

**CONFERENCE
PROGRAM**



ICAE International
Conference on
Applied
Engineering

ICAESS International
Conference on Applied
Economics and
Social Science

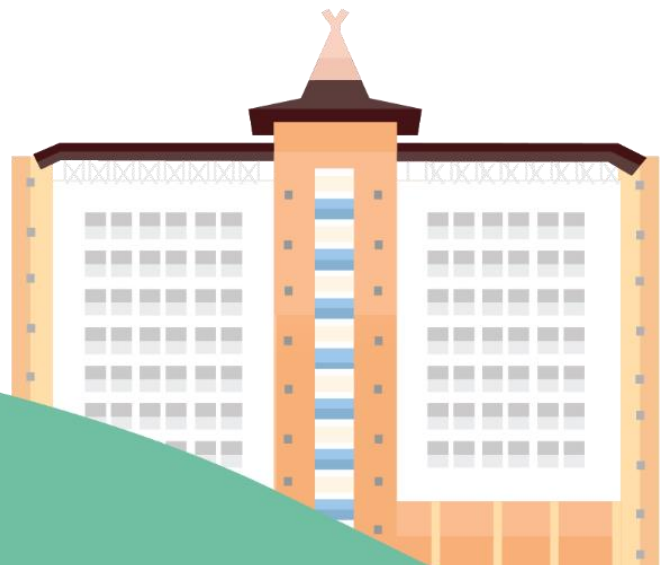
2021



Host :
Politeknik Negeri Batam

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**Batam, Indonesia
October 13th 2021**



Conference Program

ICAE International
Conference on
Applied
Engineering

ICAESS International
Conference on Applied
Economics and
Social Science

2021

Organized by



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Keynote Speakers





Prof. M. Osman Tokhi
London South Bank University, UK

Assoc. Prof. Xie Ming
NTU, Singapore



Prof. Dr.-Ing. Jens Haueisen
Technische Universität Ilmenau
Institut für Biomedizinische Technik und Informatik,
Germany

Tim Canning
City of Glasgow College, UK



Engineering bio/nature-inspired swarm intelligence techniques

Mohammad Osman Tokhi

(School of Engineering, London South Bank University, London, UK)

There has been a continued quest for development of optimisation strategies for solving scientific and engineering problems. Early developments are the traditional gradient-based search techniques. These are relatively simple and achieve solutions of reasonable quality for simple problems. However, with complex applications involving extensive computations, the quality of solution is degraded extensively using these approaches, and this is mainly due to the search algorithm getting trapped at local optima in the search space. Later approaches include random search techniques, which have the potential of reaching the global solution by jumping out of local optima points. These approaches are better suited to solving complex engineering and scientific problems. Moreover, problems with multiple requirements, which are commonly encountered in practice, can be solved with such approaches, where traditional approaches fail to solve. A class of such approaches comprises metaheuristic optimisation techniques inspired by individual/collective behaviour of living species and natural phenomena.

This presentation outlines and discusses the requirements and attributes of the optimisation approaches in context of bio-inspiration and nature inspiration, and these are exemplified by the behaviour of selected living species and natural phenomena. A set of algorithms developed based on such behaviours is described, application examples including dynamic system modelling, control system design, and model-free control techniques are presented and discussed using these algorithms.

New recording and data analysis techniques for Electroencephalography

Jens Haueisen

(Institute of Biomedical Engineering and Informatics, Technische Universität
Ilmenau, Ilmenau, Germany)
Jens.Haueisen@tu-ilmenau.de

Multichannel Electroencephalography (EEG) is widely used in clinical neurology and neuroscientific research. Recording of EEG is currently performed in specialized labs using a time-consuming and error-prone procedure with wet electrodes. Evaluation of EEG recordings requires elaborate work from trained specialists and is challenging because of the large amount of data including the data's many dimensions and because of the high noise levels. Concurrently, there is a growing interest in online EEG data processing for brain-computer interfaces and neurofeedback applications. Consequently, new approaches for EEG recording and data analysis are required.

We aim to facilitate EEG in natural environments, self-applied and unsupervised by trained personnel, thus, supporting mobile brain signal recordings in many new application fields such as sports science, telehealth, etc.

First, recent advances in dry high-density EEG recording techniques will be reviewed. Challenges and benefits of dry high-density EEG will be demonstrated on a novel 256-channel EEG cap with dry electrodes. In a proof of principle study, the novel 256-channel dry EEG cap is compared to a conventional 256-channel wet EEG cap using previously established validation paradigms. Our results demonstrate that resting-state EEG, eye movements, alpha activity, and pattern reversal visual evoked potentials can be recorded with the 256-channel EEG cap with dry electrodes with short preparation time and without significant differences to recordings with a conventional cap that is based on wet electrodes. This new technology will enable new fields of application like brain-computer interfaces and mobile EEG acquisition.

Second, the open-source MNE-CPP project will be discussed, which offers a framework to develop offline as well as online data analysis and processing software for Electroencephalography and Magnetoencephalography (MEG). MNE-CPP supports online data acquisition for EEG and MEG systems. MNE-CPP is structured into libraries, which guarantee a modular and easily extendable architecture.

Key Steps Toward Development of Humanoid Robots

Prof. Xie Ming
(Nanyang Technological University, Singapore)
mmxie@ntu.edu.sg

Since 1996, we have embarked into the journey of developing humanoid robots at Nanyang Technological University, Singapore. We have ventured into the various technical aspects of humanoid robot development. In particular, we have placed special emphasis on mechatronics design of humanoid robots, planning and control of biped walking, hand-eye coordination for humanoid robots, cognitive vision for humanoid robots, and cognitive speech for humanoid robots. From 2006 onward, several teams in Singapore have received a substantial amount of research grants and have developed together two full prototypes of humanoid robots, which are about 1.8 meters in height and weigh about 80 kg each. And, each humanoid robot has 42 degrees of freedom with independent actuations. In this plenary talk, I will share some findings and results related to the R&D works of humanoid robots in Singapore.

Along the Management Track for Good Corporate Governance

Tim Canning
(City of Glasgow College, UK)
Tim.Canning@GTE-Ltd.co.uk

Within Good Corporate Governance is a clear responsibility to operate any business with a clear view of the level of risk in each key operational area. In any business which uses machinery, process plant or other complex devices to deliver services and products there are often poorly understood risk factors relating to the potential impacts from a cyber-security incident within industrial or machinery systems. There is often less understanding about response to an incident, and the timeline that begins well before any potential incident is discovered, how a situation is determined as an incident and then the response and recovery process in industrial controls or other complex machinery control. This is as relevant to the owners of large highly automated buildings, large users of complex diagnostic devices such as hospitals and maritime vessel operators as it is to large Industrial machinery owners and operators. The presentation will consider the timeline, covering needed preparation steps, information gathering and store for use in incident determination. It will then look at methods to triage situations and separate incidents from routine maintenance issues. Finally, the presentation will extend on the immediate and medium term responses, expedited recovery and finally consider how to conduct a detailed and effective lessons learned review.

Special Session



Overcoming the VUCA challenges in the transportation domain using VANETs for ITS research

Andy Triwinarko

(Politeknik Negeri Batam, Post-Doctorate at Université de Sherbrooke, Canada)
andy@polibatam.ac.id

Road accidents, traffic jams and environmental pollution are the classical problems in the transportation domain. According to the world health organization (WHO) global status report on road safety in 2018, 1.35 million peoples die each year due to road accidents and every 24 seconds, someone dies on the road. Meanwhile, according to The Texas A&M Transportation Institute and INRIX's mobility scorecard data in 2019, American drivers lost around \$88 billion and spent 99 hours on the road due to traffic congestion. This congestion leads to the environmental problem where 3.3 billion gallons of fossil fuel is wasted.

All the statistical data above has led to more research in intelligent transportation systems (ITS) that can overcome all the problems in conventional transportation systems. Vehicular communication, other literature called it Vehicular Ad-hoc Networks (VANETs), is a wireless vehicular networking technology that can support the development of the ITS. The term VANETs generally refers to the vehicles' ability to communicate with their surroundings using wireless communication. A more recent term to use is vehicular-to-everything (V2X) communications, which defines a continuous and high-speed data communication between vehicle to vehicle (V2V), vehicle to infrastructure (V2I), vehicle to pedestrian (V2P), and vehicle to network (V2N) communications.

In this presentation, we would like to present our research of the VANETs communication to support the emergence of the ITS.

General Program



General Program

Room Link <https://s.id/ICAE-ICAESS-2021>

| | |
|------------------|---|
| 08.30 - 09.00 AM | Registration |
| 09.00 - 09.30 AM | Opening Ceremony |
| 09.30 - 10.00 AM | Keynote Speaker Session Session Chair: Ria Anggraini, S.ST, MBA Xie Ming, PhD (Nanyang Technological University) |
| 10.00 – 10.15 AM | Break |
| 10.15 – 11.45 AM | Special Session Session Chair: Hana Mutialif Maulidiah, S.T., M.Sc. Andy Triwinarko, Ph.D (Politeknik Negeri Batam) Selected paper ICAE Presentation Selected paper ICAESS Presentation |
| 11.45 – 12.40 PM | Break and Lunch |
| 12.40 – 03.00 PM | Paralel Session |
| 03.00 – 03.25 PM | Break |
| 03.25 – 03.30 PM | Closing Ceremony |
| 03.30 – 05.00 PM | Keynote Speaker Session Session Chair: Ria Anggraini, S.ST, MBA Prof. Mohammad Osman Tokhi (London South Bank University) Prof. Dr.-Ing. Jens Haueisen (Technische Universität Ilmenau Institut für Biomedizinische Technik und Informatik) Tim Canning (City of Glasgow College United Kingdom, Scotland) |
| 05.00 – 05.10 PM | Best Papers and Best Posters Announcement |
| 05.10 – 05.20 PM | Closing Remark from Head of Committee |

ICAE Session



ROOM 1A

Session chair: Dr. Indra Hardian Mulyadi, S.T., M.Eng, IPM

1. **Identification Food Nutrition Using Image Processing** *Abdullah Sani; Nova Silvia*
2. **Determination of Position of SEMG Sensor for Hand Movement Recognition** *Daniel Pamungkas*
3. **Study of A Single-Copter Bareleng-Force (SBF) Mechanical Design and Orientation Control on Arduino Nano** *Riska Analia; Susanto Susanto; Ahmad Riyad Firdaus*
4. **Camera-Based Auto-Positioning Drone** *Ahmad Riyad Firdaus; Muhammad Alfarizi Trangganu; Andreas Hutagalung; Riska Analia; Agus Syahputra*
5. **Dynamics of 6 DoF Manipulator Robot Based on Robotic Operating System** *Ahmad Riyad Firdaus; Cyrillus Rudi Soru; Hendawan Soebhakti*
6. **The Web Based Deep Learning for Voice Recognition to Be Implemented in Door Lock Security System** *Riska Analia; Susanto Susanto; Ika Karlina Laila Nur Suciningtyas*
7. **A Real-Time Distance Estimation for Early Crowds Detection to Carry Out Social Distancing as a Prevention of Covid-19 at Politeknik Negeri Batam** *Susanto Susanto; Riska Analia*
8. **Characterization of Gas Sensor and TCS34725 Color Sensor Toward Bee Honey Aroma and Color** *Marzuarman Marzuarman; Stepan Asril; Jefri Lianda; Hari Putra*

ROOM 1B

Session chair: Budiana, S.Si., M.Si

1. **Detection of Unique Code on Lead Frame RFID Chip with Template Matching Method and Report File Database** *Nanta Fakhri Prebianto; Nur Sakinah Asaad; Muhammad Arifin; Nadhrah Wivanius*
2. **Embedded Vision System for Landing Drone Detection Based on CNN Algorithm** *Arif Irwansyah; Nanda Rizky Oktapradana; Bambang Sumantri*
3. **Microstructural Evaluation of Sn99Ag0.3Cu0.7NiGe After Soldering and Coating with the Variation of Temperatures** *Budiana Budiana; Hana Mutialif Maulidiah; Widya Rika Puspita; Mustanir Mustanir; Adlian Jefiza*
4. **Surface Roughness Study on ASTM36 Iron with Combination of Sand Blasting Process Parameters** *Budiana Budiana; Budi Sugandi; Nadhrah Wivanius; Fitriyanti Nakul; Rivani Yolanda*
5. **Solution for Battery Charging by Providing an Optimum Angle of Solar Panel During Monsoon Season** *Hery Sunarsono; Yopy Mardiansyah; Sari Rahmiati*
6. **IoT-Based UVC Lamp Sterilizer** *Muhammad Prihadi Eko Wahyudi*
7. **Dual Mode Portable Power Bank for Extending Battery Life of Gadget Devices** *C. Bambang Dwi Kuncoro; Moch Bilal Zaenal Asyikin; Cornelia Adristi*
8. **CO and NO₂ Concentration Monitoring Based on Internet of Things** *Tengku Musri; Supria Supria; Nurul Fahmi; Eko Prayitno*

ROOM 1C

Session chair: Dr. Prasaja Wikanta, S.T., M.T.

1. **Network Design in Trenggalek Based on Optical Network to Facilitate the Trenggalek Local Government "FishOn" App Project** *Anak Agung Ngurah Wisnu Yoga Swara; Nayl K Saptika; Lentera Lentera; Lovenia Viona Gultom; Magioti Magioti; Catur Apriono*
2. **Identification of Chlorophyll-A Distribution in Piayu Waters, Batam Island Using Terra Modis Satellite Image** *Muhammad Zainuddin Lubis; Gregorius Sinaga; Wenang Anurogo; Muhammad Ghazali; Hanifah Widiastuti; Agaton Mufubi; Shaik Hossain; Husnul Kausarian; Fadli Suandi; Dodi Prima Resda; Adlian Jefiza; Fandy Bestario Harlan*

3. **An Application of Aermod Modeling and Geographic Information System to Predict Emission Spreading Pattern** *Sudra Irawan; Farouki Dinda Rassarandi*
4. **Cloud Masking Testing Using Band QA, Fmask, and MCM Methods Using Landsat 8 Satellite Imagery in the First Quarter of 2020 (Case Study: Batam Island)** *Farouki Dinda Rassarandi; Rifa Adliani*
5. **Accident Recording and Data Acquisition System for Insurance Vehicles (ARADA)** *Eng Mohammed Ikhlayel; Qurrotul Aini; Iman Fahruci*
6. **The Usefulness of UAV-LiDAR for Irrigation Canal Identification** *Erlyna Nour Arrofiqoh; Ni Putu Chintya*
7. **Radial Basis Function Neural Network Approach for Asymmetric Cryptography** *Nurul Hayaty*

ROOM 1D

Session chair: Afdhol Dzikri, S.ST., M.T

1. **Vulnerability Analysis Using OWASP ZAP on Higher Education Websites** *Kasmawi Kasmawi; Kasmawi Kas; Nurmi Hidayasari; Mansur Mansur*
2. **The Implementation of Motion Capture in Welcome Dance Animation** *Selly Artaty Zega*
3. **Mapping the Dynamics of Land Surface Temperature Changes to Settlement Development** *Barkah Barkah; Luthfiya Sari*
4. **The Estimation of Oxygen Demand Based on Existing Green Space in Batam City Using Landsat-8 Imagery** *Nindawidya Viraputri; Luthfiya Sari*
5. **Digital Signature Authentication System in SIMP3M Web Application of Research Assessment Services at Politeknik Negeri Batam** *Supardianto Supardianto; Nelmiawati Nelmiawati*
6. **Hot Issue in Health Use Topic Modeling with LDA** *Danuri Danuri; Jaroji Jaroji*
7. **Web-Based Information System Development of Tunas Jaya Duriangkang Football School** *Afdhol Dzikri*

ROOM 1E

Session chair: Muchamad Fajri Amirul Nasrulla, S.ST., M.Sc

1. **Usability Analysis on the VR Archery Game Interface Using the Usability Testing Method** *Riwinoto Riwinoto; Muhammad Harviando*
2. **User Satisfaction Analysis on Dev's Adventure Using Game User Experience Satisfaction Scale (GUESS)** *Riwinoto Riwinoto; Rizky Kala Maghribi*
3. **User Experience Analysis in Mobile League of Legends Wild Rift Game Using Cognitive Walkthrough Method** *Riwinoto Riwinoto*
4. **User Experience Analysis in Indonesian Heritage Samaratunga Adventure Game Using Cognitive Walkthrough Method** *Riwinoto Riwinoto*
5. **Basic Geospatial Infrastructure Measurement and Topographic Mapping in Supporting the Implementation Project Based Learning (PBL) of Bathymetric Mapping in Sembulang Waters** *Oktavianto Gustin, Arif Roziqin, Farouki Dinda Rassarandi, Rizki Pratama, Cecep Hidayat, Dinda Tasrika, Jean Aurora, Syach Putra*
6. **Mapping Distribution of Housing Social Facilities That Have Been Handover to Batam City Government (Case Study: "Batam Kota" District)** *Oktavianto Gustin, Tumbur Simanjuntak, Farouki Dinda Rassarandi, Dewi Nur Indah Sari*
7. **Applying Design Thinking to Mothercare App for Better Breastfeeding Practices in Riau Islands** *Rina Yulius; Muchamad Fajri Amirul; Nasrullah; Fandy Neta; Ahmad Hamim Thohari; Banu Failasuf; Mochamad Arsyad Alban; Diyah Karmila Sari; Ajeng Kartika Puspa; Genta Syaputra*

ROOM 1F

Session chair: Siti Noor Chayati, S.T., M.Sc

1. **Supply Chain Information System for Product Management Control Using Rule Based Reasoning Model** *Mufadhol Mufadhol; Mustafid Mustafid; Suryono Suryono*
2. **Application of Unmanned Aerial Vehicle to Test Village Map Accuracy, Case Study: Kelurahan Duri Timur** *Hendra Saputra; Faisal Ananda; Gunawan Saroji*
3. **Classification of Maturity Levels of Palm Fresh Fruit Bunches Using the Linear Discriminant Analysis Algorithm** *Rohmat Borman; Dwi Ely Kurniawan; T. Styawati; Imam Ahmad; Debby Alita*
4. **The Effect of Managerial and Institutional Ownership on Corporate Social Responsibility Disclosure** *Ayu Khoerun Nisa, Mega Mayasari*
5. **Electronic Nose Applications for Monitoring and Odor Classification in Cattle Farm** *Humaira Humaira*
6. **Hole Feature Recognition from 3D Solid Model for CAIP Application** *Andri Pratama; Edo Dwijayanto; Yogi Muldani Hendrawan; Herman Budi Harja; M. Udin Harun Al Rasyid; Idris Winarno*
7. **Competitive Strategy: A Game Theory Approach for a Developing Rolling Stock Manufacturer in South East Asia** *Wahyu Caesarendra; Bedy Kharisma; Uuf Brajawidagda; Muhammad Abdillah; Juliana Zaini; Sukoroto Sukoroto*

ROOM 1G

Session chair: Nidia Yuniarsih, S.T., M.T

1. **Pressurized Windowed Burner Chamber Performance for Solid Rocket Propellant: Preliminary Study** *Rahman Hakim, Lalu Giat Juangsa Putra, Hanni Maksum Ardi, Jong-Shinn Wu*
2. **PoleBot: Polman Open Platform Education Robot** *Pipit Anggraeni; Nur Jamiludin Ramadhan; Hilda Khoirunnisa*
3. **PROMETHEE Analysis for Selecting Municipal Solid Waste Management in Batam City, Indonesia** *Nurul Ulfah; Yosef Adicita; Mega Gemala; I Wayan Koko Suryawan*
4. **Finite-Element Approaching to Investigate Residual Stresses of Fillet Welded Longitudinal Attachment** *Nurman Pamungkas; Ari Wibowo; Nur Fitria Pujo Leksonowati*
5. **Assessment of Existing Condition of Domestic Effluent Wastewater Treatment Plant (WWTP) in Jakarta Environment Agency's Employee Dormitory** *Giovanni Ruly Putra; Betanti Ridhosari; Evi Siti Sofiyah; Nurulbaiti Listyendah Zahra; Ariyanti Sarwono; I Wayan Koko Suryawan*
6. **Software Engineering Development of Finite Element Method Programming Applications in 2D Truss Structures Using Python Programs** *Nazaruddin Nazaruddin; Dwi Wahyuni; Syafri Syafri*

ROOM 1H

Session chair: Nugroho Pratomo Ariyanto, ST, M.Sc

1. **Development of Automated Weather Observing System Category I for Aviation Meteorological Services Based on Internet of Things** *Sugiarto Sugiarto*
2. **Information System for Supporting the Life Cycle of Seismic Protection of Buildings Based on Kinematic Seismic Isolation** *Sagit Valeev*
3. **Characteristics of Municipal Solid Waste (MSW) Generation in Maluku Utara Province: Differences Before and During the COVID-19 Pandemic** *Eri Aryani; Amelinda Anggita Cahyani; Leonita Maharani Putri; Ariyanti Sarwono; I Wayan Koko Suryawan*
4. **PCB Solder Mask Coverage over Conductors (Skip Coverage) Solving Method in Teaching Factory Manufacturing of Electronics** *Nur Sakinah Asaad; Mustanir Mustanir; Diana Anggraini*

5. **Analysis of Preventive Maintenance on Forklifts with the Lifting and Transporting Instruments Inspection Method** *Budi Baharudin; Hanifah Widiastuti, Nur Fitria Pujo Leksonowati, Athifah Az Zahra Effendi*
6. **Smoke and Fire Classification Based on a Deep Convolutional Encoder-Decoder Neural Network** *Wahyu Caesarendra; Vigneashwara Pandiyan; Malik Mohammed Umar; Daniel Pamungkas; Maciej Sulowicz; Hayati Yassin*
7. **Effect of Fluctuated Flow on Horizontal Axis Wind Turbines at Various Tip Speed Ratios** *Radwan Muhammad Aljuhashy; Farouk Hamdoon; Basim Al-Bakri; Ahmad Riyad Firdaus; Robert Howell*

ICAESS Session



ROOM 2A

Session chair: Nanik Lestari, S.E., M.S.Ak

1. **The Effect of Non-Performing Loans on the Profitability of the Banking Sector Listed on the IDX** *Jenny Safana Sibarani; Diah Amalia*
2. **The Effectiveness of Student Internship Program in Industry to Developing Self Competence at Bengkalis State Polytechnic** *Rosmida Rosmida; Nur Anita*
3. **The Impact of Financial Inclusion on Financial Stability in Indonesia** *Doni Putra Utama; Wulan Lestari*
4. **Implementation Monte Carlo Simulation in Investment Evaluation, Case Study: Gas Compressor Investment PLTG 4 x 25 MW Maleo-Gorontalo** *Abdollah Siregar; Sudarso Wiryono*
5. **Sharing Economy: Perception of Drivers for Online Transportation GOJEK** *Agista Ade Pertiwi; Nanik Lestari*
6. **The Effect of Direct Foreign Investment Realization, Employment and Regional Tax Receiving on Province Economic Growth in Indonesia 2016-2018** *Bella Febiola; Adi Irawan Setiyanto*
7. **Purchase Decision Factors on Halal Products of Processed Food in SMEs Semarang** *Mella Katrina Sari; Widowati Mustika; Atif Windawati; Saniman Widodo; Sartono Sartono*

ROOM 2B

Session chair: Afriyanti Hasanah., S.S.T., M.Sc

1. **Do Monetary Instruments Affect Conventional Bank Loans to MSMEs?** *Dina Yeni Martia; Afriyanti Hasanah; Siti Liasari; Endah Purwanti; Kenneth Pinandhito*
2. **Financial Strategy Analysis for Development of Liquid Natural Gas (LNG) Power Plant to Replace Diesel Fuel Power Plant** *Rosa Darman*
3. **Analysis of the Effect of the Use of Electronic Money, Debit Card and Hedonic Lifestyle on College Student Consumption Behavior** *Ru'yati Prihastuti; Bambang Hendrawan*
4. **Mültrennung Method: The Application of Education for Separating Rubbish Using Mini Comic in Kusuma Bangsa School** *Ica Yolanda Ginting; Arta Uly Siahaan; Winanda Wahana Warga Dalam; Happy Yugo Prasetya*
5. **An Endeavour to Prevent the Risk of Family Dysfunction Through Game of Anti-Family Dysfunction (GANSIA)** *Nisriani Uswatunnisa; Arta Uly Siahaan; Adi Irawan Setiyanto; Hamdani Arif*
6. **Problem Based Learning for English Subjects in Students' Perspectives** *Sri Murni; Yosi Handayani*
7. **Buzzer Works on Human-Machine Agency Role in Securing Indonesia's Voters Precinct** *Henry Sianipar, Mediana Handayani, Ressa Uli Patrissia*

ROOM 2C

Session chair: Desi Ratna Sari, S.Hum., M.Hum

1. **Fulfillment of Employment Rights for People with Disabilities in the Middle of the Covid-19 Pandemic** *Vicko Taniady; Brillian Arafat Ilham Muhammad; Beni Hibatullah*
2. **Lecturers English-Medium Instruction Skill at Tertiary Vocational Education** *Yosi Handayani; Condra Antoni; Nurul Fadilah*
3. **Web-Based Writing Assessment or Reward-Based Writing Assessment: Which Gives Better Impact on Student Writing Motivation** *Erikson Togatorop*
4. **Investment Gallery: Improving Students' Interests Through Activities and Knowledge** *Albert Saragih; Dwi Kartikasari*
5. **Integrating SMART Decision Making Attributes to Improve the Selecting Subcontractor Strategy** *Theofilus Purnama Putra; Sudarso Wiryono*

6. **The Role of Psychological Factors in the Intention to Use Mobile Payment** *Yuniarti Yuniarti; Hajan Hidayat*
7. **Case Study: Productivity Improvement in Surgical Manufacturing Company** *Bekti Harsono; Mursyid H. Basri*
8. **Integrated Risk Management Frameworks ISO 9001:2015 as a Successful Parameter in Project Management: The Case of Yamal Train 3 Project** *Prastiwo Anggoro; Gatot Yudoko*

ROOM 2D

Session chair: Dedi Kurniawan, S.Tr.Akun., M.Acc

1. **Effect of Liquidity and Leverage on Profitability of Agricultural Sector Companies Listed on the IDX** *Bunga Sunarta; Dedi Kurniawan*
2. **Effect of Working Capital Management on Profitability of Manufacturing Companies Listed on the IDX** *Septri Yani; S Sulaksono Adi Wibowo*
3. **The Effect of Tax Awareness, Tax Morale, Tax Sanctions, and Tax Amnesty Policies on Tax Compliance of Taxpayers in Batam City** *Viska Martina; Afriyanti Hasanah*
4. **Effect of Financial Ratios on Financial Distress of Retail Trade Companies Listed on the Indonesia Stock Exchange** *Sinarti Sinarti; Maresyah Handayani; Nguyen Oanh*
5. **The Effect of Firm Performance on Annual Report Readability** *Syafira Ratna Sari; Arif Darmawan*
6. **The Effect of Love of Money and Machiavellian on Perception Ethics of Batam State Polytechnic Business Management Students** *Feby Anjriani; Riri Zelmianti*
7. **Financial Ratio to Predict the Growth Income (Study on Infrastructure Companies Listed on IDX)** *Ghina Kencana Mulia; Vina Kholisa Dinuka*
8. **Development of Accounting Application for MSMEs Based on Cloud Computing** *Supardianto Supardianto; Nelmiawati Nelmiawati; Hamdani Arif; Maidel Fani*

ROOM 2E

Session chair: Sugeng Riadi, S.E., M.Ak

1. **The New Retail Business Model and Customer Experience: A Case Study on a Coffee Shop Retail** *Dera Thorfiani; Noneng Nurjanah*
2. **Analysis of Tourism Destination Image Value Creation Through Emotions on Spa Health Tourism in Bandung, West Java** *Angga Dewi Anggraeni; Suci Fika Widyana*
3. **The Effect of Bank's Internal Financial Ratio on Lending in Indonesia Conventional Commercial Banks (Book IV Category)** *Fitri Karostiana; Sugeng Riadi*
4. **Determine Factors of Accounting Student Satisfaction in Online Learning** *Hana Ainubie; Muhammad Ramadhan Slamet*
5. **The Effect of Corporate Social Responsibility, Political Connection, and Firm Size on Tax Avoidance of the Manufacturing Sector Listed on the IDX** *Silvya Anggraini Sukma; Diah Amalia*
6. **Project Based Learning Model for Agency Personal Tax Courses: Experimental Study** *Ely Kartikaningdyah*
7. **The Effect of Liquidity, Profitability, and Solvency to the Financial Distress in Agricultural Sector Companies Listed on the Indonesia Stock Exchange (IDX)** *Egi Sukma; Ria Anggraini; Hanna Tinambunan*
8. **Does the Novelty, Advertising Value, Relevance, and Privacy Concern Effect to the Online Impulse Buying Tendency?** *Anisha Rizka Familia; Mega Mayasari*

ROOM 2F

Session chair: Ria Anggraini, S.ST., M.B.A

1. **Organizational Development at Human Resources Department of Export-Oriented Semiconductor Manufacturing Company** *Wanda Abubakar; Yudo Anggoro*
2. **Batam State Polytechnic Case Study: Generation Y in Online Fashion Shopping** *Ria Anastasia; Nanik Lestari*
3. **Effect of Recruitment, Selection, and Employment Training Process on Employee Performance of the Fitter Department of PT. Nov Profab** *Ghea Anggari; Mia Syafrina*
4. **Human Resources Professionals Transformation: An Introduction of New Concepts** *Abd. Rasyid Syamsuri; Ritha F Dalimunthe; Parapat Gultom; E Siahaan*
5. **Analysis of the Effect of Influencer Endorsement, Customer Review, Brand Ambassador, and E-Service Quality on E-Commerce in Creating Store Switching** *Maulina Ayu Sabrina Pertiwi; Dian Mulyaningtyas*
6. **Comparison Analysis of Depression, Anxiety, and Stress Levels in Students in Business Management Department and Information Engineering Department of Batam State Polytechnic on Online Learning in the Covid-19 Pandemic** *Sri Dona Oktavia; Dian Mulyaningtyas*
7. **Green Marketing Analysis on Oil Palm Plantation Industry** *Muhammad Hilman Fikri; Paham Ginting; Endang Rini; Bebi Sembiring*
8. **INFLUENCE OF PRICE, PRODUCT REVIEWS, AND QUALITY OF SERVICE ON ONLINE PURCHASE DECISIONS THROUGH SHOPEE ON STUDENTS OF BATAM STATE POLYTECHNIC** *Febby Suryawan; Ayu Puspitasari*

ROOM 2G

Session chair: Fandy Bestario Harlan, S.T., M.MT

1. **Relevance of Graduates Competence to the Needs of the Labor Market** *Fandy Bestario Harlan; Silvina Widya*
2. **Analysis of Customer Satisfaction Level of Small and Medium Micro Enterprises (SMMEs) Using Importance Performance Analysis (IPA) Method and SWOT Analysis at PT Perusahaan Gas Negara Sales Area Batam** *Nur Rahmah Andayani, Fandy Bestario Harlan*
3. **Effect of Promotion, Price, and Service of Quality on Maxim Online Driver Customer Satisfaction at Batam State of Polytechnic** *Nur Rahmah Andayani, Fandy Bestario Harlan*
4. **The Effect of Rewards and Punishment, Job Rotation, Employee Engagement and Career Development on Employee Performance at PT XYZ** *Nur Rahmah Andayani; Patyot Dechsiri*
5. **Tax Administration, Tax Knowledge, Sanctions Taxation, Individual Taxpayer Compliance** *Annisyah Aprillia, Dwi Kartikasari*
6. **The Effect of Leadership Style, Work Motivation, and Organizational Culture on Employee Performance During the Covid-19 Pandemic (Study on Manufacturing Companies in Batamindo Industrial Park Area)** *Melinawati Silitonga*
7. **Compensation Impact on the Firm Performance of Indonesian Insurance Companies Listed on the IDX** *Cynthia Bella Soeryono, Winanda Wahana Warga Dalam*
8. **Machine Learning for Domain and Hosting Marketing Strategy** *Mutiara Auliya Khadija; Wahyu Nurharjadmo*

ROOM 2H

Session chair: Yulinda, S.E., M.Si., MBA

1. **Analysis of Factors Retailer Brand, Information Richness and Easy of Use on Buying Interest in Using Shopeepay** *Yulinda Tarigan; Khalishah Aptiyani*
2. **The Effect of Workplace Conflict and Stress on Employees Performance at A Freight Transport Company** *Andi Erna Mulyana*
3. **Supplier Performance Evaluation Using Fuzzy Analytical Hierarchy Process Method at PT. XYZ** *Dewi Septiana; Adhitomo Wirawan*
4. **The Influence of Customer Experience Towards Repurchase Intention in Shopee Application** *Davied Dehna; Muhammad Ramadhan Slamet*
5. **The Effects of Perceived Usefulness and Perceived Ease of Use on the Use of "ShopeePay" E-Wallet Application** *Ade Wulan Suri; Muhammad Ramadhan Slamet*
6. **Customer Loyalty During the Covid-19 Pandemic Case Study on Bank Syariah Indonesia Post-Merger** *Widowati Mustika; Mella Katrina Sari; Winarto Winarto; Atif Windawati*
7. **Feasibility Study of Refill Drinking Water Depot at BUM Desa Sukajaya, Sukajadi Village Bengkalis Regency** *Muhammad Arif; Nazrantika Sunarto*

ROOM 2I

Session chair: Yosi Handayani, SS, M.TESOL

1. **Analysis of Jig Supplier Selection with Analytical Hierarchy Process (AHP) Method** *Roza Andila; Rahmat Hidayat*
2. **Analysis Scheduling XYZ Project Using Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT) at PT. Profab Nov** *Rohilatul Khazanah; Sri Zuliarni*
3. **Analysis of Factors Affecting the Income of MSMEs Marketing Products Through Gojek During the Pandemic** *Shinta Wahyu Hati*
4. **Effectiveness of the Online Learning Process and Work Engagement of Educators Due to Changes in Management Policy During the Covid-19 Pandemic: A Case Study of the Bina Ummah Foundation of Doctor Haji Adamri Al Husainy** *Leni Rizqa Astuti; Hajan Hidayat*
5. **Influence of Intellectual Capital on Productivity Bank in Indonesia** *Siti Nurfaizah; Winanda Dalam*

ICAE Abstracts



The Identification of Food Nutrition Using Image Processing

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Abstract. The development of research on image processing aims to improve an image processing system that produces better image output. The development of the fruit and vegetable identification system also undergoes the development of image processing research, where fruit and vegetable identification systems can be applied in various devices using a variety of programming languages. One of the programming languages that can be used is python. Therefore, the author will create a real-time fruit and vegetable recognition system using a camera, PC, and K-Nearest Neighbor (KNN) method that aims to obtain the value of nutritional content in fruits and vegetables from the fatsecret database. This study includes measuring the performance of the KNN method with various K values on 1000 training data objects obtained from datasets. It can be concluded that by testing the values $k = 1$ to $k = 9$, the best performance values obtained is at values $k = 1$ and 3 , where by the success rate reaches 99%.

Dual Mode Portable Power Bank for Extending Battery Life of Gadget Devices

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Abstract - In recent years, portable electronic devices such as gadgets, tablets, mp3 players grow rapidly as daily devices for supporting people activities. In many applications, portable electronic devices need power backup. Since wireless power technology has been introduced in mobile device applications, portable power backup has become more popular to extend the battery life of mobile devices, moreover, the power backup technique also can utilize the advantages of wireless power technology. This paper presents the development of a dual-mode power bank: wireline and wireless, especially for gadget device power charge applications, in order to enhance user experience. The power backup is stored in a Li-ion rechargeable battery where the power in-outlet is monitored by the power monitoring module. The developed device was designed in a compact, simple, and portable module in the fashionable casing regarding the wireless power bank device. Concerning the wireless system, it was also designed based on Qi-standard Wireless Power Consortium (WPC), working at an operating frequency of 110kHz, maximum transmission distance at 10mm, and providing power at 5W. Experimental and validation reveal that the device can provide power 5V at maximum current 1A. The power transfer efficiency is around 70% and compatible with Qi-standard wireless power charger either modular or built-in inside portable electronic devices.

Keyword: magnetic induction, power bank, portable, Qi-standard, wireless power

Determination of Position of SEMG Sensor for Hand Movement Recognition

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Abstract. Biomechanics is a field of science that studies the movement of living things, especially humans. Biomechanical science produces a new technology, namely electromyography (EMG). Electromyography (EMG) is a technique for recording signals originating from human muscles during contraction or relaxation, so it is widely used as a control medium. This study aims to identify finger movement patterns in the form of thumb opening, index finger opening, middle finger opening, ring finger opening, and little finger opening using a Myo Armband sensor based on electromyography (EMG) signals. This Myo Armband sensor is placed on the forearm of the subject's right hand to get a signal from the EMG. The 70 percent EMG signal is used as training to get the weight of the results for each movement. Then the weight of the training results is tested using 30 percent of the EMG signal data and classified using the Support Vector Machine (SVM) method. At the classification stage, a success percentage of 60% was obtained for the EMG 3 sensor, 73% for the EMG 4 sensors, and 53% for the EMG 8 sensor. Furthermore, after obtaining a percentage of the success of this study, the authors hope this research can become a reference for the development of making hand robots for medical purposes,

A Real-time Distance Estimation for Early Crowds Detection to Carry Out Social distancing as a Prevention of Covid-19 at an Indonesian Vocational College

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Abstract. As social beings, doing social interaction both individually and in group is very much needed by humans. However, due to several countries such as Indonesia have not fully recovered from the shackles of Covid-19, the government has to implement social distancing to suppress the spread of the virus. In order to implement the social distancing to carry out properly, an automatically system which can monitor that have potential to be crowded. This study will describe a system which can monitor crowd conditions and provide warnings if each person is at the maximum limit about 2 meters each other that has been determined to communicate. This system will detect humans who are communicating and estimate the maximum about 2 meters distance between people for implementing social distancing in real-time. As an experiment, this system has been installed in a laboratory at an Indonesian Vocational College to monitor student activities so that they always implement social distancing. From several experiments, the results obtained that the system is able to detect and calculate the distance between person positions properly as expected.

Camera-based Auto-positioning Drone

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Abstract. The Indonesian Flying Robot Contest (KRTI) requires a drone to fly autonomously to a designated object. In order to fly autonomously, the robot can use both GPS and camera for navigation. The use of GPS is not always accurate because data from GPS depends on the satellites obtained. Therefore, it is necessary to have a backup system, namely camera-based vision system. The vision methods used in this research are colour segmentation and haar cascade. Colour segmentation has the advantage of good computation by manually classifying images, whereas haar cascade has the advantage of being able to classify images automatically. The results of the design of the navigation method have been validated through simulations and experiments with quadcopter drone hardware. The results show that the navigation performance can work well, both through simulation and hardware experiments. Apart from that, testing object detection with the colour segmentation method and haar cascade can produce a good image processing but still needs to be developed for the level of accuracy.


IoT-based UVC Lamp Sterilizer


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Keywords: UVC, Sterilizer, Lamp, Radiation, COVID-19, Virus, Germ Killer, IoT.

Abstract: This appliance uses Internet of Things technology which aims to adjust ON/OFF position of the lamp in order to avoid UVC radiation which is harmful to human skin. The test used a room with a size of 3x3x2 meters. The time set for this test is 5 minutes. According to the test results for five trials, IoT communication can function properly. The lamp can be turned on and the lamp timer can be controlled via a smartphone. During that time, human detection can be carried out accurately, the device will react immediately if there is a movement of living things into the room which causes the device to turn off automatically. The on/off time of the device is also in accordance with real time conditions.

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Characterization of Gas Sensor and TCS34725 Color Sensor toward Bee Honey Aroma and Color

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Abstract. Honey is a sweet liquid produced by honey bees from nectar. In Indonesia, there are many variations of bee honey which are often found, such as coffee honey, calliandra honey, randu honey, durian honey, kelulut honey, and many other types of honey. Each type of honey has different characteristics, ranging from the taste, aroma, and color. Sometimes it is really difficult to distinguish the characteristics of honey. Therefore, a study is carried out to see the characteristics of several types of bee honey based on the color and aroma using a TCS34725 color sensor and 8 types of MQ gas sensor array. Moreover, the system is equipped with an Arduino Mega microcontroller as a reader and measurement data processing until it can be displayed on a PC screen. Based on the test results of 5 kinds of honey samples, each kind of sample is divided into 3 samples which are treated differently. The results show that the color test produces the highest color frequency value and the lighter color in randu honey with an average RGB value of 62. The darkest color of honey is TJ honey with an average RGB frequency value of 24.3. The length of storage time also affects the color of honey. In the aroma test, the MQ-9 sensor is the most sensitive sensor to the aroma of coffee honey, randu honey, and durian honey, while the MQ-2 sensor is sensitive to the aroma of calliandra honey and TJ honey. The high sour aroma of honey is able to increase the response of several sensors.

Detection of Unique Code on Lead Frame RFID Chip with Template Matching Method and Report File Database

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Image processing is a method used to process images into digital form to improve and improve the quality of an image. One of its uses is to detect the unique code on the lead frame of the RFID chip in the RFID tester machine. Image processing can simplify the process of checking the unique code created by the RFID tester machine. This system uses a camera to check the unique code on the lead frame of the RFID chip. Therefore, it will create a system with template matching method. This method has a higher level of accuracy and is widely used in industry as part of quality control. Character testing was carried out using samples on printed paper as a replacement for the RFID chip lead frame with a distance of 7 cm. So that the results of the percentage of character reading accuracy are 100%. It is then converted into a report file and saved to the database.

Keywords: Image processing, unique code, template matching

Study of A Single-copter Bareleng-Force (SBF) Mechanical Design and Orientation Control on Arduino Nano

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Abstract. The research of unmanned aerial vehicles (UAV) has grown rapidly due to technological development in various applications. One of the UAV developments is single copter drone; therefore, this paper will discuss SBF's design and attitude control behaviour in real-time application. In order to control the attitude of Single-copter Bareleng-Force (SBF), we applied a simple PID controller to control the roll, pitch, and yaw. As for the mechanical design, the 3D printer machine has been chosen to fabricate the drone mechanic, also the Arduino nano has been used as the controller board to load the computation of attitude control. Some experiment has been carried out in real-time application to verify the performance of PID controller in order to control the attitude of SBF. The results show that the PID controller is able to cop to control the attitude whether it has been given an external disturbance (pushing by hand) during flying.

The Web Based Deep Learning for Voice Recognition to be Implemented in Door Lock Security System

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Abstract. Due to the development of technology, it is easy to integrate this into many of applications such as automatic security door lock system. As presented in this paper, we proposed a voice recognition for the user authentication in order to open the door by using the word in Bahasa. In order to recognize the user voice, the convolution neural network (CNN) deep learning algorithm will be utilized as a proposed method. We also provide a simple web based which is allowed to recognize the user voice directly when the user spoke. Some experiments have been carried out to verify the performance of the system by using the work “Buka” and some words which has the similarity in pronunciation. Based on the experiment results, our system was able to recognize the trained voice accurately even the user used another word which was similar to say.

Solution for battery charging by providing an optimum angle of solar panel during monsoon season

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Keywords: Light lux intensity, bagan, solar cells, light fishing.

Abstract: During the west monsoon, traditional fishers do not dare go to the sea due to storms and their family's live depends on the result of fishing's trap in "bagan" not too far from the shoreline. This fishing's trap is equipped by a lighting's system to attract plankton to move towards, where the movement of plankton will be followed by small fish. This eventually triggers the big fish to move towards the lights to devour the smaller fish which they end up on the trap area in bagan. A lighting's system of fishing's trap use a solar energy to replace kerosene or diesel oil as a source of energy that was flammable and prone to spills, but this power energy is vulnerable to the rain. During a rainy day, the presence of water's layer on the top of solar panel cause battery to fail to charge which result in absence of lighting in bagan. This article describes an optimization solution for battery charging by providing an optimum angle of solar panel that reduce a waterlogged_layer and increase sun's radiation. The solar panel with 10_degree inclination's angle to the west relative to a horizontal plane has an optimum performance.

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Microstructural Evaluation of Sn99Ag0.3Cu0.7NiGe After Soldering and Coating with The Variation of Temperatures

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Abstract. Microstructural evaluation of Sn99Ag0.3Cu0.7NiGe has been successfully carried out using SEM-EDX characterization and roughness tester. The samples used in the evaluation of the solder microstructure were six samples. The temperature variations used in this study consisted of 155°C, 170°C, and 180°C. Based on the research conducted, the microstructure formed after being given a temperature tends to be a void and a channeling void. This void and channeling void can potentially be the main starting point for cracking the solder so that it cannot adhere to the desired layer. Apart from that, some samples show agglomeration of solder at specific points after the heating process. The formation of agglomeration at a point indicates that the diffuse event has not yet been completed.

Surface Roughness Study on ASTM36 iron with Combination of Sand Blasting Process Parameters

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Abstract. Sandblasting is one of the techniques used to clean the iron surface from dirt, dust, or rust. Several factors need to be considered when using sandblasting on the surface of ASTM-36 iron, such as the distance, pressure, and type of sand used. The distance variation used in this study consisted of 100 mm, 150 mm, and 200 mm. The pressures used in this study consisted of 4.5 bar, 5 bar, and 5.5 bar. At the same time, the type of sand used in this study consists of Setokok sand, Nongsa sand, and Bahagia sand. There were nine samples tested in this study using a combination of variations. The investigation was done before and after the sandblasting process for all samples using a Surface Roughness Tester based on ISSO: 1997 and image analysis. The results showed that all samples experienced an increase in surface roughness after the sandblasting process. However, E sample showed the highest increase in surface roughness (pressure: 5 bars, distance: 150 mm, and sand type: Bahagia sand).

Embedded Vision System for Landing Drone Detection based on CNN Algorithm

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Technology is developing rapidly towards human perception in the form of the ability of human senses. One of the senses that wants to be replicated is the sense of sight. Object detection or object recognition is one of the most popular implementations of artificial intelligent algorithm. This work aims to implement and analyze the Convolutional Neural Network (CNN) algorithm in detecting drone landing sign objects that are executed on the Nvidia Jetson devices. For this purpose, some experiments have been done to measure the detection performance (accuracy), processing time, power consumption, and work occupancy of the devices. According to our implementation, the proposed system is able to perform good result in term of accuracy and processing time (frame per second). The implementation of SSD-MobileNetV1 on the Jetson TX2 achieves accuracy of recall and precision score 0.99 and the average speed of 2.59 FPS. Meanwhile, the implementation of the proposed system using Jetson Nano with EfficientDet model can perform accuracy of recall and precision score 1, the CPU usage of 54.95%, the memory usage of 87.07%, the average power usage of 7.76 Watt, and the average speed of 2.59 FPS; Additionally, The implementation of the SSD-MobileNetV2 model on the Jetson Nano able to obtain accuracy of recall and precision score of 0.9 and 1 respectively, while the CPU usage is 54.63%, the memory usage is 92.64%, the average power usage of 7.85 and the speed performance of 8.92 FPS.

CO and NO₂ Concentration Monitoring Based on Internet of Things

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Keywords: CO, Internet of Things, NO₂, NodeMCU, Web-Based Application

Abstract: In today's era, industrial development has shifted towards the use of machines and means of transportation automatically. The development of this industry raises various environmental problems, notably the deterioration in air quality which is getting worse in several areas of Indonesia. In Indonesia, the concentrations of CO and NO₂ gases have the highest concentrations compared to the concentrations of other harmful gases. CO gas is known to be toxic to the human body which can cause health problems and can even cause death if exposed to high concentrations. Whilst NO₂ gas can also cause health problems. In this study, we use IoT technology by making use of NodeMCU as a microcontroller and temperature, humidity, CO and NO₂ sensors for monitoring CO and NO₂ concentrations in real time. The data obtained will be sent to the cloud for data storage so that users can access it via a web application. Based on the results, the maximum value of CO concentration is 13.28 ppm and the minimum value is 1.23 ppm. Whilst the maximum value of NO₂ concentration is 18.63 ppm and the minimum value is 16 ppm. Furthermore, this system can help users to get CO and NO₂ information from the web-based application.

Network Design in Trenggalek Based on Optical Network to Facilitate the Trenggalek Local Government “FishOn” App Project

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Abstract. Trenggalek Regency is facing the Indian Ocean and has a strategic landscape to become a large capacity seaport. The presence of a fiber-optic network to the southern end of the Trenggalek coast can optimize information exchange and support the government program “FishOn: One Million Fishermen Sovereign Trenggalek.” A program that encourages go-digital fishers makes the Trenggalek district a strategic location on the maritime axis. The network backbone proposed here will provide access to fast internet to the Trenggalek Regency. Access to fast internet will help the government to operate the “FishOn” program. In this paper, we calculated the total length of the backbone system following established construction infrastructure. We calculated the viability of the system using link loss and rise time budget analysis. Our total link loss analysis is below 28 dB, indicating that the designed link follows the ITU-T G.984.2 standard. The rise time budget analysis shows that the highest total rise time is 69.83 ps, below the maximum rise time dispersion of 70 ps. This proposed network backbone will span 73.6 km to connect the regency with a data rate of 10 Gbps.

Keywords–Fiber Optic; Network Backbone; FishOn; Trenggalek.

Identification of Chlorophyll-A Distribution in Piayu Waters, Batam Island Using Terra Modis Satellite Image

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Abstract

Batam Island has abundant natural resources in the sea area. This is due to the fact that Batam Island is surrounded by the ocean. However, the potential of this great natural resource has not been fully exploited by people on Batam Island, especially by the fishermen. This is due to the lack of information regarding the distribution value of chlorophyll-a which is required to determine the potential location of various biodiversity in piayu waters. The aim of this study was therefore to determine the distribution of chlorophyll-a in Piayu waters. The data processing method used was the extraction of Terra Modis image data using Ocean Data View (ODV) software. From this research, a map of the distribution of chlorophyll-a in Piayu waters was produced. The results showed that the highest distribution of chlorophyll-a occurred in May 2019 with a chlorophyll value of 2,462 mg/m³. The lowest distribution of chlorophyll-a in this study was in December 2018 with a value of 1,612 mg/m³. The content of chlorophyll-a is more abundant in the surface layer near the mainland waters of Piayu, Batam, while the closer it is to the sea, the lower the chlorophyll-a content.

Keywords: *Piayu Waters, Chlorophyll-a, Terra MODIS.*

An Application of Aermოდ Modeling and Geographic Information System to Predict Emission Spreading Pattern

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Abstract. The cement industry is one sector that emits a high level of pollution into the air that can degrade air quality. City there is a cement factory, PT. Semen X Indonesia Tbk, which has the potential for air pollution due to industrial activities using the main raw materials of coal and limestone, which produce emissions such as Sulfur dioxide, Nitrogen dioxide, and Particles. Therefore, there is a need to model analysis of SO₂, NO₂, and particle emission patterns to determine the composition of emissions produced at a certain time and to determine the direction of the spreading emission by using geographic information systems. The modeling of spreading pattern using Gaussian air dispersion models has been packaged in AERMOD View software. The data used in this study are NO₂, SO₂, and Particle emission test data from the second semester of 2019 measurements, 6-months meteorological data from Hang Nadim Class I BMKG station, and surface data. The results of SO₂, NO₂, and particle spreading modeling for 24 hours and a period of 6 months show the maximum concentration of 7.70 µg/m³ and 2.24 µg/m³ for SO₂, 16.17 µg/m³ and 4.70 µg/m³ for NO₂, and 8.08 µg/m³ and 2.35 µg/m³ for the particle. Furthermore, using the windrose map, in the second semester of 2019, the area with the maximum concentration was PT. Air Cargo Village, which is located next to the location of the activity. Even so, the maximum amount measured was very low and did not exceed the air quality standard determined by the Government Regulation of the Republic of Indonesia Number 41 Year 1999, namely 900 µg/Nm³ for SO₂, 400 µg/Nm³ for NO₂, and 30 µg/Nm³ for the particle, thus, no direct impact to the surrounding environment.

Cloud Masking Testing Using Band QA, Fmask, and MCM Methods Using Landsat 8 Satellite Imagery in the First Quarter of 2020 (Case Study: Batam Island)

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Abstract. The effect of cloud cover a major problem in satellite images processing in Indonesia. One of the areas in Indonesia with abundant cloud cover is Batam Island. The most frequently used satellite image for research is Landsat 8, but its image cannot escape from cloud cover inasmuch as included in a passive image. To overcome this problem, it is necessary to conduct research related to cloud removal and their shadows in Landsat 8 images with Cloud Masking. There are three Cloud Masking methods used in this study: QA Band, Function of Mask, and Multi Temporal Cloud Masking (MCM). These three methods were compared to Landsat 8 imagery on Batam Island in the first quarter of 2020, namely January 22, 2020, February 23, 2020, and March 10, 2020. So that the Cloud Masking method is best used for cloud and shadow removal based on accuracy results. The results of this study are the accuracy of clouds and cloud shadows on Batam Island in the first quarter of 2020, namely January 22, 2020, February 23, 2020, and March 10, 2020. The best cloud detection accuracy is the Band QA and Fmask methods because both methods have the highest accuracy value of 100% in each month of the first quarter of 2020. While the best cloud shadow accuracy is the Band QA method because it has a consistently high level of accuracy every month. The first quarter of 2020 that is > 80%. So the best method for cloud removal and cloud shadowing on Batam Island in the first quarter of 2020 is the Band QA method.

Accident Recording and Data Acquisition System for Insurance Vehicles (ARADA)

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Abstract— At the beginning of the twenty-first century, traffic accidents have emerged as one of the most important problems experienced by all countries of the world. According to the World Health Organization, traffic accidents claim the lives of more than 3.1 million people annually, and the number of injured people as a result reaches 50 million people annually. Thus, car companies have been heading since decades or paying more attention to safety and security standards and to introduce automobile safety systems as standard, not optional, and we see many safety systems in all types and models of cars that have more than 30 safety systems. In this study, an Intelligent Insurance Management System was developed for Palestinian insurance companies. The Intelligent Insurance Management System is a smart system that determines the location of the accident at the moment it occurs, provided with videos inside the car and outside the car to show the damages, losses and injuries and to know how the accident occurred and who is responsible for it. This information can be received through an application on the smartphone for ease of movement by the insurance man who in turn contacts with the ambulance and police officers. In addition, a website was developed to receive this information and stores it in a database that enables those working in the offices of insurance companies to follow up the insured cars they have and know the location, time and cause of the accident, if it is a collision, a coup or a car fire. The proposed approach is validated through simulations and comparison with a real data set of road accidents acquired from Road Safety Open Repository, and shows promising results in terms of accuracy.

Keywords— traffic accidents, Internet of things, mobile application, regarding cars.

Radial Basis Function Neural Network Approach for Asymmetric Cryptography

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Abstract. As technology evolves, artificial intelligence can be used in many aspects including cryptography, such as artificial neural networks. One of the artificial neural network algorithms is the Radial Basis Function Neural Network (RBFNN). In the process of key generation, there are two artificial neural network architectures namely arch1 and arch2. After obtaining the required values, the output of arch1 and arch2 is crossed into a pair of keys. The encryption process is carried out at the input layer to the hidden layer and the decryption process on the hidden layer to the output layer. The success of the system in performing encryption and decryption depends heavily on the center point. The number of centers that have a maximum match percentage (100%) is the center point length from 30 to 90 characters with a width range of 0.698 – 0.936. RBF has no effect on the amount of input data. However, RBF is very influential on the input range during training. This is because the RBF must pass all the data for mapping as shown by the interpolation theory.

Applying Design Thinking to Mothercare App For Better Breastfeeding Practices In Riau Islands

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Abstract. The level of exclusive breastfeeding in each region can be seen from the achievement of the exclusive rate. In Indonesia, especially Riau Islands, the achievement of the exclusive figure is still very far from what is expected, even though the prevalence of undernourished children under five in Riau Islands is the best in Indonesia, which is 13%. This is due to the existence of various obstacles faced by health workers in reducing the prevalence of malnutrition in Riau Islands. The obstacle faced in reducing the prevalence of malnutrition is that there are still many wrong parenting patterns. Parenting in this case is the treatment or way of giving the wrong food intake, including breast milk. Availability of adequate information is one of the determining factors for breastfeeding interventions for infants. Therefore, the promotion of exclusive breastfeeding through media that is close to people's daily lives such as smartphones is considered to be a good opportunity. This study aims to develop a mobile application that can be used to improve exclusive breastfeeding interventions in the Riau Islands. This study uses a design thinking approach and utilizes gamification to increase user engagement. A total of 19 participants contributed to this study. We empathize, observe, and identify problems that exist in breastfeeding practices in Riau Islands so that we find new ideas as solutions to existing problems, namely building a Mothercare application to make it easier for breastfeeding mothers to access the information needed for better breastfeeding practices.

Vulnerability Analysis using OWASP ZAP on Higher Education Websites

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Abstract: Changes in broad-based higher education services will have an impact on increasing website usage. College websites must anticipate attacks, data modification, information theft, or disruption of website services from cyber incidents. The purpose of this research is to test and analyze the vulnerabilities of 7 higher education websites using Vulnerability Scanning Techniques, with OWASP ZAP tools. The results of the study were 14 types of website warning warnings, such as warnings against SQL Injection attacks with a high threat level and X-Frame-Options Header Not Set attacks with a medium threat level. Such vulnerabilities could result in data loss and ClickJacking attacks on websites target. The findings show that the target website is not completely safe from cyber threats. As a recommendation from the results of this study, the website development team needs to pay attention to several warnings related to universities, namely monitoring the server security system, the use of installing applications, SQL Injection, library use, setting headers, cookies, and paying attention to the source code of parties. Further research can be carried out by comparing the vulnerability levels using several vulnerability scanning tools on the target website.

Keywords: Higher Education Websites, Zed Attack ProxyTools, Vulnerability Scanning.

The Implementation of Motion Capture in Recording Dance and Welcome Gesture

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Abstract. This study analyses the application of tools in motion capture to fix data errors. There are 49 markers attached to the body costume on the head, hands, body, and foot. As well as being applied to two movements, namely the welcome dance and the welcome gesture using motion capture. Welcome dance and welcome gestures are performed by one performer for each. The motion recording process begins with the camera and ground calibration, the installation of markers on the body's costume surface and recording using a motion capture tool, and ends with fixing the recording using marker labelling and data editing. Motion capture recording cannot record the actor's movements 100% accurately. Therefore, this study aims to determine the percentage of accuracy of motion capture in body parts and how to fix the error recording of motion capture. This research is a quantitative research that refers to the data obtained through motion capture recording. The results of this study indicate that a way has been found to resolve the error data recorded using motion capture technology as well as a conclusion from the percentage accuracy of motion capture.

Mapping The Dynamics of Land Surface Temperature Changes to Settlement Development (Case Study: Batam Island, Rempang Island, and Galang Island)

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Abstract. The rapid growth of Batam City significantly affecting changes in the expansion of settlements and impacted the land surface temperature (LST). The aim of this research is to determine changes in temperature and settlement development in Batam City from 2015 - 2020 by knowing how much influence changes in settlement development had on the temperature value in Batam City. Landsat 8 image data as main data and supported by fieldwork to validate extraction of settlement development using the normalized difference built-up index (NDBI) method, temperature extraction method using brightness temperature algorithm, and statistical analysis. The relationship between field temperature and image processing temperature results is $y = 0.4912x + 17,158$, resulting in a positive value with a coefficient of determination $R^2 = 0.8596$ or 85.96%, between the two variables having a solid relationship. The results of the analysis between changes in surface temperature and settlement development resulted in the equation $y = 0.1996x + 24,767$ with a coefficient of determination $R^2 0.898$ equivalent to 89.8%, which means that the relationship between the two variables is robust and temperature changes that occur in Batam City from 2015-2020 are proved influenced by settlement development.

The Estimation of Oxygen Demand Based on Existing Green Space in Batam City Using Landsat-8 Imagery

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Abstract. The rapid growth of increased population, development in industrial and housing areas conducted land conversion phenomena that reduce the open green space in Batam City. Therefore, it is necessary to calculate the estimation of oxygen requirement based on existing open green space in Batam City to find the balance point and keep sustainable development. This research uses remote sensing data on Landsat-8 imagery to calculate how much-needed oxygen is toward existing open green space and determine whether the existing open green space can or cannot supply daily needs oxygen in Batam City. It uses transformation of NDVI, Gerrarkis and then will test data accuracy by validation. The validation results showed that the accuracy of index vegetation mapping is 87,4%, and based on these, the existing open green space in Batam City is 80849,53 Ha or 78% from total area Batam . Meanwhile, for estimating the human population, motor vehicles, farm animals, and industry oxygen requirement is 8842987,86 kg/day, by using the Gerrarkis method, the area of green space is 8733,81 Ha. So based on this research, it can conclude that the oxygen requirement in Batam City had fulfilled and balance to keep the sustainable development.

Usability Analysis on the VR Archery Game Interface Using the Usability Testing Method

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Abstract. VR Archery is a 3D game that uses Virtual Reality (VR) technology. Virtual Reality is a simulation that can be similar to the real world or completely different. Since it is still in the development phase, the game VR Archery still needs a lot of development, which should have a positive effect on this game in the future. One aspect of this development is in the ease of usability. This research will be conducted using the Usability Testing method as a data collection instrument in the study. Usability Testing is used to measure the usability or usability of the product so that the researchers can get indications about the usability or usability deficiencies of the product. In this study, participants perform various tasks given by the investigator. From the results of the calculation of the SUS questionnaire, the final score of the SUS questionnaire is 69.5 with Letter Grade "D", which means that the User Interface of the VR Archery game is at a high tolerance level. The SUS value for the VR Archery User Interface system is also at the "OK" Grade Scale, which means that the User Interface for the VR Archery game is still acceptable. This indicates that in addition to not finding any fatal flaws in the interface system of the VR Archery game, but also the interface system of the VR Archery game still has a lot of room for development, especially in terms of the interface system in the future.

User Satisfaction Analysis On Dev's Adventure Using Game User Experience Satisfaction Scale (GUESS)

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Abstract. In the field of gaming, there are many issues related to how to make interesting games and games that make users want to play again. One of them is user satisfaction, which is the extent to which players feel satisfied when playing games. Dev's Adventure is a 2D platformer game which is a mobile-based adventure game, this game was created as a means of entertainment and learning programming languages. The study was conducted to determine the level of player satisfaction when playing Dev's Adventure game. The research was conducted using the Game User Experience Satisfaction Scale research method which has nine subscales, which are usability/playability, narratives, play engagement, enjoyment, creative freedom, audio aesthetics, personal gratification, social connectivity, and visual aesthetics. The data collection method is done by distributing online questionnaires. Respondents in this study were students of Batam State Polytechnic, Informatics Engineering Department. The method of analysis uses descriptive quantitative methods. Results of the analysis show that out of nine subscales of the Game User Experience Satisfaction Scale, Dev's Adventure game has five subscales that are below average, which are narratives, play engagement, enjoyment, social connectivity, and creative freedom. Then, we make a list of improvements for the five subscales that have low scores.

Digital Signature Authentication System in SIMP3M Web Application of Research Assessment Services at Politeknik Negeri Batam

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(Use Times New Roman Font: 14 pt, Centered) (Names should be written in First Name Surname order)

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Abstract. Pusat Penelitian dan Pengabdian Masyarakat (P2M Center) Politeknik Negeri Batam manages researches and community services activities for academic purposes. One of the activities have been conducted regularly is an internal funding for research and community services. Sistem Informasi Pusat Penelitian & Pengabdian Masyarakat (SIMP3M) has been provided as an information system to facilitate the activity. On a conventional system, a reviewer could assess the proposal, made a review and signed the assessment paper. However, current information system doesn't provide those processes. Authentication on the reviewer at a specific assessment as well as the assessment was nothing. Thus, the originality of the assessment process has been questioned. In this study, we proposed an implementation of digital signature on the SIMP3M to address the authentication issue. Rivest-Shamir-Adleman (RSA) cryptographic algorithm and (Secure Hash Algorithm) SHA were used as algorithm to build the digital signature. An avalanche effect analysis was used as a method to prove the concept. As digital signature has been proved to solve the issue, results show that about 90% the originality of assessment can be shown and authentication can be preserved.

User Experience Analysis In Mobile League Of Legends Wild Rift Game Using Cognitive Walkthrough Method

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Abstract. League of Legends Wild Rift is a MOBA game adapted from the very popular League of Legends PC. Riot Games developed League of Legends Wild Rift from scratch to provide reliable graphics and comfortable gameplay without leaving the PC version of League of Legends. League of Legends Wild Rift announced its first regional open beta in Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, and Thailand on October 27, 2020 and will continue with other countries in late 2020 and early 2021. The purpose of this analysis is to measure the level of user experience of League of Legends Wild Rift game which will result in the conclusion in the form of the final result of calculating the user experience level of the League of Legends Wild Rift game. From the conclusion of the matrix that can be concluded that the most problems occur because the respondents are still (user) because the respondent is first in playing this game it takes experience in playing this game and then in the category of difficult to understand views (text and icon) on the task of use vision so that respondents have difficulty in doing each task given so that it takes observation before playing this game by following training and before playing the game.

User Experience Analysis In Indonesian Heritage Samaratunga Adventure Game Using Cognitive Walkthrough Method

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Abstract. In this digital era, gaming is one of the things that is becoming popular in society, especially among young people, with many types of games, making every game developer compete to make their best games so that every player gets a good user experience. The game Indonesian Heritage has never evaluated user experience efore. In this digital era, gaming is one of the things that is becoming popular in society, especially among young people, with many types of games, making every game developer compete to make their best games so that every player gets a good user experience. User experience is very important for the success of a game. In order to get a good user experience, it needs to be evaluated. Cognitive Walkthrough method is used in evaluating The game Indonesian Heritage, which is a user experience evaluation method where testers provide a scenario-based task to find the problem seen to interfere ith the learning process. This method is suitable for use in recently released systems, as it can explore the cognitive processes of the user when first using the system. The researchers used 6 respondents who were given the task to play the game based on the scenarios that had been created. The evaluation results showed that many problems occurred because there were no indications/clues about the function (Hidden) on the Play Game task. However, the problem that arises is a mild problem and does not affect the main function in the game. In general, he game Indonesian Heritage does not experience many serious problems..

Web-Based Information System Development of Tunas Jaya Duriangkang Football School


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Keywords: Information Systems, Website, Registration, Tournament, League, Prototyping, ISO 25010

Abstract: Football is one of the most famous sports in the world. In Indonesia, this sport has become a game that is loved by all ages. Until football school is a way to distribute talent with join the club and be a participant in the tournament and league. Tunas Jaya Duriangkang football school has founded by Mr. Darmoyo on January 21, 2017 in Tanjung Piayu Batam City. But there is still a technology lag from delivery information and promotions, Registration process until getting the latest information about a tournament and league. Implementation to make information system using prototyping method with testing referring to ISO 25010. Respondents in the aspect of functional suitability of research are web developer PT. Citra Tubindo and the Secretary of the Tunas Jaya Duriangkang Football School with 100% success results in all features and are at a very good interval. Respondents for testing usability aspects were 50 people from Batam City with a percentage value of 89.5% and were in very good intervals. The results of the reliability test yielded a percentage value of 100%. The results of performance efficiency are GTMetrix Grade A with a performance score of 95.7%, structure 92.7%, and load time of 1.4 seconds. The results of maintainability resulted in an average MI value of 76.2 and were at normal intervals of maintenance. This information system is not owned by SSB Kepri even in Indonesia which is registered with the City and Provincial Football Associations that apply bracket display for tournaments and leagues.

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Hot Issue in Health use Topic Modelling with LDA

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Abstract. Knowledge acquisition is an essential component of expert system architecture. Before the knowledge acquisition process is carried out, it takes a problem domain of expertise that benefits the community, especially in the health sector. Determination of the problem domain of expertise using topic modelling sourced from health articles in Indonesia. Topic modelling using the Latent Dirichlet Allocation (LDA) method. The result of this research is that we find the issue of disease heart and relation to unhealthy eating patterns. This issue is the third topic with a probability level of 0.19. While the topic with a probability higher than reached 0.4 is on the topic of one and four—both topics about pandemic covid-19 and vaccination.

Keyword. Topic Modelling, Bag of Word, Latent Dirichlet Allocation, Term Frequency, Inverse Document Frequency

The Usefulness of UAV-LiDAR for Irrigation Canal Identification

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Abstract. The irrigation canal is one of the essential source of water for agriculture. In addition, the irrigation canal plays a crucial role in protecting and preventing agriculture from the flood. Irrigation canals are divided into several dimensions of sizes. The small irrigation canals are often absent in geodatabases. Therefore, it is crucial to have an accurate irrigation canal map. Using spatial information can help reduce risk, cost, and improve efficiency in water infrastructure planning and management. Unmanned Aerial Vehicles (UAV) with high-resolution cameras and LiDAR sensors can acquire high-resolution imageries and point clouds to generate a high-scale map of irrigation canals. This paper focuses on the identification of irrigation canals from UAV-LiDAR. The results confirm the effectiveness of UAV-LiDAR technology for irrigation canal identification, so it can be used for mapping irrigation canals with a very excessive stage of detail, useful, fast, and low-priced. In addition, this technology can highlight problems in the channel network for maintenance purposes. This data can be necessary for stakeholders to plan irrigation canal maintenance, discover some factors to include in flood risk models, and calculate the size of the reservoir network of irrigation canals.

Basic Geospatial Infrastructure Measurement and Topographic Mapping in Supporting The Implementation Project Based Learning (PBL) of Bathymetric Mapping in Sembulang Waters

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Abstract. Sembulang is a village located in Galang sub-district, Batam Island. This area is a coastal area close to the beach. Due to the lack of Detailed Engineering Design (DED) data in this area, one of which is topographical mapping. the total area of the measurement carried out is 80,000 m² or 8.00 hectares. The purpose of this study was to examine and map the existing topographical conditions in the Sembulang sub-district, Galang sub-district. Data were collected using survey methods, namely direct measurements in the field using Total Station, Waterpass, Measuring Signs, and Geodetic GPS. The measurements made consisted of making BM (Bench Mark), Measurement of KKH (Horizontal Control Framework), Measurement of KKV (Vertical Control Framework), and Measurement of details of the situation. In this study, data processing uses Autocad Civil 3D software which will produce Contour Data, Longitudinal Profiles, Transverse Profiles and Topographic Maps of Sembulang Village and Calculation of Excavation and Embankment Volumes.

Keywords. Topographic Mapping, Volume, Horizontal Control Frame, Vertical Control Frame, Details Measurement.

Mapping Distribution of Housing Social Facilities Handed over to Batam City Government (Case Study: “Batam Kota” District)

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Abstract. Housing is a group of houses that functions as a residential or residential environment that is equipped with infrastructure, facilities, and utilities. Environmental facilities are the physical basis of the environment, for example, the provision of drinking water, garbage disposal, the availability of electricity, telephones, roads, which enable the residential environment to function as it should. Community needs for shelter, especially in Batam City, continue to increase. Provision of social facilities should refer to SNI 03-1733-2014, which is about Procedures for Housing Environmental Planning in Cities. To assist the analysis process by utilizing remote sensing technology and for mapping using software GIS and direct field observations. The result of direct observation of the spaciousness is the distribution map of social housing facilities that have been handed over to the Batam City Government. Based on the results of the study, that the number of housing social facilities that have been submitted by the developer to the Batam City Government is 45 residential social facilities, the process of mapping the housing social facilities that have been handed over in Batam City District by direct observation of spaciousness and processed using applications Mapsource and Arcgis. Based on the spatial analysis of the Engku Putri Square as the center of Batam Kota sub-district government towards the distance of housing social facilities using buffering zones with a distance per 500 m, the social facility closest to Engku Putri Square is the Means of worship (Mosque/Mushalla), namely at Pondok Idaman housing and the most remote facilities are educational facilities, health facilities, playgrounds and sports fields which are available in various housing areas in the Botania region. This research will produce a Distribution Map of Housing Social Facilities that have been handed over to the Batam City Government.

Keywords: Housing, social facilities, GIS

Dynamics of 6 DoF Manipulator Robot on Robot Operating System

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Abstract. Manipulator Robot is a robot shaped like a human arm. This robot has been widely developed, and used in various sectors such as industry, medical, and military. One of the most popular applications of manipulator robots in industrial fields is sorting. Sorting is the activity of separating very many objects to be placed in the appropriate place. Often when sorting, the objects that are lifted have different loads. Therefore, we need a control that can move the manipulator robot remain stable without producing a large error. This proposal discusses the design of a dynamic simulation of a 6 DoF manipulator robot into a small-scale model of an industrial robot. Simulation is used to save costs and avoid component damage during testing. Robot modeling is formed using the features of ROS, namely URDF (Unified Robot Description Format), which will then be displayed in the Gazebo application. PID controller is used to control each joint on the robot so that the robot remains stable when moving. In this study, testing will be carried out by means of the robot will lift several loads with different weights. A node will display the result of the angle error from each joint in the robot on the ros, namely `rqt_plot`.

Supply Chain Information System for Product Management Control using Rule Based Reasoning Model

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Abstract. Accuracy, fast and efficiency in performing digital transactions are needed especially during the pandemic covid 19, this needs to be done for persevering and improving customer confidence. The supply chain is a concept applied by companies to analyze production needs from raw material providers, transportation to be used, production processes and even determine expeditions to send goods to customers according to a predetermined time. This research has never been done by other researchers where the supply chain process is carried out by a company by involving algorithms in computer science in the form of applying rule based reasoning methods to obtain optimal results. The supply chain information system combined with the rule based reasoning method allows companies to control production management that can improve product quality even up to the marketing model that will be used accompanied by consultants who are experts in their fields and can communicate actively to customers so that customers feel satisfied and feel well served. Computational rules will be run through the system developed in the form of rule based reasoning so that the company can obtain fast and precise analysis to take a decision with the purpose of obtaining the maximum benefit from any activities and transactions.

Application Of Unmanned Aerial Vehicle To Test Village Map Accuracy, Case Study : Kelurahan Duri Timur

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Abstract : Village mapping was carried out as an implementation of Law Number 4 of 2011 concerning Geospatial Information and Law Number 6 of 2014 concerning Villages. The management of village potential which includes natural, social, and economic aspects is very important for village development. Therefore, using UAV and GIS applications here is intended as a tool to carry out the process of creating, planning, and validating map data. Mapping using UAV and GIS applications is classified as a photogrammetric measurement where this measurement utilizes aerial photography for data collection. This study aims to produce maps that are accurate and have high accuracy (orthometric) that can be used as a reference in the development process. Information on development planning, spatial planning, investment planning, and economic business, is very helpful for village development. Village mapping using UAV is very appropriate to do. The purpose of this study is to test the geometric accuracy of the UAV technology for village map. Geometric accuracy (horizontal and vertical) was tested by comparing the ortho mosaic coordinates and the Digital Terrain Model (DTM) to the GNSS RTK measurements. The spatial data generated from UAV technology in this study has a geometric accuracy of 1.9018 m horizontally and 2.253 m vertically so it can still be used for large-scale mapping of 1:5000.

Classification of Maturity Levels of Palm Fresh Fruit Bunches Using the Linear Discriminant Analysis Algorithm

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Abstract. Palm oil is an important commodity for Indonesia. Therefore, oil palm cultivation is a supporter of the success of oil palm commodities in producing products. The harvesting process is an activity that must be considered because it affects the production and quality of oil palm fresh fruit bunches. For this reason, the sorting of oil palm fresh fruit bunches is very important. This paper tries to classify the maturity level of oil palm fresh fruit bunches through image management using the Linear Discriminant Analysis (LDA) algorithm. LDA algorithm is an approach used to classify data into several classes. The steps taken in this paper are starting with the transformation of the color space from RGB images to L*a*b images, then image segmentation with thresholding and feature extraction with HSV. Image transformation to HSV aims to make it easier to classify image characteristics based on hue and saturation. Furthermore, the LDA algorithm will perform a dispersion matrix analysis in order to obtain optimal projections to enter into spaces to look for patterns that can be separated. This paper finds that the classification of oil palm fresh fruit bunches image processing using the LDA algorithm produces an accuracy rate of 85%.

The Effect of Managerial and Institutional Ownership on Corporate Social Responsibility Disclosure


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Keywords: Managerial Ownership, Institutional Ownership, Corporate Social Responsibility (CSR).

Abstract: This research was conducted to test the influence of Managerial Ownership and Institutional Ownership on Corporate Social Responsibility (CSR) on mining companies listed on the Indonesia Stock Exchange (IDX) in 2016-2018. This research has dependent variables namely CSR and independent variables namely Managerial Ownership and Institutional Ownership. CSR measurement is calculated using Corporate Social Responsibility Index (CSRI). The measurement of Managerial Ownership and Institutional Ownership is calculated by dividing the number of shares ownership by the number of shares outstanding. This study uses multiple regression with database collection techniques. The samples used 54 companies. The analysis technique used is multiple regression analysis technique. The results found that Managerial Ownership negatively affects CSR and Institutional Ownership positively affects CSR.

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Electronic Nose Applications for Monitoring and Odor Classification in Cattle Farm

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Keywords: E-Nose, odor classification, backpropagation, LoRa

Abstract: The Electronic Nose (E-Nose) has ability recognizing odor and mimicking the human nose function. The E-Nose is made of sensors array in order to detect the quality of odor and aroma. The E-Nose has been applied in many areas such as medical, industry and agriculture. This study proposed long distance monitoring of cattle farm odor in daily activities and E-nose application to classify the odor by using server based. The Long Range (LoRa) Network is selected to transmit the data because the area is not affordable by internet provider. The data is transmitted to Politeknik Negeri Padang building, department of information technology, which has distance around one kilometre from cattle farm. The LoRa Network consist of Lora Server, Jetson Nano, and LoRa client. The LoRa Client or End-Device consist of microcontroller, sensor array and LoRa module. The sensor array is formed by MQ6, MQ4, MQ2, MQ8, MQ9 and MQ135 which sense to specific chemical gas for every sensor. The sensor data is delivered to server through LoRa Network and stored in database. All gas activity in cattle ranch is visualized in web supported by flask. To achieve qualified dataset, the measurement is done 24 hours in a day. The odor dataset is grouped into normal condition (NC) and polluted condition (PC). The E-Nose model is created by using Artificial Neural Network and the prediction results is displayed on a simple web. Based on experiment, the model accuracy was successfully achieved 99.0%.

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Hole Feature Recognition from 3D Solid Model for CAIP Application

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Abstract. In this paper, an approach to recognize hole features automatically from a 3-dimension solid model is proposed. The proposed algorithm is developed to improve the existing Computer Aided Inspection Planning (CAIP) platform. STEP data is utilized as raw data. An algorithm is designed to analyze and calculate the number of face bonds. Hole features are defined according to face bond and cylindrical surfaces type. A software called HECTOR (Hole Inspector) has been developed based on the proposed algorithm. The experiment result shows that HECTOR has accurately recognized cylindrical features from 3D solid model. In addition, a number of cylindrical features, features type, features dimension, features coordinates, and features direction are also successfully retrieved from the 3D solid model.

A Game Theory Approach to Tailor a Competitive Strategy for a Developing Rolling Stock Manufacturer in South East Asia

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Abstract. A company has to address its position within its industry. It is crucial to know and to recognize what the competitors did and which strategy works best to win the market share. Therefore tailoring a competitive strategy is vital; hence it has to be tailored specifically for each product and market condition. Thus making it more critical for developing industry in ASEAN, the purpose of this paper is to recognize a competitive strategy for a developing rolling stock manufacturer in South East Asia. In creating a competitive strategy, we propose a game theory approach. An industry analysis among rivals must be done first using the Hirschman Herfindahl Index (HHI) for a specific product, Diesel Multiple Unit (DMU). Based on the HHI calculation, the DMU market rivalry often falls into a Dominant Firm category. This finding is interesting because there are a few number of dominant players in the same strategic market. Once the rivalry within the industry is known, using historical data gathered between dominant players, what strategy they execute, and seeing the differences they make on how much payoff gained utilizing the strategy; a game matrix is then deployed between players in the market. The result shows that the Indonesian Railway Industry has successfully increased its market share by reducing costs and shortening delivery time. Though it seems general, an interesting finding shows that it still has room to opt for the strategy to increase the price and lengthen the delivery time by focusing on quality and still win the market share.

Pressurized Windowed Burner Chamber Performance for Solid Rocket Propellant: Preliminary Study

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Abstract. Aim: To investigate the performance of the strand burner chamber prototype. Material and Methods: Finite element analysis applies to design and evaluate the mechanical performance of materials and structures. Experimental studies perform to validate the FEA results and to get the burning rates and chamber pressure data. Research using Solidworks and ANSYS to Design the chamber. FEA and experimental results examined by equivalent stress, hot-fire test data, and visual data. Experimental studies conducted using a CW Laser coupling with Focus Lens to ignite the propellant strand. Quartz glass design with ASME BPVC standard for high-pressure sight windows. Hi-speed camera 600 frames/sec with 1.8 ND Filter Lens to measure the burning rates. Results: The lowest safety factor is 0.18, which is on the sight windows. During the experimental studies, pressure increasing gradually hereafter the ignition process. Then before the combustion process going to stop, the pressure gradually dropped. Suddenly the crack was discovered on the sight windows surface. Conclusion: The burning rate data cannot to perform because of the large number of combustion smokes. Further research strongly recommended using signal wire to obtain burning-rates data.

Keywords. Solid Propellant; Strand Burner; Pressurized Chamber, FEA.

PoleBot: Polman Open Platform Education Robot

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Abstract. This paper introduced PoleBot that is an omnidirectional mobile robot for educational purposes and developed for industrial application purposes. It is designed for multipurpose tasks and missions, it can be combined with other equipment for many applications: Storage management, food & beverage, pharmacy, laundry, waste etc. Using omnidirectional configuration has the capability to move in an effective, efficient way the task, mission faster, easier, reduce operation time and optimize productivity. This paper explains the development of PoleBot control using an opensource platform namely Robot Operating System (ROS) and applies to the simulation using Gazebo as planning. PoleBot has a smaller error value with an average error of 4.18% compared to the sideways movement of 5.08% and high accuracy values around 95.82% and 94.92% Thus, the use of PoleBot is very suitable for use both in industry and as an education robot.

Keywords. PoleBot, Kinematics, Omnidirectional drive, ROS

PROMETHEE Analysis for Selecting Municipal Solid Waste Management in Batam City, Indonesia

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Abstract. The increased volumes of waste and lack of knowledge in processing techniques are the causes of the ineffectiveness of the urban waste treatment system. Therefore, this study aims to determine the ideal waste treatment in Batam City based on waste composition. Three scenarios of waste treatment were evaluated by Multi-Criteria Decision Making, PROMETHEE I and II. There were 26 criteria in which four criteria groups were used, technological, environmental, economic, and social. The obtained results show that sanitary landfills and incineration were the most suitable for implementation in Batam City. However, the successful implementation of the chosen strategy was proven to depend not only on a good decision process but also on the reliability and accuracy of projecting uncertain future events.

Finite-Element Approaching to Investigate Residual Stresses of Fillet Welded Longitudinal Attachment

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Abstract. The Finite-Element investigation method of welding residual stress uses the 2-way analysis method, first by applying thermal modeling and second by structural modeling. In this study, optimal parameters for numerical modelling are 6 mm global specimen model meshing size, welding input power efficiency by 70%, convection film coefficient by 15 W/m²K, and the application of multilinear isotropic hardening to the material properties. Comparing to the physical experiment, this numerical investigation provides the highest residual stress in the main plate obtain by 1.01 yield stress in the weld toe area, as far from weld toe residual stresses reduced gradually. While the residual stresses characteristic at longitudinal direction on both the simulation and experiment, qualitatively, have the same result and pattern.

Assessment of Existing Condition Domestic Effluent Wastewater Treatment Plant (WWTP) in Jakarta Environment Agency's Employee Dormitory

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Abstract. The problem of domestic wastewater in the City of Jakarta is an emergency. Monitoring the quality of wastewater from wastewater treatment plants (WWTP) is rarely carried out; this will lead to non-optimal processing results. One of the WWTPs established before 2016 is located in the Jakarta Environment Agency's Employee Dormitory. Because in the process of making this WWTP, it still refers to the old regulation, namely PerMenLHK No. 112 of 2003, while the current implementation refers to PerMenLHK No. 68 of 2016. This study aimed to determine the monitoring of the quality of WWTP in the Jakarta Environment Agency's Employee Dormitory. Sampling was carried out at four WWTP locations at three different times. The parameters measured were Biological Oxygen Demand (BOD); Chemical Oxygen Demand (COD), Total Suspended Solid (TSS); Ammonia; Oil and Grease; and Total Coliforms. Overall, all parameters have not met the standards of PerMenLHK No. 68 of 2016., except pH, TSS, and Oil and Grease.

Software Engineering Development of Finite Element Method Programming Applications in 2D Truss Structures Using Python Programs

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Abstract. Structural analysis is a significant thing to do in construction design. Structural analysis is the process of predicting the performance of a structure under loading conditions. Structural analysis is challenging to do with analytical methods, so numerical methods do it. The finite element method is a numerical solution tool that is used to facilitate the process of structural analysis. Finite Element Method calculations involve many iterations and computational operations, so computer assistance is required to complete them. This study aims to produce a structural analysis application with the concept of the Finite Element Method to analyze 2D frame structures. This application is made using the python programming language. The application made consists of 3 stages (pre-processing, processing, post-processing). The application is simulated on a truss structure that has three nodes and two elements. The simulation results show results that are not much different from analytical calculations and manual calculations. The most significant difference is only 0.1%. It can be proved that the precision of the application is close to 100%

Development of Automated Weather Observing System Category I for Aviation Meteorological Services Based on Internet of Things

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Abstract. Weather is one of the significant aspects that have a major role in aviation safety operations. This research aims to develop an Automated Weather Observing System Category I based on the Internet of Things to support aviation meteorological information services. The system is designed using the HMP155 temperature and humidity sensor, PTB110 air pressure sensor, and RMY03002 anemometer. Data observed from the sensor is processed by CR1000 datalogger and sent to the server with the NodeMCU ESP8266 module using the MQTT protocol. The system will process data from sensors into a meteorological report in the form of a METAR code. Data sent to the server can be accessed through the website and MQTT dashboard. The temperature sensor calibration correction result is 0.15°C. The correction value resulting from humidity sensor calibration is 1.9%. The air pressure sensor has a correction of -0.1 mb. The wind speed has the largest correction value of -0.31 m/s, while the wind direction is 0.2 degrees at the set point of 270 degrees. Delay analysis shows the value of 0.32678949 ms which is included in the good category with a throughput of 1416.428835 bytes/sec. The results of this study indicate the system can be implemented to provide actual information on aviation based on the Internet of Things.

Information System for Supporting the Life Cycle of Seismic Protection of Buildings Based on Kinematic Seismic Isolation

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Abstract. The problem of improving the quality of ensuring seismic safety of infrastructure facilities and monitoring their condition using an integrated information system is discussed. It is assumed that the information system contains data generated at all stages of the life cycle of the creation and maintenance of a seismic building protection system. The considered seismic protection of buildings is based on a kinematic seismic isolation system. Analysis of the effectiveness of seismic isolation is carried out at all stages of the life cycle. The architecture of the building monitoring system is discussed, including three-component sensors and a data collection module.

Characteristics of Municipal Solid Waste (MSW) Generation in Maluku Utara Province: Differences Before and During the COVID- 19 Pandemic

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Abstract. Maluku Utara has not been spared the case of the COVID-19 outbreak, which is currently a problem in the world. A side effect of the COVID-19 pandemic is the occurrence of large-scale social restrictions that impact the economy and the environment. The purpose of this study is to study the different characteristics of MSW in Maluku Utara Province. This research was conducted using secondary data from Indonesia's national waste information system and then processed to obtain the characteristics of MSW in Maluku Utara Province. Waste generation in the three areas seen shows a rise in MSW in Kab. Morotai Island and Tidore Islands City, while the capital city in Ternate City, tend to remain. The total generation in Ternate City reached 72.29 tons/day. During the pandemic, there was a decrease in plastic and food waste, reaching 1.1% and 7% in Ternate City. This indicates a possibility of a decrease in calorific value, considering that plastic waste has the highest calorific value. The overall calorific value of MSW showed a decline from 9.26 MJ/kg before the pandemic to 8.23 MJ/kg during the COVID-19 pandemic.

ANALYSIS OF PREVENTIVE MAINTENANCE ON FORKLIFTS WITH THE LIFTING AND TRANSPORTING INSTRUMENTS INSPECTION METHOD

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Keywords: Forklift, Preventive Maintenance, Inspection, Safety

Abstract: In the oil and gas industry for the needs in the manufacturing process, the process of moving materials is often carried out using forklift equipment which functions to smooth the manufacturing process. A good forklift equipment is needed in the smooth process. One form of effort to ensure the equipment can fulfill its work function is to perform preventive maintenance. Preventive maintenance, which is another form of controlling work risks related to equipment, consists of several methods such as: lubrication, cleaning and inspection. Inspection is a comprehensive preventive maintenance in which the processes of the inspection, in addition to paying attention to the function of the tool, also pay attention to the elements of labor safety for users and people in the operating environment of the equipment. This study aims to determine Preventive Maintenance on Forklifts using the Lifting and Transporting Instruments Inspection method based on the Minister of Manpower Regulation No. 08 of 2020 on Occupational Safety and Health For Lifting and Transporting Instruments with visual inspection, technical measurement, non-destructive testing, function testing and forklift testing in load lifting. Produce recommendations for repairs on the Safety Equipment section, namely on the horn, replacement of brake lights and leaks in hydraulic seals.

Effect of Fluctuated Flow on Horizontal Axis Wind Turbines at Various Tip Speed Ratios

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Abstract. The value of tip speed ratio (TSR or λ) of a wind turbine was evaluated numerically in this study. A wind turbine of NREL VI model and the test section of NASA/Ames tunnel was chosen in this study by using a CFD package, ANSYS Fluent 19.1. In general, the power coefficient was determined at different tip speed ratios. It was maximum (0.424 and 0.268) for steady flow state at TSR= 6 for the real and small- size respectively. For unsteady flow, it was (0.401 and 0.168) at TSR= 6 for the real and small- size respectively. The effect of unsteady wind flow in wind turbines was studied then compared with that of steady-state conditions flow. Moreover, for real and small-size turbines, the study included the tip speed ratios at (lower and higher values than the design one) which were 4 and 8 for this type of wind turbine. Generally, the trend of the small- size wind turbine performance showed a high similarity with its full scale corresponding numerical result. Moreover, the average unsteady flow performance at $\lambda =6$ was lower than that of the steady- state flow curve. However, it was high relatively at others tip speed ratios.

PCB Solder Mask Coverage Over Conductors (Skip Coverage) Problem Solving Using Ishikawa Method

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Abstract. Printed Circuit Board (PCB) is used widely in electronics industry. One of the critical parts in PCB manufacturing process is solder mask application. The IPC standard is used as an acceptance criteria for PCB solder mask coverage over conductors (skip coverage) defect in Teaching Factory Manufacturing of Electronics (TFME), Politeknik Negeri Batam. The PCB used in this research is rigid PCB FR4. Solder mask application method is screen printing with thermal curing. To solve the defect, fishbone diagram (Ishikawa diagram) has been made with three potential problems breakdown before being analyzed with and 5-why techniques. This method is used to define the root cause for the potential problems. Corrective actions are made for all the root causes before it continues the validation run with the proposed parameters done. The PCB are inspected 100% by microscope with 40X magnification. The results showed that there were no longer skip coverage defect present. The PCB thickness can meet the acceptance criteria a minimum of 25 μ m based on IPC standard.

Encoder-Decoder based Neural Network (EDCNN) for Smoke and Fire Image and Video Classification

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Abstract. An increase in fire accident rate has been reported to be growing recently due to a lack of advanced technology for detecting the presence of smoke and fire at the initial stage. To date, electronic sensor-based monitoring methods are the most common technique that has been widely practiced. However, the existing methods are not securely proven to detect the presence of smoke and fire at an initial stage with higher accuracy. This study presents a preliminary method for initial stage detection of smoke and fire using Deep Learning method. One of DL methods namely Encoder-decoder based convolutional neural network (EDCNN) is used to classify both smoke and fire density levels. In this study, the images data are extracted from a sample video sequence, and it is further divided into three different classes such as background or negative, smoke, and fire. An EDCNN with VGG-16 architecture is used to train and test the 3 classes of images data. The global accuracy of the proposed classification method reaches up to 95%. The classification model of EDCNN is then applied to the simulated fault electronic circuit video due to loose wires. According to the video application result, the proposed method is potential for further real time application where the existence of smoke and fire can be distinguished by the EDCNN classification model.

DigiArs Profile Creation in Motion Graphic

Evaliata Sembiring and Liony Lumombo (Politeknik Negeri Batam, Indonesia)

Studio DigiArs is a production house used to produce multimedia works and a practicum placement for Polibatam students. This studio is an application of the teaching factory/teaching industry, so that it can be very potential to produce multimedia products for internal and external parties of Polibatam. Therefore, we need a Studio Digiars profile in the form of a video. This project focuses on creating it using the Sherwood-Rout approach. The results obtained after the completion of this project include: (1) In the production process, there have been changes to several storyboard designs to adjust video content; (2) the resulting video profile is a combination of live video and motion graphics; (3) The video profile is 3 minutes 2 seconds in MP4 format, suitable for various electronic devices.

Characterization of Dispense Nozzle and Leadframe Material for Die Attach Process to Control Epoxy Bleed Out

Greace Panggabean (Politeknik Negeri Batam, Indonesia); Ngiow Nelson (PT. Infineon Technologies, Singapore); Siti Aisyah (Politeknik Negeri Batam, Indonesia)

Die attach is an important and commonly used method of producing a package which is usually applied to attach the die to the leadframe using epoxy as a connector. To determine the performance of the die attach process, it is necessary to characterize the type of material and tooling. For the process of characterizing, this research used several types of leadframes namely L, N and U, and several diameters of the dispense nozzle with size of 0.1mm & 0.3mm. Applying this characterization, the results of Epoxy Bleed Out (EBO) and Bond Line Thickness (BLT) reached the requirement specifications.

Analysis of Wave Soldering Process to Reduce Defect of Short Solder

Delvia Sari and Siti Aisyah (Politeknik Negeri Batam, Indonesia)

Wave soldering is the process of soldering through-hole component on a large scale using wave shaped solder. There are several processes that are carried out during soldering namely fluxing, preheating and soldering process. One of the defects that often occur in the wave soldering process is short soldering, an unwanted soldering condition in which lead component are joined together. The purpose of this research is to analyze how to reduce defect of short solder. The method used is fishbone analysis which is very helpful to know the cause of the defects. By applying this method, it will increase the performance of the wave soldering process to be more effective.

Mobile-Geofence-Based Attendance Application During WFH

Tasya Selvia Ulfa (Politeknik Negeri Batam, Indonesia)

In this COVID-19 condition, the campus has difficulties in managing absenteeism because most of the employees in the agency work on a WFH (Work From Home) basis. Before the COVID-19 pandemic, employees were absent through fingerprints, but during the COVID-19 pandemic, attendance using fingerprints was not very effective because the rate of virus transmission was higher. With this attendance system, it is expected to reduce the rate of transmission of COVID-19 and to make attendance more accurate, fast and easy in managing attendance information with a very large number of employees.

Applications for Business Management Room Loans

Mira Chandra Kirana, Ana Jannatu Uzlifat, Jusriyani Sirait, Tiara Anggraini and Muhammad Pais (Politeknik Negeri Batam, Indonesia)

Batam State Polytechnic students often borrow rooms, both for study and organizational events. In addition, students often have difficulty borrowing a room, for example, when they want to borrow a room, it turns out that the room has been borrowed by someone else, so the student has to borrow an empty room. others. Many students also do not know the facilities in the room they will borrow. Therefore, we created a web-based room loan application under the name PR-MB where this application can make it easier for students to borrow a room

Application and Effect of Colour Grading Live Video on Motion Graphic Learning Video for Graphic Design Course of Multimedia and Network Engineering

Fandy Neta, Liony Lumombo, Teddy Setyawan and Sri Neli Utami (Politeknik Negeri Batam, Indonesia)

The spread of the covid-19 virus has a significant impact on the education sector. This situation caused teaching and learning activities to be done online. The learning activities conducted online take learning media that can attract students' learning interests, one of which is the merger of live video with motion graphics. In making a live video with motion graphics, colour grading techniques are used to provide a new atmosphere to attract students' learning interests. The method used in this project is R&D and the Hannafin & Peck development model. The data analysis technique used in this study is to use the Significance Test. This project shows that learning videos using color grading techniques is more preferred than videos without colour grading. This learning video will be a learning medium for graphic design courses in Multimedia and Networking Engineering at Batam State Polytechnic.

Application of Soil Moisture on Chili Plants Based on Mobile Integrated with IoT Devices (CHLOE)

Nuzela Rahma Fitra (Politeknik Negeri Batam, Indonesia)

Chili is not a type of plant that is new to us. For Indonesians, chili plants as a food companion that must be on the dining table. Whether it's made with chili sauce or just fresh vegetables when eating fried foods. so the need for chili as a special addition to Indonesian cuisine so that chili has a fairly profitable economic value. Chili price continues to increase, now the price range reaches Rp. 100,000-120,000 per kilogram from the normal price which is around Rp. 30,000-33,000. It means This commodity has experienced a 100% price increase compared to other days usually. Many housewives have become the main fans of planters chili with the practice of planting pots or polybags at home as ingredients kitchens and reduce their expenses due to rising prices chili that often happens. One of the success factors for planting chili influenced by several factors and how the owner does care for the plant. Care for chili plants is carried out mainly to ensure good circulation and watering given on time in sufficient quantities. There is a time for the owner chili plants are not near the planting area or often forgetfulness, so that they cannot directly treat the plant. There is an increasingly rapid and growing technological development in encouraging the creation of ideas or ideas that can make efficient time and practical use. So from that came the idea of innovative work namely the application of Soil Moisture on Chili Plants based on mobile integrated with IoT devices. With the introduction of this new idea it is hoped that the community can easily manage plants chilies well and produces a useful output. For community use is facilitated by the presence of a mobile interface and instructions on the application to be used.

Production of "English" Learning Videos for the General

Evaliata Sembiring and Liony Lumombo (Politeknik Negeri Batam, Indonesia)

Learning videos have advantages in the implementation of learning, namely students can play videos repeatedly until they understand the message or expected learning. This video playback can be done online or offline and is not based on the specifications of the player device, such as PC, laptop, mobile phone or other technology. In this project, a Learning Video on English is produced by applying the concept of a combination of Live Action video with Motion Graphics. The video development method uses the Sherwood-Rout approach which focuses on 6 stages of development, namely project initiation, specification, design, production, review and evaluation, and delivery and implementation. Projects can be completed in a timely manner and as a result of collaboration in various competence backgrounds, namely design, animation, videography, editing techniques and managerial skills. The development of this project is one of the implementation of PBM in Polibatam through Project Based Learning (PBL). This activity is an application of the teaching industry at the DigiArs studio in Polibatam, which produces 21 learning videos, with a duration of +-5 minutes for each video in MP4 format. Videos are uploaded on websites so that they can be run online through various forms of digital devices.

Design of Locker Security System Using RFID Reader RC522

Alamin Sukri and Siti Aisyah (Politeknik Negeri Batam, Indonesia)

Security system is needed especially in the storage system implemented in public places such as airport, library, train station. RFID Technology is one of the most use security system recently because it is quite cheap. This research aims to create a security system using RFID implemented in locker system that replaced the conventional ways using keys. The proposed design is using Arduino Uno as a microcontroller, servo motor as a actuator to lock and open the locker, and RFID tags as access authorization. In order to find out whether the locker is occupied or not, the proposed system applied the ultrasonic sensor HCSR-04 to detect object or item existance in the locker, and LED as an indicator. The RFID Reader RC522 can read the cards with distance of 2.2 cm and the system is able to guarantee the locker security with performance of 100% secure.

Web Based Free Used Goods Sharing App

Mira Chandra Kirana, Elsa Maulidya, Juniar Indah P. R. Situmorang and Dea Aditya Mahardika (Politeknik Negeri Batam, Indonesia)

Nowadays, many people who prefer to choose to waste their used goods or want to substitute them into new ones. Whereas those used goods are still worthy to use, although not rarely people who prefer to share them to others, but sometimes it is difficult to find other people who need those used goods. The reusement of used goods is beneficial because it reduces the waste. Therefore, here comes an app that can help people to share their used goods to others, namely Web-Based Free Used Goods Sharing App: BagiBagi. The analysis and method that we use is entity relationship diagram, also use case diagram. For the design on the website display, there are several pages ranging from list page design, home page design, page design per category, edit profile page design, item posting page design, and so on. People who have the necessity to share their used goods because don't use those goods anymore and don't want to have those become stacks, this app will help them to find people who want their goods that they share. For seekers of used goods, they can save expenses to not always buy new goods and it can reduce consumptive behavior in the society.

Service Project in 3D Animation Using Motion Capture

Selly Artaty Zega, Aldino Saputra, Ahmad Fauzan Wafi, Fadil Mayuheru, Mariska Mulia, Siskha Handayani and Gendhy Dwi Harlyan (Politeknik Negeri Batam, Indonesia)

Topic of this project is creating 3D Animation using motion capture and iclone previs/realussion with the title "How to Order Food in Restaurant According to Health Protocol". In the content, we would like to remind everyone about physical distancing and also obey the rules of health protocol from government. Especially in restaurant area. This project has been done by the Project Based Learning study method. The stage of this project are crating 3D asset, motion capture phase, layouting, cleaning up data, retargeting, audio recording and compossing, and compositing. The result of this project is a 3D animation short.

Automated Recording Device for Monitoring GPU (GROUND POWER UNIT) Usage

Fitriyanti Nakul (Politeknik Negeri Batam, Indonesia)

The usage record of an electric power generator called GPU (Ground Power Unit) in the hangar of Batam Aero Technic Company has been using paper forms were filled in handwritten by the GPU operator. Based on this practice, there are obstacles, including paper forms which are often scattered, damaged, or even lost. In addition, administrative staff must also recap GPU usage into the computer for monthly reports, so the work is neither effective nor efficient. The Arduino-based automated recording device was invented as a solution to increase workflow effectiveness. This device is an electronic box equipped with an LCD screen, keypad, and a MicroSD storage card that can perform real-time monitoring of GPU usage and generate usage reports stored on MicroSD. The device can be embedded in the GPUs to increase the efficiency of the existing workflow. GPU operators can install the device on the GPU panel and be accessible.

Library of Body Gestures in Teaching

Selly Artaty Zega, Delaila Ramadhennisa and M. Zulkarnain Wijaya (Politeknik Negeri Batam, Indonesia)

When a teacher is teaching, there is a lot of limb movements and expressions of a teacher when delivering material. Based on the results of the project that has been made, the author has found body movements in teaching based on several references that have been found then the author produces a library of body movements in 2D format. This library contains 5 of them, namely "The character's hands are in the front and move lightly", "One character's hand moves inward", "Waving hand movement", "Character hand moves sideways", and "Both character hands move open out". The author uses Facial Capture technology which is available in Adobe Character Animator software to produce character expressions. The advantage of this project is that the teacher will only focus on learning content without having to think about talent as a performer in the online course and also preparing audio and scripts.

ICAESS Abstracts



The Effect of Bank's Internal Financial Ratio on Lending in Indonesia Conventional Commercial Banks (Book IV Category)

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Keywords: Internal Financial Ratio, Lending, Book IV Category

Abstract: The purpose of this study is to analyze the effects of Third-Party Funds (DPK), Capital Adequacy Ratio (CAR), Loan Deposit Ratio (LDR), Return on Asset (ROA), Non-Performing Loans (NPL) on Lending. The object of this research is a Indonesia conventional commercial bank (book IV category) for the period 2012 – 2019. The sampling technique uses a purposive sampling method with a sample size of 5 banks, namely Bank Rakyat Indonesia (BRI), Bank Negara Indonesia (BNI), Bank Mandiri, Bank Central Asia (BCA), Bank CIMB Niaga. The number of research samples used was 40 samples. This study is using multiple regression analysis with T test and F test, Hypothesis testing methods used with IBM SPSS 26. The results showed that DPK, CAR and ROA partially had a positive effect on lending, while LDR and NPL partially had no positive effect on lending. DPK, CAR, LDR, ROA, NPL simultaneously effect on lending.

Effect of Liquidity and Leverage on Profitability of Agricultural Sector Companies Listed on the IDX

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Keywords: Current Ratio, Debt to Equity Ratio, Return on Assets, Return on Equity

Abstract: This research aims to see how liquidity and leverage affect profitability in agricultural sector companies in Indonesia. Liquidity is measured by Current Ratio (CR), leverage as measured by Debt to Equity Ratio (DER), and company profitability is measured by Return on Assets (ROA) and Return on Equity (ROE). This study uses secondary data with data collection techniques using financial statements of agricultural sector companies listed on the Indonesia Stock Exchange from 2015-2019. Purposive sampling was used as a methodology in this study, and 15 companies match with the criteria. The test method in this study uses panel data regression analysis with Eviews 9. This study found that the CR has an insignificant impact on ROA and ROE in the agriculture sector. This study also found that the DER has an insignificant effect on ROA but significantly negatively impacts ROE in the agriculture sector. Simultaneously, CR and DER have an impact on ROA and ROE.

Effect of Working Capital Management on Profitability of Manufacturing Companies Listed on the IDX

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Keywords: Working Capital Management, Profitability, Gross Operating Income.

Abstract: This study aims to determine the effect of WCM on the profitability of Indonesia's listed manufacturing firms for 2015-2019. This study has one dependent variable, namely profitability which is measured by GOI and has an independent variable, namely WCM, which is measured by ICP, RCP, APP, and CCC. This study also has two control variables, firm size and leverage. The sampling technique used the purposive sampling method. Data is obtained from the annual reports of 86 companies. The data analysis technique is panel data regression analysis with the E-views 9 software. The results of the study found that ICP, RCP, APP, and CCC have a significant effect on profitability.

The Effect of Tax Awareness, Tax Morale, Tax Sanctions, and Tax Amnesty Policies on Tax Compliance of Taxpayers in Batam City

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Keywords: Tax Awareness, Tax Moral, Tax Sanctions, Tax Amnesty Policy, Taxpayer Compliance

Abstract: This study aims to determine the effect of tax awareness, tax morale, tax sanctions and tax amnesty policies on taxpayer compliance in Batam City, especially those registered at the North Batam Pratama Tax Office. Data collection was carried out by the non-probability sampling method with convenience sampling technique. The sample of this study with a total of 100 samples. Statistical test methods and data processing using component based-Structural Equation Modeling (SEM) or Partial Least Square (PLS) using SmartPLS Version 3. The research findings show that: 1) tax awareness has no significant effect on tax compliance, 2) tax morale positive and significant effect on tax compliance variable, 3) tax sanctions have no significant effect on tax compliance, 4) tax amnesty policy (tax amnesty) has a positive and significant effect on tax compliance.

Effect of Financial Ratios on Financial Distress of Retail Trade Companies Listed on The Indonesia Stock Exchange

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Abstract: This study aims to examine the effect of financial ratios on financial distress in retail trade sub-sector companies in Indonesia. Profitability is measured by Return on Equity (ROE), leverage is measured by Debt to Equity Ratio, Liquidity is measured by Current Ratio (CR) and Financial distress is measured by Z-Score. This study uses secondary data with data collection techniques using financial statements of retail trade sub-sector companies listed on the Indonesia Stock Exchange for the period 2014-2018. The sampling technique used purposive sampling method, obtained a number of 14 companies that fulfill the criteria with a total population of 26 companies, so that the total observation for 5 years was 70 samples. The test method in this study uses panel data regression analysis with Eviews 9. The results of this study found that the Return on Equity has a significant positive impact on Financial Distress on retail trade sub-sector. This study also found that the Debt Equity Ratio has a significant negative impact on Financial Distress on retail trade sub-sector and Current Ratio has a insignificant negative impact on Financial Distress on retail trade sub-sector.

Keywords: Financial Ratios, Return on Equity, Debt to Equity Ratio, Current Ratio, Financial Distress, Z-Score

The Effect of Firm Performance on Annual Report Readability

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Keywords: Gunning Fog Index, Readability, Firm size, Firm age, Firm Performance.

Abstract: This study aims to examine whether there is an effect of firm performance on the readability of the annual report and how the influence between these variables. This study uses a sample of companies with various industrial sectors listed on the IDX for 2017-2019 period. The number of samples used as many as 114 companies. The independent variable in this study is expressed by the company's performance using Tobin's Q value and the dependent variable is expressed by the readability of the company's annual report using gunning fog index. This study also uses control variables that are proxied by the size and age of the company. The data processing in this study uses SPSS version 20. The results of the hypothesis indicate that the company's performance influences on the readability of the company's annual report. Companies with high performance get a high readability value of the annual report as well. This is due to the increasing size of the company's operations so that the company offers a more detailed explanation. The high age of the company does not affect the readability of the annual report. The conclusion of this study states that other factors have more influence on the readability of the annual report.

THE EFFECT OF LOVE OF MONEY AND MACHIAVELLIAN ON PERCEPTION ETHICS OF BATAM STATE POLYTECHNIC BUSINESS MANAGEMENT STUDENTS

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Keywords: Love of Money, Machiavellian, Ethical Perception

Abstract: This study aims to determine the effect of *Love of Money and Machiavellian* on the ethical perceptions of Batam State Polytechnic business management students. And added a control variable in the form of a gender variable. The method used in research is a quantitative approach. Research data obtained through the distribution of questionnaires by researchers to Batam State Polytechnic business management students totaling 270 people. This study uses a quantitative approach and uses analytical methods multiple linear regression data. The results partially show that *love of money* negative impact on ethical perceptions and *a machiavellian* negative impact on ethical perception. Then the results of the study also prove the variables *Love of Money* and *Machiavellian* simultaneously harm the ethical perceptions of management students Batam State Polytechnic business. And the results of the study also prove the variable *Love of Money* and *Machiavellian* with Gender as a control variable showed that all variables both independent variables and control variables have a simultaneous influence on the ethical perceptions of Batam State Polytechnic business management students.

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Financial Ratio to Predict the Growth Income (Study on Infrastructure Companies Listed on IDX)

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Keywords: Current Ratio, Debt to Equity Ratio, Total Assets Turnover, Net Profit Margin, Profit Growth.

Abstract: This study aims to determine the effect of liquidity, solvency, activity, and profitability on profit growth in infrastructure sector companies in Indonesia. Liquidity is measured by Current Ratio (CR), solvency is measured by Debt-to-Equity Ratio (DER), activity is measured by Total Assets Turnover (TATO), and profitability is measured by Net Profit Margin (NPM). This study uses secondary data with data collection techniques using financial statements of infrastructure sector companies listed on the Indonesia Stock Exchange from 2014-2018. The purposive sampling method, obtained several 25 companies that fulfill the criteria with a total population of 80 companies, so that the total sample of observation for five years was 125 samples. Testing is assisted by the EViews 9 program using panel data regression analysis. The result shows that Total Assets Turnover has a significant positive effect on profit growth. While there is no significant positive impact between current ratio into income growth. This study also found that the Debt-to-Equity Ratio and Net Profit Margin have no significant adverse effect on profit growth in infrastructure sector companies.


Development of Accounting Application for MSMEs Based on Cloud Computing


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Keywords: information technology, accounting application, cloud computing, rapid application development

Abstract: A good accounting or financial governance is the most important factor in development of Micro, Small and Medium Enterprises (MSMEs). Ability to create a good transaction record produces a strong financial report which is one way of good governance examples done by MSMEs. A good quality financial report contains information that is trustworthy, straightforward, appropriate, reliable, relational, and understandable. They are essential since they will be utilized in making a decision to determine direction of MSMEs development. An efficient accounting application is necessary to assist MSMEs in creating essential financial reports such as accounting journal, general ledger report, balanced list, income statement, and statement of capital changes. Rapid Application Development (RAD) is an application design approach used to build the application. System analysis began with a literature review, followed by creation of designs, prototypes, and collected user input requirements. The application was tested using a Black-Box testing approach and have been developed with Cloud Computing technology. There is a Software-as-a-Service in Cloud Computing technology that has the benefit of being able to be run by multiple customers and without requiring them to purchase extra infrastructure. This is due to features of start-up in the early stage, thus there is no need to invest in an extra infrastructure. Therefore, cloud application development by utilizing Software-as-a-Service technology is the right solution.

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DETERMINE FACTORS OF ACCOUNTING STUDENT SATISFACTION IN ONLINE LEARNING

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Keywords: Online Learning, Course Structure, Online Tutorials Flexibility, Online Tutorials Quality, Technology Quality, Student Satisfaction

Abstract: This study aims to determine the influence of course structure, flexibility of online learning, quality of online learning, and quality of technology on student satisfaction in online learning. This research uses independent variables namely course structure, online tutorials flexibility, online tutorials quality, and technology quality. The dependent variable used is student satisfaction. This study used primary data with data collection techniques using questionnaires (web-based questionnaires) that were distributed to students of D3 Accounting and D4 Managerial Accounting in 2020/2021 Politeknik Negeri Batam. Sample withdrawal technique using cluster sampling method. The testing method in this study used multiple regression analysis with the help of SPSS statistical application program Version 25. The results showed that the course structure, online tutorials flexibility, online tutorials quality, and technology quality significantly influenced student satisfaction in online learning.

The Effect of Corporate Social Responsibility, Political Connection, and Firm Size on Tax Avoidance of the Manufacturing Sector Listed on the IDX

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Keywords : Tax Avoidance, Corporate Social Responsibility, Political Connection, Firm Size, Leverage, Return Of Assets.

Abstract : This study aims to examine the effect of corporate social responsibility, political connection and firm size on tax avoidance in manufacturing sector companies in Indonesia. The data in this study uses the financial statements of manufacturing sector companies listed on the Indonesia Stock Exchange for the period 2015-2019 so that using 250 samples. Analysis of research data using panel data regression method using the Generalized Least Squared (GLS) approach. The results of the study explain that corporate social responsibility has no effect on tax avoidance, political connection has no effect on tax avoidance, and firm size has no effect on tax avoidance in manufacturing sector companies listed on the Indonesia Stock Exchange.

Project Based Learning Model For Agency Personal Tax Courses: Experimental Study

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Keywords : Problem Based Learning, Tax Knowledge, Learning Motivation, Learning Outcomes

Abstract : Conceptual of this research is to explore the extent of the benefits of the problem based learning model in private corporate tax practice courses on increasing tax knowledge and understanding, learning outcomes and student motivation. The purpose of this study was to determine and analyze how the problem based learning model of corporate personal tax practice courses on increasing and understanding tax knowledge, learning outcomes and student motivation. The contribution of this research is as additional useful information for accounting study programs in improving curriculum and learning outcomes. The research design used experimental research which was carried out in private corporate tax practice classes. The purposive random sampling technique is a sample selection technique based on the criteria of accounting study program students taking corporate personal tax practice courses. Data collection techniques used questionnaires, interviews and observations in the private corporate tax practice class. The data analysis method used descriptive statistics that explored learning methods and classroom approaches as well as inferential statistics to test the effect and pretest-posttest control group design test from the application of the learning model for corporate personal tax practice courses. The inferential statistical method used is the data analysis technique used is SPSS analysis. The results showed that problem based learning had an effect on tax knowledge and understanding, problem based learning and learning motivation had an effect on tax knowledge and understanding, learning motivation moderated problem based learning on tax knowledge and understanding. The last hypothesis is that there are differences in learning outcomes before and after participating in problem based learning.

The Effect of Liquidity, Profitability, and Solvency to the Financial Distress in Agricultural Sector Companies Listed on the Indonesia Stock Exchange (IDX)

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Keywords: Financial Distress, Financial Ratios, Liquidity, Profitability, Solvability, Z-Score

Abstract: This study aims to analyze financial ratios, namely liquidity ratios, profitability ratios, and solvency ratios that affect financial distress conditions. This study uses quantitative research methods. The data used is on agricultural companies on the Indonesia Stock Exchange (IDX) in 2015-2019, with 75 samples. The dependent variable of financial distress was measured using the Altman analysis model (Z-Score). The independent variables were measured using financial ratio indicators, namely liquidity ratios, profitability ratios, and solvency ratios. This study uses secondary data with database collection techniques and uses a non-probability sampling technique, purposive sampling. The data used is panel data regression, using the Eviews 9 application. This study shows that the liquidity ratio with the working capital and current ratio to total assets proxies affects financial distress conditions. Profitability ratios with Return on Equity and return on assets proxies affect financial distress conditions. The solvency ratio as measured by debt to total assets affects financial distress conditions. While the solvency ratio analysed by debt to total Equity and time interest earned does not affect the financial Ratio.

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THE EFFECT OF NON-PERFORMING LOANS ON THE PROFITABILITY OF THE BANKING SECTOR LISTED ON THE IDX

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Keywords: NPL, ROA, ROE & NIM.

Abstract: This study aims to examine the effect of non-performing on the profitability of the banking sector in Indonesia. Determination of the sample of this study using purposive sampling method so that it uses 125 samples. The data in this study uses the financial statements of banking sector companies listed on the Indonesia Stock Exchange for the 2015-2019 period. Analysis of research data using panel data regression method using the Generalized Least Squared (GLS) approach. Non-performing loans in this study were measured using the ratio of Non-Performing Loans (NPL) while profitability was measured using the ratio of Return On Assets (ROA), Return On Equity (ROE), and Net Interest Margin (NIM). The results of this study, firstly, show the influence of NPL on ROA, secondly there is an influence between NPL on ROE, and finally the influence of NPL on NIM in banking sector companies in Indonesia.

THE EFFECTIVENESS OF STUDENT INTERNSHIP PROGRAM IN INDUSTRY TO DEVELOPING SELF COMPETENCE AT BENGKALIS STATE POLYTECHNIC


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Keywords: Internship Program, Effectiveness, Developing Self Competence

Abstract: This research is entitled Effectiveness of Student Internship Program in Industry to Self Competency Development at Bengkalis State Polytechnic. Universities continue to evaluate the competence of students who have been equipped with competencies according to the study program, both hard skills and soft skills through assessment by industry in the student internship program to industry for one semester. Student internship is a program that aims to enrich students' insights and skills to prepare and create superior Indonesian human resources, especially in facing global competition through link and match industrial and university curriculum. Through this program, it is hoped that there will be a link & match curriculum between universities and the industrial sector. The universities can be updated with the needs of the industry. However, to achieve the purpose of holding the KP, is not an easy thing. There are still many obstacles in the process of implementing the KP, starting from placements in fields that are not in accordance with their expertise, the level of industry trust in KP students is lacking and other things. So this study will discuss the effectiveness of the Job Training program that has been implemented by the Bengkalis State Polytechnic. The KP held by the Department of Commercial Administration starting in 2020 has been carried out for one semester. A total of 17.9% of the total students carry out KP in private companies, 10.1% in BUMN/BUMD companies, 60% in government agencies, and 13% in other agencies.

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The Impact of Financial Inclusion on Financial Stability in Indonesia



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Keywords: Financial Stability, Financial Inclusion

Abstract: The financial system has a strategic role in an economy. In the last 22 years, Indonesia has experienced two economic crises. This event reminds of the importance of maintaining financial system stability. The data used in this study is quarterly data for the period 2008-2019 from Indonesia Financial System Statistics and Financial Stability Review of Bank Indonesia as well as the Annual Report of the Deposit Insurance Corporation. Data analysis method used a t-test and f-test. The result of this investigation showed that financial inclusion that was proxied using the number of savings accounts and the number of bank service offices had no influence on financial stability. Meanwhile, financial inclusion that is proxied using the number of ATMs, third-party funds-to-GDP ratio and SMEs credit account ratio to bank credit accounts has a positive and significant effect on financial stability. This research also shows that financial inclusion jointly has a positive and significant effect on financial stability. Based on this research, the government is expected to create a policy that attracts the public to use financial services that are fully available.

Implementation Monte Carlo Simulation in Investment Evaluation , Case Study : Gas Compressor Investment PLTG 4 x 25 MW Maleo-Gorontalo

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Keywords: Capital Budgeting, Investment Evaluation, Sensitivity Analysis, Monte Carlo Simulation, uncertainty.

Abstract: Investment evaluation is a crucial part before investment decision in order to measure will the project generate profit for the company. This study is investment evaluation Gas Compressor Investment PLTG 4 x25 MW Maleo Gorontalo. There are two investment evaluation method in this project Capital Budgeting and Monte Carlo Simulation. Capital Budgeting technique use to measure this investment evaluation in this project consist of Net Present Value (NPV), Internal Rate Return (IRR), Probability Index (PI) and Payback Period (PBP). From the evaluation, it was obtained that a positive NPV of 500,444, an IRR of 11.50% greater than the WACC of 9%, while the PI of 1.08 and PBP of 1.57 years was faster than the duration of the 2 (two) year contract. Monte Carlo simulation applied to predict the financial feasibility of a project by considering risks and uncertainties use to calculate Probability NPV<0 in this project , with use Capital Expenditure (CAPEX), Life Time Project and Debt : Equity Portion as the input variables. Monte Carlo simulation result probability NPV <0 is 10,32 % mean while probability NPV >0 is 89,68%.

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SHARING ECONOMY: PERCEPTION OF DRIVERS FOR ONLINE TRANSPORTATION GOJEK

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Key Words : *Sharing Economy, Attitude, Enjoyment, Sustainability, Economy Benefit, Reputation*

Abstract : *Sharing Economy is an economic-technological phenomenon that is driven by the development of information and communication technology for sharing related to socio-economics that includes goods and services. One of the transportation service companies in Indonesia that uses the concept of sharing economy is GOJEK. This study aims to determine internal motivation and external motivation that affect one's intention to become a GOJEK driver in Batam City. Internal motivation is measured by perceived attitude, perceived enjoyment, perceived sustainability and external motivation is measured by the perceived economic benefits and perceived reputation. Measurement of variables was adopted from Hamari's study (2015). This study uses a questionnaire distributed to GOJEK drivers for 1 month with a sample of 130 drivers. The results found, first internal motivation, perceived attitude and perceived enjoyment have positive effect on intention, while the perceived sustainability has no effect. Second, external motivation, economic benefits and reputation has a positive effect on the intention to become a GOJEK driver.*

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The Effect of Direct Foreign Investment Realization, Employment and Regional Tax Receiving on Province Economic Growth in Indonesia 2016-2018


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Keywords: Foreign Direct Investment, Labor, Local Tax Revenue, Economic Growth

Abstract: This study aims to determine the effect of the realization of foreign direct investment, labor and local tax revenue on provinces in Indonesia in 2016-2018. This study uses secondary data with data collection techniques using all reports on the realization of foreign direct investment, labor, local tax revenue and province economic growth in Indonesia registered with Badan Pusat Statistik (BPS) or Statistics Indonesia and Bank Indonesia (BI) for the 2016-2018 period. The research method used is a quantitative method with an analysis of 34 provinces in Indonesia in the 2016-2018 period with a total sample size of 86 samples. Secondary data is processed using SPSS version 26 application. The test results in this study indicate: The realization of foreign direct investment affects the economic growth of provinces in Indonesia; Labor affects the economic growth of provinces in Indonesia; Regional tax revenues have an effect on provincial economic growth in Indonesia; Foreign direct realization, labor and local tax revenue simultaneously have a positive and significant effect on provincial economic growth in Indonesia.

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Purchase Decision Factors on Halal Products of Processed Food In SMEs Semarang

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Keywords: Halal Products, SMEs, Halal Label, Religiosity, Halal Awareness, Buying Interest, Purchase Decision.

Abstract: Halal is the lifestyle choice of most Muslim consumers in Indonesia, including the selection of food products that must be guaranteed halal. The purpose of this research is knowing and analysing the purchase decision factors on halal products of processed food in SMEs Semarang. Based on the data of SMEs Semarang, the development of Food Processed is ranked 2nd by 31%. Due to the large portion of the Processed Food SMEs sector in Semarang, it is necessary to strengthen the processed food SME industry, so they can survive and thrive in the current Covid-19 pandemic. The phenomenon is supported by the requires to be fulfilled of Halal standards, so that the products marketed of SMEs produce proceed food must have a guarantee that the product are halal certified. The sample in this study amounted to 154 consumer respondents of processed halal products. Analysis technique uses path analysis. The study indicates that halal label, religiosity, halal awareness are positively significant to purchase decisions. On the other hand, halal label does not impact significantly on the buying interest. Different result were found religiosity and halal awareness have a positive and significant effect on the buying interest on halal products of processed food in SMEs Semarang. Meanwhile, the impact of halal label, religiosity, halal awareness through buying interest had a significant positive effect on the decision to purchase halal products of processed food in SMEs Semarang.

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Do Monetary Instruments Affect Conventional Bank Loans to MSMEs?

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Keywords: MSME, BI 7 Days RR, SBI, Bank Indonesia Certificate

Abstract: This research aimed to analyse the effect of SBI and BI 7 Days RR on the UMKM credit of conventional Banks in Indonesia in 2017-2019. The method used is a quantitative approach by applying multiple linear regression models. The research used statistical data obtained from the official website of the Financial Service Authority and Bank Indonesia's interest rate from the official website of Bank of Indonesia. This research showed that in the 2017-2019 period, the Bank Indonesia Certificate (SBI) variable has no significant effect on MSMEs credit of conventional banks in Indonesia. Meanwhile, the BI 7 Days RR variable had a significant positive effect on UMKM credit of conventional banks in Indonesia in the 2017-2019 period. Simultaneously, the results showed significant effects between SBI and BI 7 Days RR variables on the MSMEs credit of conventional banks in Indonesia in 2017-2019. This research showed that the SBI and BI 7 Days RR variable significantly impacted conventional bank credit expansion to the MSMEs sector.

FINANCIAL STRATEGY ANALYSIS FOR DEVELOPMENT OF LIQUID NATURAL GAS (LNG) POWER PLANT TO REPLACE DIESEL FUEL POWER PLANT Case Study : LNG Based PLTMG, Tanjung Balai Karimun 3 x 4 MW

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Keywords: Business Feasibility Analysis, Electricity Tariff, PLTMG

Abstract: Many of the islands around Batam use diesel power plants (PLTD) to generate electricity. The cost of operating these plants is very expensive since they use expensive diesel fuel and tend to experience significant increases, so that it burdens the government and users if they subsidize the electricity tariff.

PT XYZ intends to expand its business by becoming a supplier of electricity to the islands around Batam by using a Gas Engine Power Plant (PLTMG) to replace the existing PLTD on the islands. To determine whether the PLTMG construction has business feasibility and the electricity tariff is cheaper than the PLTD tariff, a research is carried out that focuses on the Business Feasibility for the PLTMG construction and the selection of gas transportation modes will be best to supply gas to the generating site.

By using the economic feasibility parameters NPV, IRR, PBP and BCR and by conducting sensitivity analysis and risk management, it is expected that the results of this study will provide clear, safe and comprehensive guidance for management in order to grow and develop their electricity business.


After conducting a Technical Study and Business Feasibility Analysis, it was found that the PLTMG construction was feasible to be implemented on Karimun Island with a capacity of 3 x 4 MW using ISO Tanks and LCT ships to transport natural gas in the form of LNG.

PT XYZ will benefit from the construction of a PLTMG of IDR17,327,179,295,- in the first year with an electricity tariff of IDR1.805/kWh. And when compared to the current PLTD electricity tariff of IDR 3,000/kWh, the PLTMG electricity tariff are much cheaper. In addition, this will also provide significant savings in the cost of providing electricity for PT PLN (Persero) WRKR of IDR106,775,640,000/year.

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Investment Gallery: Improving Students' Interests Through Activities and Knowledge

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Keywords: Investment Gallery, Activities, Knowledge, Interests, Capital Market, Stock Exchange, Students

Abstract: The literacy level regarding the capital market is generally low in Indonesia; thus investment galleries are set up to increase public awareness, interests, and participation since the early stage of student investors. This study aims to prove whether activities done by the investment gallery and the knowledge about the capital market impact students' interests in learning and investing in the Indonesian Stock Exchange. Socialization, training, and competition operate as proxies for activities. Knowledge about the capital market, the investment gallery, and education serve as proxies for knowledge. While desire, awareness, and taking time to study investing function as proxies for students' interests summing up to nine indicators of three variables. The research uses a quantitative approach by implementing multiple linear regression analysis using IBM SPSS Statistics 22. The sample totaled 213 students of Politeknik Negeri Batam who attended any activity attributed to the investment gallery selected using a proportionate sampling technique. The authors verified that the test was valid and reliable. They also confirmed that the relationship between variables met the classical assumption tests, including multicollinearity, heteroscedasticity, and normality. The results of this study indicate that both the activities variable and the knowledge factor have a significant positive effect on investment interest, either partially or simultaneously. Therefore, investment galleries are proven to improve student investors' interests in participating in the capital market through their activities and knowledge sharing.

Case Study: Integrating SMART Decision Making Attributes to Improve The Selecting Subcontractor Strategy

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Keywords: Subcontractor, Construction Value Chain, Financial Ratio, Capacity Planning, Project Funding, Strategic Improvement, Subcontract Performance.

Abstract: PT McDermott Indonesia is subsidiary of McDermott International Incorporated. In its working practice, McDermott cooperate with other contractors so called subcontractors to complete specific work on a project. This research was conducted using lessons learned from the non-conformance made by one of the subcontractor on the project of Qatar Gas North Field. The objective of this business research is to ascertain the elements where this problematic subcontractor error occurs. An integrated framework is developed incorporate attributes of : construction value chain, financial ratio, capacity planning and project funding. The study uses analysis methods to identify the potential problem, interviews among related parties and simulation methods to formulate an improvement plan. This research concludes that the analysed attributes have an important role and should be included in the key for subcontractor selection by using the proposed SMART decision making method. This new strategy expected can help PT McDermott Indonesia to improve the assessment of each subcontractor competency prior to contract awards.

The Role of Psychological Factors in the Intention to Use Mobile Payment

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Keywords: Performance expectancy, Facilitating conditions, Hedonic motivation, Perceived security, Behavioral intention, Mobile payment

Abstract: The rapid growth of mobile commerce businesses and the increasing number of transactions using mobile devices are strengthening mobile payments as an instrument of payment. In addition, the Covid-19 pandemic situation makes digital transactions also continue to increase. Regardless of the benefits provided by mobile payments, the adoption of mobile payments is still considered in the early stages and quite new for consumers in Indonesia. Telecommunication infrastructure facilities that are not evenly distributed and aspects of data security that become obstacles in the development of mobile payment services. Departing from these problems, the use of mobile payments still needs to be increased especially during this pandemic. The purpose of this study is to find out the factors that influence the intention to use mobile payment from the psychological side by using independent variables, namely performance expectancy, facilitating conditions, hedonic motivation, and perceived security, and a dependent variable that is behavioral intention. The method of data analysis is descriptive statistics and multiple regression. The results of this study are there is a positive influence between performance expectancy variables and hedonic motivation variables towards behavioral intention variables while facilitating conditions and perceived security variables do not affect behavioral intention variables.

Analysis of Factors Retailer Brand, Information Richness and Easy of Use on Buying Interest in Using ShopeePay

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Keywords: *Retailer Brand, Information Richness, Ease of Use dan ShopeePay*

Abstract: *This study aims to test and analyse factors retailer brand, information richness, and ease of use towards the buying interest student of Batam City using ShopeePay. This exploration utilizes a quantitative methodology with various straight investigation utilizing SPSS 22 programming. Information assortment is gathered by disseminating Google Form survey connects to an example of 370 individuals who are ShopeePay clients in Batam City. The outcomes showed that there was an impact of retailer brand, information richness, and ease of use experience both part of the way and stimulatively on buying choices through Shopee online business. In this investigation, the computation of the coefficient of assurance got by 0.260. This implies that 26% of purchasers purchasing revenue is clarified by retailer brand, information richness, and easy of use factors, while the rest is clarified by different factors.*

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Case Study: Productivity Improvement in Surgical Manufacturing Company

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Keywords: Productivity, capacity, fishbone diagram, lead time.

Abstract: PT MED Batam (PT-MB) has been chosen by its headquarter office, to receive new transfer product, to be manufactured in Batam Indonesia. While it is good business opportunity, PT-MB faces productivity issue. With the benchmark of transfer site, its productivity is still 63% compared with them, during the monitoring phase of 6 months period (July – Dec 2020). To solve the problem, PT-MB should increase productivity to match with transfer site. Based on this condition, the main objective from this research is to find business solutions to increase capacity through productivity raise from 5M (Man, Machine, Material, Method, Measurement), to gain trust and capture more product transfer from headquarter. The business solutions are derived using the root cause analysis, utilizing the fishbone diagram and why-why analysis. The findings have led to identify 8 business solutions, in which covering from Man (training), Method (SOP), Measurement (SOP), Machine (TPM and Critical Spare Part), and Material (Material Lead Time and Supplier Communication). Having completed on some business solution implementation, we can achieve 7.94 units/hour by Jul 2021. Overall improvement compared with Dec 2020, productivity has increased from 5.7 units/hour to 7.94 units/hour, improved by 39.3%, in which very significant improvement. By Jul 2021, the gap is 11.7% compared with target 9 units/hour. We are confident, with 3 months towards October 2021, and some of business solutions are still in-progress for implementation, we will achieve our target of 9 units/hour.

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Integrated Risk Management Frameworks ISO 9001:2015 as a Successful Parameter in Project Management: The Case of Yamal Train 3 Project

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Keywords: Efficiency of cost, Schedule achievable, Construction sequence, PM BOK 6th edition, ISO 9001 :2015, Integrated Risk Management.

Abstract: Purpose: Managing Risk has become one of main concern in application of Project management. Risk could be mitigated, eliminated or even controlled, to do so as project manager require skills based on different approach or frameworks. In this paper we propose to integrate two major frameworks of managing risk, namely ISO 9001:2015 standard clause 6.1 and Project Management Book of Knowledge 6th edition. Design/Methodology/approach – An integrated framework is developed by analysing and synchronizing contributing factors of risks, including from internal organization or external organization, and performing qualitative measurement and obtaining expert judgement. The proposed framework is then applied to a construction project called Yamal Train 3 Project consist of 23 electrical house (E-house) and tight schedule within 17 months. Findings – The integrated risk management should identify risk factors in very early stage of construction sequence, register as ISO document and perform qualitative of risk effect onto project. Practical implications - The impact of application integrated risk management is organization has contingency reserve budget, utilize various resource to mitigate and lower down risk impact. Originality/Value – from conceptual point of view, this study aims at unifying an integrated Risk Management from two frameworks PM Bok 6th edition and ISO standard approach, while from the practical point of view, it provides application of the proposed framework on construction project by showing how business organization mitigate risk to obtain efficiency of cost and schedule achievable.

The New Retail Business Model and Customer Experience: A Case Study on a Coffee Shop Retail

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Keywords: New Retail, Customer Experience, Online-offline channel.

Business model innovation is becoming substantial to survive in a dynamic environment. However, the innovation can not stand alone. Customer behaviour is one of the variables that a company should consider when creates a business model innovation. A new business model called new retail (NRBM) is invented to adapt to the digital transformation. The study aims to measures the new retail business model factors: customer, Convenience, cost, communication, and context or distribution channels that could affect consumer experience: sensory experience, emotional experience, and social experience. The quantitative approach: The structural Equation Model (SEM) and the Smart PLS application are used to obtain the data and measure the impact of the independent variable on the dependent variable. The population in this study is Starbucks consumers who have used all online-offline channels and are domiciled in Bandung. Based on data analysis, NRBM and customer experience variables are in the excellent category. It can be proven that NRBM has a positive impact on customer experience when shopping at a coffee shop. Future research can expand the area, involve other retail sectors, and add additional variables that could contribute different results, such as environmental factors and other consumer behaviour variables.

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Analysis of Tourism Destination Image Value Creation Through Emotion on Spa Health Tourism in Bandung West Java

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Keywords: Tourist Emotion, Tourist Destination Image, Behavioral Intention, Health Tourism, Spa.

The purpose of the study was to develop a behavioral intention model of urban tourists in visiting Health Spa tourism during the Covid-19 pandemic in Bandung City. The city of Bandung has its own charm through Spa health tourism, lots of tourists visit while relaxing by enjoying the Spa in Bandung. This is also supported by the Minister of Culture and Tourism who held an event titled Spa & Wellness Tourism Award 2019 which was at Spa industry business players. Factors identified in the study include tourist emotion and tourist destination image. The goal is set based on the problem of knowing the factors that influence the behavioral intentions of tourists in the new normal era. The data collection method is in the form of a questionnaire with a sample of 70 samples. The data processing method uses simple data analysis using SPSS and the Regression and Correlation method to determine the relationship between factors that influence behavioral intentions in the new normal era. The results of the study found that there was an influence of Tourist Emotion and Tourist destination image through Behavioral intention.

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Analysis Of The Effect Of Influencer Endorsement, Customer Review, Brand Ambassador, And E-Service Quality On E-Commerce In Creating Store Switching

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Keywords: Influencer Endorsement, Customer Review, Brand Ambassador dan E-Service Quality, Store Switching.

Abstract: This study examines Influencer Endorsements, Customer Reviews, Brand Ambassadors, and E-Service Quality on Tokopedia E-Commerce in Creating Store Switching from Shopee to Tokopedia. Respondents from this study were respondents who had Tokopedia or Shopee user accounts or both, and respondents who had made transactions on Tokopedia or Shopee e-commerce or both. The population in this study are Tokopedia and Shopee consumers or users of the Tokopedia and Shopee online shopping applications. The number of samples for this study was 171 respondents. The sampling technique in this study was using a non-probability sampling technique with purposive sampling type with an unknown population formula. In this study, collected data through questionnaires given directly to respondents. The analytical method is used for a descriptive analysis using Structural Equation Modelling (SEM), convergent validity test, discriminant validity, composite reliability test, Cronbach's alpha test, R-square, t-test, and path coefficient with a significance level of 5%. The results of this study are the three exogenous variables, namely influencer endorsement, brand ambassador, and e-service quality, that influence positive and significant effects on creating store switching. Meanwhile, the exogenous customer review variable has no positive and insignificant impact in creating store switching.

Does The Novelty, Advertising Value, Relevance, and Privacy Concern Affect on The Online Impulse Buying Tendency?

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Keywords: Online impulse buying; novelty; advertising value; relevances; privacy concern; social media advertising

Abstract: *Online impulse buying is a factor that can generate profit for online retailers and advertisers. Currently, buying and selling activities do not only occur face-to-face, but can be done through an e-commerce which offers many conveniences. Marketing methods are also increasingly developing through social media. This research is a quantitative study which aims to test the effect of novelty factors, advertising value, relevance, and privacy concern on the tendency to make impulsive online purchases. Respondents used were students majoring in Business Management at Batam State Polytechnic with a sample of 108 students with a sampling technique using purposive sampling. This study uses multiple linear regression analysis techniques. The results of this study indicate that the relevance and privacy concern have a significant effect on the tendency to make online impulse. Meanwhile, the novelty and advertising value variables did not have a significant effect on the online impulse buying tendency.*

Organizational Development at Human Resources Department of Export-oriented Semiconductor Manufacturing Company

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Keywords: Organizational development, Sustainable performing organization, Human Resources, Decision making, Alternative Solutions.

Abstract: 2020 was a challenging business year. Pandemic was unprecedented situations required speedy and well-thought actions in managing business with upholding health and safety of the employees as company's utmost priority. The Human Resources (HR) Department plays critical role to sustain employees' safety and health as well as their motivation. Despite many achievements, to stay relevant in the future, HR must continuously evolve. This paper will firstly identify categories of high-performing HR organization which enable organization to achieve sustainable performance. In addition, this paper will also propose and select best-fit solutions from identified organizational alternatives. The author elaborates conceptual framework of 5-Star model from Jay Galbraith as reference in Organizational Development (OD) initiatives. The author combines the framework with the 7-steps approach to systematically develop the framework. The author initiates OD with business analysis conducted during the departmental review. The result of workshop is presented in the SWOT analysis format. To confirm the SWOT, author conducts quantitative and qualitative survey to internal and external organizational stakeholders. Once the focus category is clarified, the organization alternatives are developed and selected. Lastly, after confirming the best-fit solution, work-packages on how to improve each category are developed and prioritized as executable actions.

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Batam State Polytechnic Case Study: Generation Y In Online Fashion Shopping

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Keywords : Intention, Trend, Shopping Enjoyment, Economic Orientation, Brand Value, Generation Y

Abstract : Generation Y are those who were born from 1981 to 2000. In this era, they are starting to forget about shopping through stores and prefer shopping online. This research aims to identify and test what perceptions support generation Y in online fashion shopping. The purchase intention is measured by the perceived trend, perceived shopping enjoyment, perceived economic orientation, and perceived brand value. This study uses non-probability sampling method with snowball technique. Data processing techniques using SPSS 22 by performing multiple regression and independent t-test. This study uses a questionnaire distributed via google form with the number of respondents as many as 369 Batam State Polytechnic Students. The results found, first perceived trend, perceived shopping enjoyment, perceived economic orientation, and perceived brand value has a positive effect on online fashion shopping intentions. Second, there is a difference perceived trend, perceived shopping enjoyment, perceived economic orientation and perceived brand value between women and men in online fashion shopping.

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The Effect of Workplace Conflict and Stress on Employees Performance at a Freight Transport Company


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Keywords: Human Resources Management, Performance, Work Conflict, Work Stress.

Abstract: This research aims to find out the effect of a work conflict and stress on employees' performance at a freight transport company with and without educational level as a control variable. The method used in this research was a quantitative approach by using questionnaires data from 40 employees in the company. The data obtained then being analysed with classic assumption test and inferential statistics. The result of the study shows that work conflict and stress have a significant impact on employee performance with and without educational level as a control variable.

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EFFECT OF RECRUITMENT, SELECTION AND EMPLOYMENT TRAINING PROCESS ON EMPLOYEE PERFORMANCE THE FITTER DEPARTMENT OF PT NOV PROFAB



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Keywords: Recruitment, Selection, Job Training, Employee Performance, Multiple Linear Regression

Abstract: This study aims to examine the effect of the Recruitment, Selection, and Job Training process on Employee Performance at the Fitter Department of PT NOV Profab. This study uses quantitative methods. The population of this study consisted of employees of the PT NOV Profab assembly department with a total sample of 73 people. The sampling technique used the Accidental Sampling (Convenience Sampling) method through a questionnaire given directly to the respondents. The data analysis method used is a descriptive analysis using multiple linear regression, classical assumption test, t-test, and F test with a significance level of 0.05 and the coefficient of determination. The results of the study prove that the variables of recruitment, selection, and work training at the same time have a positive and significant impact on the variable performance of PT NOV Profab's fitter department employees and the independent variable that has the greatest influence on the performance variable of PT NOV Profab's fitter department employees is recruitment because it shows the Standardized Coefficients Beta value, which is greater than the other independent variables.

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Human Resources Professional Transformation: An Introduction of New Concepts

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Keywords: Competence, Commitment, Work Contribution, Demography, Human Resources Professional Transformation, Employee Productivity.

Abstract: Conceptually this research develops a model with a new concept as renewal called Human Resources Professional Transformation (HRPT). This concept is a synthesis to fulfill theoretical needs in answering problems in the role and function of human resource management. Specifically, this concept aims to build individual abilities/talents of line division of human resources in determining work from the business context side with run the roles and functions of human resources which include Competence, Commitment, Work Contribution, Demography (including age, education, gender, and work experience) so as to increase employee productivity as a competitive advantage of the company.

COMPARISON ANALYSIS OF DEPRESSION, ANXIETY, AND STRESS LEVELS IN STUDENTS IN BUSINESS MANAGEMENT DEPARTMENT AND INFORMATION ENGINEERING DEPARTMENT OF BATAM STATE POLYTECHNIC ON ONLINE LEARNING IN THE COVID-19 PANDEMIC

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Keywords: Depression, Anxiety, Stress, Major, Online Learning

Abstract: This study examines the Comparative Analysis of Depression, Anxiety, and Stress Levels for Students of the Department of Business Management and Department of Informatics Engineering at the Batam State Polytechnic Against Online Learning During the COVID-19 Pandemic. The population in this study were students of the Department of Business Management and the Department of Informatics Engineering. The respondents in this study were students of the Department of Business Management and the Department of Informatics Engineering from 2018 to 2020, with a total sample of 188 students. The sampling technique here uses the Random Sampling method. In this study, the data is collected through questionnaires given directly to respondents online. This study uses a quantitative approach with descriptive statistical analysis methods and a Chi-Square test. The results of this study are students of the Department of Business Management have higher levels of depression, anxiety, and stress compared to students of the Department of Informatics. There is no significant effect between students' depression, anxiety, and stress level in online learning towards majors.

Green Marketing Analysis on Oil Palm Plantation Industry

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Keywords: Green Marketing, Positional Advantage, Marketing Performance, Oil Palm.

Abstract: Palm oil is one of Indonesia's important export commodities as a foreign exchange earner besides oil and gas. Indonesia is one of the largest producer and exporter of palm oil in the world. As the largest foreign exchange earner, the palm oil industry should also be able to maintain its superiority in various sectors, hopefully in the future it can continue to contribute to the development of the industry, especially oil palm. This paper aimed to analyze the role of Green Marketing in oil palm plantations. The essence of competition lies in how a company can implement processes to create products or services that are cheaper, with better quality, and produced faster (cheaper, better and faster) than the other business competitors which can increase the influence of the green marketing concept as well as the profits. The results of the study showed the effect of green marketing on marketing performance in the oil palm plantation industry and this research provided a scenario that could give the most significant impact on increasing marketing performance in the oil palm plantation industry.

Analysis of Customer Satisfaction Level of Small and Medium Micro Enterprises (SMEs) using Importance Performance Analysis (IPA) Method and SWOT Analysis at PT Perusahaan Gas Negara Sales Area Batam

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Keywords: Customer Satisfaction, Importance Performance Analysis (IPA) and SWOT Analysis

Abstract: This research aims to determine the level of SMEs customer satisfaction and identify the best strategies in increase customer satisfaction at PT Perusahaan Gas Negara Sales Area Batam. The research uses field research type with qualitative descriptive type approach. The analytical methods used: Importance Performance Analysis (IPA) and SWOT Analysis. The sample in the study was as many as 62 sources who based from MSME customers and 2 Sources from sr. of the Analysis Industry and Batam Commercial Sales Area. The results of this study explained that customer satisfaction is 95%. There are 3 attributes that need to be improving, i.s : first, Gas usage facilities meet eligibility attributes. Second, PGN provides consultation on the use of natural gas clear and Directional. Third, PGN is quick in answering any information that customers need. According to the SWOT analysis, the company has a strong position in the industry so it can maintain its aggressive business strategy.

Effect Of Promotion, Price, And Service Of Quality On Maxim Online Driver Customer Satisfaction At Batam State Of Polytechnic

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Keywords: Promotion, Price, Service of Quality, Customer Satisfaction

Abstract: The purpose of this study is to determine the effect of promotion (X1), price (X2), service of quality (X3) to customer satisfaction (Y) Maxim at Batam State of Polytechnic. The research uses a quantitative approach and uses descriptive statistical analysis data processing using multiple linear regression test with non-probability sampling techniques of accidental sampling. The population and sample in this study amounted to 100 respondents. Data collection for this study uses questionnaires consisting of 26 items/indicators statement with a likert scale. The results of research on the t test (partial) obtained t count promotion (X1) of 2.115 > t table 1.98 and sig value of 0.004 < 0.05, price (X2) of 3.002 > t table 1.98 and sig value of 0.003 < 0.05, service of quality (X3) of 6.151 > t table 1.98 and sig value 0.000 < 0.05, it is known that promotion, price and service of quality have a positive effect on customer satisfaction. The conclusion of the research, the advice researchers is the implements of promotion, price, and service of quality on Maxim Online Driver is included in very good category, but there are some aspects that would be better if there were improvements in the promotion variable such as being able to continue to increase the supporting factors of Maxim promotion and maintaining customer satisfaction so that customers are willing to repeat using Maxim Online Driver services as the main choice.

Influence Of Price, Product Reviews, And Quality Of Service On Online Purchase Decisions Through Shopee On Students Of Batam State Polytechnic

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Keywords: Price, Review Products, Quality of Service, Purchase Decision

Abstract: This study aims to determine the influence of price, product reviews, and quality of service on *online* purchasing decisions through Shopee on Batam State Polytechnic students. The population in this study is students of Batam State Polytechnic class 2018-2020 with the number of samples used in this study is 100 respondents. This study uses quantitative approach using descriptive statistical analysis with data processing using multiple linear regression analysis with sampling techniques using *purposive sampling* techniques. The results proved that product prices and reviews had no influence on purchasing decisions where t-calculated the price of 0.381 and t-count product reviews 0.690 smaller than the t-table of 1,660. While the variable quality of service has an influence on the variable of purchasing decisions with t-count 1,816 greater than t-table of 1,660. And the three independent variables namely price, product reviews and service quality have a positive and significant effect simultaneously on purchasing decisions with a value of f-count 12,791 greater than the value of f-table that is 2,14.

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The Effect of Tax Administration, Tax Knowledge and Tax Sanctions on Taxpayer Compliance

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Keywords: Tax Administration, Tax Knowledge, Sanctions Taxation, Individual Taxpayer Compliance.

Abstract: This study aims to identify and analyze whether the effect of tax administration, tax knowledge and sanctions taxation to compliance of individual taxpayers. The method of this thesis is the research instrument test, classic assumption test, multiple linier regression test and hypothesis testing. Independent variables in this study are tax administration, knowledge of taxation and tax sanctions, while the dependent variable is the individual taxpayer compliance. The number of population in this study is not known how many individual taxpayers are registered using a sample from Paul Leedy obtained 139 people as a sample. The type of data used is primary data. The results of this study prove that simultaneously tax administration, knowledge of taxation and tax sanctions have an effect on individual taxpayer compliance. Partially, the variables of tax administration and tax sanctions have an effect on individual taxpayer compliance. Meanwhile, tax knowledge has no effect on individual taxpayer compliance.

The Effect Of Leadership Style, Work Motivation, And Organizational Culture On Employee Performance During The Covid-19 Pandemic (Study On Manufacturing Companies In Batamindo Industrial Park Area)

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Keywords: Leadership Styles, Work Motivation, Organizational Culture, and Employee Performance.

Abstract: Many factors within the company that can affect and improve the performance of its employees. There are three factors that are used as independent variables, including leadership style, work motivation, and organizational culture, and one dependent variable is employee performance. The purpose of this study was to determine the effect of leadership style, work motivation, and organizational culture on employee performance during the covid-19 pandemic. This study uses primary data in the form of a survey with a questionnaire adapted from Gibson, et al. (2009), Wibowo (2010), and Mathis & Jackson (2011) as research instruments and measured using a 5-point likert scale. Analysis of the data used in the form of multiple linear regression analysis and t test. The method used in sampling is purposive sampling. The population is 280 respondents and the sample is 165 respondents, that employees of manufacturing companies in the Batamindo Industrial Park area, Muka Kuning. The results of this study state that: Leadership style has a positive effect on employee performance during the covid-19 pandemic, Work Motivation has a positive effect on employee performance during the covid-19 pandemic, and Organizational Culture has a positive effect on employee performance during the covid-19 pandemic.

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COMPENSATION IMPACT ON THE FIRM PERFORMANCE OF INDONESIAN INSURANCE COMPANIES LISTED ON THE IDX

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Keywords: Compensation, Profitability, Revenue Growth

Abstract: The purpose of this study is to examine the effect of increasing employee's compensation on firm performance of insurance companies measured by profitability and revenue growth from both short-term and long-term perspective. This study use purposive sampling method as a sampling technique and data archived to obtain research sample that consisting 50 observations covering from 10 insurance firm listed in Indonesian Stock Exchange from 2015-2019. The hypothesis testing is using panel data regression. The results show that in the short term increasing employee's compensation has a negative effect on company performance measured by company's profitability, and in the long term increasing employee's compensation also has a negative effect on company performance measured by company's revenue growth. This study limits to using insurance companies listed on the Indonesia Stock Exchange within 5 years as a sample.

Machine Learning for Domain and Hosting Marketing Strategy

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
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
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Keywords: Machine Learning, Marketing Strategy, Domain, Hosting

Abstract: To compete in global industries, a company must have a good business marketing strategy. Especially for domain and hosting company that has many competitors. In this research, the aim is to get the marketing strategy for domain and hosting using Machine Learning. Unsupervised Machine Learning using Association Rules is used to determine the best combination of items from the company transaction data. The combination of items will know the behavior of customer. Bundling product offerings can also be determined by looking at the confidence and lift of the itemset. This research proof that Business Intelligence technique using Association Rules will make improvement for marketing strategy especially for Domain and Hosting company. Association rule is used to determine the best combination of items from the company's transaction data. Bundling product offerings can also be determined by looking at the high value of confidence and lift more than equal to 1. Using this algorithm, will decide the best bundling package for marketing strategy. The bundling package that may be offered is Domain.com + Hosting Lite ID + Others and Domain.com + Hosting Super SG + Others products. This result can be applied for promos and doing product analysis to achieve the expected goals and KPI.

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The Influence of Customer Experience towards Repurchase Intention in Shopee Application

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Keywords : Customer Experience, Repurchase Intention

Abstarct : Indonesia and the rest of the world are currently infected with virus Covid-19 , so the government is taking steps to urge people to do social distancing, in this case the Shopee marketplace also supports this matter. Shopee is the initial consumer-to-consumer (C2C) mobile marketplace application. Shopee is also one of the websites that are the most visited online trading platforms for customers. The main consumer indicator is determined by the influence of customer experience that causes the repurchase intention in shopping. This study aims to determine the effect of customer experience on intention to shop again on the Shopee marketplace platform. The study used quantitative methods with 100 respondents using multiple linear regression analysis techniques. The results of the study show that the variables sensory experience, feel experience, think experience and relate experience have no effect repurchase intention and variable act experience has an influence repurchase intention.

SUPPLIER PERFORMANCE EVALUATION USING FUZZY ANALYTICAL HIERARCHY PROCESS METHOD AT PT. XYZ

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Keywords: Supplier, best performance, office stationary, Fuzzy Analytical Hierarchy Process (FAHP)

Abstract: PT. XYZ is a company engaged in procurement services. There are several suppliers who cooperate with PT. XYZ to supply all kinds of goods needed by the company. This research focuses on assessing supplier performance on office stationary types of goods in the form of ballpoints using fuzzy analytical hierarchy process (FAHP) measurement method. The criteria for assessing supplier performance in PT. XYZ namely Price, Delivery, Service and Quality with alternative supplier TK. BL, TK. MK, TK. GM and PT. ST. The purpose of this research is to know the most important criteria and sub-criteria and know the best performing office stationary suppliers. Data collection techniques are conducted by interviewing purchasing & procurement staff at PT. XYZ, questionnaires and documentation. The data processing used in this study uses the FAHP method with the help of Microsoft Excel 2019. The result of the overall assessment is TK. BL and TK. MK as suppliers in PT. XYZ with the best performance because both have the highest weight (0.290).

The Effects of Perceived Usefulness and Perceived Ease of Use on the Use of “ShopeePay” E-Wallet Application

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Keywords: Perceived usefulness, perceived ease of use, use of ShopeePay, TAM.

Abstract: Many factors influence a person in using the ShopeePay e-wallet. Therefore, this study aims to identify the factors that influence the use of the ShopeePay e-wallet. Factors that influence include perceived usefulness and ease of use based on the TAM (Technology Acceptance Model) theory. This research is a quantitative study using primary data from questionnaires. The questionnaire was distributed to 100 respondents, ShopeePay e-wallet users in Batam City who have used ShopeePay at least once. After testing the hypothesis using multiple regression analysis on 100 respondents, it is known that there is a significant influence between perceived usefulness and perceived ease of use toward the use of the ShopeePay e-wallet. This discovery is expected to be used as reference material regarding the ShopeePay e-wallet application by the people of Batam City.

Customer Loyalty Business Model During the Co vid-19 Pandemic a Case Study on Bank Syariah Indonesia Post-Merger

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Keywords: Customer knowledge, customer engagement, customer trust, loyalty, merger, sharia banking.

Abstract: Islamic banks are business entities that are growing and developing rapidly in the world. Indonesia is a country with the largest Muslim population in the world, but the market share achieved is still small. It shows that the Indonesian people prefer conventional banks to Islamic banks. Indonesian government took the initiative to merge three state Islamic banks into one Islamic bank. As a bank with a new entity, the adjustment process will create various complex uncertainties and have the potential to affect customer loyalty. The condition was exacerbated by the fact that the merger was carried out when the COVID-19 pandemic was sweeping the world. This study aims to build a loyalty development business model in the context of a recently merged Islamic bank in Indonesia. Data collection was conducted through a survey that involved 138 Bank Syariah Indonesia's customers. Customer knowledge, trust, and engagement variables are used to predict customer loyalty. The research model was tested using path analysis. The result shows that customer trust affects customer loyalty is a better model than customer knowledge affects loyalty with customer engagement as a mediating role.

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The Effect of Rewards and Punishment, Job Rotation, Employee Engagement and Career Development on Employee Performance at PT XYZ

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Keywords : Reward & Punishment, Job Rotation, Employee Engagement, Career Development, Performance.

Abstract : This research aims to find out the effect of working conditions on performance of employee at PT XYZ.. Respondents as well as the population studied are employees of PT XYZ, with a total sample of 168 employees. The sampling technique used by the researcher is disproportionate stratified random sampling, using the Slovin equation. The data collection technique in this study used a questionnaire with Google Form media. The data analysis method used by the researcher is quantitative associative analysis using Multiple Linear Regression, Classical Assumption Test, t-test, and F-test with a significance level of 0.05 and a coefficient of determination. The results of this study are: Rewards and punishment, job rotation, employee engagement, career development simultaneously have an effect on employee performance.

Feasibility Study of Refill Drinking Water Depot At BUM Desa Sukajaya, Sukajadi Village Bengkalis Regency

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Keywords: Village Owned Enterprises (BUM Desa), Business Feasibility, Drinking Water.

Abstract: Villages have an important role in the process of equitable distribution of national economic development. One of the purposes of Undang-Undang Number 6 of 2014 concerning Villages is to stimulate villages to have BUM Desa which functions as a service institution and at the same time carries out the business functions of the Village Government in order to obtain village original income that can be utilized for development purposes. BUM Desa Sukajaya in Sukajadi Village already has several business units. One of them is a bottled drinking water refill depot. Even though this business is run without going through a business feasibility calculation process, since it started in 2020 this business has been quite profitable compared to other business units at the BUM Desa Sukajaya. Based on the results of the feasibility study conducted in this study using a business feasibility approach similar to that of a BUMD as regulated in Government Regulation Number 54 of 2017, it was found that Business Drinking Water refill Depot is considered feasible to be implemented. However, the implementation of the Drinking Water refill Depot business must be supported by policies and synergies with government programs because it involves primary needs. Although this business is quite profitable, but it is a type of business with limited development and it is difficult to expand the market, because this business depends on the number of residents and each village has its own drinking water service program in accordance with government programs.

Feasibility Study of Refill Drinking Water Depot At BUM Desa Sukajaya, Sukajadi Village Bengkalis Regency

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ANALYSIS OF JIG SUPPLIER SELECTION WITH ANALYTICAL HIERARCHY PROCESS (AHP) METHOD (Case study at Purchasing Department at PT Patlite Indonesia)

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Keywords: AHP, Quality, Price, Delivery, Supplier Profile, Service, Jig Supplier.

Abstract: PT Patlite Indonesia is a manufacturing industry that produces Warning Signal Lamp. The increasing number and types of products affect the raw materials and equipment used, due to limited production capacity, labor, and other production facilities, causing PT Patlite Indonesia to rely heavily on suppliers. The most widely used equipment in the production process at PT Patlite Indonesia is the Jig. This jig supports the entire production process. The purpose of this study is to find the criteria that are considered important in the selection of jig suppliers and the order of priority for the best jig suppliers at PT Patlite Indonesia. The research method used is the Analytical Hierarchy Process (AHP) method with qualitative descriptive analysis tools and data processing using Ms. Excel. The results of this study indicate several criteria that are considered important, namely Quality, Price, Delivery, Supplier Profile, Service, and Supplier. The best Jig with the highest weight being the order of top priority is PT Media Sarana Sukses with a total weight of 0.681 or 68.1%, the second priority is PT Ingram Indonesia Jaya with a total alternative weight of 0.226 or 22.6% and the last priority with the lowest weight is PT Buana Batam Mandiri with a total alternative weight of 0.093 or 9.3%.

Analysis Scheduling XYZ Project Using Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT) at PT. NOV Profab

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Keywords: *CPM, PERT, Scheduling, Project*

Abstract: *This study aims to test the scheduling of the XYZ project at PT. NOV Profab uses CPM and PERT methods. From this research, we will get the estimation of scheduling time and find the critical path of each method. This study uses data collection techniques by means of direct interviews with the project engineer and documentation data in the form of project schedule attachments. This study was structured with mixed methods. Each method has 3 critical paths, the result of scheduling the CPM method for 52 days, according to the real schedule of the XYZ project and the PERT method for 51 days, faster with the real schedule of the XYZ project.*

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ANALYSIS OF FACTORS AFFECTING THE INCOME OF MSMEs MARKETING PRODUCTS THROUGH GOJEK DURING THE PANDEMIC

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Keywords: Capital, Labor, Raw Materials, Information Technology, Income

Abstract: The population in this study is MSMEs through Gojek with a sample of 100 respondents. Data retrieval and collection techniques using *google form*. The analysis method used is factor analysis. Research on the analysis of these factors there are 5 factors in variables, capital factors (X1), labor factors (X2), raw material factors (X3), information technology factors (X4) and income factors (Y). The results of the study on the analysis of factors showed that out of 40 statement indicators, There are 7 new factors formed, namely loyalty factor (X1) has the highest *loading* value of 0.816, raw material factor (X2) has the highest *loading* value of 0.849, capital factor (X3) has the highest *loading* value of 0.891, resource factor (X4) has the highest *loading* value of 0.707, wage or salary factor (X5) has the highest *loading* value of 0.869, labor availability factor (X6) has the highest *loading* value of 0.728 and utilization factor (X7) has the highest *loading* value of 0.761. Then the most dominant MSME income factor influences the factor with a percentage of variance value of 31.232%.

Effectiveness of the Online Learning Process and Work Engagement of Educators Due to Changes in Management Policy During the Covid-19 Pandemic: A Case Study of the Bina Ummah Foundation of Doctor Haji Adamri Al Husainy

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KEYWORDS Effectiveness, Online Learning Process , Work Engagement

ABSTRACT The purpose of this study was to find out and explore information about how effective the online learning process is and how the work engagement of educators at the Bina Ummah Doktor Haji Adamri Al Husainy Foundation in Batam City during the covid-19 pandemic. This type of research uses a qualitative approach with a case study method. Informants or subjects in this study were MI and MTs educators, Chair of the Foundation, One Roof Management staff and had worked for at least 2 years. Data collection techniques using semi-structured interview techniques. Researchers used data analysis described by Creswell.

The results of this study indicate the goals and objectives of the Bina Ummah Foundation for education, social and religious or religion. During covid-19 the Foundation implemented a new policy, namely the online learning process using technology. The media used are Zoom, Whatsapp, Google Meet, and Youtube. This policy is considered less effective. This is due to obstacles such as no interaction so that students cannot understand, difficulties in delivering material, material is difficult for students to accept, lack of awareness of obligations. The advantages of this policy are having free time and increasing knowledge about technology. In addition, the drawbacks of this policy are a lot of time wasted, the learning process is not effective and the lack of awareness of responsibility to students. The level of work engagement is considered to have decreased from before, but it did not break the aspect of the work spirit or vigor of the educators. Aspects of dedication are given by educators by showing a sense of love for their work such as being responsible, committed, disciplined, obeying the rules and working sincerely and sincerely. Work engagement factors are the existence of trust, work contracts and the existence of reciprocal relationships that are accepted. Aspects of the preoccupation of work or absorption most of them feel more engrossed in working when face to face. disciplined, obeying the rules and working sincerely and sincerely. Work engagement factors are the existence of trust, work contracts and the existence of reciprocal relationships that are accepted. Aspects of the preoccupation of work or absorption most of them feel more engrossed in working when face to face. disciplined, obeying the rules and working sincerely and sincerely. Work engagement factors are the existence of trust, work contracts and the existence of reciprocal relationships that are accepted. Aspects of the preoccupation of work or absorption most of them feel more engrossed in working when face to face.

Influence Of Intellectual Capital On Productivity Bank In Indonesia

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Keywords: Intellectual Capital, Productivity, Assets Turnover, Employee Productivity.

Abstract: The purpose of this study is to examine the effect of Intellectual Capital on productivity as proxies by ATO and EP which are listed on the Indonesia Stock Exchange (ID) for the 2015-2019 period. This study use purposive sampling with data collection using archival data. There for the data includes is 105 data obtained from 21 banks for 5 years. The hypothesis testing is using panel data regression analysis. The result of this research is that intellectual capital has an effect on ATO and EP. VAHU had no effect on ATO and EP, VACA had no effect on ATO and EP, STVA had no effect on ATO and EP. This research is limited to the banking sector listed on the Indonesia Stock Exchange.

Analysis of The Effect of The Use of Electronic Money, Debit Card and Hedonic Lifestyle on College Student Consumption Behavior (Case Study: College Student of The Batam State Polytechnic Applied Business Administration Study Program)

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Keywords: Electronic Money, Debit Cards, Hedonic Lifestyle, Consumptive Behavior.

Abstract: This study discusses the effect of electronic money, debit cards, and hedonic lifestyles on student consumptive behavior. Retrieval of research data using questionnaires or questionnaires and documentation. Using multiple linear regression analysis and descriptive analysis to explain the results of the study. The research sample was 137 respondents, the respondents were students of the 2017 Applied Business Administration study program and the 2018 batch of Batam State Polytechnic. The results of this study are that there is a negative effect of the use of electronic money on the consumptive behavior of students, there is a significant positive effect of a partially hedonic lifestyle on the consumptive behavior of students. The debit card variable partially has no effect on the consumptive behavior of students. The variables of electronic money, debit cards, and hedonic lifestyles together affect the consumptive behavior of students.

RELEVANCE OF GRADUATES COMPETENCE TO THE NEEDS OF THE LABOR MARKET

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Keywords: Relevance, Graduates Competencies, Labor Market Needs

Abstract: This research examines the relevance between graduates' competencies and competencies needed in the labor market, especially those in Batam. The respondents studied were Alumni of The Applied Business Administration Study Program. The analytical approach used is a descriptive static analysis and multiple correlation analysis. This study showed that the level of relevance between graduate competencies to competency needs in the labor market is 71% which means it falls into the "relevant" category.

Mültrennung Method: The Application of Education for Separating Rubbish Using Mini Comic in Kusuma Bangsa School


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Keywords: ADDIE Model, Education Media, Kusuma Bangsa School, Mini Comic, Pre-test and Post-test.

Abstract: The importance of implanting is a sense of awareness and concern for environmental cleanliness must have been implanted in the community, especially implanted from an early age. One way is to carry out community activities with the aim of increasing awareness of the surrounding environment since children age with the implementation of waste sorting education and training in waste management to students at Kusuma Bangsa School use mini comic educational media entitled "Smart Waste Management". The purpose of carrying out this activity is to reduce existing problems by providing education, namely providing education in sorting and processing waste. The method of implementing will be made using the pre-test and post-test methods using the ADDIE Model in making this mini comics which consists of the stages of analysis, design, development, implementation and evaluation. From the results that have been done as a whole obtained an average pre-test of 58% and post-test 88% with a value of N-Gain 0.71 which falls into the category of high increase. The results of the analysis showed that the mini comic "Smart Waste Management" can help students as a media of educational briefing on sorting and processing waste in the Kusuma Bangsa School environment.

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An Endeavour to Prevent the Risk of Family Dysfunction Through Game of Anti-Family Dysfunction (GANSIA)


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Keywords: ADDIE Model, Educational Game, Family Dysfunction, GANSIA

Abstract: Dysfunction in the family is one of the social problems that occurred related to the hampered prosperous family development towards aspects of triumph in national development. An endeavour to prevent the risk of family dysfunction is needed so that these cases can be minimized and not become an enduring social problem. Therefore, the creation of educational learning media is an endeavour to prevent the risk of family dysfunction through an educational board game with talking pen, smart cards, and mini storybooks that can be played by all family members and children which is called Game of Anti-Family Dysfunction (GANSIA). The research model used in this study is the ADDIE model which consists of 5 stages; analysis, design, development, implementation, and implementation. As well as a research method that used in this study are pre-test and post-test. Based on the results of the analysis, it is known that the average result of the pre-test is 31,25% (poor) and the average result of the post-test is 92,5% (excellent). From these results, it is known that the product has an excellent effect in enhancing understanding of 8 family functions as an endeavour to prevent the risk of family dysfunction.

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Problem Based Learning for English Subjects in Students' Perspectives

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Keywords: Problem Based Learning, Learning English, Teaching English, Learning Problems.

Abstract: This study focused on the students' perspectives toward the implementation of Project-Based Learning (PBL) for English Subjects in State Polytechnic Batam. The research used qualitative descriptive to analyze the student's perspective related to the learning of the PBL method applied in English courses. The instrument was a questionnaire to examine the student's perspectives. The participants were about 250 students of Batam State Polytechnic majoring in Business Management, which consists of 10 classes of English courses that output oral and written skills, study programs in Accounting, Managerial Accounting, and Applied Business Administration. The result showed that students faced many difficulties in their PBL English. However, they were still able to complete their PBL assignments on time. The role of lecturers in English PBL subjects has been carried out properly as facilitators and student companions and most students feel satisfied with this. The data that is mostly used by students in making their English PBL written reports is about procedures/processes, data in tabular form, line graph, bar chart, and pie chart. The topics that are widely used by students in their English PBL oral reports are product promotion and internship reports.

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Buzzer Works on Human-Machine Agency Role in Securing Indonesia's Voters Precinct


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Keywords: Buzzer; Political Algorithm; Polarization; Trending Topic, Human-Machine Agency.

Abstract: This paper investigates political polarization observed on Twitter during the 2019 Indonesia presidential election to illuminate a complex and organized human-machine interaction driven by the personalized algorithm and its impact in securing designated voters. In this research, the theory of Interactive Media Effects (TIME) leverages to verify that personalized algorithm provides a myriad opportunity for buzzers to commercially politicize using the bot as machine agency in targeting undecided and swing voters for a Trending Topic Operation. An autonomous application NodeXL and Twitter API successfully acquired 328.474 tweets as the source for social network analysis. Snowball technique in obtaining data interviews from 6 field experts served as triangulation along with related literature support. A study on the 2019 Indonesia Presidential election revealed that buzzer activity played a significant role in securing votes by deceiving the Twitter algorithm. The human agency has proven more impactful than machine agency in creating trending topics. Findings also show that bot use was still widespread among 2019 Indonesia presidential candidacies. These findings redefine the electoral voter's sphere in Indonesia as the new promising precinct emerged and raise further concerns of the possibility of instigating a specific behavior through manipulating one's political preference.

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Fulfillment Of Employment Rights For People With Disabilities In The Middle Of The Covid-19 Pandemic

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Keywords: Human Rights, Employment Rights, People with Disabilities, and Fulfillment of Rights

Abstract: This study aims to examine the fulfillment of the human rights of people with disabilities in the field of employment. The research method uses a literature study. Literacy search was carried out using several search engines. The study results indicate that fulfilling the human rights of people with disabilities is still not optimal in the employment sector in Indonesia. This is due to the lack of inclusive education and training. The fulfillment of accessibility for people with disabilities is also a problem that needs to be addressed. Seeing this, there needs to be a synergy from several parties such as employers, trade unions, and the competent government to formulate strategies that can facilitate and accommodate people with disabilities to obtain equal rights and equality in the work environment. The entry of the COVID-19 pandemic has created more problems for workers with disabilities. Seeing this, it is necessary to accelerate vaccination and provide social assistance for people with disabilities to fulfill the human rights of people with disabilities. In addition, it is necessary to strengthen Public-Private Partnership to create job opportunities for people with disabilities.

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LECTURERS ENGLISH-MEDIUM INSTRUCTION SKILL AT TERTIARY VOCATIONAL EDUCATION

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Keywords: *English-medium Instruction, Teaching skills, English language Usage, Vocational education, Teaching Materials*

Abstract: English-medium Instruction (EMI) is a teaching activity for core subjects in English. In this case, the lecturers of Core subjects in a study program will deliver the subject using English. EMI focuses on transferring knowledge related to core competencies of study programs in English. In contrast, English Language Teaching (ELT) is teaching English as a subject to enable the students to communicate using English. This study investigates how need the lecturers at the Politeknik Negeri Batam have English training to build their EMI ability. This is qualitative descriptive research. The data is taken using a questionnaire to lecturers from different study programs at Politeknik Negeri Batam. The result shows that EMI training is needed to improve the fluency of the lecturers in teaching using English as well as develop their skills in creating and preparing teaching materials in English.

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Web-based Writing Assessment or Reward-based Writing Assessment: Which Gives Better Impact on Student Writing Motivation

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Keywords: Writing, English Writing, Writing Assessment, Writing Motivation.

Abstract: In the teaching and learning of English writing, learning motivation to write is a central and challenging issue as the writing complexities often discourage students. Slow and unclear teacher assessment feedbacks also frequently made them disappointed. This study tried to provide a web-based and a reward-based writing assessment in the State Polytechnic of Batam Indonesia to see their impact on student writing motivation. Data collection included surveys and students interview. The study found that both treatments have a positive and significant impact on students writing motivation. It also revealed how they might increase motivation to write and which of them is more effective in increasing writing learning motivation. Implication and suggestion due to the study findings are also presented.

The User Interface Design Process on Mobile Application

Dea Almira (Batam State Polytechnic, Indonesia); Sinarti Sinarti (Politeknik Negeri Batam, Indonesia)

This poster discusses the flow of the interface design process (User Interface) of a mobile application with explanation at each step. User Interface (UI) is the visual part of a digital application product that concerns how information can be displayed in a form that can be seen by the user and aims to improve the functionality and User Experience (UX) of an application. In the design process, it is necessary to carry out the steps that must be done, namely related to initial research for the purpose of making the application (Discover), identification of application user needs (Define), system analysis (Ideate), screen interface design (Prototype), and user interaction with products or services and feedback from the user (Test). The purpose of this poster is to inform the steps of the User Interface design process for an application using descriptive analysis methods so that software developers can maximize the efficiency, aesthetics and accessibility of mobile applications to be developed. An effective User Interface makes it easy for users to enjoy all the features and functions in an application, for those things a continuous process with User Experience (UX) is also needed so that the resulting design can work according to the purpose.

Key words: User Interface, design process, mobile application, digital product, User Experience

Compliance Audit of Work Order Testing SOP at PT XYZ

Natalia Bella Tampubolon and Sugeng Riadi (Politeknik Negeri Batam, Indonesia)

This study report discusses the importance of implementing a standard operating procedure (SOP) for work order testing in carrying out material testing. The purpose of this study was to audit the level of employee compliance with the SOP in carrying out material testing based on the work order testing SOP. This study uses data that has been analyzed using descriptive methods. The results of the study stated that the SOP compliance audit for work order testing was declared compliant with a percentage of 91.3%. However, there were several findings, namely the delivery of material testing samples and the material testing process was not carried out on time according to the predetermined schedule.

Documentation of System and Procedures for Management of Time Deposits in Order to Improve Internal Control at BPRS Syariah Madani Company

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This study aims to determine whether the time deposit management procedure at PT BPRS Syariah Madani, Batam whether it has considered the aspects of control. The research method used is descriptive qualitative. The research results of this study report can be concluded that the internal control system on the aspect of the organizational structure that clearly separates responsibilities and authorities, Authorization system and recording procedures, Employees whose quality is in accordance with their responsibilities. It has not worked optimally for time deposits which could hinder OJK's reporting process and uncontrolled procedures.

Factors Affecting Purchase Decisions Online at E-Commerce (Case Study of Planet Helistore)

Reni Kurnia and Dedi Kurniawan (Politeknik Negeri Batam, Indonesia)

This Study Report discusses The industry is required to understand customer behavior in its target market by offering its products, one of which is the online method. The purpose of this study was to determine and analyze the influence of trust, easiness, and quality of information on purchasing decisions in e-commerce at Planet Heli Store customers with a sample of 36 respondents. The technique of collecting data is by spreading the online questionnaire. The results of the study indicate that trust gets the highest percentage of customer decisions to make online purchases. This research shows that high trust in Planet Heli Store will influence someone in making online buying decisions.

Inventory Calculation EOQ Method to Control Spare Part at Excelitas Technologies Ltd

Vika Asmorowati and Adi Irawan Setiyanto (Politeknik Negeri Batam, Indonesia)

The research was conducted at PT Excelitas Technologies Batam which is engaged in manufacturing. The study report discusses the management of spare part supplies at PT Excelitas Technologies, which is currently placing orders on request without any calculation of a specific method. The techniques used in this research are observation, documentation, and interviews presented with descriptive methods. The results of this study if the inventory count using the Economic Order Quantity (EOQ) method, the minimum purchase quantity of raw materials is 190 pcs, the quantity of Safety Stock (SS) is 36 pcs and the quantity of Reorder Points (ROP) in placing an order is at 163 pcs. order frequency 6 times during a year. This method can minimize storage costs and ordering costs as well as the occurrence of out of stock in inventory.

Procurement Evaluation of Goods in Purchasing Section at Pt Lancang Kuning Sukses

Salmah Mahirah Ali and Yosi Handayani (Politeknik Negeri Batam, Indonesia)

This study report discusses the evaluation of procurement procedures at the purchasing department at PT Lancang Kuning Sukses. The procedure for requesting procurement of goods has not been going well. This certainly has an impact on the purchasing department. The purpose of this study report is to evaluate the procurement procedures at the purchasing department at PT Lancang Kuning Sukses whether it is in accordance with the provisions in the SOP. This study report uses data in the form of purchase requests and September purchase reports. From the results of this study report, it can be concluded that there is a mismatch between the procedures carried out with the existing SOP.

The Analysis of Successful Payment of Receivables at PT Profab Indonesia

Ardeta Sismayani and Afriyanti Hasanah (Politeknik Negeri Batam, Indonesia)

The research of this study is motivated by a lot of bad debt which causes the company's finances to be in a position that is not as expected. Purpose of study report to know the factors and solutions of bad debts. The method used in this research is descriptive analysis method. The results of this study suggest that the company to use analysis aging schedule and account receivable management in order to use the accounts receivable in the company and the possibility of bad debts.

Analysis of Debt Payment Request Procedure

Elvi Jelita and Muhammad Ramadhan Slamet (Politeknik Negeri Batam, Indonesia)

This study discusses the procedure for requesting debt payment, especially in document verification activities at PT Persero Batam. Requests for debt payment must be implemented effectively and efficiently to support the achievement of practical operational activities for the company. The author wants to analyze the causes of obstacles in requesting debt payments by conducting interviews with related parties, conducting observations to find out how to verify documents requesting debt payments to the company and using the fishbone diagram research method. Based on the analysis results using the fishbone diagram, there are still frequent constraints in the procedure of requesting debt repayments, especially in the document verification activities of three factors, namely man factor, method factor, and milieu factor.

Calculation of Virtual Office Rental Case Study PT ABC

Tiaraa Wulandari (Politeknik Negeri Batam, Indonesia); Irsutami Irsutami (Batam State Polytechnic, Indonesia)

The purpose of this study is to determine the virtual office rental rates at PT Batam Jaya Propertindo using traditional calculation methods. The method of data collection was carried out by observation, question and answer, and inspection which were then processed and analyzed descriptively. As usual in calculating the cost of goods, the data that the author uses are data related to direct materials, direct labor, and overhead by taking into account the expected profit and taxes to be paid. Based on the results of the study, it is known that the virtual office rental rate obtained is Rp. 614,242, - per month.

Analysis of Control Procedure and Calibration of Measuring Equipment and Gauge/Fixture at PT Mega Persada

Adri Maiyesti and Muhammad Ramadhan Slamet (Politeknik Negeri Batam, Indonesia)

This research was conducted at PT Mega Persada, which aims to study SOPs and analyze control and calibration procedures. The method used in this research is descriptive data analysis method. Analysis of the calibration procedure can provide information about measuring instruments that have not yet been calibrated and have passed the calibration period. The results of repeated research indicate that the incidence of audit events for measuring instruments that have passed the calibration period of the problems from the management itself, the procedures have not been implemented properly, there are no sanctions for employees who violate the rules and limitations of the tools

Procedure Analysis of Direct Mount Material Issues in the Department of Spray, Painting, Printing PT SAT Nusapersada, Tbk

Puja Sri Mutia and Muhammad Ramadhan Slamet (Politeknik Negeri Batam, Indonesia)

This study report discusses the analysis of procedures for issuing direct mount materials at the Spray, Painting, Printing Department of PT Sat Nusapersada, Tbk which aims to analyze and evaluate the procedures for issuing goods at the Spray, Painting, Printing Department. The method that the author uses in this research is descriptive data analysis method. The process of data analysis results using 4 (four) factors of fishbone analysis method, namely man, mother nature, method and material which aims to provide information about the causes of the difference between the actual quantity and the quantity in the system. The results of the research data obtained and have been processed into a fishbone diagram which shows that there are often differences between procedures and work practices in the field.

Entrepreneurship Training During the Covid Pandemic for Women Small Entrepreneurship in Puri Asri Residence Complex, Nongsa District, Batam City

Shinta Wahyu Hati, Fandy Bestario Harlan, Winanda Wahana Warga Dalam, Diah Amalia, Wika Arsanti Putri and Mega Mayasari (Politeknik Negeri Batam, Indonesia)

Community service in the form of entrepreneurship training is given to women micro, small and medium entrepreneurs who live in the Puri Asri Residence Housing, Batu Besar Village, Nongsa District, Batam City. This entrepreneurship training is carried out in a blended offline and online manner by complying with health protocols. This training was held because there was a request from women entrepreneurs in the housing complex to develop their businesses. The training provided is on small business management such as business marketing, financial records and determining cost of goods. During the training, entrepreneurship motivation materials were also given so that women entrepreneurs could remain enthusiastic about entrepreneurship during the Covid pandemic. In terms of gender, women entrepreneurs who take part in this entrepreneurship training are motivated and optimistic to develop their businesses during the pandemic.

Keywords: Training, Entrepreneurship, micro, small and medium enterprises, Gender

Application of Sofi Accounting Information System in Credit Sales Transaction at PT XYZ

Pebrina Pebrina and Muhammad Irsyad Halim (Politeknik Negeri Batam, Indonesia)

The focus of this study is discusses the utilization of SOFI accounting information system to entry credit sales transactions can be an alternative to solving problems that many small-medium companies face in processing credit sales transactions such as PT XYZ. In this study the authors used descriptive methods as data analysis method. Data collection methods from this research are documentation and interviews. The purpose of this research is to find out how to apply and how to use SOFI application in the process of recording credit sales transactions at PT XYZ. With SOFI accounting information system, users can record, process and provide financial statements quickly and accurately.

Key words: Accounting information system, credit sales, SOFI application

Calculation, Payment and Reporting of Income Tax Article 21 in PT. KSJ

Monica Dame Aritonang and Charles Tang (Politeknik Negeri Batam, Indonesia)

This study report discusses the calculation, payment and reporting of Income Tax Article 21 of PT. KSJ. PT. KSJ is a company engaged in the sale of household furniture with 10 employees. Calculation of Income Tax Article 21 carried out by the accounting department of PT. KSJ found there was a calculation error. This study uses descriptive analysis method with data collection methods literature study and interviews. The results of the study found that the calculation error of Income Tax Article 21 made by PT. KSJ is found in the tax calculation of employees who do not have a Taxpayer Identification Number (NPWP) are calculated the same as employees who have a Taxpayer Identification Number (NPWP), so it is not in accordance with the laws and regulations.

Impact of the Imposition of Value-Added Taxes on Game Developer in Indonesia with A Sales Platform Games (Case Study of the Steam Platform)

Ziana Febriana Zein and Riri Zelmiyanti (Politeknik Negeri Batam, Indonesia)

Steam is one of the computer-based game sales platforms where many game developers sell games on this platform, previously there were no special regulations governing the collection of Value Added Tax (VAT) for transactions on the Steam platform. In May 2020 the government issued Ministry of Finance Regulation Number 48/PMK.03/2020 regarding the collection of value-added tax through electronic commerce which took effect in July 2020. Indirectly buying games on digital platforms such as Steam is included in the provisions of the regulation, so The purpose of this research is to find out the impact after the existence of the regulation on game sales on the side of game developers from Indonesia. The research method used is a descriptive qualitative method, with data collection from Steam Valve and interviews with several game developers in Indonesia. The results in this study are, the imposition of a value-added tax of 10% (according to the applicable rate) is charged to the game developer without any increase in the price of games on the platform, due to the tax-inclusive system on the Steam platform, games that have already been released before July 2020 game developers cannot adjust the selling price after the regulation and which means the profits for Indonesian game developers will be smaller due to the imposition of Value Added Tax (VAT).

Keyword: Game, Steam, Valve, Game Developer, Value-Added Tax

Planning of Standard Operating Procedure for Storage of Raw Material at PT Crown Headwear and Knitting Mill

Lias Stepen and Wika Arsanti Putri (Politeknik Negeri Batam, Indonesia)

PT Crown is a company engaged in the production of goods such as clothing, head accessories, and others. Each company will order raw materials to the supplier if there is an order that wants to be produced. The ordered raw materials will be used in production, each production process is completed there are some leftover raw materials and these raw materials will be stored in the warehouse. The raw materials stored in the warehouse are stored for a long time which makes the raw materials damaged and unused when checking into the warehouse. The damage was caused by the absence of provisions or procedures (SOP) in storing raw materials in the warehouse.

Development of Standard Operating Procedures (SOP) for Procurement of Special Used Materials Shopping in Practice at SMK Negeri 6 Batam

Cessy Nofia and Muhammad Ikhlah (Politeknik Negeri Batam, Indonesia)

SMK Negeri 6 Batam was established in 2010. Located in the Kabil, Batam City. Lately, at SMK Negeri 6 Batam, there has been a waste of money, especially in spending on consumables for practicum materials and there are often incomplete documents supporting spending, such as the absence of records and photos of documentation of goods. Therefore, to minimize the occurrence of findings during the audit, a Standard Operating Procedure (SOP) is needed to facilitate the process of controlling the procurement of goods in schools.



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2021