

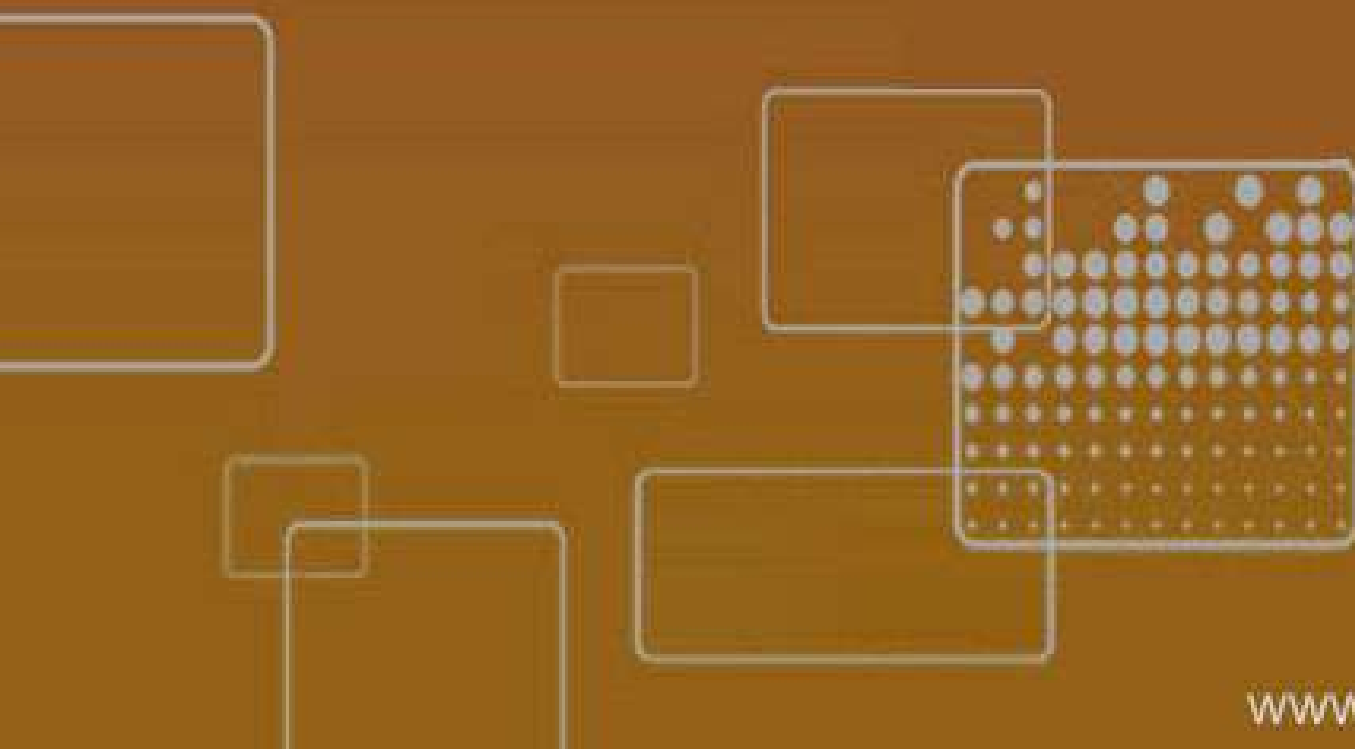
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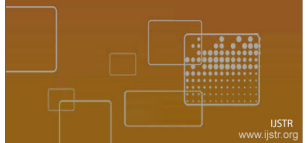
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Irrigation Contractors' Selection And Evaluation Model Based On A Multi-Criteria And Data Analysis

Mohamed Abdel-Hamid, Hanaa Mohamed Abdelhaleem

The irrigation structures such as bridges, culverts, weirs and syphons are the most important projects in development the countries. The aim of this study is to choose the most efficient irrigation contractors for government procurement based on a multi-criteria and data analysis. When proposals are presented, the awarding board will determine the tender assessment measures of the bids received in advance. The research recommend a decision-making framework to support the awarding board in this hard mission while retaining a clear process in line with government procurement rules and conditions, as well as ensuring equal and fair assessment of all proposals. In this respect, the cross-efficiency evaluation has been used among the eligible candidates to select the best contractor. The suggested methodology allows the evaluation of quantitative contractor choice data and preserves the transparency functionality required by government procurement. Additionally, all proposals are analyzed similarly without any subjective adjusting by the public officers according to the same quantitative weights. A case study linked to the tender of an Egyptian public organization for selecting the efficient

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The Extent Of Awareness Regarding Green Financing Among Jordanian Commercial Banks From The Perspective Of Investment Department Managers

Dr. Marwan Mohamed Abu Orabi

Current study is an attempt to find out the awareness level of commercial banks in Jordan about the concept of green financing and the extent of the commercial banks' use of this type of financing. The current study relied on the quantitative methodology by distributing a questionnaire to (142) managers, leaders and employees in commercial banks in Jordan - (49) commercial bank. Results of the study proved that there is an acceptable level of awareness within the categories studied in banks about the concept of green financing and that there is an actual application for this type of finance within banks in Jordan.also, results indicated that the first and most important supporter of green financing in banks are the government, legislations and laws must be framed and oriented towards supporting foreign investment in environmental projects in addition to back up banks in its approaches to finance green investments.

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An Overview Of Iot Operating System: Contiki Os And Its Communication Models

Payal Malik, Malvika Gupta

The virtually dependent such as internet and computers on the human for information that captured the data in form of typing, pressing button, digital picture or scanning a bar code with unevenly of 1024 terabyte and accessible on the internet. In this article author has described an IoT based operating system CONTIKI OS used for transmitting the data from one to another node with authenticity. CONTIKI OS interface is based on the JAVA which is efficient and secure by many security layers. Protothread, system loop and micro ip are the features that has been supported by the CONTIKI OS and also supports over network such as TCP/IP and IPv6 stack by cisco. Author also discussed about the

communication models that helps to transmit the data over network with secure connection. This conclude that CONTIKI OS provides the security while transmitting the data from one to another node using communication models.

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Efficient Removal Of Congo Red Using Nickel Iron Modified Layered Double Hydroxide As Adsorbent

Neza Rahayu Palapa, Tarmizi Taher, Arini Fousty Badri, Risfidian Mohadi, Aldes Lesbani

The removal of anionic congo red dye by adsorption was studied using Ni/Fe and Ni/Fe-POM layered double hydroxides (LDHs). Material Ni/Fe LDH was prepared using the coprecipitation method at pH 10. Material Ni/Fe LDH was intercalated using polyoxometalate (POM) silicotungstic to form Ni/Fe-POM LDHs. The LDHs were characterized using XRD, FTIR, and BET analyses. The adsorption parameters such as kinetic and thermodynamic adsorption were investigated. Adsorption of congo red on both LDHs follows the pseudo-second-order kinetic model. The thermodynamic adsorption of congo red on Ni/Fe and Ni/Fe-POM LDHs shows spontaneous, endothermic adsorption process and adsorption was classify as physical adsorption.

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The Analysis Techniques Of Amino Acid And Protein In Food And Agricultural Products

Edy Subroto, Elazmanawati Lembong, Fitry Filianty, Rossi Indiarto, Gisella Primalia, Miswa Salza Kirana Zaenal Putri, Hanna Christy Theodora, Salsabila Junar

The protein content in food and agricultural products affects the physicochemical and nutritional properties of these products. This review aims to discuss the analysis techniques of protein and amino acid in food and agricultural products. The qualitative analysis can be conducted using the Hopkins-Cole, Xanthoproteic, Millon, Nitroprusside, and Sakaguchi test. In contrast, the quantitative analysis of proteins can use the Kjeldahl, Biuret, Lowry, UV Spectrophotometry, and Turbidimetry. It also discussed the immunohistochemical techniques to identify cellular or tissue constituents (antigens) by staining techniques, while Formol titration measures the hydrolysis of proteins and N-

amino quickly. The amino acids can be analyzed by microbiological methods, colorimetric, high-performance liquid chromatography (HPLC), and gravimetric techniques. These methods/techniques can be chosen according to the type of sample and the purpose of the analysis so that the results can be obtained accurately.

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Weight Optimization Of Support Roller By Using Theoretical, Finite Element And Experimental Analysis

Prasad M Patil, Gajanan C Koli

An appropriate design of Support roller is significant for satisfactory performance of conveyor system. A number of Support rollers and return rollers are used in conveyor system so that the excess weight of the Support roller affects the total weight of system and also enhances the power consumption. Excess material used in conveyor system does not add any values in the performance on the contrary it reduces energy efficiency and increases manufacturing cost. It is notable to decrease power consumption and manufacturing cost of material handling sector. So that, in this paper we intended to reduce weight of Support roller to increase energy efficiency of conveyor system with reduction in material cost by weight optimization of roller.

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Silt Pit Application In Tropical Palm Dates Plantation: Case Study In Aceh Province, Indonesia

Devianti, Yuswar Yunus, Ramayanty Bulan, Dewi Sartika T., Agustami Sitorus

Palm date (*Phoenix dactylifera* L.) began to be popularly developed in the wet tropics, especially in Aceh Province. The cultivation is carried out on sub-marginal land that cannot be grown by land cover crops with sloping land more than 10°. Without conservation efforts, gradually, the area used will experience degradation due to monoculture cultivation methods. The unavailability of data and conservation field testing in tropical date palm plantations makes it difficult for decision-makers and researchers to determine appropriate land conservation efforts. Therefore, this study aims to analyze the effect of one of the mechanical conservation

methods in the form of silt pits in date palm plantations that are cultivated in the tropics. Two experimental plots (with and without using silt pit) with an area of 88 m² each was designed at the date palm plantation in Blang Bintang sub-district, Aceh Besar Regency, Aceh Province. The parameters of natural rainfall, surface runoff, and erosion rates are measured, analyzed, and compared during the experiment. The results show that natural rainfall has a very significant effect in causing surface runoff and erosion rates that occur in date palm plantations. The application of the silt pit has been able to reduce the effects of surface runoff and erosion rates of 88.55%, 85.42%, respectively. A model for estimating erosion rates that occur on date palm plantations has also been developed with a reliable level of accuracy.

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Design Of Gain Scheduled PID Controller For Nonlinear Liquidlevel System

SheetalGawale,V.K.Jadhav, C.B.Kadu, P.S.Vikhe, S. M. Turkane

This paper exhibits the design of gain scheduling PID controller for controlling the dynamics of a nonlinear liquid level system. The gain scheduling PID controller controls the level of the water in the tank. The Ziegler-Nichol tuning technique used to tune the parameters of gain scheduling PID controller. Here the meta-heuristic methodology known as Firefly Algorithm (FA) for the optimization of error percentage and improving the accuracy is introduced. Our newly designed technique accomplishes an accuracy of up to 93%. The newly designed strategies utilize in this explore achieved using MATLAB/SIMULINK environment. Thus, the theoretical analysis and simulation are shown to confirm the effectiveness of the proposed methodology in the control system.

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The Universal Design Between Human Physical And Psychological Capabilities Within The Interior Spaces

Amany Mashhour Hendy

In light of contemporary developments that covered all fields, the companies struggle to acquire a broad base in consumers for the

products offered in the global markets. They depend on the tremendous technological development that contributed to the convergence of the nations and societies. And the designers sought to achieve the universal design that obtains a widespread among broad societal levels and segments, according to its ease of perception from all people with different abilities. The expansion of the application of the universal design includes the buildings' interior design to facilitate the interaction of individuals with the internal elements and to percept its details quickly. Therefore, the need came to define the extent to which the universal design principles can be achieved in the interior design spaces. And if it could deal with the variant human capabilities and whether its application in the buildings' interior may conflict with the fulfillment of different human needs. This research aims to clarify if it can provide the principles of the universal design that may contribute to achieving human comfort, psychologically and physically, in interior spaces, and that is through the analytical and the interpretative studies.

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A Fuzzy-Logic Based Signal Loss Model At 2.6ghz For Wireless Networks

Stephen Ojo, Victor Ojong Etta

The article presents an optimal signal loss propagation model developed at 2.6GHz with the use of fuzzy-logic which is used to primarily represent all measure of uncertainties and uncertain data spectrum thereby producing accurate results. Experimental data were collected across Cyprus at 2.6GHz and compared with three existing signal loss models. The fuzzy-logic signal loss prediction model was then developed and compared with the experimental data and with each of the theoretical empirical models, the newly developed model predicted signal loss with the greatest accuracy as it gives the lowest root-mean square error. The newly developed model is very efficient for signal propagation.

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Intruding Thermal Insulation And Teaching By Hand Concepts In Engineering Program Of Jordanian Universities

The engineering programs in most of the Jordanian Universities don't include the essential basic background to use the thermal insulation in the building and the philosophy of teaching by hand. Additionally, the private construction sector in Jordan doesn't have the vital information or the experience of using the thermal insulation concept in their constructions. This study aims to establish a roadmap for developing the engineering program in Jordanian Universities to intrude the concept of thermal insulation and teaching by hand philosophy. This will enhance the higher education institutions in the field of thermal insulation for engineering constructions in Jordan. The study will focus on establishing laboratories to receive the necessary equipment to improve the teaching by hands and modernising at least four courses mainly in the construction material and the heat transfer topics. These courses will be introduced in the civil engineering and the mechanical engineering curricula and built based on the Engineering courses. The study will, therefore, contribute to improve the quality of higher education and enhancing its relevance for the labor market and society. It will also initiate the awareness of thermal insulation into the Jordanian governmental and private construction sectors.

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74-79

Real Time Online Monitoring Of Solar Power Plants Voltage, Current, Power, And Efficiency To Smartphone, Web, And Email

Albert Gunadhi, Diana Lestariningsih, David Leo
Budi Teguh

Solar Power Plants is a generator that utilizes solar energy to produce electricity. However, the solar power plants needs to be improved optimization in the measurement of electrical quantities on power and efficiency that is still done with a multimeter and manual calculations. Measuring the solar power plants electricity needs to be done regularly so that every condition can be monitored properly. One effective and efficient way to overcome this is to use a realtime measurement system. This tool has a voltage sensor to read the voltage value of solar panel and a current sensor to read the current generated by solar panel. The Raspberry Pi 3 microcontroller is used as the main processor to get the value of solar panel electrical power and absorption efficiency from the processing of voltage and current values. The solar panel is used as a

source of electrical energy from sunlight stored in batteries. This tool also has a touch screen display connected to Raspberry Pi 3 to display solar panel data (voltage, current, power, and absorption efficiency) in numeric form and manage measurement data (intervals and data quantity) based on GUI (Graphical User Interfaces). The measurements of voltage, current, electric power, and the efficiency of solar panel yield an average error below 4%. The results of measurement data monitoring are displayed in graphical form through ThingSpeak cloud server that can be accessed via a smartphone and PC (Personal Computer). The measurement data also sent to the recipient's email in the form of CSV file so that the data can be viewed in tabular form through Microsoft Excel.

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80-86

Analysis Of Heavy Metals In Surface And Groundwater At Lashkergah City, Helmand – Afghanistan.

Niaz Mohammad Zahidi, Ahmad Ansari, Gulam Yahya Sargand, Jailani Achak

This study is meant to assess the groundwater and surface water of Lashkergah City; in this study, drinking water pollution in terms of Heavy metal pollution index (HPI) and Correlation analysis performed. The water samples collected from five wells and one sample from surface water during the autumn season (October 2014). The concentration of metals like (Cr, Mn, Fe, Ni, Cu, Zn, Cd, Hg, Pb, and As) was tested and determined by Inductivity Coupled Plasma Mass Spectrometry (ICPMS). For analyzing the standard data methods, the HPI model, and resultant data utilized. Drinking water samples ($n = 6$), the highest value of heavy metal pollution index $HPI = 96.82$ has been recorded from the Lashkergah city area. Correlation analysis data showed that the sources of heavy metals in surface and groundwater analyzed between metals such as; Chromium positively correlated with Hg ($r = 0.725801$) and negative with other heavy metals. Mn has strongly positive correlation with Fe ($r = 0.988553$) and Arsenic ($r = 0.909246$), but some correlation with Nickle ($r = 0.737467$), Zinc ($r = 0.664663$) and Pb ($r = 0.415797$). And negative values with Cu, Cd, and Hg. A negative correlation means there is some difference between source amounts of metals. Still, a positive correlation shows that it obtained from the same amount of solid wastes and air pollutants in the study area. Wells and surface water metal-containing concentration is different, because surface

water is directly contacted with wastes, air pollutants and used minerals than wells water, so it has less amount of heavy metals. Heavy metals like Cd, Hg, Pb, and As have bad impacts, and some of them are hazardous to all living things, especially to Human beings.

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Image Enhancement Of Foggy Images Using Hybrid Method Based On Dark Channel Prior

Er. Ashutosh Sharma, Dr. Nirupama Tiwari

The movement of atmospheric particles, which decreases contrast, changes color as well as atmospheric particles difficult to identify by human vision as well as some outdoor computer vision devices, will be used in images captured in hazy or foggy weather conditions. Image dehazing is thus an important issue and has been widely explored in computer vision. The task of image dehazing is to remove weather factors' impact to enhance the image's visual effects and to gain post-processing. We were using a pre-method of dark channels to dehaze images and NPEA to increase the image's naturalness or edge detection to detect edges.

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Role Of Artificial Intelligence In Automatic Traffic Light Detection System

Sarita, Dr. Anuj Kumar

In the era of high-end cutting edge technology, Artificial Intelligence (AI) serves as the backbone of intelligent & self-adaptive devices. AI has spread its root in almost every field by providing ease in the development of powerful, robust, and expeditious devices. These AI-based systems serve as a helping tool for Driver Assistance system (DAS) and Traffic Light Detection Systems (TLDS). These systems can be of great help to a visually deficient or a Colorblind person by generating alert messages and helping collision avoidance and saving the driver from any mishap. TLDS may also strengthen the mobility of visually challenged and old-aged. The TLDS stages can be categorized into four steps, preprocessing for noise removal, segmentation for region of interests (ROI) generation, feature extraction actual color, and shape detection. The Application areas for AI in computer vision and image processing are lane detection,

trajectory planning, motion detection, geo-location localization, traffic lights, and signs detection, etc. This study concentrates on AI-based TLDS tools/apps and videos. As a result of AI-based TLDS, the roads will be more mobile, energy-efficient, less collided thus saving human lives.

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Image To Image Translation Using Generative Adversarial Network

Boddu Manoj, Boda Bhagya Rishiroop

With the increasing potential of Deep fakes in the field of computer vision has made many toilsome tasks effortless. In this paper, we will be discussing one such task. We will demonstrate how we can generate a real like images that don't even exist in the real world. We will be implementing this with the DCGAN (Deep Convolution GAN) algorithm which is an extended network of GAN (Generative Adversarial Network). Although there are other algorithms available such as encoder and decoder DCGAN has demonstrated to be an incredible accomplishment in generating better quality images. Also, we have talked about the conceptual parts of GAN and examined our technique to make a DCGAN model. For training purposes, we will be using the CelebA dataset which consists of more than 200k faces of celebrities.

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Cloud Computing: Determinants Of Software As A Service (Saas) Model Adoption

Chatura Chinthana Gamage

Cloud computing is a cutting-edge technology that has been recognised by the organisations and individuals for a wide range of potential applications. Software-as-a-Service (SaaS), one of the cloud computing models, is a service which is provided at the topmost service layer, that receives computing resources and services from external providers and allow the remote use of business applications. Since the first appearance of the concept, few researches are dedicated to determining the drivers and complexities of adopting SaaS cloud computing services thus, the literature is limited on this topic. As more adopters are becoming familiar with the technology and implementing cloud computing in their business work, understanding what determines adoption decisions is essential for

future cloud technologies to be aligned with the consumer's needs. In this study, a research model is introduced based on the technology-organization-environment (TOE) framework to assess the determinants that influence the adoption of SaaS cloud computing services. This paper primarily aims to present the concept of SaaS service model and to critically evaluate the drivers and complexities for adopting SaaS cloud services. The results of the study will provide practical strategies not only for the organisations considering the adoption of SaaS cloud services, but also for the vendors supplying SaaS services.

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Airfoil Performance Due To Winglet Configuration On NACA 4412

Muhammad Agung Bramantya, Nicholas Christian, Gesang Nugroho

Unmanned Aerial Vehicle is one of many types of aircraft that growing rapidly these days for many uses from farm usage, military usage, and many more. To develop aviation technology in Indonesia, research is done to find a perfect winglet geometry for the airfoil NACA 4412 that used generally. Research is done with Computational Fluid Dynamics method, with ANSYS Fluent to find lift force, drag force, lift coefficient, drag coefficient, and lift-to-drag ratio. The results will be plotted in Microsoft Excel. From this research, it is shown that the usage of a correct winglet will improve wing performance. The usage of a spiroid winglet has the highest value of lift-to-drag ratio at 10° angle of attack, with 5.53% improved performance, but it lacks stability. For now, spiroid winglet is the best winglet for airfoil NACA 4412. It can increase the average performance by 2% - 3.92%.

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Artificial Neural Network And New Mathematical Approach To Solve Muti-Objective Linear Fractional Programming Problem

Khaled Elsharkawy

A new algorithm based on revised simplex method is designed to solve multiple objectives linear fractional programming (MOLFP), we put a condition for the feasible solution to be efficient that is at every iteration we check if each feasible point is efficient or

not. Our algorithm can be used to convert the multi-objective linear fractional programming problem into linear programming problem and hence solving it. A simple example is given to illustrate the theory of the proposed algorithm and a suggestion to the solution using artificial neural network.

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Enhanced Security Framework On Chatbot Using Mac Address Authentication To Customer Service Quality

Richki Hardi, Ahmad Naim Che Pee, Nanna Suryana Herman

The function of customer service includes serving customer complaints. The process is able to use as a control for customer satisfaction. The more consumers who are satisfied with the benefit of a product, the better the customer service will be. Currently, Chatbot has been widely used in companies to improve service and to simplify customer service. Its existence is beneficial in facilitating fast data access so that it can provide services to customers more quickly. Because of this easy access, companies are obliged to ensure that all devices they have are guaranteed security. Based on this reason, the researcher will increase the Security Framework on the Chatbot by using MAC address authentication which can only be accessed by the registered customer's hardware machine address, so that if it is accessed on a different hardware device (smartphone, laptop or tablet), then the chatbot menu will not be able to be run. MAC address authentication on hardware is expected to be the first stage to be authenticated by the system prior to software authentication such as hybrids such as matching name and password, unique code and email verification.

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Performance Analysis Of LMS Channel Equalizer For Sinc Pulse And Rectangular Pulse Low Pass Channels

Saurabh Shah, Ved Vyas Dwivedi, Jaymin Bhalani

In Digital Communication System, the requirement of high-speed data transmission achieved through the channel is most important. But in transmission, the data flow rate is reduced due to the Inter Symbol

Interference (ISI). For removing this ISI, we require a Channel equalizer. In this paper, we used the Least Mean Square (LMS) equalizer technique. LMS technique shows the convergence of weights with sampling instant and also compare the eye diagram before and after the adaptive equalizer. The adaptive LMS equalizer reduced the ISI and gives better performance.

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A New Modified Version Of Gauss-Seidel Iterative Method Using Grouping Relaxation Approach

Baher A. Haleem, Ihab M. El Aghoury, Bahaa S. Tork, Hisham A. El-Arabaty

Systems of linear equations appear in many areas either directly as in modeling physical situations or indirectly as in the numerical solutions of other mathematical models. The solution of the linear equations' system is probably the most important issue in numerical methods like the finite element method (FEM). Using the finite element method in modeling various structures, with either simple or complicated configuration of elements, in structural engineering became prevalent many years ago. There are two main types of solvers depending on whether the used method is direct or iterative (indirect) method. In contrast to the iterative techniques, the direct techniques provide almost exact solutions, however they are not convenient for some situations, including but not limited to huge systems of equations. In such situations, the iterative solvers are favored as they have privileges concerning solving speed and storage requirements. In addition, indirect solvers are simpler to program. This research focuses on using the Classical (Stationary) iterative techniques for solving linear systems of equations. The main objective of this research is to develop a new modified version of the well-known Gauss-Seidel (GS) iterative technique which is adapted to solving problems in structural engineering. The proposed technique remarkably outperforms GS technique regarding the required number of iterations and the convergence speed. In this paper, the differences between the direct and iterative approaches have been discussed, along with a quick overview of some of the methods underlying these two classes. Then, the idea and algorithm of the new proposed "Modified Gauss-Seidel" (MGS) technique have been elucidated. Afterward, the algorithm has been programmed and used to solve some 2D Practical Examples, besides using the conventional Jacobi and GS techniques.

Finally, the obtained results have been compared to assess the proposed MGS; it outperformed both Jacobi and GS.

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Posture And Activity Analysis For Patients In Rehabilitation

Dhruv Agarwal, Donna Thomas

Recognizing the patient posture and physical actions is the key focus on their rehabilitation to restore or enhance the functional and motor abilities of those with physical disabilities. In this paper; we focus on the gross motor skills in adults who are in rehabilitation from an injury and will present a method for recognizing their posture and activities using a sequence of RGB-D images. The shape features are extracted using the depth information in the frequency domain via spherical harmonics representation.

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Generation Gap In Hatimu Aisyah By Zurinah Hassan: A Matter Of Emotional Distance

Dr. Halis Azhan Mohd. Hanafiah, Associate
Professor Dr. Zaitul Azma Zainon,

This research aims to discuss 'generation gap' as a matter of emotional distance, as portrayed in the novel Hatimu Aisyah by Zurinah Hassan. The term 'generation gap' is usually associated with the difference in beliefs, thoughts, values and tastes of two different generations, particularly between the old generations and the younger ones. The differences thus cause difficulties in communication, inflict conflicts, and furthermore, may initiate emotional distance between the two generations. The research outlines three objectives to achieve, (1) to identify the characters conflicting with the issues of generation gaps in Hatimu Aisyah by Zurinah Hassan; (2) to classify causes of conflicts pertaining the issues of generation gaps in Hatimu Aisyah by Zurinah Hassan, and (3) to relate the issues of generation gap with social changes in Hatimu Aisyah by Zurinah Hassan. This research employs close reading method. The primary source is the novel Hatimu Aisyah by Zurinah Hassan, first published by Dewan Bahasa dan Pustaka in 1991. The secondary sources include journals, books, articles, references or other sources that enable further understanding on the issues highlighted in the primary source. To

clarify further on the issues of generation gaps, the research also employs the theory of Psychosocial Stages of Development by Eric H. Erikson. Erikson outlines eight confronting stages in one's life, namely (1) infant (basic trust vs basic mistrust), (2) toddler (autonomy vs shame & doubt), (3) preschooler (initiative vs guilt), (4) school-ager (industry vs inferiority), (5) adolescent (identity vs role confusion), (6) young adult (intimacy vs isolation), (7) middle age (generativity vs stagnation) and (8) older adult (ego-integrity vs despair). The results later indicate that there are four groups of people conflicting with the issues of generation gaps, each represented by Aisyah's mother (grandmother), Aisyah (mother), Jamilah, Latifah, Hamid, Aziz and Rohani (sons and daughters) and Azizah, Rodiah and Anisah (granddaughters). The causes of conflicts are due to perception of these generations on (1) the types of education they received, (2) the influence of modernization and (3) the decline of traditional customs. It is later clear that the more the younger generations accustomed to the social changes, the wider the gap would be expanded, thus the more possibilities emotional distance occur among the older generations who are still bound to the inheritance.

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Mediating Role Of Brand Preference On The Relationships Between Brand Cues And Brand Loyalty In Electronic Products

AlJohani, Majed Saad, Ahmad, Azhar

This study aims to investigate the mediating role of brand preference in explaining the relationships between brand cues such as brand name, country of origin and brand communication with brand loyalty in the context of electronic brands in the emerging markets. This paper strives to improve a model that extends the understanding of how brand cues identify consumers' preference towards brand loyalty. Accordingly, the study conducted a survey through quota sampling technique on laptop users in Saudi Arabia. A total of 800 questionnaires were distributed. The study provides insights into the multi dimension of brand cues in developing brand preference which would affect consumer brand loyalty. Also, the results confirm the significant effect of brand preference as mediator on the relationship between brand cues and brand loyalty. Hence, the study model contributes a new perspective for building reputable brands by obtaining consumers preference towards brand to increase brand loyalty. In addition,

this study distinguishes the mediating role of brand preference in different contexts and offers evidence for marketing success.

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Survey On The Applications Of Artificial Intelligence In Cyber Security

Shidawa Baba Atiku, Achi Unimke Aaron, Goteng Kuwunidi Job, Fatima Shittu, Ismail Zahraddeen Yakubu

the rise in cyber attacks has overwhelmed the monetary resources and human ability to analyze and combat every new form of cyber threat in the cyber security industry. With the increasing digital presence, there is a large amount of personal and financial information that should be protected from cyber attacks. In fact, cyber attacks can ruin the reputation of an organization or letdown the organization completely. This research examines the use of AI in the enhancement of cyber security. Recent developments in artificial intelligence are transformational and have exceeded the level of human performance in tasks such as data analytics. The study adopted the thematic literature review method, and data were sourced from Google scholar, science direct, research gates, academia, and others. The investigation revealed that application of AI in controlling cyber attack has advantages and disadvantages; however, the advantages outweigh the disadvantages. This researcher discovers that with the speedy and efficient technology required to operate AI systems, they are likely to improve the protection of customers and businesses in the cyberspace. This is proven by the increasing deployment of AI engines rather than conventional scanning engines in cyber security.

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Drilling Modelling Using Computer Simulation

Nguyen Thi Anh, Tran Thanh Tung

This paper presents an approach method to construct of finite element model of drilling. The purpose of this study was to proved the capble of computer simulation method through research the drilling. In this paper a drilling model was carried out using the Ls-Dyna software base on finite element technique. The simulation results will be compared with experimental test . The result of the model assures the exactly of proposed method and

proved that numerical method is a practical approach to drilling problem.

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A Comparative Analysis Of Face Recognition Models On Masked Faces

Yalavarthi Bharat Chandra, Gouru Karthikeya Reddy

Face recognition systems are among the widely used biometrics in fields such as surveillance, access controls, attendance, forensics and other security purposes. Due to current Covid-19 crisis almost everyone can be seen wearing a mask in public. This change can be very challenging for existing facial recognition systems and can make them less effective. A face mask covers significant portion of the face making facial recognition systems having less face features to recognize and on top of that face masks can also add significant noise to the image. As wearing face masks is going to be new normal it is important to understand and study how current state of art face recognition models perform in recognizing masked faces. We did a comparative analysis on four state of art deep learning models which are widely used in this field 1)VGGFace 2)FaceNet 3)OpenFace 4)DeepFace. The analysis is made on face verification task on RMFRD dataset which is largest real world masked face dataset available. We compared the models on various metrics like error rate, accuracy ,precision, verification time.

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Smart Residential Buildings And Its Effect On Reducing Energy Consumption With The Approach Of Energy Consumption Optimization

Mahdi Mohkam

Due to the scarcity of energy resources and the high cost of production and transmission, human beings are always looking to optimize energy consumption so that they can pay the lowest cost while using all the tools that need to consume energy. Consumption optimization is not only economically beneficial to the consumer but also beneficial to production units and the environment. Equipping residential buildings with smart equipment is a solution to this problem, the implementation of which can be costly at first, but in the long run can reduce many economic costs and environmental pollution. Smart control

systems have high flexibility and can be easily adapted to different needs. The smart management system, using the latest technologies, is the percentage that creates ideal conditions, along with optimal energy consumption in buildings. Therefore, in this paper these systems examined, and we have tried to examine how to control and reduce electrical energy. In this regard, two optimization algorithms have been used to reduce energy costs, the results of which have been compared with each other. There is now a smart control tool that allows the consumer to schedule their home appliances on a daily or weekly basis while using them to pay less for non-peak times. Energy hub is a concept that has recently been introduced in energy systems integrated with multiple energy carriers. Specifically, it is the central energy hub in which all the activities related to a system, including production, storage and energy consumption in the application equipment are determined. In this paper, the YALMIP toolbox of MATLAB software is used in energy efficiency optimization with the aim of reducing the costs of fossil fuels by considering the production capacity of a photovoltaic production unit. With this toolbox, the right time to turn on each of the appliances is determined according to the practical limitations of each of them, and the most possible use is made of the photovoltaic unit that produces clean energy.

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PERFORMANCE ENHANCEMENT THROUGH COMMUNICATION OFFLOADING FOR ENERGY EFFICIENCY ON MOBILE CLOUD COMPUTATION

NOSHARWHAN ADIL, PRINCE WAQAS KHAN, YUNG-CHEOL BYUN

RECENTLY, THERE HAS BEEN AN ENORMOUS INCREASE IN MOBILE DATA USAGE WITH WIDESPREAD SMARTPHONE PROLIFERATION SIMILAR DEVICES AND THE GROWING POPULARITY OF VIDEO STREAMING SERVICES. CLOUD COMPUTING IS THE STRUCTURAL DESIGN IN WHICH VIRTUAL MACHINES, CLOUD SERVERS, HOSTS, AND TRADERS PARTICIPATE TO EXECUTE ANY JOB ON THE CLOUD. THE MIGRATION OF THE VIRTUAL MACHINE IS THE MAJOR PROBLEM THAT HAS BEEN EMPHASIZED DURING THIS SECTION. BECAUSE OF THE OVERHEAD OF VIRTUAL MACHINES, THE TASK'S EXECUTION TIME IS INCREASED. INFORMATION AND COMMUNICATION TECHNOLOGY HAVE EMERGED TREMENDOUSLY IN THE PAST FEW

YEARS, MAINLY DUE TO THE INTRODUCTION OF SMARTPHONES. HOWEVER, LIKE ITS PREDECESSORS, THE NEW TECHNOLOGY CAME WITH ITS LIMITATIONS AS WELL. THE HANDHELD GADGETS WE CALL SMARTPHONES FACE SOME SEVERE CHALLENGES IN PERFORMANCE (COMPUTATION), STORAGE, AND ENERGY. FIRST, TWO CHALLENGES ARE SOMEHOW ELIMINATED BY THE INCREASE IN PROCESSING POWER AND IMPROVEMENT IN OPERATING SYSTEMS. ENERGY MANAGEMENT IS ONE OF THE MOST DEMANDING PROBLEMS IN SMARTPHONE. THIS RESEARCH AIMS TO TACKLE THE ISSUE BY USING THE CLOUD COMPUTING CONCEPT. THE PRIMARY FEATURE OF SMARTPHONE IS TO COMMUNICATE. THE LARGER THE COMMUNICATION IS, THE HIGHER WOULD BE THE ENERGY CONSUMPTION. IN THIS RESEARCH, WE PROPOSE A NOVEL APPROACH FOR OFFLOADING, AND THIS METHOD IS THE RIGHT SOLUTION TO RESOLVE THE ENERGY CONSUMPTION ISSUE FOR COMMUNICATION-INTENSIVE APPLICATIONS. TO DEMONSTRATE OUR PROPOSED METHOD'S EFFECTIVENESS, WE PERFORMED DIFFERENT ANALYSIS TESTS.

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Soil Permeability Comparison By Laboratory Tests: Baghdad City

Wafaa Fadhil Abbas, Haitham Kadhim Dakheel, Falah Gaser Falah

Intermediate part of Iraq and symbolizes the first governorate from the eighteen governorates of Iraq in area called of Baghdad City. Permeability in Baghdad city is the meaning property that effects on the construction's constancy, then, the research is focused to evaluate the permeability for (cohesion less soil). Because of the soil morphology of Baghdad city, numerous disturbed samples at different depths were taken indicative of locations covering the region in Baghdad governorate. Four sites of soils in Baghdad city are certain. These sites are categorized consistent with the values of effective diameter to (A, B, C and D). The coefficient of permeability (k) is valued by using the constant head permeability test when the soil samples are arranged in dry natural, then distribution the soil within the permeability shape at changed density by using raining soil (at different void ratio), these tests are recurrent at different coefficient of uniformity (CU). The mathematical representation of the coefficient of permeability data are represented by empirical equation. The relapse analysis was performed by using the statistical package and

the results of the analysis provide the empirical equation for Baghdad soil. The empirical equation (12) compare with the Poiseuille's equation (11), the results of the empirical equation are conventional as compared to Poiseuille's equation. The results got from the present empirical equation (12) are compared with the field results of the four arbitrary sites which indication a good matching.

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Indoor Air Quality Between Textiles' Treatment And Human Health

Amany Mashhour Hendy, Dalia Kamal Bakr

Indoor air quality is a global demand and one of the most important benefits in achieving the principles of sustainability. Textiles used in interior spaces such as beds' and seats' covering, , curtains, carpets and interior decoration as well as thermal insulation or protection from moisture considered one of the reasons for indoor air pollution. These textiles were treated by poisonous chemicals in dyeing, printing and finishing processes to impart a required functional property to the fabric such as making cotton fabrics wrinkle free, flame retardant, water repellent, waterproof, anti-static, anti-bacterial.. etc. Interior textiles were subjected to different types of physical and chemical treatments in which these treatments may be emitted in indoor spaces due to factors of air movement, temperature rise and friction. Thus, the intensive usage of these textiles within the indoor spaces may affect indoor air quality. Research problem can be stated in the modern technology of textile treatment used in interior spaces which has a detrimental effect on indoor air quality. Also, are there some methods that must be followed to reduce pollution emitting from these fabrics? and Are there some fabrics should be forbidden in some internal spaces which may depend on the internal space itself, number of ventilation times inside the space and activities that are practiced within the space? This research aims to determine the amount of pollutants that may be spread in the internal space resulting from the uses of treated textiles through surveys and analytical studies.

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The Physical Workload Analysis By Cardiovascular Load (CLV) Method For Administration Employees

A workload adjustment is an important factor in any type of work. Adjustment of physical workload must be maintained in balance to make employees not burnt out by excessive workload when carrying out their activities. Excessive workload can lead to decreased work productivity, work motivation, work injuries, and reduced concentration. This service company is one of the state companies run in shipping and logistics services businesses. It must be able to control the workload to make it appropriate for its employees. The service company owns many subsidiaries throughout Indonesia, although difficult to evaluate, this company must be able to balance the physical workload in its entire company. One example from the branch of Malang Raya showed an unbalanced physical workload. Therefore it is necessary to measure the workload in this study by applying the Cardiovascular Load (CVL) Method. This method is used by several previous studies to measure the physical workloads. The measurement instrument to gauge the physical workload is an oximeter. Participants in this study were the employees with a total amount of 30 people. It conveys an average result of 40.75 % from 30 employees taken of the branch of Malang Raya. This result measurement categorized as high classification of workload so that improvements are needed to help in balancing the physical workload which experienced by most of its employees. From the workload measurement, this service company should consider the evenly distributed tasks or workloads over each employee in this company, especially for those who have experienced physical overload. In addition, it is necessary to consider additional employees at branches of service companies whose working conditions had reached the workload limit. As for the next researcher, it can be analyzed to see the mental workload and employee needs for each branch of this service company.

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DETECTING MALICIOUS APPLICATION USING BEHAVIOUR ANALYSIS OF MOBILE SENSORS

Sukhdev Mathur, Akshi Kumar

Smartphones have become an inseparable part of every individual globally and the users have become increasingly dependent on these multi-functional gadgets that help in our day-to-day activities. But a user never knows what

is going on inside his phone. He cannot decipher seeing a mobile application, whether it has any malicious behaviour by its appearance for any downloaded application from play store, or any third-party store. That app may be transmitting your data to a remote server without your knowledge. Even Google play store sometimes cannot detect these applications due to code obfuscation techniques. This research analyses mobile sensors' behaviour in malicious and benign mode and tries to detect if any application performs any malicious activity. Sherlock dataset has been used for the behavioural analysis by applying four supervised machine learning techniques to detect unusual behaviour and comparison has been made. We have taken two feature sets, one containing only application features, and others containing global features along with application features. We have used the F1 score as a deciding parameter for the best performance. XGBoost performs best with an F1 score of 98.82% and 98.86% on applications dataset and global dataset, respectively.

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Credit Card Fraud Detection Using Supervised Learning Approach

Rashmi S. More, Chetan J. Awati, Dr. Suresh K. Shirgave, Dr. Rashmi J. Deshmukh, Sonam S. Patil

Fraud is a set of illegal activities that are used to take money or property using false pretenses. Transaction fraud using credit card is one of the growing issue in the world of finance. A huge financial loss has significantly affected individuals using credit cards and furthermore vendors and banks. One of the most successful techniques to identify such fraud is Machine learning. This paper proposes a fraud detection algorithm using Random Forest which can help in solving this real world problem. The accuracy of detecting fraud in credit card transaction is increased using this proposed system. The proposed system also uses learning to rank approach to rank the alert that effectively reduces the number of alert generated by FDS thereby providing investigator a small reliable fraud alerts.

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Mitigation Of Harmonics In Power Network With Real Time Data Based On Etap

The emerging development of non - linear loads such as power electronic devices in industry is responsible for injecting harmonics into the electrical network. The static power converters like Variable Frequency Drives (VFD) are mostly used in industries for energy efficiency and process control of an induction motors. This situation cultivates deterioration of voltage and current waveform (i.e.) usually VFD drawn the current from the utility that's not same as applied sinusoidal voltage waveform. This paper aims to build a simulation model of gas cooling plant to evaluate characteristics of harmonics at different case studies with help of Electrical Transient and Analysis Program (ETAP). Generally, harmonic analyser in ETAP, studies the power network and is subjected to harmonic current injection and harmonic voltage at multiple frequencies and real time network is elucidated from voltage and current harmonic distortion at dominant harmonic frequencies individually. In this project, the harmonic pollution is analysed in ETAP and mitigation techniques are recommended which are that single tuned filters should be installed for worst case condition and simulation results of ETAP shows that harmonic voltage and current are well within the limit value as per IEEE 519 -2014 standard and provides theoretical lookout for the improvement of power quality in the power network.

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Thermal Performances Of Two Phase Closed Thermosyphon With Different Inclination Angles

Shrikant V. Pawar, Abhimanyu K. Chandgude,

Thermal performance of a two phase closed thermosyphon (TPCT) is analyze for different inclination angles. TPCT is circular pipe and filled with acetone. A Simple circular pipe made up of aluminum and it tested for heat input of 50W to 300W at a different inclination angle 30, 40, 50, 60, 90. TPCT used with 30% filling ratio. Thermal efficiency of TPCT and the mean temperature difference between evaporator and condenser ($T_e - T_c$) determined and plotted with 30 % of filling ratio. Whole analysis shows that inclination has no significant effect thermal performance of TPCT.

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Spatio-Temporal Analysis Of Public Transportation System Using Static Transit Accessibility Methodological Framework

Anita Prajapati, Nawraj Bhattarai, Tri Ratna Bajracharya

This paper analyses the public bus network of the valley, its service coverage, and the share of the valley population with suitable access to the network within a given distance and time. It also analyses spatial relationships to public transport access in the valley. The Spatio-temporal access with the public transport is analyzed using General Transit Feed Specification (GTFS) data set and GIS network analysis. The GTFS dataset is developed for the valley using data obtained from the survey. The result shows that 39% of the valley population can access public buses within 500m. It is found that the population-weighted average distance to the nearest bus stop is 894m and takes 16 minutes in the valley. This spatial map categorizes the area with different levels of public bus access highlighting the area needing investment in relation to the existing traffic congestion in the valley.

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Video Magnification For Fingerprint Using Eulerian

Sachin M. Karmuse, Dr. Arun L. Kakhandki

The state-of-the art fingerprint biometric systems are potentially vulnerable to spoofing attacks by means of artifact fingerprints that can be fabricated using low-cost, widely-available resources and methods. As most to date biometric applications require cost intensive hardware for the capture device, it would be beneficial to utilize the resources provided by the widely spread Smartphone devices in order to develop a fingerprint capture solution that would include anti-spoofing countermeasures in terms of Presentation Attack Detection (PAD). This article examines the applicability of Eulerian Video Magnification method to emphasize the heartbeat-related color variations of the genuine living fingers as a means of distinguishing between genuine and artifact fingers.

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The Effect Of Naoh Catalyst On The Manufacture Of Biodiesel From Crude Palm Oil Using Transesterification Reaction

Netty Herawati , Mardwita, Muhammad Rizki
Ardianysah

Biodiesel seems to be an energy that has bright prospects and future, because Biodiesel is non-toxic, biodegradable, essentially free of sulfur and carcinogenic benzene, produced from renewable materials, recyclable sources, does not add significantly to the accumulation of greenhouse gases. In general, biodiesel is made from transesterification reactions, i.e. alcohol reactions with triglycerides form methyl esters and glycerol with the help of base catalysts. In the manufacture of biodiesel, crude palm oil (CPO) raw materials are obtained from PT. Sinar Mas Sejahtera in Prabumulih, South Sumatra. This research was conducted by reacting the comparison ratio of CPO: Methanol (in this study the ratio is 1: 2, 1 : 3 and 1 : 4) with the help of NaOH catalysts (in this study catalysts used 1%, 1.5% and 2%) temperature of 70oC for ±3 hours. Through this experiment, biodiesel yield was obtained at cpo variation 1: 4 with NaOH catalyst of 1.5% by 70%. The final results of this study, from CPO and Methanol varying can be concluded that not all parameters correspond to SNI where the density obtained is 0.8387 while SNI (0.850 – 0.890 gr/ml). For viscosity it meets the standard of 4.8 – 5.5 cSt with SNI (2.3 – 6.0 cSt).

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Impact Of Research Methodology In Sustainable Transport On Tier 2 Area.

Monicaba Mahendrasinh Vala, Dr. F S Umrigar, Dr.
Laxmansinh B. Zala

In India, all Tier -1 cities have METRO Rail and/or BRTS as a mass rapid transport system. Very few tier-2 cities have MRTS and currently they are depending on city bus service for public transportation needs. Even public transportation in these cities is depleting and expenditure is increasing. For providing more service to people and coverage area each year system expansion is done and basic cost is not recovered by operating the Transit service from normal fare (direct income). For this subsidy is given to ULB. In many case the indirect income is more than the direct income. For this improving the level of service is important to maintain and/ or improve the transit ridership. MoUD has developed the service level benchmark in 2008

based on expert's opinion. In that quantitative criteria are based on the performance of the transit system and qualitative criteria are not consider. Also the users' and operators' perspective may differ from the expert opinion. Hence it's required to measure the transit service attribute based on users' perspective to know the actual demand/exaptation from the people. Operators are driving the transit service based on the revenue generation and because of this they neglecting to enhance the important service attribute. Also it's important to consider the operators' requirement to maintain the transit service. Therefore, improving existing service levels of public transport systems is required, in order to counter the challenges of rising trends of private vehicle ownership and environmental pollution. Improved level of service for public transit will improve user perception (i.e, customer satisfaction) of existing transit service quality amongst captive riders, choice riders and potential transit riders.

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A Comparative Study On Low Power Adders For Wearable Devices

Mahesha Y, Priya Seema Miranda, Jayalakshmi K P, Keerthana Bhandarkar, Aniceta Priya Dsouza

An adder is a device used to perform arithmetical functions in electronic calculators and digital instruments and has a wide range of applications. The major factor involved in driving all these instruments is Power. As the power consumption of a device increases, the life span of device reduces. In order to maintain longer life of the device, it is necessary that the power consumption is less. A device is considered efficient when it consumes low power and has high speed. The purpose of this study is to investigate the power and delay product of the adders. The adders that have been compared are all of 12 bit and have been synthesized and simulated using the Cadence software. The outcomes of different properties obtained from the synthesis reports and simulation of the circuit helps in finding out the adder with minimum power and delay product. The adders that have been compared in this paper are Ripple Carry Adder (RCA), Carry Look Ahead Adder (CLA), Carry Increment Adder (CIA), Carry Select Adder (CSA) and Kogge Stone Adder (KSA).

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Performance Of Rice Husk Screw Feeder For Fixed Bed Combustion

Tamaria Panggabean, Tineke Mandang, Leopold Oscar Nelwan, Wawan Hermawan

The accuracy and smoothness of the husk fuel feed in a fixed bed combustion furnace is very important in improving the performance of the husk combustion. In this study, a screw feeder was designed to feed rice husks into the combustion chamber, according to combustion requirements smoothly. The feeding mechanism used is that the husk from the hopper is fed into a screw feeder which is rotated by an electric motor. The husk feeding rate can be regulated by controlling the rotational speed of the electric motor using an inverter. For smooth feeding, a tapered outer diameter screw was used with the screw outer diameter enlarging from 48 mm at the inlet to 69 mm at the outlet. The husk feeding performance was tested in: 1) the non-combustion conditions and 2) the combustion conditions in a fixed bed furnace. The results of the performance test without combustion showed that the feed rate of the husk increased linearly with the increasing of the screw rotating speed. The husk feeding rate at 10-35 rpm screw rotating speed was 2.85-10.91 g/s. In the combustion test, the screw feeder could feed the husks to the combustion chamber smoothly. The temperature of the combustion chamber increased as the husk feed increases. There was no significant increase in temperature in the screw feeder and no burning of husks in the screw feeder.

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Products And Movie Recommendation System For Social Networking Sites

Debajit Datta, T. M. Navamani, Rajvardhan Deshmukh

Recommendation systems are an integral part of information filtering system in data science, that are widely used in order to identify the pattern a user would likely choose on the basis of the previous choices of the user as well as from studying the pattern in which others have chosen. For a fact, the recommendation can never be a cent percent correct at providing recommendations to the user but can be close enough to please them to a certain extent. Thus, the same is widely used in the industries these days to get higher profit and have a good hold in the market. The data scientists of every company design some algorithm that studies the information from the social network and clusters the data. There can be a

single algorithm for classification like k-Means clustering or Hidden Markov model or can be done by bagging and boosting techniques. With this technique of displaying the movies or products into the profile of a particular customer, they not only increase their business but also enhances the customer experiences but there are several issues related to the standard techniques like the cold start problem, shrill attack, etc. thereby increasing the scope of research in this field. This work deals with both Collaborative Filtering and Content-Based Filtering to form a product and movie recommendation system for the social networking sites that shows the effectiveness of collaborative filtering and portrays the challenges faced by content-based filtering.

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Analysis And Design Of A Fuzzy Controller And Performance Comparison Between The PID Controller And Fuzzy Controller

Md Tanvir Ahmed

The paper presents fuzzy control performances by using some different parameters with comparison between fuzzy controller and PID control. Fuzzy control system is a mathematical system which is based on fuzzy logic in contrast to logic. It is broadly used in machine control. For example, the two input variables are "brake temperature" and "speed" that have values defined as fuzzy sets. Based on the simplified model of the system, simulations are carried out for analysis and design this with using some parameters. To study the fuzzy controller system simulations has been carried out in MATLAB 2016 environment. The results confirm improvement of the performance using the developed fuzzy control system.

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Geographic Information System-Based Mapping Of Malnutrition Children In The Philippines

Racquel L. Pula, Rosanna A. Esquivel

The research focused on mapping the malnutrition cases in Philippines specifically in the City of Cabanatuan using the Geographic Information System (GIS). In this study, data were collected from Day Care Centers and Elementary Schools across the eighteen barangays of District I of Cabanatuan City. The

barangay attributes were also considered in this study. The study was cross-sectional in design and the data obtained were analyzed using the QGIS 3.10 coruña version. GIS revealed that Barangays Palagay and Balite have the highest malnutrition density with respect to land area which ranges from 8 to 10 students per hectare, while Barangays Talipapa, Claudillo, Sto Niño and Pamaldan have the highest malnutrition density with respect to population which ranges from 57 to 64 malnutrition cases per 1,000 population. Recommendations include increasing the number of health workers in areas with high malnutrition density per hectare, and refocusing nutrition programs in areas with high malnutrition density per population.

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The Cultural Lesson Between (Dialectic Enlightenment) And (Mythologies)

Haider Fawzi Muhammad Ali Wasmi

The research attempts to provide a functional structure based on the principle of cultural diversity, and between the participating osmosis areas that dealt with the cultural lesson, and lit up many institutional (cognitive) and (cultural) rebellions. It also examines the effects of the procedural presentation of cultural criticism by examining two blogs among the most important cultural symbols in the cultural lesson if they are not really the most important. He intends to make an implicit comparison between two cultures (German and French), and review the reception of critical theory and work circles within its borders, and the resulting approaches and methodologies between (the Enlightenment Controversy) and (myths), then reveals the burden of Marxist theory of structural structure as an inevitable consequence of the theory's developments within the curricula closed to its structure and openness On the self. Controversy over Enlightenment (philosophical fragments) and the concept of the term the book is considered one of the most important sources of the cultural lesson, if not the most important. Depending on the nature of the material and the treatment, we can divide the book into two main sections, after two presenters to the authors, one of which is written (1944) and the addition of a text in the year (1947). It represents the first edition of the book and the second (1969) through an introduction to the Arabic translation composed (1).

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The Effects Of Aerofoil Profile Modification On A Vertical Axis Wind Turbine

Amit Kumar Thakur, Ajay Kumar Kaviti, Jayashri N Nair

This study focuses on optimizing the NACA-0015 aerofoil that would be easily used in wind turbines on a vertical axis. The profile changes considered are the amalgam of both the inward dimple and the Gurney flap on the NACA-0015's higher pressure surface. For optimization, a total of seven forms of modifications were considered. Data generated from the aerofoil profile analysis of computational fluid dynamics are used for optimization. To ensure that the optimization is decisive, CFD simulations are validated against existing experimental results.

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An Overview Of Renewable Energy In Southeast Asia: Current Status And Future Target

Erdiwansyah, Mahidin, R. Mamat, Muhammad Zaki, M.S.M. Sani, Hamdani, Muhibbuddin, K. Sudhakar, Jamsari Alias, Norazila Mat, N.A.C Sidik

In the latest years, nations in Southeast Asia such as Singapore, Malaysia, Thailand, the Philippines and Indonesia have experienced significant economic growth. The tropical climate in the region enables the potential for using renewable and sustainable energies. This discussion provides an overview of the Southeast Asian region's renewable energy resources like solar energy, wind power, geothermal, hydropower, biomass, by considering their national resource potential. This study also discusses the present and future energy demands, renewable energy targets and economic perspectives. However, the energy potency cannot be managed optimally, because it is hampered by several challenges to fulfil the nations' renewable energy's target. The present reorganization of traditional energy utilities to introduce renewable energy systems will have a tremendous effect on the region's social, political and environmental circumstances.

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Exploring Dimensions Of Defense In Cyber Space-A REVIEW

INTRODUCTION: IN THIS MODERN AGE, THE WORLD IS ADVANCING IN TERMS OF CONNECTIVITY THROUGH NEW NETWORKING PARADIGMS. THERE WILL BE GROWTH IN VOLUME, VARIETY AND VERACITY OF THE CYBER DATA ALONG WITH DEVICES, AND IT IS PREDICTED THAT THIS COUNT WILL REACH 200 BILLION BY 2020. DIGITAL CRIMINALS LARGELY DEPEND ON DECEIT STRATEGIES TO EXPLOIT WEAKNESSES AND MASQUERADE THEIR IDENTITY WHICH IN TURN ARE PESSIMISTIC ABOUT CYBER DETERRENCE. THIS ARTICLE PRESENTS A REVIEW OF CYBER CRIMES - METHODS AND WAYS TO TACKLE THEM WITH A BRIEF REVIEW ON CYBER FORENSICS. METHODOLOGY: SCOPUS DIGITAL LIBRARY AND IEEE EXPLORE WERE SEARCHED FOR RELEVANT ENGLISH PAPERS FROM 2019 TO REVERSE CHRONOLOGICAL ORDER. RESULTS AND CONCLUSION: THERE IS AN ALARMING EMERGENCY TO DESIGN NEW TECHNOLOGIES THAT CAN EFFECTIVELY WITHSTAND ANY KIND OF CYBER-ATTACKS. THE NEWLY DEVELOPED SECURITY PROTOCOLS SHOULD BE DYNAMIC ENOUGH TO HOLD THEIR GROUND AGAINST THE EVER-CHANGING NATURE OF CYBERCRIMES.

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The Influence Of Visual Media And Learning Style On Early Reading Ability Of Children Of Kindergarten In Gorontalo

Pupung Puspa Ardini, Asra Biahimo, Rusmin Husain,
Hijrah Syahputra

This study was aimed at finding out (1) the differences in early reading ability of the children taught using flashcard visual media and those taught using letter poster, (2) the differences in early reading ability on children with visual learning style treated using the flashcard media and letter poster media, (3) differences on early reading ability of children with kinesthetic learning style treated using flashcard media and letter poster media (4) interaction of early reading ability with visual media and children learning style. This study was implemented on TK Al Ishlah Gorontalo. The number of sample in this study was 48 students of Group B kindergarten selected using random sampling technique. This study used factorial experiment 2 x 2. The data were analyzed using two pathways ANAVA followed by Tuckey test. This study revealed: (1) there were differences in overall early reading ability between students with different learning style,

where the $F_{count}=5.259$ and $F_{table} = 4.20$ (2) There were differences between learning style on early reading ability in children, where the $F_{count}= 4.720$ and $F_{table} = 4.20$ (3) The difference ability of Flash card media and letter poster media $Q_{count} \leq Q_{table}$, it was obtained that $Q_{count} = 5.63$ and $Q_{table} = 2.037$. (4) Interaction between learning media and learning style toward the early reading ability was calculated using $t_{count} = Q_{count} = 2.39$ and $Q_{table} = 2.037$

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The Era Of Big Data: A Thorough Inspection In The Building Blocks Of Future Generation Data Management

Zeinab Lashkaripour

Data as one of the main assets in any organization, is generated at a constantly increasing pace from various sources of network devices such as smart appliances and embedded sensors. This high pace in device expansion and data generation indicates the dawn of Big Data (BD) era. Thus, this paper is aimed at providing an extensive knowledge on this ever increasing pool of data. Accordingly, a variety of events leading to BD and definitions given for it through the years are demonstrated and analyzed based on different factors. Furthermore, the infrastructures and architectures for storing, processing, manipulating, and analyzing such large-scale scheme-free datasets are compared with respect to criteria such as usage, performance, flexibility, scalability, and complexity. Moreover, for better understanding of BD, the related technologies named Cloud Computing (CC) and Internet of Things (IoT) and the broad sources of data generation are also presented. Finally, the challenges that rise beside all the gains are discussed and to conclude, a novel summarize of the issues in CC, IoT, and BD is also given. This paper would be of great value to those who seek to study, research, and work in this scientific field and demand a full dimensional perspective.

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Potential And Utilization Of Biomass For Heat Energy In Indonesia: A Review

Mahidin, Erdiwansyah, Muhammad Zaki, Hamdani, Muhibbuddin, Hisbullah, Rizalman Mamat, Herri Susanto

Biomass is the world's most commonly used source of renewable electricity today. It is used primarily in strong form and, to a smaller degree, oil fuels or petrol. In contemporary times, the use of biomass for energy generation has risen at only a small pace. Biomass is the primary source of energy in Indonesia. Biomass is used to fulfil a range of energy requirements, including producing electricity, heating households, fueling cars and supplying industrial equipment with a heat process. Biomass potential includes waste from timber, animals and plants. Among biomass power sources, fuelwood might be the most important since it accounts for a large 17% share of Indonesia total power manufacturing. The complete biomass energy potential in Indonesia is about 38 million tons of oil equivalents (Mtoe). The quantity of biomass that can be used in Indonesia is roughly 32 Mtoe. The potential for electrical manufacturing from usable bioenergy sources in 2012 is 83 MW and corporate revenue, representing more than 350,000 jobs. This research shows that the potential for climate change mitigation and power sustainability in Indonesia is significant for biomass energy.

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Civil Engineering Students' Conceptual Understanding On Centrifugal Force Implementation Through Geometrical Design Of Inter-City Road In Indonesia

Syaiful Syaiful, Juang Akbardin

The development of inter-city road infrastructure development in Indonesia has already increased sharply along with economic growth and regional development. The geometrical design of the road has already been designed by the standard provisions and needs of the functions of the road services built. The application of physics concept in designing geometrical platform as a function in applying theoretical physics to the standardized-geometrical design. A centrifugal force in the physics concept is a basic principle in designing geometric horizontal alignments of the road. Conceptual understanding of engineering students in term of designing geometrical design perspective, has been based on the implementation of centrifugal force in the case of work on vehicles ride in the road bends. The implementation has ever been based on variables which were determined by understanding to apply logic of thinking constructively. The variables are determining the students' conceptual understanding on the parameters of the

centrifugal force equation which is working on the bend. The analytical method which is regarded on the categories of parameter functions used, is the approach of implementing centrifugal force. Civil engineering students' conceptual understanding on geometrical designs through the implementation of centrifugal forces are able to increase the ability of analyzing process on the functions of comfort and driving safety. These procedures are collocating with reducing the effect of greater centrifugal force. Moreover, the application is also able to reduce accident-prone areas due to the influence of magnitude-centrifugal forces on the geometrical design of the road.

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Tribological Characteristics Of Al6061 Reinforced With Granite Particulates

Koli Gajanan Chandrashekhar, Dr. D. P. Girish, A.A. Katkar

This study mainly focuses on synthesis of AA6061 composites reinforced with granite particles using stir casting technique. The microstructure of Al6061 alloy and Al6061-granite composites were studied using scanning electron microscope. Friction and wear behavior of Al6061 alloy and Al6061-granite composite were evaluated under varied loads and sliding velocities using tribometer in accordance with ASTM-G99 standard. SEM of composites reveals that distribution of granite particles is homogenous in matrix material. Friction and wear tests demonstrate addition of granite particles in Al6061 alloy has led to fall in wear rate and friction coefficient. Rise in the applied load enhances the wear rate and drops the friction coefficient for all the combinations studied. Increase in sliding speed increases both friction coefficient and wear rate. However, at all the loads and sliding speed, Al6061-granite composite displayed lowest wear rate and friction coefficient.

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Iot Empowered Smart Stick Assistance For Visually Impaired People

Ayesha Ashraf, Saba Noor, Muhammad Arslan Farooq, Asad Ali, Ahmad Hasham

Eyes are foremost blessing to enjoy the nature. Blind people face lot of hurdles in daily life. Blind people needs to depend on others to

perform their normal life activities. Information technology brings revolution in every field of life with emerging artificial intelligence, internet of things, wireless sensor networks etc. Internet of Things is evolving technology that digitally interconnect the humans, machines, sensors and everything for automation. It transform manual processes to intelligent automated processes with the help of artificial intelligence. In this research, we have developed a sensitive smart stick empowered by Internet of Things to support the visually impaired peoples. Smart stick is incorporated with ultrasonic sensor and buzzer to sense and alarm in case of any hurdle. Android application is developed with smart stick to generate the important notification and forward to registered numbers along with GPS location. This solution is cost effective and implemented with state of the art hardware.

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Residual Shear Strength, Slake Durability And Mineralogy In Clay Shale And Rock On Ungaran - Salatiga Toll Road, Bawen, Semarang

Bambang Pardoyo

The Bawen - Semarang Toll Road, located in Central Java, is a road that connects Bawen District to Semarang Regency. Geologically, the location of the Indonesian territory, which is traversed by three main tectonic plates, namely the Europe-Asia, India-Australia and the Pacific Plate, makes Indonesia a lot of active volcanoes and prone to disasters. The purpose of this study is the physical, mechanical and mineralogy characteristics of clay shale and rock. The methodology is the sample used in sun-exposed conditions and the tests properties rock, direct shear test, durability test, and mineralogy test. The conclusion from the results of the analysis on direct shear, it is found that the value of the residual effective shear angle (ϕ_r) ranges from 4.77° - 9.78° and the effective cohesion value (c') is 5.97 - 17.95 kN/m² and can it is said that in geological engineering for materials that are susceptible to weathering processes, rock resistance based on the slake durability classification, samples L 1 and L 4 are classified as Low Durability, so it can be interpreted that the sample is very prone to weathering when exposed directly to weather changes, L 2 is classified Medium Durability, and L 3, are classified as Medium High Durability, so that it can be interpreted as L 2 and L 3, it takes a long time to experience the weathering process Meanwhile, the mineralogy composition of the residual clay shale by XRD testing was obtained the composition of

24.7% montmorillonite, 31.2% kaolinite and 10.3% mica..

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Social Engineering, New Era Of Stealth And Fraud Common Attack Techniques And How To Prevent Against

Asma A. Alsufyani, Lama A. Alhathally, Bayan O. Al-Amri, Sabah M Alzahrani

as our modern daily lives require continues connection to online resources and services, the threat of these services being exploited to do harm rapidly increases. The human naïve nature could be a reason to that whereas some threats and attacks are actually the absolute opposite of such a trait, human minds can produce both good and bad methods to use technology, one of the very bad methods nowadays is widely known as social engineering, an evidence to prove that internet cannot and won't be a safe place for those who don't carry a careful and wise practice while using technology. This survey paper addresses social engineering threats and categories and, discuss some of the studies on countermeasures to prevent such attacks, providing a comprehensive survey study of social engineering to help understand more about this modern way of theft, manipulation and fraud.

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The Influence Of Visual Media And Learning Style On Early Reading Ability Of Children Of Kindergarten In Gorontalo

Pupung Puspa Ardini, Asra Biahimo, Rusmin Husain, Hijrah Syahputra

Abstract: This study was aimed at finding out (1) the differences in early reading ability of the children taught using flashcard visual media and those taught using letter poster, (2) the differences in early reading ability on children with visual learning style treated using the flashcard media and letter poster media, (3) differences on early reading ability of children with kinesthetic learning style treated using flashcard media and letter poster media (4) interaction of early reading ability with visual media and children learning style. This study was implemented on TK Al Ishlah Gorontalo. The number of sample in this study was 48 students of Group B kindergarten selected using random sampling technique. This study used factorial experiment 2×2 . The data were analyzed using two pathways ANAVA followed by Tuckey test. This study revealed: (1) there were differences in overall early reading ability between students with different learning style, where the $F_{\text{count}}=5.259$ and $F_{\text{table}} = 4.20$ (2) There were differences between learning style on early reading ability in children, where the $F_{\text{count}}= 4.720$ and $F_{\text{table}} = 4.20$ (3) The difference ability of Flash card media and letter poster media $Q_{\text{count}} \leq Q_{\text{table}}$, it was obtained that $Q_{\text{count}} = 5.63$ and $Q_{\text{table}} = 2.037$. (4) Interaction between learning media and learning style toward the early reading ability was calculated using $t_{\text{count}} = Q_{\text{count}} = 2.39$ and $Q_{\text{table}} = 2.037$

Index Terms: Learning Style, Media, Early Reading, Kindergarten, Hijaiyah.

1. INTRODUCTION

Early childhood children are individuals who are undergoing vast development process and fundamental changes for their further lives. In this stage of their lives, development, and growth process in various aspects are quickly changing. Dhieni [1] viewed that there was a strong correlation between language developments learning to read. The best way to help children to learn to read is through reading books for them and accompanying them in reading and having various interesting books in class. A wide extent of recent literature has proven that children can be taught to read before they reach the school-age (5-7 years old). Durkin, as cited in Dhieni [2], has studied the influence of early reading ability on children. He concluded that there were no negative effects on children who were able to read early in their age. Children who were taught to read before they enrolled in elementary school are generally more progressive compared to those who were never taught to read early.

The benefits of teaching children to read early based on the teaching and learning process were (1) fulfilling children's curiosity; (2) intimate and informal situation at home, learning group or in kindergarten; (3) early age children are sensitive in general, thus, easy to impress, and easy to manage; (4) children can learn something quickly and easily. From several arguments of the experts presented above, it can be concluded that developing early reading ability is an

appropriate and positive thing for children [3]. Reading is perceptive written language ability. Reading skill is a complex activity and involved various skills. Thus, reading activity is an integrated activity, which involves several activities, such as, recognizing the Hijaiyah alphabets, linking them to sound, meaning, and pronouncing those alphabets according to the way they are produced. To modify the running headings, select View | Header and Footer. Click inside the text box to type the name of the journal the article is being submitted to and the manuscript identification number. Click the forward arrow in the pop-up tool bar to modify the header or footer on subsequent pages. Hijaiyah alphabet (or Arabic alphabets, throughout this paper, will be referred to as Hijaiyah) is the alphabets in which the Qur'an was written with, consisting of 28–30 letters including the alif. Recognizing and becoming apt in reading this alphabet is an objective of learning in each educational institution, both formal and non-formal. Learning the hijaiyah alphabets are initiated with alphabets introduction, reading symbols (fathah, kasroh, and dhumma) and the way to pronounce those letters according to the way they are produced. Therefore, initial reading for hijaiyah alphabets is becoming essential for the Qur'an learning at Al Ishlah kindergarten of Gorontalo city. Reading needs visual assistance, which could help children, such as flashcard. Schramm stated that learning media is a message conveyor technology, which can be utilized for the needs of learning. In sync with this, Gagne wrote that media are various types of components in the learners' environment to motivate them to learn. The readiness for early reading means that mentally children are ready to learn to read. In general, children are ready to learn to read at the age of 6 years old. However, several studies pointed out that reading readiness has happened before children reach the age of six, or in kindergarten age. At this time, children are starting to become aware that words are statements of symbols that contain meaning. Thus, they will further start focusing their attention on two or more aspects of words and their pictures [4]. Based on the initial observation on Group B children, there were children who find it difficult to read the hijaiyah alphabets, even there were some who find it difficult to pronounce the hijaiyah alphabets. Children were yet able to recognize the entire

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hijaiyah alphabet, thus their reading ability was low. This was due to several things such as, first, teachers were yet to use interesting media, activities were teacher-centered, more focused on using the student's worksheet, and lack of children's ability in memorizing the alphabets. Interview with several parents revealed that at home, children spent most of their time playing with their gadgets, as well as lack of repetition on hijaiyah alphabets, and early reading hijaiyah alphabets. Based on the description above, it was suspected that children early reading ability can be increased using the flashcard media. Thus, this study was titled, "the influence of visual media and learning style on the early reading ability of the Group B children at Al Ishlah Kindergarten Gorontalo City."

2 THEORETICAL REVIEW

2.1 The nature of early reading ability

Syaodih [5] revealed that kindergarten children are individuals who are undergoing various development processes, from physical, intellectual, social, emotional development, and language development. These various aspects of development could normally be developed when the environment also positively contributes to children development. However, in reality, there are children who experience obstacles that influence their development. Hurlock [6] revealed that kindergarten children are children age 4 to 6 years old, which is also known as the golden age. Such is due to the best development time of children in this phase, as the first five years of a child's life, which provided a critical foundation for the next stage of their lives. Children who experience a happy childhood and fulfilled physical and mental needs at an early age are more likely able to go through the next stage of development seamlessly. On the definition above, it can be concluded that kindergarten children are children age 4–6 years old who are undergoing development phase in all aspects of their lives. Children in their first stage of early reading (6-7 years old) or the initial stage of decoding. In this stage, children focus on the correlation between letter and sound and increase their knowledge of spelling. Children are fully dependent on written text. In this stage, children are able to hear the phonemes through words, increase their ability to describe words, and also to start to observe words from vocabularies, which can guide them to become competent readers. The description of early reading encompasses (1) focus on writing, meaning and knowledge from the story; (2) focus on the shape of words and sounds that are relevant to symbols; and (3) coordinate knowledge between writing and story. In the initial reading phase, children can start with reading a simple story [7].

Zuchdi and Budiasih [8] wrote that materials that can be taught in early readings are:

1. Pronunciation and intonation of words and simple sentences,
2. Letters that are mostly used in words and simple sentences that are familiar to students (letters are introduced gradually up to 14 letters),
3. New meaningful words (using familiar letters) such as a store, cassava, toys, eyes, guest,
4. Pronunciation and intonation of the familiar and new words (letters introduced from letter number 10 to 20th letters).

2.2 Visual Learning Style

Each child has visual potential as an ability to see and observe things, thus, obtained information on those things. Children with visual learning style would be quick to understand things being described by the teacher when they can see it directly, or through looking at the pictures and through reading (regardless that in kindergarten, reading is not the primary activity). Children with a visual learning style would find it easy to understand something through symbols or pictures. Children with visual learning style are easy to identify through their characteristics that eager to observe something, their interest in pictures and symbols. When learners have this characteristic, then the teacher is to select a learning strategy that draws their interest through pictures or symbols for them to easily recognize and memorizing something in relation to the intended learning objectives. Below are strategies that can be implemented by the teacher in learning activities for children with visual learning style.

The characteristics of this learning style are:

1. Always try to see the lips of the teacher while he/she is teaching.
2. When getting direction on how to do something, student usually will see how others do it before he/she does it.
3. Tend to use body language (to express and replace words) when describing something.
4. Dislikes speaking in front of the group and does not like to listen to others.
5. Usually less able to memorize oral information.
6. Prefer a demonstration than an oral explanation.
7. Usually able to sit peacefully among the noisy situation without feeling disturbed.

2.3 Visual Media

Visual media itself are media that only involves sighting sense. Several types of this media are printed-verbal media, graphic-printed media, and non-printed visual media. First, visual-verbal media are media which contains verbal message (linguistic message in the form of writing). Second, non-verbal graphic media is visual media which contains a non-verbal message such as, visual symbols or graphic elements, such as pictures (sketches, painting, and photo), graphic, diagram, charts, and maps. Third, non-verbal three-dimension media are models like miniature, mock-up, specimen, and diorama. As learning media in general, visual media also used various means to assist the learning process in school. Flashcard media is one of the visual media to develop early reading skill in children. According to Levie & Lentz (as cited in Arsyad) [9] there were four functions of learning media, especially visual media, such as (a) attention function, (b) affective function, (c) cognitive function, and (d) compensatory function. It can be concluded that flashcard as a visual media to develop early reading ability in children that visual signs or pictures can accelerate the achievement of the objectives to understand and memorize information or messages within the pictures. Indriyana [10] wrote that poster is a combination of clear, eye-catching, and interesting visual to attract attention. It means that a poster is a colorful and attractive picture that can be used by the teacher as a medium to deliver learning materials to be interesting for students and assist them in understanding the materials. Sudjana and Rivai [11] wrote that poster is a visual combination of strong design with color and message intended to attract people's attention for a long time to deliver

a memorable message to a person who sees it.

3 RESEARCH METHODE

This study used experiment method treatment level 2×2 of ANAVA which involved several variables categorized below:

1. Dependence variable (Y) = early reading ability
2. Independent variable (X) = visual media
3. Confounding variable = learning style

The sampling technique in this study was random sampling. The samples were 48 students in Group B of kindergarten treated using flashcard media. The score of the test from the instrument implementation was sequenced from the highest score to the lowest score. The score was classified into 33% of the upper group and 33% of the lowest group as sample. This study used inferential analysis to test the analysis requirement and hypothesis test, which consisted of : a) normality test with Liliefors test where the criteria was H_0 would be rejected when L_0 was larger than L_{table} and H_0 would be accepted when L_0 was less than L_{table} ; b) the variance homogeneity test using Barlet test with the criteria of H_0 would be rejected if X^2_{count} was larger than X^2_{table} and H_0 would be accepted if X^2_{count} was less than X^2_{table} and two pathways ANAVA test to test the research hypothesis and if there were interaction between learning media and learning style toward the early reading ability then the hypothesis test would be carried out by Tuckey test with the criteria of H_0 would be rejected when t_{count} was larger than t_{table} and would be accepted if t_{count} was less than t_{table} .

4 RESULTS

Based on the summary of ANAVA above, it can be described that:

1. The result of two pathways variance analysis between the columns obtains the $F_{count} = 5.259$ and was larger than the $F_{table} = 4.20$ in the significance level of $\alpha = 0.05$. This means that the noel hypothesis is rejected, hence the alternative hypothesis which stated that there were significant differences in early reading ability between the students taught using flashcard media and those taught using letter poster media is significantly accepted. As this difference has been pointed out, then the children's learning styles were analyzed. It is revealed that the average score for early reading ability on children taught using flashcard media (A_1) was 30.25 more visual than the average score of children taught using the letter poster (A_2) was 27.50. Therefore, the first hypothesis which stated that the initial reading ability on children taught using flash card media was more visual than those taught using letter poster.
2. The variance analysis result between B (learning style) showed that the value of $F_{count} = 4.720$ and was larger than $F_{table} = 4.20$ in the significance level of $\alpha = 0.05$. This means that the noel hypothesis was rejected; hence, alternative hypothesis stating that there were differences on the early reading ability of children who have visual learning style and those with kinesthetic learning style is significantly accepted. This learning media differences pointed out that initial reading ability of the children is more visual between the two treatments. The result of the analysis showed that the average score on the initial reading ability of the visual learning style children (B_1) was 31.00 higher than the

TABLE 1
RESEARCH DESIGN

Learning Style (B)	Visual media (A)	
	Flash Card (A_1)	Letter Poster (A_2)
visual (B_1)	A_1B_1	A_2B_1
kinesthetic (B_2)	A_1B_2	A_2B_2

average score in early reading ability of the children with kinesthetic learning style (B_2) by 28.44. Therefore, the second hypothesis stating that there was an interaction between learning style and early reading ability of the Group B kindergarten children is significantly accepted.

3. Based on the ANAVA test on significant interaction between learning style and early reading ability of the children, it is proven that there is a significant influence of the two variables on the early reading ability of the children, which further tested using the t-test.

Further analysis using Tuckey test for two groups of the compared subject reveals:

1. The T-test result for (A_1B_1) children with visual learning style shows that flashcard media is able to increase their early reading ability compared to the letter poster. This is evident in the $t_{count} = 5.63 > t_{table} = 2.037$ ($\alpha = 0.05$). Also, the average score of group A_1B_1 ($\chi = 5.63$) is higher than group A_2B_1 ($\chi = 2.037$). It means that the hypothesis is accepted or significantly tested.
2. The result for t-test for children in the group (A_2B_2) with a kinesthetic learning style showed that poster letter could increase early reading ability on children compared to the flashcard media (A_1B_2). This is proven by $t_{count} = 2.39 > t_{table} = 2.037$ ($\alpha = 0.05$). Also, the score from group A_2B_2 ($\chi = 2.39$) is higher than the group A_1B_2 ($\chi = 2.037$). This means that this hypothesis is significantly accepted.

5 DISCUSSION

Early reading focuses on children conditioning to initiate and recognize reading materials. It was yet to focus on the understanding of the reading materials, even more on comprehensive mastery of the materials and presenting the result from the readings. At the pre-school age, children are stimulated to be able to do an early reading. Early reading is taught on pre-school children. This program is a daily program on complete vocabularies, and meaningful within the personal context of the children and using the materials delivered through games and interesting activities as media of learning. Based on the description of this research finding, it is obtained that children that meet the indicator of recognizing the hijaiyah alphabets, linking them with their sounds in average have a good initial reading ability. The ability of the Group B children at PPIT Al Ishlah, as revealed in this study is that their early reading ability can be increased using flashcard media for those with visual learning style. Meanwhile, poster media was yet to significantly increase the children early reading ability. Based on the description above, it can be insisted that in general children ready to learn to read was at the age of 6 years old. However, several studies have pointed out that readiness to learn to read has happened before children reach the age of 6, which is on the age when children are still in kindergarten. At this stage,

children are starting to be aware of the words as a statement of the symbols which contain meanings. Further, they started to focus on providing various perspectives on children. Previous studies have found that almost all children have significant early reading ability than others. They are already able to read early correctly and fluently. These five children are more pronounced than others, they not only can read fluently and clearly but also they are faster in doing the tasks given by the teacher. In addition, there are only three children who have moderate early reading ability, regardless of the fact that their early reading ability is not as fluent as the other five. However, there is one child who experiences difficulty in learning and has less developed early reading ability. This is evident in the children who find it difficult to recognize the hijaiyah letters, linking them with sound. In the implemented early reading ability activity, the child is still in need of assistance. Thus, the result is yet as expected in completing the tasks given by the teacher. Based on the description on the result of this study discussed above, it points out that the average of the children are able to early read, their reading ability of the group B children at PPIT Al Ishlah has to be more effective. The readiness for early reading means that mentally children are ready to learn to read. In general, the readiness of the children to read happens at the age of 6. However, there are several studies which pointed out that the readiness to read happened before they reach the age of six, which is during the kindergarten age. This is supported by the theory developed by Ghabanchi & Rastegar [12] that IQ positively correlates with reading; therefore, further analysis was carried out on the early reading ability of the children based on their IQ and from the experiment carried out. Children with high intelligence tend to have high early reading ability. We found the interesting interaction where children with average intelligence can be optimized using the experiment with the flashcard method.

6 CONCLUSION

Based on the data analysis and the hypothesis test, the following conclusion is reached:

1. There is a significant difference in the early reading ability among students with different learning styles. This is according to the hypothesis criteria that H_0 is rejected. Further, it is obtained that the $F_{\text{count}} = 5.259$ and $F_{\text{table}} = 4.20$ this means that there are differences between children taught using flashcard media, which are more visual than those taught using the letter poster.
2. There are differences in different learning style on early reading ability of the children. This is based on the hypothesis criteria of H_0 is rejected. Further, it is obtained that the $F_{\text{count}} = 4.720$ and $F_{\text{table}} = 4.20$. This means that there is a difference between children with visual and kinesthetic learning style.
3. Differences in early reading ability of the children taught using flashcard media and poster media. Flashcard media is more visual compared to children taught letter poster with the testing criteria of H_0 is accepted when $Q_{\text{count}} \leq Q_{\text{table}}$. Further, it is obtained that $Q_{\text{count}} = 5.63$ and $Q_{\text{table}} = 2.037$ This means that hypothesis is accepted or significantly tested.
4. There is an interaction between media, learning style on the early reading ability. Flashcard media treatment, children with visual learning style has higher interaction than those with poster learning media. This supported

the testing criteria of H_0 is rejected as $t \text{ count} = 2.39 \geq 2.037$, and further, it is obtained that $Q_{\text{count}} = 2.39$ and $Q_{\text{table}} = 2.037$, which means that the hypothesis is accepted or tested significantly.

Based on the conclusion above, below are several recommendations of this study on learning.

1. To increase the early reading ability of the 5 – 6 years old children, the school can provide appropriate media for children their age.
2. Learning activity needs to use more interesting media. Thus the early reading ability of the children could develop.
3. Further study, could develop flashcard media toward other abilities such as cognitive ability, language, and moral ability.

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REFERENCES

- [1] N. Dhieni, et al., Metode Pengembangan Bahasa. Universitas Terbuka.: Jakarta, p. 9, 2005.
- [2] N. Dhieni, et al., Metode Pengembangan Bahasa. Universitas Terbuka.: Jakarta, p. 51, 2005.
- [3] Jalongo, Mary Renck. Early Childhood Language arts .New Jersey :Pearson Education,p.9,2007.
- [4] M. Jamaris, Perkembangan dan Pengembangan Anak Usia Taman Kanak-kanak. Grasindo.: Jakarta, 2009
- [5] S. N. Syaodih. Landasan Psikologi Proses Pendidikan. PT Rosdakarya.: Bandung, p. 58, 2005.
- [6] R. Dewi, Berbagai Masalah Anak TK. Depdiknas, Dirjen Dikti.: Jakarta, p. 16, 2005.
- [7] E. Hoff, Language Development, Thomson Learning, p.244, 2005
- [8] D. Zuchdi and Budiasih. Pendidikan Bahasa dan Sastra Indonesia di Kelas Rendah. Depdikbud.: Jakarta, p. 51, 1996.
- [9] A. Arsyad, Media Pembelajaran. PT GrafindoPersada.: Jakarta, p. 16, 2009.
- [10] D. Indriana. Ragam Alat Bantu Media Pengajaran. Diva Press.: Yogyakarta, p. 62, 2011.
- [11] E. J. Kemp, and K.D. Dayton, "Planning and Producing Instructional Media 5thEd" Harper and Row Publisher Inc : New York, 2012, pp.3
- [12] Z. Ghabanchi and R. Rastegar, "The Correlation of IQ and Emotional Intelligence with Reading," Reading Matrix: An International Online Journal, vol.14, no.2, pp. 135-144, September. 2014.