



RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCES (REMACS 2019)

ABSTRACTS

CS240 – Bachelor of Information Technology (Hons)

CS248 – Bachelor of Science (Hons) Management Mathematics

CS251 – Bachelor of Computer Science (Hons) Netcentric Computing

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019) SCHEDULE

DATE: 24 MAY 2019

TIME: 8:00 am – 4:30 pm

VENUE: PODIUM AND A001

8:00 am	Registration
8:30 am	Video Pitching and Poster Presentation
12:00 pm	Rest / Prayer Break

VENUE: LT5

2:30 pm	Closing Ceremony
	REMACS Director Speech
	FSKM Head of Study Speech
	Officiating speech by Rector of UiTM Perlis Branch
	REMACS 2019 Video Montage
	Award Ceremony (Best Video, Best Poster and Best Presentation)
	Photography Session
	Ceremony Ends

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS240

ROOM: PODIUM

BOOTH NO	TOPIC & AUTHORS	EXAMINER1	EXAMINER2	VIDEO PITCHING & POSTER
1	WEB-BASED STUDENT ATTENDANCE MONITORING WITH SMS NOTIFICATION <i>Fatheenursyaza Bakhri & Hawa Mohd Ekhsan</i>	EN RAY ADDERLEY JM GINING	PM DR SHARIFAH LAILEE	DR AZNOORA OSMAN
2	OUT OF BOUND BALL DETECTION FOR SCORECARD MARKING USING LASER SENSOR <i>Muhammad Syafiq Mat Salim & Romiza Md Nor</i>	DR NORFIZA IBRAHIM	EN JIWA NORIS HAMID	EN TAJUL ROSLI RAZAK
3	COMEX:COMPETITIVE ONLINE EXAMINATION APPLICATION <i>Nadhirah Mohd Napi, Noorfaizalfarid Mohd Noor & Dr Mohamad Fadhili Yahaya</i>	CIK UMI HANIM MAZLAN	PM DR NAIMAH MOHD HUSSIN	EN JIWA NORIS HAMID
4	VISUALIZATION OF AIR POLLUTION INDEX USING WEB APPLICATION PROGRAMMING INTERFACE TECHNIQUE <i>Nurul Atikah Binti Rosshidi & Mohammad Hafiz Bin Ismail</i>	EN AZMI SEMAN	DR KHAIRUL ANWAR SEDEK	PN MAHFUDZAH OTHMAN
5	AD HOC QUESTION PAPER APPLICATION (AQPA) USING FISHER-YATES SHUFFLE ALGORITHM <i>Izzati Farzana Ibni Amin, En. Noorfaizalfarid Mohd Noor & Dr. Azrul Abdullah</i>	CIK UMI HANIM MAZLAN	PM DR NAIMAH MOHD HUSSIN	PN MAHFUDZAH OTHMAN

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS240

ROOM: PODIUM

6	TEST: THE EARLY SCREENING TOOL FOR DYSLEXIA <i>Nurul Jasmin Binti Idris & Nor Arzami Bin Othman</i>	DR SITI ZULAIHA AHMAD	DR NADIA ABDUL WAHAB	EN TAJUL ROSLI RAZAK
7	IMPLEMENTING ECHOIC IN MOBILE AUGMENTED REALITY FOR SCIENCE LEARNING <i>Atikah binti Ali & Dr. Norfiza binti Ibrahim</i>	PN NORA YANTI CHE JAN	DR SITI ZULAIHA AHMAD	EN TAJUL ROSLI RAZAK
8	AUGMENTATIVE ALTERNATIVE COMMUNICATION (AAC) FOR SPEECH DELAY CHILDREN <i>Nor Kamaliah Bt Mohd Kamaruddin & Puan Nora Yanti Bt Che Jan</i>	DR NADIA ABDUL WAHAB	EN NOR ARZAMI OTHMAN	EN TAJUL ROSLI RAZAK
9	QURAN INDEX WEB APPLICATION USING CLOUD DATABASE <i>Noriati Roseni binti Ghazali & Khairul Anwar Sedek</i>	EN AZMI SEMAN	EN MOHAMMAD HAFIZ ISMAIL	EN TAJUL ROSLI RAZAK
10	WEB-BASED STRESS MANAGEMENT SYSTEM (SMS) USING STUDENT ACADEMIC STRESS SCALE <i>Siti Aishah binti Ya'acob , Ray Adderley JM Gining & Dr. Shukor Sanim Mohd Fauzi</i>	EN JIWA NORIS HAMID	EN MOHAMMAD HAFIZ ISMAIL	PM DR SHARIFAH LAILEE
11	WEB-BASED APPLICATION AND APPROVAL OF STUDENT EXTRACURRICULAR ACTIVITIES <i>Izni Hawa binti Sulaiman & Naimah binti Mohd Hussin</i>	PM DR SHARIFAH LAILEE	EN MUHAMMAD NABIL FIKRI JAMALUDIN	DR SHUKOR SANIM

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS240

ROOM: PODIUM

12	IMPLEMENTING VEHICLE STICKER SYSTEM USING RFID TAGS IN UiTM PERLIS <i>Nurul Najiha Binti Mohd Razib & Jiwa Noris Bin Hamis</i>	PN HANISAH AHMAD	EN AHMAD YUSRI DAK	DR SHUKOR SANIM
13	HOME REMEDY RECOMMENDATION SYSTEM FOR SKIN WELLNESS <i>Nour Aida Azreena Binti Ahmad Zulman & Dr. Nadia Binti Abdul Wahab</i>	DR AZNOORA OSMAN	EN RAY ADDERLEY JM GINING	DR SHUKOR SANIM
14	INTERACTIVE ANIMATED COMIC IN LEARNING ENGLISH TENSES <i>Nur Ainna Adilla Binti Jamalil Aris, Dr Siti Zulaiha Binti Ahmad & Dr Naginder Kaur</i>	EN NOR ARZAMI OTHMAN	DR AZNOORA OSMAN	EN TAJUL ROSLI RAZAK
15	DOCUMENT MANAGEMENT SYSTEM FOR INDUSTRIAL TRAINING <i>Tengku Mohamad Khusalam Bin Tuan Mohamad Zaki & Mohamad Nabil Fikri Bin Jamaluddin</i>	PM DR SHARIFAH LAILEE	DR KHAIRUL ANWAR SEDEK	CIK UMI HANIM MAZLAN
16	SMART E-STICK FOR VISUALLY IMPAIRED WITH OBSTACLES AND WATER DETECTION <i>Nur Maisarah Binti Ahmad Nazri, Dr Shukor Sanim Bin Mohd Fauzi & Ray Adderley JM Gining</i>	PN NORA YANTI CHE JAN	EN MUHAMMAD NABIL FIKRI JAMALUDIN	EN TAJUL ROSLI RAZAK

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS240

ROOM: PODIUM

17	AN INTERACTIVE ANIMATED COMIC OF PAEDOPHILE AWARENESS AMONG CHILDREN <i>Nur Anis Idayu Binti Mohd Nor, Dr Siti Zulaiha Binti Ahmad & Mrs Anis Maesin</i>	CIK UMI HANIM MAZLAN	DR NADIA ABDUL WAHAB	EN TAJUL ROSLI RAZAK
18	WEB BASED INNOVATION COMPETITION JUDGING SYSTEM <i>Nur Ain Bt Azuan Zahari, Dr Shukor Sanim Bin Mohd Fauzi & Ray Adderley JM Gining</i>	PM DR SHARIFAH LAILEE	DR KHAIRUL ANWAR SEDEK	EN ANAS FATHUL ARIFFIN
19	MONITORING BATTERY CONSUMPTION LEVEL USING CURRENT SENSOR <i>Ahmad Afiq Bin Ahmad Shaiful & Romiza Binti Md Nor</i>	EN ABDUL HAPES MOHAMMED	EN MOHD FARIS MOHD FUZI	EN AZLAN ABDUL AZIZ
20	MOUSE TRAP WITH EMBEDDED TECHNOLOGY <i>Muhammad Hazim Firdaus Bin Ismail & Dr.Norfiza Binti Ibrahim</i>	MAHFUDZAH OTHMAN	EN ZULFIKRI PAIDI	EN MUHD HASBULLAH MOHD RAZALI
21	SMART IRRIGATION NODEMCU-BASED CONTROLLER WITH SOIL MOISTURE SENSOR <i>Siti Syafika Husna Binti Yaman & Mohammad Hafiz Bin Ismail</i>	EN MUHAMMAD NABIL FIKRI JAMALUDIN	EN MOHD FARIS MOHD FUZI	PN NOR AZRIANI MOHAMAD NOR

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS240

ROOM: PODIUM

22	MONITORING ROAD TRAFFIC WITH IMAGE RECOGNITION <i>Muhammad Afiq Bin Md Yusof & Mohamad Hafiz Bin Ismail</i>	EN HANISAH AHMAD	EN ZULFIKRI PAIDI	PN NOR AZRIANI MOHAMAD NOR
23	WEB-BASED SCIENCE LABORATORY ACCIDENTS REPORTING SYSTEM WITH SMS NOTIFICATION <i>Hani Munira Binti Abdul Aziz & Hawa Binti Mohd Ekhsan</i>	EN MOHAMMAD HAFIZ ISMAIL	EN RAY ADDERLEY JM GINING	CIK NURUL HIDAYAH AB. RAJI
24	IMPLEMENTATION OF WEB-BASED ELECTRONIC MATERNITY RECORD <i>Siti Fadhilah Aqilah Binti Sukiman & Dr. Nadia Binti Abdul Wahab</i>	DR AZNOORA OSMAN	EN AZMI SEMAN	CIK SITI HAFAWATI JAMALUDDIN
25	ASSISTIVE TOOL FOR ASSIMILATING MNEMONICS IN JAPANESE HIRAGANA SYLLABARY <i>Hana Wahida-Adli, Nor Arzami-Othman & Dr. Naginder Kaur</i>	DR AZNOORA OSMAN	PN HANISAH AHMAD	CIK SITI HAFAWATI JAMALUDDIN
26	AUTO MAILBOX NOTIFICATION SYSTEM VIA SHORT MESSAGE SERVICES USING MOTION SENSOR (AMNS) <i>Muhamad Amirun Amri bin Zamri & Abdul Hapes bin Mohammed</i>	DR NORFIZA IBRAHIM	EN JIWA NORIS HAMID	DR NUR FATIHAH FAUZI

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS240

ROOM: PODIUM

27	CREDIT SCORE ANALYSIS SYSTEM USING FUZZY LOGIC <i>Syarifah Nur Liana Binti Syed Hamzah & NoorFaizalFarid Bin Mohd Noor</i>	PN MAHFUDZAH OTHMAN	CIK UMI HANIM MAZLAN	DR NUR FATIHAH FAUZI

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS251 ROOM: PODIUM

BOOTH NO	TOPIC & AUTHORS	EXAMINER1	EXAMINER2	VIDEO PITHING & POSTER
28	WEB-BASED BOOKING SYSTEM <i>Muhammad Ridhwan bin Md Arshad</i>	EN AHMAD YUSRI DAK	PN NURUL HIDAYAH AHMAD ZUKRI	EN TAJUL ROSLI RAZAK
29	MOBILE DOCTOR: MALAYSIA COLORECTAL CANCER MOBILE APPLICATION WITH CLOUD DATABASE <i>Khairul Nazmi Bin Ishak & Mohd Nizam Bin Osman</i>	PN HANISAH AHMAD	EN ROS SYAMSUL HAMID	EN AHMAD YUSRI DAK
30	DEVELOPING LIGHT REACTING SPEAKER WITH BLUETOOTH EMBEDDED AND FINGERPRINT SECURITY SYSTEM <i>Mohamad Luqman Hakim Bin Mohamad Mokhtar & Abdul Hapes Bin Mohammed</i>	EN ROS SYAMSUL HAMID	EN NURZAID MUHD ZAIN	EN AHMAD YUSRI DAK
31	CLOUD WEB-BASED FLOODGATE WATER LEVEL MONITORING SYSTEM USING ARDUINO AND GROOVED SENSOR <i>Muhammad Nabil Emir Bin Sazahan & Mohd Nizam Bin Osman</i>	EN ZULFIKRI PAIDI	EN NURZAID MUHD ZAIN	EN ALIF FAISAL IBRAHIM
32	HELPER: A DELIVERY SERVICE FROM ANY LOCATION WITH CLOUD INTEGRATIONS <i>Muhammad Najmi Bin Mazlan & Mohd Nizam Bin Osman</i>	EN ALIF FAISAL IBRAHIM	EN IMAN HAZWAM ABD HALIM	EN MOHD FARIS MOHD FUZI

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS251

ROOM: PODIUM

33	CENTRALIZED LIGHTING CONTROL SYSTEM FOR PERSONAL RESIDENCE USING VOICE RECOGNITION AND MOBILE APPLICATION <i>Nik Khairul Mustaqim Bin Nik Azmi Badvi & Abdul Hapes Bin Mohammed</i>	EN IMAN HAZWAM ABD HALIM	EN ZULFIKRI PAIDI	EN ROS SYAMSUL HAMID
34	E-LEARNING OF JAVA BASIC WITH GAMIFICATION SYSTEM <i>Noor Ramadah Sulaiman & Mahfudzah Othman</i>	PN HANISAH AHMAD	PN HAWA MOHD EKHSAN	EN IMAN HAZWAM ABD HALIM
35	ENGENIOUS: LEARNING ENGLISH USING SOCIAL MEDIA FEEDS <i>Nor Hidayah Binti Abdullah & Noorfaizalfarid Bin Mohd Noor</i>	EN MOHD FARIS MOHD FUZI	EN AZMI ABU SEMAN	EN IMAN HAZWAM ABD HALIM
36	DEVELOPMENT OF AN ONLINE ROOM BOOKING SYSTEM FOR UNIVERSITY ACCOMMODATION <i>Nur Hanun Binti Abdul Razak & Prof. Madya Dr. Naimah Binti Mohd Hussin</i>	PN NURUL HIDAYAH AHMAD ZUKRI	EN AZMI ABU SEMAN	EN NURZAID MUHD ZAIN
37	AUTOMATED VEHICLE MANAGEMENT SYSTEM USING BARCODE SCANNER <i>Nur Nisa Syazana Binti Yusni & Ahmad Yusri Bin Dak</i>	PN RAFIZA RUSLAN	PN HAWA MOHD EKHSAN	EN NURZAID MUHD ZAIN
38	GPS BASED E-ATTENDANCE SYSTEM FOR LECTURERS IN UITM PERLIS BRANCH <i>Nur Syadiyah Binti Shafiai & Pn.Nora Yanti Binti Che Jan</i>	DR NORFIZA IBRAHIM	EN ALIF FAISAL IBRAHIM	PN RAFIZA RUSLAN

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS251

ROOM: PODIUM

39	SPEECH EMOTION RECOGNITION APPLICATION USING VOKATURI API WITH BINAURAL BEAT SOUNDS THERAPY (EMO CHECKUP) <i>Nurul Hidayah Binti Ibrahim & Nurul Hidayah Binti Ahmad Zukri</i>	EN ALIF FAISAL IBRAHIM	PN RAFIZA RUSLAN	EN ZULFIKRI PAIDI
40	DEVELOPING MOBILE APPLICATION TO FIND SUPERVISOR FOR UNIVERSITI TEKNOLOGI MARA (UITM) FINAL YEAR PROJECT <i>Shafiq Izzuwan Bin Khairul & Abdul Hapes Bin Mohammed</i>	EN NOR ARZAMI OTHMAN	EN ALIF FAISAL IBRAHIM	PN RAFIZA RUSLAN

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

CSP650 - LIST OF TOPICS & EXAMINERS CS251

ROOM: A001

BOOTH NO	TOPIC & AUTHORS	EXAMINER1	EXAMINER2	VIDEO PITHING & POSTER
41	QUESTOCR: SWIFT EXAMINATION QUESTION GENERATOR <i>Siti Aishah Binti Zulkifle</i>	EN RAY ADDERLEY GM JINING	DR ABIDAH HJ MAT TAIB	PN RAFIZA RUSLAN
42	MR JAMAL: AN ARABIC E-LEARNING MOBILE APPLICATION FOR UITM STUDENTS <i>Siti Nurzulaikha Binti Md Shamsull Bahri</i>	EN AHMAD YUSRI DAK	EN MOHD FARIS MOHD FUZI	PN NURIDAWATI BAHAROM
43	SMARTTRAVEL: A CONTENT-BASED RECOMMENDATION SYSTEM FOR TUORISTS USING FUZZY THEORETIC MATHOD <i>Siti Salwani Binti Mustafa</i>	DR KHAIRUL ANWAR SEDEK	EN ROS SYAMSUL HAMID	PN SITI SARAH RASELI
44	BABY CARE GUIDE APPLICATION WITH THE IMPLEMENTATION OF GOOGLE MAPS API <i>Syadiyah Irdina Binti Shahrol</i>	EN ROS SYAMSUL HAMID	EN IMAN HAZWAM ABD HALIM	EN ZULFIKRI PAIDI
45	PERSONALITY COMPATIBILITY ON MOBILE APPLICATION IN UNIVERSITY <i>Muhammad Faqrul Affendi Bin Hasram</i>	EN IMAN HAZWAM ABD HALIM	EN ROS SYAMSUL HAMID	EN TAJUL ROSLI RAZAK

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

MSP660 - LIST OF TOPICS & EXAMINERS CS248

ROOM: A001

BOOTH NO	TOPIC & AUTHORS	EXAMINER	POSTER PANEL	VIDEO PITCHING PANEL
46	A COMPARISON BETWEEN TWO TYPES OF FUZZY TOPSIS METHOD IN RANKING THE CAFETERIA IN UiTM PERLIS <i>Aifaa Nazihah Binti Abdullah</i>	RAIHANA ZAINORDIN	KHAIRU AZLAN ABD AZIZ	AZLAN ABDUL AZIZ
47	THE ANALYSIS OF E-COMMERCE WEBSITE FEATURES ON CUSTOMER'S PURCHASE INTENTION USING FUZZY EXPERT SYSTEM <i>Ibrahim Bin Roslan</i>	IZLEEN IBRAHIM	NORPAH MAHAT	RAIHANA ZAINORDIN
48	SELECTION OF VOLLEYBALL PLAYERS USING FUZZY PROMETHEE <i>Khairunnisa Binti Anuar</i>	ROHANA ALIAS (PM)	NOORSHAM MANSOR	NURUL HIDAYAH AB.RAJI
49	THE PREDICTION OF FINANCIAL DISTRESS BY USING ALTMAN'S MODEL <i>Maizatulakma Binti Abu Othman</i>	MOHD AISHA NUDDIN ABDUL JALIL (PM)	ANAS FATHUL ARIFFIN	ROHANA ALIAS(PM)
50	COMPETITIVENESS OF PASSENGER AND COMMERCIAL VEHICLES SALES IN MALAYSIA BETWEEN 2016 AND 2017: CONSTANT MARKET SHARE ANALYSIS <i>Mohd Junaidi Bin Razlan</i>	ZURINA KASIM	AZLAN ABDUL AZIZ	SUZANAWATI ABU HASAN

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

MSP660 - LIST OF TOPICS & EXAMINERS CS248

ROOM: A001

51	MEASURING PERFORMANCE OF CONVENTIONAL AND ISLAMIC BANKS USING DEA METHOD: EVIDENCE FROM MALAYSIAN BANKING SYSTEM <i>Muhammad Alif Asyraf Bin Abu Bakar</i>	NORWAZIAH MAHMUD	NURUL HIDAYAH AB. RAJI	RIZAUDDIN SAIAN (DR)
52	PRICING WARRANT BY USING BINOMIAL MODEL: COMPARISON BETWEEN HISTORICAL AND IMPLIED VOLATILITY <i>Muhammad Nasruddeen Bin Mazlan</i>	RAJA SULAIMAN RAJA LOPE AHMAD (PM)	MOHD AISHA NUDDIN ABDUL JALIL (PM)	WAN NURSHAZELIN WAN SHAHIDAN
53	COMPARISON OF DISTANCE MEASURE IN CLUSTER ANALYSIS: A CASE STUDY OF FINAL EXAMINATION ANSWER BOOKLET <i>Nadiatul Farhana Binti Mohtar</i>	NOORZILA SHARIF	SITI NOR NADRAH MUHAMAD	ZURINA KASIM
54	PREDICTING ATTACKERS OF ONLINE SHAMING USING ANT COLONY OPTIMIZATION <i>Noor Shafiqah Fazlien Binti Mohamad Fauzi</i>	TEOH YEONG KIN	NORAINI NORDIN(DR)	ANAS FATHUL ARIFFIN
55	THE DYNAMIC ANALYSIS OF DIFFERENT VIRAL CONTENTS IN FACEBOOK USING SUSCEPTIBLE-INFECTED-RECOVERED (SIR) MODEL <i>Nordayana Binti Mohd Azhar</i>	KU AZLINA KU AKIL	RUDZAH LEBAI TALIB	RAJA SULAIMAN RAJA LOPE AHMAD (PM)
56	ALLOCATION OF TIME AND COST IN PROJECT MANAGEMENT USING GOAL PROGRAMMING <i>Nur Athirah Binti Amir Hamzah</i>	NORPAH MAHAT	NORHAYATI SHAFII	NURIDAWATI BAHAROM

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

MSP660 - LIST OF TOPICS & EXAMINERS CS248

ROOM: A001

57	FUZZY TIME SERIES AND GEOMETRIC BROWNIAN MOTION IN FORECASTING STOCK PRICES IN BURSA MALAYSIA <i>Nur Ezzati Dayana Binti Mohd Ramli</i>	NOORSHAM MANSOR	BALKIAH MOKHTAR	MUHD HASBULLAH MOHD RAZALI
58	THE EPIDEMIOLOGICAL MODELS FOR NEWS DISSEMINATION VIA TWITTER <i>Nur Syafiqah Binti Md Asri</i>	DIANA SIRMAYUNIE MOHD NASIR	JASMANI BIDIN	SHARIFAH FHAHRIYAH SYED ABAS
59	AIR QUALITY PATTERN ASSESSMENT IN PENINSULAR MALAYSIA USING STATISTICAL APPROACH <i>Nur Syuhada Aini Binti Ahmad Lokman Bukhari</i>	NORHAYATI SHAFII	NOR AZRIANI MOHAMAD NOR	SITI NOR NADRAH MUHAMAD
60	DETERMINATION OF IMPORTANT CRITERIA IN MEASURING THE PERFORMANCE OF NON-ACADEMIC STAFF BY USING FUZZY AHP <i>Nurfarahizzah Binti Zulkifli</i>	SHARIFAH FHAHRIYAH SYED ABAS	NOORZILA SHARIF	SITI FATIMAH ABD RAHMAN
61	TASK ALLOCATION IN PRODUCTION SYSTEMS USING FIREFLY ALGORITHM <i>Nurhani Zawani Binti Zulkifli</i>	SITI SARAH RASELI	MUHD HASBULLAH MOHD RAZALI	IZLEEN IBRAHIM
62	A SINGLE OBJECTIVE FUZZY LINEAR PROGRAMMING IN OPTIMIZING HAND SOCKS PRODUCTION <i>Nurul 'Ain Rusydiah Binti Mohd Rodzi</i>	MOHD FAZRIL IZHAR MOHD IDRIS	MOHAMAD NAJIB MOHAMAD FADZIL	JASMANI BIDIN
63	NUTRIENT MANAGEMENT FOR RUBBER PLANTATION USING GOAL PROGRAMMING <i>Nurul Ain Binti Mohd Razali</i>	NORAINI NOORDIN (DR)	KU AZLINA KU AKIL	KHAIRU AZLAN ABD AZIZ

RESEARCH EXHIBITION IN MATHEMATICS & COMPUTER SCIENCE (REMACS 2019)

MSP660 - LIST OF TOPICS & EXAMINERS CS248

ROOM: A001

64	FUZZY WATER QUALITY INDEX (FWQI) MODEL IN DETERMINING THE WATER QUALITY STATUS OF RIVER IN PENANG ISLAND <i>Nurul Izzati Husna Binti Wahab</i>	RUDZAH LEBAI TALIB	IZLEEN IBRAHIM	SITI SARAH RASELI
65	OPTIMAL TIMETABLE SYNCHRONIZATION FOR GREATER KUALA LUMPUR USING MIXED INTEGER PROGRAMMING <i>Saiyidatul Adidah Binti Idris</i>	JASMANI BIDIN	NURIDAWATI BAHAROM	NOORSHAM MANSOR
66	SELECTING SUPPLIER FOR AN OPTICAL SHOP BY USING YUEN'S FUZZY TOPSIS METHOD <i>Sharifah Fatin Amirah Binti Syed Fahmey Sham</i>	BALKIAH MOKHTAR	MOHD FAZRIL IZHAR MOHD IDRIS	NORHAYATI SHAFII
67	ALIGNED MHD FREE CONVECTION FLOW OF MAGNETIC NANOFLUID OVER A MOVING VERTICAL PLATE WITH CONVECTIVE BOUNDARY CONDITION <i>Siti Nur Hidayatul Ashikin Binti Ibrahim</i>	MOHAMAD NAJIB MOHAMAD FADZIL	NUR FATIHAH FAUZI (DR)	TEOH YEONG KIN
68	PERFORMANCE OF TREE-BASED CLASSIFIERS WITH MINIMUM DESCRIPTION LENGTH DISCRETIZATION TECHNIQUE FOR EPILEPSY DATASET <i>Zam Zam Syafurah Binti Samsudin</i>	RIZAUDDIN SAIAN (DR)	WAN NURSHAZELIN WAN SHAHIDAN	NUR FATIHAH FAUZI (DR)
69	Analytic Hierarchy Process(AHP) and Fuzzy AHP For Ranking The child Abuse Factors in Malaysia <i>Nur Farhiyah Binti Zulkofli</i>	SITI FATIMAH ABD RAHMAN	NOR AZRIANI MOHAMAD NOR	SITI HAFAWATI BT JAMALUDDIN
70	EVALUATING THE AVOIDANCE FACTORS IN COUNSELING USING FUZZY ANALYTICAL HIERARCHY PROCESS (AHP) <i>Nurul Hafizah Binti Alias</i>	SUZANAWATI ABU HASAN	RAJA SULAIMAN RAJA LOPE AHMAD (PM)	RUDZAH LEBAI TALIB

QURAN INDEX WEB APPLICATION USING CLOUD DATABASE¹Noriati Roseni binti Ghazali & ²Khairul Anwar Sedek(Supervisor)¹nrg.gmel@gmail.com²khairulanwar@uitm.edu.my**ABSTRACT**

Quran is consist all aspects of life including the faiths, worship, morality, laws, warnings, histories or analogies as well as the urge to think. Most of Muslims daily reading al-Quran without understanding of a Quran verse. The lack of research effort and controlling authority caused the lacked Quran index in Malay translation. This is a support tool to help Malay reader understand the Quran based on words from Quran index by simply searching any index or topics as a reference. There are three categories which are Index List, Index Classification and Index Juz Division. Malay reader needs the best reference of Quran index with the authenticity of Quran. As a special dictionary, this led the researcher to ensure the Quran reader gained their adequate understanding content of Quran via Malay Language. The purpose of this research is to design quran index web application named QIwa using Cloud Database; Firebase and ReactJS that can be accessed anywhere and anytime. A total of respondents: eight expert users for Usability Test and twenty-three users for User Acceptance Test (UAT) from different state and different age involved in testing and evaluating the QIwa through survey questions. Besides that, in development and construction process is done and completely successful according to identified the suitable software, hardware and tools during implement the programming development. By evaluating the application; Usability Test and User Acceptance Test (UAT), mostly users are satisfied with QIwa. The final outcome is the efficiency of web application help Malay Quran reader understand contents of Quran.

Keywords: quran index, web, search

IMPLEMENTING VEHICLE STICKER SYSTEM USING RFID TAGS IN UiTM PERLIS

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ABSTRACT

Vehicle stickers are be used by the designated vehicles only and cannot be assigned to the others vehicle. This important of this study is to help auxiliary police to reduce vehicle sticker problem. Currently, UiTM Perlis used manual spot check of vehicle sticker. The procedure was take time to check all vehicle sticker in UiTM. There are bring some problems to the university directly or indirectly. The problem is the students purchase vehicle stickers from any other sources, misuse and fabricate the vehicle stickers and also steal other students' vehicle stickers. The University takes serious view on the issue of the problem. Therefore, a vehicle sticker system using RFID tags has been developing to overcome this problem. The purpose of this project is to develop a system that help the auxiliary police to verify the validity of the vehicle sticker. There are nine phases which is planning, information gathering, analysis, design, development, testing, evaluation, implementation and documentation phases is chosen as methodology for this study. The evaluation of the system involves Heuristic Evaluation and usability test. There are thirty respondents which consists of three experts and twenty-seven students from UiTM Perlis. Result from the Heuristics evaluation and Usability Test, most of the respondents are agree that all the functionalities that available in the system is functioning well.

Keywords: auxiliary police, vehicle sticker, validity vehicle sticker.

HOME REMEDY RECOMMENDATION SYSTEM FOR SKIN WELLNESS

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ABSTRACT

The purpose of this research is to design and develop a Home Remedy Recommendation System for Skin Wellness. This system is able to identify users' facial skin type and recommend suitable home remedies facial treatment. For each treatment, the system is able to give a guideline on how to prepare the home remedies through video tutorials. Five planes of User Experience (UX) layer is used as a guideline in designing and developing this system. Waterfall Model which consists of analysis, design, implementation, testing and documentation phases is chosen as the methodology for this study. The evaluation of the system involves Heuristic Evaluation with three Human Computer Interaction (HCI) experts. The feedback and suggestions from the experts were taken into consideration and refinement of the system is made based on these comments. After system refinement, User Experience Test (UXT) was conducted with thirty participants. The results form UXT clearly indicate that the system is attractive, perspicuity, effective, dependent, stimulate and novel. As a conclusion, the Home Remedy Recommendation System for Skin Wellness has been successfully designed and developed to assist the users in identifying their skin type and recommending suitable home remedy based on users' skin type.

Keywords: Home remedy, facial skin wellness, recommendation system, web-based system

INTERACTIVE ANIMATED COMIC IN LEARNING ENGLISH TENSES

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ABSTRACT

University students often find it very difficult to learn English especially grammar, since it is not their native language. Students still have difficulties in envisioning English grammar. Therefore, interactive animated comic in learning English tenses (i-COMEST) is designed to help students in learning English tenses as an alternative learning application. This research focuses on two type of tenses which are simple present tenses and simple past tenses. i-COMEST is an application to learn English grammar through comic using storytelling technique, blended with interactive multimedia elements, such as text, graphics, audio, video, animation, together with several multimedia principles. The study adapts Waterfall Model as the guideline to accomplish the study which consists of analysis, design, development, implementation, testing and documentation phases. This application is tested based on three main testing process which are heuristic evaluation, usability testing and user acceptance testing. The respondents (lecturers and students) agreed that i-COMEST is an attractive, user friendly and interesting learning aid ($\mu = 4.42$). The user acceptances results proven that the application is useful, easy to use and acceptable by the target user ($\mu = 4.50$). It concludes that i-COMEST is an interesting and valuable for students in improving English language especially grammar skills as it is an important language in the world.

Keywords: i-COMEST, multimedia elements, multimedia principles, interactive animated comic.

WEB BASED INNOVATION COMPETITION JUDGING SYSTEM

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ABSTRACT

Innovation produces new business and is a vital source of evolution in industry and business. Realizing the importance of innovation, many competitions are being held worldwide where the main intention of this competition is to cultivate idea and creativity culture. One of the important parts of innovation competition is the judging process because this is when the winner will be determined. However, most of the judging process still relies on manual approach which is paper-based. Therefore, the aim of this study is to develop a prototype of Web-Based Innovation Competition Judging System (ICJS) in order to improve the efficiency of the judging process. This project is developed using Laravel, MySQL and PhpStorm as an editor. Evaluation phase encompassing functionality test and Technology Acceptance Model (TAM) test. For functionality testing, most of the listed components are able to be completed during development of the prototype. For TAM, there are three components which are used for test; Perceived of Usefulness, Perceived Ease of Use and User satisfaction. The TAM test is conducted by distribute the questionnaire to seven lecturers that are related to innovation competition. From the findings, it is discovered that most of the lecturers agree that ICJS facilitate them in evaluating product and determining winner. From the feedbacks received for TAM, it can be concluded that the respondents are satisfied with ICJS as well as the functions provided in the system. One of the recommendations of ICJS is that the system can be enhanced by allowing admin to edit the criteria and scale of the evaluation form according to innovation competition preference. Next, by identifying the gap between marks given by judges in the report section in order to avoid bias and unfair during determining the winner.

Keywords: innovation competition, judging, Laravel, Technology Acceptance Model.

WEB-BASED SCIENCE LABORATORY ACCIDENTS REPORTING SYSTEM WITH SMS NOTIFICATION

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ABSTRACT

Science laboratories are filled with biological materials, hazardous chemicals and equipment. Understanding the importance of laboratory safety is vital as the laboratories reap a wide array of safety hazard from the chemicals to electric equipment. Anyone who are using the science laboratory especially students need to know the potential danger that may occurs in handling the experiments. The problem occurs when the students unable to follow the rules and safety in the laboratory and injuries or accidents happened. However, the staffs need to make a report about the incidents using paper-based form of reporting which is cumbersome as paper files unable the user to easily edit the content forcing to make a new copy. Thus, this study is aimed to develop a web-based reporting system on accidents for Science Laboratory and integrate it with Short Message Service (SMS) known as (SLARS). The Waterfall Model has been used as the methodology in this study. Then, SLARS is evaluated using Expert Review and Usability Test. Expert Review was conducted with an expertise in Information Technology (IT) and 12 participants contributed in the Usability Test where consist of five sections; the interface, the content of the system, the navigation of the system, the function, and general feedback. The findings from the evaluation indicates that the information provided within the system can help users to make a report on the incidents happened and the system is well-designed to be implemented in the future.

Keywords: Science Laboratory, Accidents in Laboratory, Rules and Safety, SMS Technology

SMART IRRIGATION NODEMCU-BASED CONTROLLER WITH SOIL MOISTURE SENSOR

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ABSTRACT

Water is the most important resources in our daily living. In the early days of abundant resources and minimal development pressures, only a little attention was paid on water requirements for human daily living. Farmers' need to pay fully attention to their farm as the farmer might not know the soil moisture which is soil humidity's level and it can be resulted of water waste during rainfall season. Therefore, it has become necessary to control the amount of water use as the process of photosynthesis are the serious matter in animal and humans' daily life. The aim of this project is to develop a Smart Irrigation NodeMCU-based Controller with Soil Moisture Sensor (Smartig) that can help farmers by reducing the use of power, the money, time savings and the consumption of water. This project presented a prototype of automatic irrigation system based on the reading of the soil moisture sensor. This prototype includes NodeMCU-controller and soil moisture sensor. The system has been tested using Technology Acceptance Model (TAM). There were 15 participants that involved in the evaluation phase. From the findings, it can be interpreted that most of the participants were agreed to use Smartig. For the future works of Smartig, the system will be enhanced by adding a light sensor, humidity sensor and water level sensor so that Smartig can be more beneficial to the user.

Keywords: Irrigation, NodeMCU, Soil Moisture Sensor, Blynk.

COMEX:COMPETITIVE ONLINE EXAMINATION APPLICATION

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ABSTRACT

Examination is one of the important assessments in education institution to evaluate the student performance based on their subject they had learnt. Conventional examination might bring difficulties for lecturers. High cost required to print exam paper, if there were large amount of students. The time needed to mark answer sheets also take much longer. With rapid development of technology nowadays, most of the educational institutions replace their paper-based examination with the web-based examination system that can reduce the cost of examinations and reduce work of organization for preparing examination. This paper aims to develop a web-based application for online examination using Fisher-Yates shuffle algorithm. Fisher-Yates manages to randomize multiple choice questions for each exam session. Literature review has been conducted to study on managing examination, randomization techniques and application testing method. A web based online examination has been constructed based on syllabus in UiTM, Perlis. There are five phases in developing Competitive Online Examination application adapted from waterfall model. This application has been tested by thirty respondents in the university. Technology Acceptance Model (TAM) used to evaluate the system based on Perceived Usefulness and Perceived Ease of Use. To improve the prototype, data filtration in pages and repetition avoidance must be implemented. As a conclusion, Fisher-Yates can be implemented in online exam to manage randomization techniques for examination. Thus, it helps university to increase productivity among the lecturers and students.

Keywords: Online Examination, Fisher-Yates Shuffle Algorithm, Randomization, Multiple Choice Questions.

MOUSE TRAP WITH EMBEDDED TECHNOLOGY

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ABSTRACT

The Mouse Trap with Embedded Technology (MoTrap) is a design that to help the people to reduce and solve their problem with mouse at their house. Currently, most of the people use previous mouse trap that does not effective and using hazardous rat poison. This attitude can lead to the lack of safety and awareness while using poison. This can cause the children to suffer from disease due to usage of poison that are chemically and hazardous. The objective of this project are to identify the required Internet of Things (IoT) components for the MoTrap, to develop Mouse Trap with Embedded Technology that fix both smartphone and computer and to evaluate the functionality and user acceptance of the MoTrap. There are multiple function like the user can get notification after the mouse has been trap though smartphone, view the live image from the mouse trap and can view the video that been recorded in cloud storage. The phases of the waterfall model consist of analysis, design, development, testing, implementation and maintenance. Two types of testing has been conducted which are Functionality Test and Technology Acceptance Test. There are thirty respondents among the residents participated in testing phase. From the testing the mean of the Technology Acceptance Model (TAM) is more than 2.5 which is high value of mean. This concludes that Mouse Trap with Embedded Technology can be implemented by the people in order to reduce and as alternative way in order to solve their problem with mouse in their house.

Keywords: Internet of Things (IoT), Functionality Test, Technology Acceptance Test.

IMPLEMENTING ECHOIC IN MOBILE AUGMENTED REALITY FOR SCIENCE LEARNING

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ABSTRACT

Augmented Reality (AR) is an advance technology that has been recognized as a potential to various type of fields including education. A preliminary investigation has been conducted at the early stage of this study to identify the knowledge of AR among students. This research is to identify AR elements and introducing echoic as it can concretize the knowledge to be presented and help in making learning experience appear real, living and vital. Mobile platform is chosen as it is mainly used as a medium of communication and to find information among secondary school students. Therefore, it is suggested to integrate mobile and echoic in this project known as EMARA (Echoic Mobile AR Application). EMARA is design using principles of Mobile Interface Design and Gestalt theory and developed using Unity and Vuforia. Scope of EMARA focused on one of the topics in Science Form 3 subjects which is about "Blood Circulatory System". EMARA is evaluated using Expert Review by distributing questionnaires among seven experts and for thirty students aged fifteen, Quasi-Experiment, Technology Acceptance Model (TAM) questions are included. The result from the Expert Review shows that the EMARA is suitable to use but still needs refinement and improvement. Meanwhile, the results from the Quasi-Experiment and TAM indicated that the EMARA is efficient and helpful.

Keywords: Mobile Augmented Reality, Echoic, Science Learning, Expert Review, Quasi-Experiment, Technology Acceptance Model

VISUALIZATION OF AIR POLLUTION INDEX USING WEB APPLICATION PROGRAMMING INTERFACE TECHNIQUE

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ABSTRACT

Visualization can be termed as the representation of an object, situation, or set of information as a something that people can see. In the early days of abundant resources and minimal development pressures, only a little attention was paid to the growing environmental concerns such as air pollution. Therefore, it has become necessary to spread awareness about air pollution index to the community. The research aims to develop a visualization of air pollution index using web application programming interface technique (API) called VaPi. VaPi is developed to allow users to know about the air pollution index. The reading of air pollution index is extracted from Jabatan Alam Sekitar's server. The research is focusing on developing a system by using Internet of Things as a platform. Nodemcu and related components such as LED and LCD will be used to develop the system. The system will be tested using Technology Acceptance Model method. The method consists of four aspects which are perceived of usefulness, perceived ease of use, user satisfaction and attributes of usability. There were thirteen participants in Perlis and three participants in Penang that involved in the evaluation phase since VaPi only covered three places which are Penang, Perlis and Kedah. From the findings, it can be interpreted that most of the participants were agreed to use VaPi. The participants also suggested that VaPi should cover more places and add alarm system if the reading of air pollution index is critical. For the future works, VaPi will be enhanced by making it more portable and display time of the retrieval data of air pollution index.

Keywords: air pollution index, web application programming interface, Internet of Things, LED, LCD

WEB-BASED APPLICATION AND APPROVAL OF STUDENT EXTRACURRICULAR ACTIVITIES

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ABSTRACT

A system that can be used to submit and approve an application to organize student extracurricular activities has grown in importance as information technology is applied in all aspects of life. An extracurricular activity is an activity carried out by students that falls outside the realm of normal school, college or university education curriculum. To organize an activity, students need to prepare a paperwork to be submitted through their advisors. Current manual process has problems such as incomplete application forms, missing forms and difficult to manage all the documents. Therefore, the aim of the project is to develop a web-based system that automate the manual process of applying to organize student extracurricular activities and will also automate the approval process. The development of the system is divided into three phases: (1) requirements identification, (2) application design and construction and (3) system testing using heuristic evaluation and usability testing. There are twenty five participants that are involved in the testing (two administrative staffs, twenty three students and three experts). The results indicate that the respondents agreed that all functionalities that are available in this application works well. It also significantly reduces the time to resolve problems related to the application submission and improve the process of application and approval of student extracurricular activities. The objectives of the project are achieved, where a prototype was developed to demonstrate the various functions that are included in the scope of the project.

Keywords: Automated system, extracurricular activities, management system.

SMART E-STICK FOR VISUALLY IMPAIRED WITH OBSTACLES AND WATER DETECTION

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ABSTRACT

Visual impairment can be termed as a disability that distresses the structure and functions of the visual system. Many people considered blindness as an inability to see at all or at best to perceive light from darkness. In the context of visual impairment, most people with visual impairment has difficulty to find their way autonomously in an unfamiliar area. Visually impaired people usually use the standard white cane or walking cane to assist them walking but it is not adequate enough to ensure their safety when navigating. The purpose of this study is to improve the traditional white cane by integrating it with ultrasonic sensor to detect obstacles in front them, water sensor for detection the presence of water puddle, GPS Module for the location of white cane and Blynk Application to display the details of location. Waterfall model was adopted to develop Smart e-Stick (SeS). SeS evaluation has been conducted to measure the effectiveness of ultrasonic sensor and water sensor through functionality testing and the usefulness, ease of use and user satisfaction via Technology Acceptance Model (TAM). A total of ten respondents with age above twenty years old are involved in the process. From the findings, it is learned that Smart e-Stick (SeS) provide the solution for the visually impaired to increase the protection and safety towards the people while navigating outdoor or unfamiliar area. For the future works of SeS, the system will be enhanced by making the detection range wider so that it will allow SeS to detect obstacles in every different angle.

Keywords: Smart e-Stick (SeS), visually impaired, obstacles, water detection.

OUT OF BOUND BALL DETECTION FOR SCORECARD MARKING USING LASER SENSOR

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ABSTRACT

Scorecard is found in many sports such as golf and woodball. Score is a quantitative measure of opponents' relative performance in a sports discipline. Score is usually measured in the abstract unit of points, can increase or decrease the score of the parties involved. Nowadays, most sports have techniques to make sure the game run smoothly. Without a technology, the game may have been delayed due to lack of utilization of existing technology. iScore is introduced to implemented technology in woodball. The detection method is used to generate an automatic score for player by detecting the out of bound ball. Out of bound ball can effects the score in the gameplay. It is very important for the future in improving the use of the scorecard in sport. In order to generate an automatic scorecard, Calm Technology Principle has been involved. The principle require the smallest amount of attention possible, amplify the best of humanity and machines and solve a problem only using a minimum amount of technology. Evaluation has been conducted among amateurs and world class woodball players. Two sections in the questionnaires which are functionality test and design of iScore using Calm Technology principles. All of the respondents produced a satisfied results and most of them need an improvement of iScore by adding the gate to end the game. For future work, the gate will be added by using PIR motion sensor so that the game can be ended.

Keywords: Woodball, Detection method, Internet of Things, Laser sensor, Scorecard Marking, Web based, Calm Technology Principle

TEST: The Early Screening Tool for Dyslexia

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ABSTRACT

Dyslexia is a learning disorder related with reading as they have difficulties to identify speech, sounds and also to discover how to relate the letters and words. It is estimated that ongoing Malaysian school children are dyslexic, but very few receive a proper remedial program due to the poor screening process. The Early Screening Tool (TEST) is applied to overcome this issue. TEST is developed based on screening tools from Dyslexia Checklist Instrument and it is integrated with multimedia elements. TEST is a computer-based screening that is designed for students ranging from six to twelve years old and it is suitable to be used for pre-school children around six years old before they go through primary school. It is the first step towards a simple screening that could help teachers and parents to identify a child's symptom of dyslexia based on Dyslexia Checklist Instrument that have been applied in TEST. TEST is evaluated by conducting three types of testing which is heuristic testing, usability testing and user acceptance testing. There are twenty-eight respondents which consist of three experts, three teachers and twenty-two students from primary school. Analysis of the responses demonstrated that the respondents enjoy the screening session by using TEST computer based. The results indicate that screening method have an impact on how to identify the dyslexic. Further research is needed to discover other factors that could strengthen the effectiveness of this project.

Keywords: Dyslexia, dyslexia screening, computer based screening

MONITORING BATTERY CONSUMPTION LEVEL USING CURRENT SENSOR

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ABSTRACT

Nowadays, power wheelchair is one of the most important vehicles especially for people with physical disabilities such as paralysis, stroke, handicap and many more. Electric wheelchair is also called electric-power wheelchair or powerchair can be moved by an electrically based power source, regularly motor or batteries. In fact, it is very important to have frequent monitoring battery level because power wheelchair need the sufficient battery level for it to be move around. Therefore, this project is developed to monitor the battery consumption level and real time battery monitoring. Current sensor is used to measure the current state of the battery level. In this project, Internet of Thing concept is applied where sensor and mobile application is integrated known as BLife. BLife was designed using the visibility of the system status principles consist of knowledge is power, appropriate feedback, compel user to action and communication create trusts. If the battery in the lower state, the power wheelchair users will be informed through mobile application by showing an indicator to inform that it needs to be recharged. Moreover, the current location of the power wheelchair user also will be notified to the caretaker so that they know of the user whereabouts. Evaluation of BLife has been conducted to power wheelchair user and students of UiTM. Evaluation consist of two part which is functionality testing and evaluation on impact of the visibility of the system status. Most of them are satisfied and giving a good feedback on impact of the visibility of the system status. This project is contributed to the disable people who has limited access to charge battery and to aware them on their battery level.

Keywords: Monitoring system, Real Time Battery Monitoring, Arduino Microcontroller, GPS module, Current Sensor, Internet of Things.

WEB-BASED STRESS MANAGEMENT SYSTEM (SMS) USING STUDENT ACADEMIC STRESS SCALE

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ABSTRACT

The transition of students from high school level to university level is inherently stressful for students. There are several types of stress such as academic, financial, family and relationship stress. But, academic stress are very popular among university students. Academic stress is mental pain regarding some dissatisfaction related with academic disappointment. Hence, as a university students, they should know how to deal with academic stress. Therefore, the aim of this project is to develop a prototype of Web-based Stress Management System using Student Academic Stress Scale. The Stress Management System (SMS) will able to assist the university students to identify their current academic stress level by answering forty questions available in the system. SMS also will provide a suggestion based on the level of stress. There are three phases involve in developing SMS. The first phase of the project started with a requirement identification where database and requirements are the output. Next, application development phase that create interface design, database and coding for developing process. Third phase was evaluation that involved Test Script and Technology Acceptance Model (TAM). Functionalities of the prototype was tested using a Test Script technique. TAM was used to evaluate the system based on Perceived Usefulness, Perceived Ease of Use and User Satisfaction. There are fifty respondents of UiTM Perlis involved in the evaluation process. Result from TAM test, most of the respondents agreed that all functionalities that are available in SMS work well.

Keywords: Academic Stress, University Students, Stress Management System (SMS).

AD HOC QUESTION PAPER APPLICATION (AQPA) USING FISHER-YATES SHUFFLE ALGORITHM

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ABSTRACT

Examination plays a vital role to measure the capabilities of the students in their learning. Hence, generating an effective question paper is a task of great importance for institution. Currently, preparing exam question papers using traditional method are quite challenging and time consuming. There are guidelines need to be followed and the questions must incorporate with different level of difficulties. There is also issue on cheating during exam. Thus, this research proposed an automated approach of Ad hoc Question Paper Application (AQPA) which is fast, streamlined, randomized and secure. This web-based application makes use of Fisher-Yates Shuffle algorithm as a randomization technique which is a reliable algorithm for randomizing questions. The application development methodology employs adapted Waterfall Model which consists of six phases. In this application, it allows the user to manage questions and generate the questions randomly and automatically. For evaluation process, a testing was conducted on 20 lecturers in UiTM Perlis branch using Technology Acceptance Model (TAM) to evaluate perceive usefulness and perceive ease of use on the prototype. The result shows that most of them agreed that AQPA application could be used for generating exam question papers. This application can be improved by providing scheme answers to the lecturers. In conclusion, this application has the potential to enhance the effectiveness in generating question paper

Keywords: Automated, Question Paper Generation, Randomization, Fisher-Yates Shuffle, Technology Acceptance Model (TAM).

ASSISTIVE TOOL FOR ASSIMILATING MNEMONICS IN JAPANESE HIRAGANA SYLLABARY

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ABSTRACT

University students that learn third language especially Japanese often find it challenging to learn to read it, since it is not their native language. In view of this, the researcher had attempted to introduce ATAMJHS, a new learning alternative intended to attract university students in learning one out of the three components of the Japanese syllabary which is Hiragana. ATAMJHS is a desktop multimedia application used to learn basic Japanese Hiragana along with a third-party application called HP Reveal. This is done by using mnemonics, blending with multimedia elements, such as text, graphics, audio, and video and combining with the use of Tangible User Interface that connect the digital world with the physical world to stimulate multimedia learning and multiple sensory learning. Evaluation had been conducted to one expert with Japanese background and another two experts with multimedia background along with thirty-four university students with or without Japanese education background to evaluate its effectiveness and usability. The pre-test and post-test discovered that ATAMJHS increase Japanese literacy among students either with or without Japanese education background. Meanwhile, usability test revealed that ATAMJHS is usable and accepted as a viable learning alternative for university students. In the future, the research can be further improved by including all Japanese writing system components. Other than that, the research may implement better and clearer sound set along with the ability of data keeping and tracking of progress from the application's previous usage. In conclusion, ATAMJHS would be interesting and valuable for students in improving Japanese reading skills, especially Hiragana, as it is an important part of the Japanese writing system.

Keywords: Multimedia application, Tangible User Interface, HP Reveal, Mnemonics, Japanese Hiragana Syllabary.

DOCUMENT MANAGEMENT SYSTEM FOR INDUSTRIAL TRAINING

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ABSTRACT

Industrial Training is important to University Technology Mara student to train students to adapt work environment when going career life. LiOnline is develop to help coordinator and students in order to overcoming manual submission file, document redundant issue and email overload. LiOnline is a web-based system for document submission of industrial training. It is develop using Laravel framework and MySQL database. LiOnline system is able to notify student and coordinator. Coordinator can set task like video workplace, report every week and list organization workplace. Evaluation of LiOnline is conducted by performing Technology Acceptance Model (TAM) to six coordinators and thirty students to test the Perceived of Usefulness, Perceived Ease of Use and User satisfaction to LiOnline. From the findings most users satisfied with LiOnline and wanted LiOnline to be deploy for industrial training. This shows, that LiOnline can help coordinator and students to reduce their problem when student undergo industrial training. For future work, LiOnline need to be added more function like calculating mark of the work, integrating LiOnline with other platform and using short message services (SMS) to send notification to coordinator at company.

Keywords: Industrial Training, Laravel, MySQL, Technology Acceptance Model (TAM), Web-based.

IMPLEMENTATION OF WEB-BASED ELECTRONIC MATERNITY RECORD

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ABSTRACT

The purpose of this research is to design and developed a Web-based Electronic Maternity Records (eMaternity). This system is able to insert, update and delete the patient's information, visits, treatments and appointments. The system also help the patients, doctors and other medical practitioners to exchange the information as it can be access anytime and anywhere. Five Planes of User Experience is used as a guideline in designing and developing the system. Waterfall Model which consists of analysis, design, implementation, testing and documentation phases is chosen as the methodology for this study. User Experience Test (UXT) was conducted with 7 participants in a healthcare unit of a university and feedbacks and suggestions from the participants were taken consideration and refinement of the system is made based on these comments. The result form UXT clearly indicate that the system is attractive, has good perspicuity, efficient, dependable and have a great value. As the conclusion, eMaternity has been successfully designed and developed to assist medical practitioners in managing and handling patient's record efficiently and effectively. Most of the participants are in the opinion that this system is useful and would recommend this application to their colleagues and friends. For the future works, this system also could be develop as a mobile app as this could benefit the users and encourage more people to use this system. In addition, it could be improved by integrating other modules or functions such as integration with user's email. By integrating the system with email, it will help the user to get notification about their future appointment for check-up.

Keywords: Maternity record, web-based system, User Experience Test (UXT).

WEB-BASED STUDENT ATTENDANCE MONITORING WITH SMS NOTIFICATION¹Fatheenursyaza Bakhri & ²Hawa Mohd Ekhsan¹fatheen.syaza@gmail.com²hawame@perlis.uitm.edu.my**ABSTRACT**

Students attendance in Universiti Teknologi MARA (UiTM) Perlis are commonly being monitored by lecturers and Academic Affairs Division (HEA). Lecturers need to monitor student attendance as it may help to identify student problems at an early stage. Currently, lecturers need to fill in the absenteeism report on paper and need to hand over to HEA staff. Some students avoid to tell their parents regarding the warning letter or any absenteeism problem that occur. Thus, the purpose of this research to develop a Web-based Student Attendance Monitoring with SMS Notification (SAMS). Short Messaging Service (SMS) technology is used since it provides a quicker way to communicate with others. In the testing phase, usability test had been conducted with fourteen respondents in UiTM Perlis including ten students, two lecturers and two staff from HEA. From the findings, it is discovered that SAMS can help lecturer in monitoring the student absenteeism in an easier way which they do not need to go to HEA to make an absenteeism report, the integration of system with SMS is helpful as it can notify the parents and users are satisfied to use this system.

Keywords: Attendance Monitoring, SMS Technology

AUTO MAILBOX NOTIFICATION SYSTEM VIA SHORT MESSAGE SERVICES USING MOTION SENSOR (AMNS)

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ABSTRACT

Mailing system is the system that still available and important to us. Mailbox is important to protect the mail from damaged and avoid missing. The purpose of this project is to develop an Auto Mailbox Notification System using Short Message Services via Motion Sensor(AMNS). It can solve the common problem of the current mailbox where the owner of mailbox doesn't need to check the mailbox frequently on availability of mail. This research is focus on developing a system by using Internet of Things as a platform. Arduino Uno and related components such as Pir sensor and GSM module used to develop AMNS. AMNS is evaluated used functionality and usability testing method. 50 respondents had participated in the evaluation process. From the feedback received, it shows that the AMNS is useful and able to assist them make their life much more easier as they do not need to go check the mailbox, just need to see their mobile phone. Overall, AMNS is suitable for public to use because it can notifying the mailbox owner about the new mail in the mailbox and will be useful to the community who live or work at residential area or office.

Keywords: Short Message Services, Passive Sensor, Internet of Thing

AUGMENTATIVE ALTERNATIVE COMMUNICATION (AAC) FOR SPEECH DELAY CHILDREN

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ABSTRACT

Augmentative Alternative Communication (AAC) is a method of communication that can ‘add-on’ to speech and are used to get around problems with ordinary speech. The purpose of this research is to design and develop an AAC for speech delay children. The technique that is applied is speech recognition to improve their speech developmental among them. In methodology, the model that used in the project is Waterfall model. There are two types of testing used to evaluate the application which are heuristic evaluation and usability testing. A heuristic evaluation has been conducted to three expert users where feedbacks and suggestions from them were taken into refinement. After refinement, Usability Testing was conducted with thirty speech delay children at age four to nine years old. Usability Testing was used to evaluate the application based on User Interface Satisfaction, Interaction and Navigation, Functionality, Content and General Feedback. Result from Usability Testing, reported that speech delay children agreed the functionality of the application very well where the icon and image used are suitable. Furthermore, there were also recommendation to improve the AAC application in the future such as to include verbal instructions along with the instructions of the word for the users to understand where the users can play the application themselves without being instructed by the therapist or teacher. As a conclusion, AAC application for speech delay children has been successfully designed and developed to assist the children in improving their communication skill.

Keywords: Augmentative Alternative Communication (AAC), speech recognition, speech delay.

AN INTERACTIVE ANIMATED COMIC OF PAEDOPHILE AWARENESS AMONG CHILDREN

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ABSTRACT

Paedophile issues is a nightmare to those children who became the victims as they might suffer for their whole life. Awareness of paedophile is still generally low among people in Malaysia especially children that it requires a creative and attractive method to deliver the message. The application named as 'i-ComPedo'. 'i-ComPedo' is stands for an interactive animated comic of paedophile awareness among children. 'i-ComPedo' is designed and developed to create an awareness about paedophile. This research focuses on the integration of animated comic and interactive multimedia using storytelling elements. This research developed an interactive animated comic of paedophile awareness by using multimedia application for children developed in this research. The storytelling uses comic concept to express the idea of the story to attract the children's attention and to increase understanding. Therefore, the main aim of this study is to develop an interactive animated comic of paedophile awareness among children. The study adopted ADDIE Model as a guideline to accomplish the project, which consists of analysis, design, development, implementation and evaluation phases. In order to evaluate the usefulness of i-'ComPedo', this study conducted three main testing process which are Quasi-experiment, usability testing and user acceptance that involved children and teachers. The result from Quasi-experiment proved the effectiveness of the application in creating awareness among primary school children aged 9-11 years old with 13.4 % increment of knowledge and understanding of paedophile issues. The children perceived 'i-Compedo' as an interesting, understandable, usable and comfortable courseware in usability testing session with successful tasks percentage is 91.2 %. The application was highly accepted by the targeted users as the overall user acceptance mean score is 4.39 in creating paedophile awareness among children. As a conclusion, an interactive animated comic is developed to offer a new and innovative approach in creating awareness among children about paedophile.

Keywords: Children, animated comic, paedophile, interactive multimedia, awareness

CREDIT SCORE ANALYSIS SYSTEM USING FUZZY LOGIC

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ABSTRACT

Credit scoring analysis is used by creditors to evaluate potential risk poses by lending money to customer and avoid risky customer to the institution. It determines the level of creditworthiness of the potential customer for a loan such as personal loan. Credit score is directed either on statistical method or soft computing method. Currently, fuzzy logic becoming increasingly preferred due to its proficient and precise nature. Using fuzzy logic, characteristics (known as 'C') of borrower can be gauge instantly based on set of input data set. In this research, it aims to study and use fuzzy logic algorithm to analyze personal credit worthiness based on identified 'C'. The result from the literature review is portrayed in a prototype. The CSAS is a self-service credit scoring analysis that can assist potential customers to evaluate their creditworthiness. To evaluate perceive of usefulness and perceive ease of use on CSAS, a testing has been conducted on thirty respondents from the public workers. The result shows that most of them agreed to use CSAS for their credit scoring analysis to check the credit worthiness of the applicant. In conclusion, creditworthiness of potential borrower can be evaluated based on 'C' using fuzzy logic algorithm.

Keywords: credit score, fuzzy logic, personal loan

MONITORING ROAD TRAFFIC WITH IMAGE RECOGNITION

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ABSTRACT

Traffic jams is one of the daily problems that occur to road user. There are many reasons that traffic jams could be occur anywhere whether it comes from the driver itself or maybe there are construction or an accident happened. As a driver, we must plan our journey well to avoid being stuck in the traffic jams. Therefore, it is essential to develop an affordable system that would help the driver or even the PLUS highways stuff to recognize traffic condition at a certain location. The objective of this study is to develop an automated system to recognize traffic jams on Projek Lebuhraya Utara Selatan (PLUS) highway with image recognition and to evaluate the accuracy of image recognition on heavy traffic. In this technique, an algorithm called Convolutional Neural Network (CNN) was implemented. The beneficial of using CNN is that they can capture or able to learnt relevant features from an image at different levels similar to a human brain. They were two evaluation that have been done which effectiveness of image recognition and the accuracy of image recognition result which these two evaluations produce an accurate result that makes thirty respondents from road user agree with this project to be developed. For the future works, there are a few suggestions and recommendations that researcher received after doing the testing. The respond was added more location, added user manual and display the image result in the web. Overall, CNN does produce an accurate representation of traffic image.

Keywords: Projek Lebuhraya Utara Selatan (PLUS), Convolutional Neural Network (CNN), Traffic jams.

ABSTRACTS

CS251 – BACHELOR OF COMPUTER (HONS) NETCENTRIC COMPUTING

Developing Light Reacting Speaker with Bluetooth Embedded and Fingerprint Security System

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ABSTRACT

Mobile device has been use widely as a medium to listen to music. Mobility is a must on every devices in last 5 years. The device that can give more satisfaction to the music listener is a speaker. But it must be secured to make sure it cannot be access by outsider. The objective of the system is to provide a security system for the speaker and to provide a wireless connection for the speaker to any devices. Motivated by the trend in the last 5 years which is the biometric security system in every mobile device, Developing Light Reacting Speaker with Bluetooth Embedded and Fingerprint Security System project also use the same type of security system. This device was develop using Arduino Mega, sound sensor, Bluetooth module HC-05, and the most important part is Fingerprint scanner that represent the biometric security reader. The system will provide security system which is user has to scan their fingerprint to start the speaker instead of using the switch. When the fingerprint is detected, the Bluetooth module in the speaker will turn on so user can connect their device to the speaker. The significant of Bluetooth device is to allow the mobility of the speaker up to 10 meters without the distraction of any obstacles from wall.

Keywords: Arduino Speaker, Bluetooth, Fingerprint, Sound sensor.

BABY CARE GUIDE APPLICATION WITH THE IMPLEMENTATION OF GOOGLE MAPS API

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ABSTRACT

Pediatrician is a clinic that provides services that specialized in medical science that concerned with the physical, mental, and social health of children from birth to young adulthood. Usually, first time parent lacks of parenting knowledge starting from pregnancy phase, childbirth until infant care. Pediatricians can help parent with issues, such as growth and development, feeding, and discipline. These problems become issues when first time parent do not know what to do and how to handle their baby needs. The first objectives of this project is to develop baby care guide application with Google Maps API implementation to track the nearest pediatrician. This application were developed by using Android Studio and Firebase. StarUML was used in order to design the class diagram, ERD, flowchart and network diagram. This project focus on anyone whose is first time parent to be the user. Google Maps API features enable user to locate the nearby pediatrician location. The second objectives of this project is to test functionality and user acceptance in making sure that the application work properly. The functionality testing was conducted by testing the application to an expert which is a lecturer from science computer department while user acceptance was conducted by giving the application to 30 first time parent to test it. The result shows that 80% was the total of respondent who were strongly agree and agree state that they satisfied with the application. It shows that, the application helps them getting more knowledge and skills about parenting add with 51.4% respondent strongly agree that it was easy to find the information they needed using this application.

Keywords: Mobile Application, e-Health.

AUTOMATED VEHICLE MANAGEMENT SYSTEM USING BARCODE SCANNER

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ABSTRACT

In Universiti Teknologi MARA Perlis, most of the students have the opportunity to go to their classes with their own vehicle. This will lead to the increasing numbers of vehicle that came in and out of the campus. Currently, all of the vehicle must be registered to acquire the sticker which allows the students to enter the campus. However, in order to get the sticker, student must register their information at the auxiliary's office which will be time consuming. Thus, the objective of this project is to develop an Automated Vehicle Management System to help solve the problems. There is no automated system available in Universiti Teknologi MARA Perlis in order to automatically manage and organize all of the students' record in a database. The system was developed using Notepad++ with PHP programming language and the system used MySQL to develop the database of the system. A handheld barcode scanner was also used in this system so that auxiliary police can scan students' metric card and automatically store the record in the database. Automated Vehicle Management System was tested using usability and functionality testing by potential users of Universiti Teknologi MARA Perlis. The respondents were highly recommended this system to be implemented in Universiti Teknologi MARA Perlis in the future. Other than that, project can be improved by replacing the barcode scanner with a much sophisticated detection device and by making this system into a hybrid application.

Keywords: Barcode scanner, PHP, MySQL.

HELPER: A DELIVERY SERVICE FROM ANY LOCATION WITH CLOUD INTEGRATIONS

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ABSTRACT

Helper application is a mobile delivery application integrated with cloud computing as the alternative for one-stop delivery service. It was developed specifically for the purpose of allowing the user to get a delivery for anything from anywhere. Thus, it will allow any shop to have a delivery service for no cost whatsoever. Furthermore, another main component of Helper application is its ability to work as a deliveryman. Not only does the application allow you to make and take orders from anywhere, but you can also work as a deliveryman for earning some extra cash. The application has an integrated cloud computing service as the backend of the mobile application. Integrating cloud services can overcome the crucial storage issue faced by mobile phones by providing the ability to store all contents on the cloud's database. Real-time synchronization is done between all users to improve, enhance and fully utilize the application. Helper used the waterfall model as its methodology. User acceptance and functionality testing was conducted with 30 respondents who are the students enrolled in UiTM Perlis to determine the effectiveness of application by evaluating the questionnaires that were divided into a few categories respectively. Results of the system evaluation showed that most of the participants were satisfied with all categories provided. Based on the result of the testing, it is proven that Helper can function as a one-stop alternative to delivery services due to its capabilities and features.

Keyword: Mobile application, delivery, Firebase

DEVELOPMENT OF AN ONLINE ROOM BOOKING SYSTEM FOR UNIVERSITY ACCOMMODATION

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ABSTRACT

University accommodation is one of the facilities allocated for the use of all university members. At UiTM Perlis university accommodation consists of dormitories and guest houses which can be used for public rent. In order to make reservation, the lodger have to come to Cengal College Office then fill in the manual form. However, it is time consuming for the lodger to wait for reservation approval from Rector. The objectives of the project are to automate the existing manual system and to evaluate the effectiveness of online room booking system by using usability test and user acceptance test. The online booking system were developed by using PHP and MySQL languages and in order to develop the system ERD, use case diagram, flowchart and testbed were designed. Two testing were conducted to collect the result which were usability testing and user acceptance testing. 60% of respondents were strongly agree and 36.67% of respondents were agree that the online room booking system is useful for them. Also 76.67% respondents were really satisfied with the performance of the system. Thus, this project found out that the online room booking system does help user in booking rooms when the user can save time and quickly help users find a suitable room.

Keywords: university, accommodation, booking system, PHP, MySQL.

SPEECH EMOTION RECOGNITION APPLICATION USING VOKATURI API WITH BINAURAL BEAT SOUNDS THERAPY (EMO CHECKUP)

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ABSTRACT

There are many ways of communication but the speech signal is one of the fastest and most natural methods of communications between humans. Therefore, the speech can be the fast and efficient method of interaction between human and machine too. Recognising emotion from speech has become one the active research themes in speech processing and in applications based on human-computer interaction. People in mental health problems are typically unhappy, unwell, angry or sad and having emotional disturbance. Most of them are unable to speak out their problems in front of others makes them unable to be aware of their own emotions. Besides, there are a lot of mental health patients that having difficulties when they are having a face-to-face treatment. The objectives of the project are to design and develop an application named as EMO CHECKUP that implemented speech emotion recognition technology using Vokaturi API with binaural beat sounds therapy and to evaluate the effectiveness of the EMO CHECKUP by using functionality and usability test. The application was developed by using Java programming language and C/C++ languages in Android Studio IDE. The usability testing was conducted in order to collect result from 30 respondents. 20% of the respondents strongly agreed that by using EMO CHECKUP, their emotion conditions would be improved. Not only that, 33.33% out of respondents also agreed that learning to use EMO CHECKUP would be easy for them. Thus, this project found out that EMO CHECKUP does help users in recognising their emotions and at the same time helping them in managing their emotions by listening to binaural beat sounds.

Keywords: Android application, speech emotion recognition, binaural beat sounds therapy.

MR JAMAL: AN ARABIC E-LEARNING MOBILE APPLICATION FOR UITM STUDENTS

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ABSTRACT

Recently, the University of Technology Mara (UiTM) Arau, Perlis students learned their Arabic subject through conventional teaching and learning within a brick-and-mortar classroom facility method. The conventional way of learning caused students to feel bored and easy to lost their focus during the learning process. This mobile application provides an e-Learning type of learning process. This type of learning conducted via electronic media, usually on the Internet. The purpose of this study is twofold. Firstly, this mobile application is to develop a mobile application of Arabic learning for UiTM students called Mr. Jamal. Second, to examine the user's acceptance using Mr. Jamal application and its ability as a supporting tool to learn the Arabic language. This project developed in Android Studio using JAVA language. This mobile application add-on listening skills that can be used to enhance students' performance to learn the Arabic language. The significance of this project is to help students of UiTM to learn Arabic words by themselves using the mobile application easier using the conventional way and also to encourage students to have more enthusiasm to learn the Arabic language. The waterfall model is used for the development model. This model is sequential and downwards design process. In this project, there will be six phases involved which are Information Gathering, Project Requirement, Systems Design, Systems Development, Testing, and Documentation. The developed mobile application is evaluated by 30 respondents through acceptance and functionality testing. The aspects evaluated are Perceived Ease of Use, Perceive of Usefulness, E-Learning Self-Efficacy, Enjoyment and also the Functionality. Most of the users agreed that all the buttons and menus were functioning well. However, to increase the effectiveness and efficiency of this mobile application, some features need to be added like the writing skills to able students to write Arabic words and check it whether it is true or false.

Keywords: Android Application, Arabic E-Learning, Mr. Jamal, Mobile Application

GPS BASED E-ATTENDANCE SYSTEM FOR LECTURERS IN UITM PERLIS BRANCH

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ABSTRACT

Attendance refers to the action of going regularly to or being present at a place or event. The methods used for attendance were usually punch card and thumbprint. These two methods were used to record the employee attendance to check the availability of the employee. Previously, Universiti Teknologi MARA (UiTM) Perlis branch is using punch card and being replaced by thumbprint method to record employee attendance. Thumbprint attendance system used biometric device to allow employee to scan their thumbprint for attendance identification. Since thumbprint attendance system use thumb itself, it is found that the employee have difficulties in accessing the biometric device because of the weather, physical conditions and other problems. Thus, this project proposed is to develop a mobile based attendance system using built-in GPS feature in a smartphone. The second objective is to evaluate the mobile based attendance system. The system was developed using Android Studio with the Firebase as a database of a system. The developed mobile application is evaluated by thirty UiTM Perlis lecturers through usability testing. The aspects evaluated are from perceived usefulness and perceived ease of use. The result shows that 40% of users agreed that the GPS Based E-Attendance System is a useful system. While, 46.67% users strongly agreed that the system is easy to use. Hence, the significance of this project are lecturers do not need to move back and forth from one building to another building, provides lecturers with a convenient situation, easy to access and reduce paperwork use and decrease human effort as well. However, some features need to be improve in future works which is the application should be able to generate attendance report by displaying clock in and clock out time for previous date.

Keywords: E-Attendance, Mobile Application, GPS, Google Maps API.

ENGENIOUS: LEARNING ENGLISH USING SOCIAL MEDIA FEEDS

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ABSTRACT

Social media delivers public content in many types of information. It can be used to assist learner to get proper source of class learning socially. Nowadays, university students are not really in class oriented to learn in university. Flip classes and blended learning are the current style of university policy for teaching and learning. However, most of them struggles to prepare their students with proper learning materials. With social media feeds, students will get different style of learning interest and intimation. This project aims to provide English language teaching materials using social media content from Facebook, Instagram, YouTube and Twitter. The cumulative contents from the social media will be positioned in a prototype using social media Application Programming Interface (API). Literature review has been conducted to explore about university practises for teaching and learning, social media environment and programming and acceptance testing for an application. A prototype has been established to demonstrate this study. The evaluation of the prototype involved 35 respondents and the result showed that 48.57% of them decide to accept the prototype as useful application for their English language teaching and learning platform. It is recommended to use prevalent references in the prototype to suit with the university requirements. In conclusion, social media contents from API programming undoubtedly supports university teaching and learning practices especially for English education.

Keywords: Learning, English, Social Media

DEVELOPING MOBILE APPLICATION TO FIND SUPERVISOR FOR UNIVERSITI TEKNOLOGI MARA (UITM) FINAL YEAR PROJECT

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ABSTRACT

Universiti Teknologi Mara final year students need to make a Final Year Project (FYP) before graduating from university. A final year project is an approach to test student's capability, it gives student chance to apply all the skills that have they learned from university, even with the help of a supervisor, the student needs to overcome all possible errors and boundaries. The student also needs to present their project at the end of the semester and also make a thesis. Student needs to find a supervisor to guide that along with the ways to finish their project. However, it is difficult for a student to meet up with the potential supervisor. This is because student have limited information about the potential supervisor and also it is hard to make an appointment with a potential supervisor. Thus, these projects objective is to propose an e-supervisor system, a mobile application that can help the student to identify a potential supervisor. The second objective is to provide the student with a previous projects summary that can help the student make research. To accomplish this project, a laptop with Android Studio software is needed to develop e-supervisor. The real-time database is required for this project, thus Firebase approach has been applied for this project. This research shows how a complicated process of finding a supervisor can be solved by using android mobile application with real-time database.

Keywords: Final Year Project, Mobile Application, Supervisor, Student.

CENTRALIZED LIGHTING CONTROL SYSTEM FOR PERSONAL RESIDENCE USING VOICE RECOGNITION AND MOBILE APPLICATION

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ABSTRACT

Lighting system has been assisting humanity in such a long period. However, a cheap, reliable and effective lighting control system has yet to be a mainstream technology in our today's world. Some of the major inconveniences regarding the conventional lighting control system are mobility and flexibility. So, this project is focused on the centralizing personal residence's lighting control system with two features, mobile application and voice recognition which cover the issues of mobility and flexibility. Hence, centralized lighting control system for personal residence using mobile application and voice recognition is developed based on Internet of Things (IoT) concept. The mobile application used is Blynk which connected to the lighting control system over a local wireless connection while the voice recognition system is directly connected to the lighting control system. Both features served the same role to trigger the 4-channel relay module which will act as light switches. The personal resident can trigger the indoor light switches using their smartphone everywhere through internet connection. On the other hand, the voice recognition system will wait for the user's command to trigger the switches. A prototype of working centralized lighting control system has been developed accordingly to the objectives and requirements. The prototype undergoes pilot testing and experimentation to identify the workflow and efficiency of the system. This system will visualize the conceptual understanding of controlling a lighting system for personal residence in more organized manner.

Keywords: Lighting control system, IoT, Mobile application, Voice recognition, Personal residence.

E-LEARNING OF JAVA BASIC WITH GAMIFICATION SYSTEM

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ABSTRACT

Java is one of the programming languages that contribute in developing the computing technologies. This programming language has been introduced to the education in Malaysia in order to coping with the advancement of technology. The Java programming subject is compulsory course that should be taken by the computer sciences students. According to the advancement of technology, most of the subjects uses e-learning system to conduct the learning and teaching process. The flexibility of e-learning system which are available at any where and any time cause the increasing of students' engagement towards the system. Furthermore, the implementation of gamification into the e-learning system make it more attractive and enhance the students' motivation during the learning and teaching process. However, learning Java programming subject has its limitation which is students are unable to gain the better understanding about the basic Java programming during the first year of semester. Another limitation that has found is the current e-learning system still lack of integration with gamification elements. The main objective for this system is to build the system with the element of gamification. The gamification element that had been chosen to implement in this system is the timer and leaderboard. The timer is challenged students to choose the answer during the time given. For leaderboard, it is to shows the students who are get the best marks among them. This can motivate students to do better. Another objective is to test the system using the WebpageTest tools. The online system was designed and developed using the web-based applications such as the MYSQL as the database creation, Notepad++ is uses to write the system source code and graphical representations, and Awardspace.net as the webhost to make the system available in online environment. The result shows that all the tasks in Usability Test are completely done by the lecturer and students. In User Acceptance Test, users are agreed that the system is user friendly and beneficial to the students' learning experiences with the mean score 4.15 and 4.20. Users also agreed that the features in the system are able to use, the provided button is easy to click, and the consistency of the theme used on the system with the mean score 3.85, 4.20 and 4.20 respectively. After conducted the testing, there are a few limitation that were found. The system do not shows the timer which make users unable to estimate the time range per questions. Besides, the system performance is lower than expected. This system had taken more time to load every webpages. It is because the image use by this system comes out in a large size. There is recommendation to use the smallest size instead of the largest size. This will take shortest time for the webpages of the system to load. By implementing those recommendations, there will be more users attracted to use the system. This will make the users who are from the Computer Science programmes enhance their learning process and methods.

Keywords: Java programming, e-learning, Gamification, Quiz, Leaderboard.

QUESTOCR: SWIFT EXAMINATION QUESTION GENERATOR

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ABSTRACT

Past year examination question has become one of the useful source for the lecturers in the teaching and learning method. These past year question will be used as a references by the lecturer to create a new question for the examination paper. However, the lecturer found it difficult to create question using previous examination paper because they have to rewrite or redraw the question again. Thus, one method that can be used to solve the problem is by using Optical Character Recognition (OCR). OCR is a conversion from text paper into a digital text form. OCR is widely used in the recognition of plat number, exam paper reader (EPR) and even cheque number. QuestOCR is a mobile application that implement the use of OCR. QuestOCR can be used by the lecturer to capture and insert the question into the mobile phone for examination use. The goal of the research is to help the lecturers which find difficulties in creating question using previous examination paper. Three objectives were highlight in this research. First objective is to identify requirement for OCR implementation in mobile application for question duplication in examination paper. Second objective was to develop an Android mobile application implementing OCR for question duplication. Third objective is to evaluate the effectiveness of the implementation of OCR in mobile application usage using TAM. Literature review has been conducted to explore about examination paper, Optical Character Recognition, mobile application, mobile database and acceptance testing for mobile application. In this project, two hardware were being used which are a laptop and mobile phone. Android Studio was installed into to laptop as the tools to develop QuestOCR and SQLite was used as the database. QuestOCR were evaluated using TAM testing by lecturers of UiTM Perlis. Two aspects were evaluated which are perceived usefulness (PU) and perceived ease of use (PEOU). The result shows 36.67% of the users were satisfied that QuestOCR is a useful mobile application and it is easy to be use. In conclusion, QuestOCR is flexible, convenience and reliable to be used by the lecturers. However, to improve the effectiveness of QuestOCR other character recognition or methods could be used to collect the characters, numbers or even pictures or tables. Other than that, this research can be improvised by combine the mobile application with web application.

Keywords: Examination Question, Optical Character Recognition, Mobile Application, SQLite.

SMARTTRAVEL: A CONTENT-BASED RECOMMENDATION SYSTEM FOR TOURISTS USING FUZZY THEORETIC METHOD

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ABSTRACT

Recommendation system (RS) is a common word in the travel industry since technology improvement led to growing of RS application that helps tourists to select, compare and make decisions almost instantly. Planning a trip, both before and during the travel required a lot of time since choosing a tourist destination from the massive amount of information is one of the most complex tasks for tourists especially for people with a limited amount of budget. Thus, this project proposed is to develop a Content-based Recommendation System (CBRS) for tourists using Fuzzy Theoretic Method and Budget Constraints Algorithm. The second objective is to evaluate the user's acceptance of the SmartTravel system and the ability of it as a planning tool for traveling purpose. The system was developed using XAMPP and Notepad++ with MySQL as a database of the system. Programming languages such as JavaScript, PHP, and CSS was used to design the system. This system was evaluated by 30 respondents by using two types of testing namely functionality test and user acceptance test. The evaluation was divided into three sections which are demographic, user interface design, usefulness, and content. The result shows that 70% of users agreed that the System is a useful system since it can help the user to found the best travel destination and travel activities based on their preferences. While 88% of users strongly agreed that the system will reduce their time in searching for travel information and help them to travel based on their budget. Hence, the significance of this project is the system helps travelers to make a decision on where to travel and what type of activities suitable for them and it encourages people to do their favorite activities and visit many places in Perlis without worrying about travel expenses. In future research, the system will involve more module that improves the way the data outlined and given the user more features on budgeting their travel expenses including transportation, accommodation, and others.

Keywords: Tourism, Recommender system, Content-based filtering, Fuzzy theoretic method, web-based system, destination recommendation.

CLOUD WEB-BASED FLOODGATE WATER LEVEL MONITORING SYSTEM USING ARDUINO AND GROOVED SENSOR

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ABSTRACT

Cloud Web-based Floodgate Water Level Monitoring System using Arduino and Grooved Sensor is a web-based application that was developed to monitor water level at designated floodgate. The floodgate water level monitoring system used Arduino Uno as its water level monitoring system. This hardware was used to detect the water level of a water surface using the grooved water sensor module. The device integrated NodeMCU to connect the device to the system. The NodeMCU is responsible for the communication between the water level device and Firebase, the cloud database that the system used to store its data. The purposed of the floodgate water level monitoring system was to help the crop field's floodgate operators manage the floodgate more easily by providing them the water level history of the water canal. The water sensor device send data to the cloud database whenever changes of water level is detected. The data is then organised into periods of daily and weekly. The website, hosted also by Firebase, will take the data and transform it into charts. The development of the floodgate water level monitoring system consists of 8 steps, which are information gathering, planning, research design, project requirement, design and development, experiment, analysis and documentation. An accuracy test was conducted to verify the water sensor device accuracy in taking the water level measurement. The reading of the water sensor device must be parallel to the reading obtained from a standard ruler for measuring short distance. The results obtained from the testing was within the acceptable accuracy percentage. Therefore, the proposed application proved to be beneficial to the floodgate operators by allowing them to have a quick information on the water level history of the affected floodgate and also gives morale support to other developers to help contribute to the agricultural sectors in the future.

Keywords: IoT, website, monitor, water level, floodgate

PERSONALITY COMPATIBILITY ON MOBILE APPLICATION IN UNIVERSITY

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ABSTRACT

Human personality refers to the way humans think, feel, and behave. Overtime, people will stop and ponder on their personality and consider on improving themselves based on their personality. In this modern era, people depended on their mobile devices to browse and searched the necessary information they need on the internet. However, the problem with the internet is it does not provide an accurate answer desired by the user. Hence, a mobile application on Android was developed to resolve this issue. The scope of this project revolves around university students and observing their behavior in their studies. The method used in this project was based on the Waterfall Model that includes various phases starting with system planning and ends with documentation. The mobile application provides a batch of questionnaire towards to user for them to answer. Based on the question provided, the user will answer it by reflecting on themselves. Once answered, the mobile application will display the result of their personality. The result displays the person's behavior. Additional feature is providing a brief on the person's expectation and their preferable working environment as well as advises on how to improve themselves. With the result received, they can further broaden their understanding on their personality and make improvement on themselves. The result for the system evaluation showed the participant were satisfied with the features provided. Therefore it is proven that it can benefit users to improve and learn more about themselves.

Keywords: Personality, Mobile Application, Android.

MOBILE DOCTOR: MALAYSIA COLORECTAL CANCER MOBILE APPLICATION WITH CLOUD DATABASE

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ABSTRACT

Colorectal cancer is the second highest for Malaysian male and the third highest for the female. This kind of cancer has a high risk to inflict the patient body and give several problems to the patient body. Thus, an application is created to aid the doctor to manage the interview session with their patient and inform the user when is the next appointment will be held. This application is called MobileDoct a Malaysian Colorectal Cancer Application. People nowadays are busy with their work and sometimes they forgot to manage their time to go for an appointment with the doctor. The objective of this project is to develop an application that will set date for when is the appointment session will be held. The system will be tested on the This application could only be used by the Android user's only that are using android version 5.0 which known as Lollipop until the current version which is android Pie which is android version 9.0. This application also integrates with cloud computing that is using Firebase database. The result shows that this application could help the user which is both of the patient and doctor. This application could reduce the time consuming for both users, which is patients and doctor. In the traditional way, a patient needs to go to the counter and wait for their turn. Finally, in the near future, this project could be upgraded to inform the user of the latest news or information about cancer and enhance system functionality.

Keyword: Colorectal Cancer, appointment, Android version, Firebase database

ABSTRACTS

CS248 – BACHELOR OF SCIENCE (HONS) MANAGEMENT MATHEMATICS

MEASURING PERFORMANCE OF CONVENTIONAL AND ISLAMIC BANKS USING DEA METHOD: EVIDENCE FROM MALAYSIAN BANKING SYSTEM

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ABSTRACT

Malaysia is the first country in the world that has introduced dual-banking system namely conventional and Islamic. Banking industry in Malaysia started in 1867. As in 2017, Malaysia has a total number of 27 conventional banks and 16 Islamic banks. Measuring the performances of the banks is very important as it will lead to a good management. Efficiency and effectiveness are two main important indicators when measuring the performances of any institutions. The main objective of this study is to measure the overall performances of the bank as well as their efficiency and effectiveness score. This paper analyses the performances of conventional and Islamic banks in Malaysia which include five selected conventional banks namely CIMB Bank Bhd, Hong Leong Bank Bhd, Malayan Banking Bhd, Public Bank Bhd, and RHB Bank Bhd while another five selected Islamic banks which are Affin Islamic Bank Bhd, Bank Islam Malaysia BHD, Bank Muamalat Malaysia Bhd, CIMB Islamic Bank Bhd, and Hong Leong Islamic Bank Bhd. This study covers years from 2014 to 2018. The researcher used a non-parametric method which is two-stage Data Envelopment Analysis (DEA) method in measuring the efficiency and effectiveness score of the banks. DEA method is a non-parametric method in operating research and economics and the best method in evaluating performances because of its characteristics as a central tendency approach. The results of this report state that conventional banks perform better than the Islamic banks. The results also show that there is no bank that exhibits best practice in both stages. Finally, Public Bank Bhd and Bank Islam Malaysia Bhd are the best banks in terms of performance for conventional and Islamic banks.

Keywords: Data Envelopment Analysis, Performance Measure, Efficiency, Effectiveness, Malaysian Banking System

AIR QUALITY PATTERN ASSESSMENT IN PENINSULAR MALAYSIA USING STATISTICAL APPROACH

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ABSTRACT

The causes of air quality problems detected are the high increase in the number of vehicles, the rapidly growing urbanization and industrialization that indirectly poses a threat to the environment and public health. The primary objective of this research was to analyse air quality pattern in Peninsular Malaysia utilizing cluster analysis. The sub-objectives of this study were to classify the air quality pattern using hierarchical cluster analysis, to differentiate between clusters using discriminant analysis and also to identify sources of air pollution using principal component analysis. The data was provided by the Department of Environment (DOE) of Malaysia for the years 2013 until 2016 by monthly basis. 5 parameters of air pollution index (API) namely nitrogen dioxide (NO₂), carbon monoxide (CO), ozone (O₃), sulphur dioxide (SO₂) and particulate matter less than 10 microns (PM₁₀) were involved in this study. Therefore, statistical approach which is cluster analysis (CA) was used in this study. It cluster three smaller classes compared to 48 air monitoring stations which has the same characteristics. Discriminant analysis (DA) was used to differentiating between the three classes where it used standard, backward and forward stepwise technique. It was shown that 2015 has more stand out and different pattern. Wilks' lambda test also is utilize to measure how well each variables separates into groups. Principal component analysis (PCA) found that CO and PM₁₀ are the major pollutants that have contributed to degradation of air quality in the Peninsular Malaysia based on the three classes due to combustion process from vehicles and industries. Hence, by using the statistical approach for analysing huge data sets become better understanding on air quality pattern and clearly identified the significant air pollutant parameters.

Keywords: Air Quality Pattern, Pollution Parameters, Statistical Approach, Hierarchical Cluster Analysis, Discriminant Analysis, Principal Component Analysis.

FUZZY TIME SERIES AND GEOMETRIC BROWNIAN MOTION IN FORECASTING STOCK PRICES IN BURSA MALAYSIA

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ABSTRACT

Every country has their own stock market exchange, which is a platform to raise capital and place where shares of listed company are traded. Bursa Malaysia is a stock exchange of Malaysia and it is previously known as Kuala Lumpur Stock Exchange. All over the world, including Malaysia, it is common for investors or traders to get lost due to wrong investment decisions. According to conventional financial theory, there are so many reasons that can lead to bad investment decisions. One of them is confirmation bias where an investor has a preconceived notion about an investment without a good information and knowledge. In this paper, we study the best way to provide good information for investors in helping them make the right decisions and not to fall prey to this behavioral miscue. Two models for forecasting stock prices data are employed, namely, Fuzzy Time Series (FTS) and Geometric Brownian Motion (GBM). This study used a secondary data consisting of AirAsia Berhad daily stock prices for duration of 20 weeks from January 2015 to May 2015. The 16-weeks data from January to April 2015 was used to forecast the stock prices for the 4-weeks of May 2015. The results showed that FTS has the lowest values of the Mean Absolute Percentage Error (MAPE) and the Mean Square Error (MSE), which are 1.11% and $MYR^2 0.0011$, respectively. For comparison, for GBM, the MAPE is 1.53% and the MSE is $MYR^2 0.0017$. In addition most of the forecasted stock prices by FTS are almost similar to the actual stock data. The findings imply that the FTS model provides a more accurate forecast of stock prices.

Keywords: Forecasting, stock market, Fuzzy Time Series, Geometric Brownian Motion.

FUZZY WATER QUALITY INDEX (FWQI) MODEL IN DETERMINING THE WATER QUALITY STATUS OF RIVER IN PENANG ISLAND

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ABSTRACT

The determination of water quality status of a river or any other water sources is highly undetermined. Thus, it is essential to have a good model to determine the status of water quality. The conventional water quality used by Development of Environment (DOE) has some limitations, by which many researchers have developed and used varieties of water quality measurements, but the value of Water Quality Index (WQI) is still not accurate. In recent years, the fuzzy logic methods have been demonstrated to be appropriate in addressing uncertainty and subjectivity in environmental issues. Therefore, in this study, the development of a new index which is called the Fuzzy Logic Water Quality Index (FWQI) is proposed to determine the water quality status of rivers in Penang Island, which are at Juru River, Pinang River, and Dondang River by using six parameters namely Dissolved Oxygen (DO), Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solid (TSS), Ammoniacal Nitrogen (NH₃-N), and pH value. With the inspection of the smallest error in RMSE, it shows that the FWQI is better model compared to WQI model in determining the status of water quality. The results from this study shows that the status of the rivers for both stations at Juru River and Pinang River are polluted, while the status is slightly polluted for Dondang River.

Keywords: Fuzzy Logic, Water Quality Status, WQI, FWQI

DETERMINATION OF IMPORTANT CRITERIA IN MEASURING THE PERFORMANCE OF NON-ACADEMIC STAFF BY USING FUZZY AHP

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ABSTRACT

Evaluating employee performance is an important process in order to improve employee self-esteem, to identify employee for reward and to identify who should have additional training. The management has the responsibilities to identify which criteria are significant when come to evaluate employee performance. This study is focused on non-academic staff in Universiti Teknologi MARA (UiTM) Perlis Branch. The main objective of this study is to determine the important criteria in measuring the performance of non-academic staff. Through this study, non-academic staff will aware which criteria are important and used in performance appraisal. However, multiple conflict criteria, uncertainty and vagueness of the experts' opinion are the three major obstacles in identifying the important criteria. Therefore Fuzzy Analytical Hierarchy Process (FAHP) which uses both qualitative and quantitative decision making approaches is used to solve this problem. The FAHP method adopted here uses Triangular Fuzzy Number (TFN). FAHP has been improved to deal with the subjectiveness and impression in the pair-wise comparison process. This study revealed the application of FAHP in determines the important criteria and sub-criteria in measuring the performance of non-academic staff in UiTM Perlis Branch. The data used for this study were collected and converted to a pairwise comparison for both criteria and sub-criteria by using triangular fuzzy number (TFN). The result of this study is evaluated by using EXCEL spreadsheet, showed that the most preferable and influencing criteria and sub-criteria in measuring the performance of non-academic staff are work quality and communication respectively. Finally, this study can be implemented to other multiple criteria decision making problems such as supplier and lecturer selection.

Keywords: Performance, Non-Academic Staff, Criteria and Sub-Criteria, Fuzzy AHP, Triangular Fuzzy Number.

NUTRIENT MANAGEMENT FOR RUBBER PLANTATION USING GOAL PROGRAMMING

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ABSTRACT

Rubber plantation in Malaysia is currently not limited to household consumption, but it can be directly involved in the export and import activities. As we know, plantation of rubber in the Farming Unit of UiTM Perlis has a great potential to grow as it has a high market value. Every year, the Farming Unit staff will fertilize the rubber tree 2 times. The main objective of the study is to minimize the cost of chemical fertilizers used to plant rubber. Besides, the sub-objectives are to determine the best combination of weight for fertilizers used on a rubber tree and to calculate the mass per hectare of Nitrogen, Phosphorus, and Potassium needed for the rubber tree. The data were analyzed using POM-QM software for Windows. In the model formulation, there are seven types of decision variables and three constraints, which are the cost of chemical fertilizers and the requirement of the upper and lower limits of nutrients in the chemical fertilizers. The findings of the study have shown that the fertilizers that would minimize the total cost of rubber plantation are Urea, Muriate of Potash (MOP), and Triple Super Phosphate (TSP) while the compound of NPK applied was 90 kg/ha of Nitrogen, 110 kg/ha of Phosphorus, and 130 kg/ha of Potassium. Results of the model indicated that this method is able to meet all the goals expected. In conclusion, this study shows that goal programming is an effective technique to deal with nutrient management problem.

Keywords: Rubber, fertilizers, goal programming.

TASK ALLOCATION IN PRODUCTION SYSTEMS USING FIREFLY ALGORITHM

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ABSTRACT

The assembly line process has been widely used by most manufacturing industries all over the world. In the production systems, the workpieces of the products will be assembled in line and passed through several workstations before they turn into finished products. However, there exists a problem in the assembly line process by which the management always deal with unbalancing of the assembly work among the workstations. It is hard for the management to optimize the number of workstations without violating the restriction of the line such as precedence relations among the task. Therefore, from the above matter, this study will solve the Simple Assembly Line Balancing Problem Type 1 (SALBP-1) by minimizing the number of workstations to complete all tasks based on the given cycle time and task time using firefly algorithm. Hence, the number of tasks assigned for each workstation is determined where the total task time for each workstation will not exceeding the cycle time. Based on the result obtained, it shows that the optimal number of workstations needed for 9 tasks is 4 and the total task time for each workstation is not exceeding 10 minutes. As for the recommendation, other metaheuristic and the trend for algorithm hybridization can be applied with the aims of minimizing the number of workstation for SALBP-1.

Keywords: Assembly line, production, SALBP-1, firefly algorithm.

ALLOCATION OF TIME AND COST IN PROJECT MANAGEMENT USING GOAL PROGRAMMING

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ABSTRACT

The allocation of time and cost in a project have always become a common issue faced by most of the company. In the real-life activity, the project manager needs to handle multiple issues that arise regarding the project management such as the projects are not completed on time and the cost is over budget. This paper discusses about the application of preemptive goal programming model to allocate time and cost in few projects at Teras Chuping Enterprise, a metal welding and fabrication company. The data was analyzed using LINGO 17 software. The results show that when the first priority is to complete the project on time, the priority to keep the project expenditure within the budget is not fully achieved with some projects are above the budget and some project are below the budget.

Keywords: Goal programming, project management, cost, time.

COMPARISON OF DISTANCE MEASURE IN CLUSTER ANALYSIS: A CASE STUDY OF FINAL EXAMINATION ANSWER BOOKLET

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ABSTRACT

Hierarchical Cluster Analysis (HCA) is unsupervised learning classification into groups or clusters. This technique is for grouping the similar data into clusters and dissimilar data into different clusters. Clustering algorithms are widely used to not only categorize and organize data, but are also useful for data compression and model construction. HCA is widely used and can be applied in many areas such as in agricultural, medical and education. The purpose of this study is to compare the dissimilarity measure. The goal of this study is to cluster the unused Main Answer Booklet (MAB) and Additional Answer Booklet (AAB) based on faculty, level of education and courses. Faculties involved are FAC, FBM, FPA, FSG, FSKM, FSPU and FSR. There are five methods of distance measure to compare the dissimilarity distance. Compare to the five distance measure, there gives the same results. The result of faculties shows that the most unused MAB is FSG and the most unused AAB is FSPU. For level of education show that FSG is the most unused of MAB and AAB. Meanwhile, For courses, BIO 320, ECO 120, MAT 183, CTU 555, GEO 290 and CTU 551 are the most MAB unused and MAT 423 is the most and highest unused AAB. Therefore, the Academic Affairs Division (BHEA), UiTM Perlis need to redesign the number of MAB and AAB pages, so that students can fully use the page provided and minimize the cost of preparing the Answer Booklet.

Keywords: Hierarchical Cluster Analysis, Main Answer Booklet, Additional Answer Booklet, Academic Affairs Division.

COMPETITIVENESS OF PASSENGER AND COMMERCIAL VEHICLES SALES IN MALAYSIA BETWEEN 2016 AND 2017: CONSTANT MARKET SHARE ANALYSIS

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ABSTRACT

The Association of Southeast Asian Nations (ASEAN) countries have achieved rapid industrialization especially since the mid-1980s on Automotive Industry. Thus, automotive industry has been highlighted for the Gross Domestic Product (GDP) as well as Gross National Product (GNP) growth. The competitiveness between different brands in Passenger and Commercial vehicles are very stiff. The term of competitiveness is taken seriously in Malaysia for the purpose of sustainable development. Besides, to date there still does not exist a formal method of analyzing competitiveness of all brands in Passenger and Commercial vehicles. Therefore, this study is conducted to rank the passenger and commercial vehicle sales competitiveness in Malaysia between 2016 and 2017 by using the Constant Market Share (CMS) analysis. In addition, the other two specific objectives of this study are to determine the competitiveness of the national and non-national passenger and commercial vehicles sales in Malaysia and to analyse the performance of the sales of passenger and commercial vehicles in 2017 as compared to 2016. CMS Analysis is a simple analysis method normally used in analyzing competitiveness of exports between countries. This study proved that it also can be used in analyzing the competitiveness between brands in passenger and commercial vehicles. The data was collected from 10 brands of passenger and commercial vehicles where the results were run in Microsoft Excel. It shows that the most competitive in passenger vehicles for national brand was Proton while for non-national brand, the most competitive brand was Honda. The performance sales of passenger vehicle in year 2017 recorded an increment of 4,474 units. Furthermore, commercial vehicle is only dominated by non-national brands and the most competitive is Toyota brand. The performance sales of commercial vehicle in year 2017 recorded a decrement with a number of 59,506 units by 2,541 units.

Keywords: Competitiveness, Passenger Vehicle, Commercial Vehicle, Constant Market Share (CMS) Analysis

PRICING WARRANT BY USING BINOMIAL MODEL: COMPARISON BETWEEN HISTORICAL AND IMPLIED VOLATILITY

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ABSTRACT

A warrant is a security that allows the holder to buy and sell the underlying share at a fixed price until expiry date. Warrant price will always fluctuates since the underlying share also fluctuates. Hence, determining the warrant price is the main problem among the investors in Malaysia. This research is focusing on pricing the warrant for five companies that were listed in Bursa Malaysia. The companies were chosen randomly from UiTM DataStream. The selected companies are Boon Koon Sdn Bhd, Hovid Bhd, Kelington Bhd, ML Global Bhd and Tropicana Corporation Bhd. The data contains underlying share, interest rate, exercise price and actual warrant price. This research aims to define the price of warrant by using Binomial model. Historical volatility and implied volatility were used in this research whereby volatility is the movement of the underlying share price. This research also is aiming to compare the actual warrant price with the calculated warrant price. The data will be computed manually by using Microsoft Excel and the comparison will be made from those two type of volatilities to give the nearest value of calculated warrant price to the actual warrant price. The nearest value will be assumed the best value for this research. The best result can be made by analyzing the line graphs and comparing between historical volatility and implied volatility with actual warrant price. After that, the results will be error measured by using Mean Square Error to support the results that were obtained from the line graphs. In the end, implied volatility gives the better results compared to historical volatility.

Keywords: Warrant, Volatility, Binomial Model, Moneyness.

PREDICTING ATTACKERS OF ONLINE SHAMING USING ANT COLONY OPTIMIZATION

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ABSTRACT

Online shaming is an act which involves persecution by the internet. It is a vigilante activity which is carried out through social media on the internet. Online shaming involves the action of attackers which publicly embarrasses the victim by sharing some personal information of the victim. Then, the attackers are usually involved in sharing something to embarrass the victim publicly by using social media. This is because the social media platform makes it easier to share something and it is easier to share the photo that can shame others in the real world. The main objective of this study is to develop a class model for predicting the attackers of online shaming. This study implemented Ant Colony Optimization Algorithm to develop classification rules for predicting the attackers of online shaming. In order to predict the attackers of online shaming, Ant Colony Optimization Algorithm will be used and it will be compared with J48 algorithm. The results have shown that the Ant Colony Optimization Algorithm produced a better predictive accuracy. Therefore, it is submitted that the Ant Colony Optimization Algorithm produces the most accurate result in predicting the attackers of online shaming. This study also shows that Ant Colony Optimization is a suitable technique in developing the classification model. Besides, the Ant-Miner algorithm is suitable in this study because it can train the data for many times to obtain the highest percentage of accuracy for developing the classification model to predict the attackers of online shaming. The Ant Miner system plays an important role in running the Ant Colony Optimization Algorithm and making comparison in this case study.

Keywords: Online shaming, Ant Colony Optimization, Ant-Miner, J48 algorithm.

THE PREDICTION OF FINANCIAL DISTRESS BY USING ALTMAN'S MODEL

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ABSTRACT

The purpose of this research to identify the prediction of financial distress companies listed in the PN17 for eight years from 2010 till 2018. This study compare the capability of the three different of Altman's Model which were the Original Altman's Model (1968), Revised Model (1983) and Three Revised Model (1993) in predicting five year prior the bankruptcy. The result of this research show that the Original Altman's Model was the best and more accurate model than other two model in predicting the financial distress for the corporate sector (PN17).

Keywords: Financial Distress, Bankruptcy, PN17, Altman's Z- Score Model, Multiple Discriminant Analysis.

ALIGNED MHD FREE CONVECTION FLOW OF MAGNETIC NANOFLUID OVER A MOVING VERTICAL PLATE WITH CONVECTIVE BOUNDARY CONDITION

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ABSTRACT

The present study investigates the behaviour of aligned magnetohydrodynamic (MHD) free convection flow of magnetic nanofluids over a moving vertical plate by considers two types of the mixtures of magnetic nanofluids which were water and kerosene based magnetic nanofluids. The convective boundary conditions were taken into consideration where the right surface of the plate was in contact with the cold fluid while the left surface of the plate was in contact with the hot fluid. The similarity transformation was used to reduce the partial differential governing equations into ordinary differential equations. Then, the reduced equations was coded into Maple software and solved by using Fourth – Order Runge – Kutta method. The results of velocity and temperature profiles were illustrated graphically while the results of skin friction coefficient and Nusselt number were presented in tabulated data. The study found that the inclination angle of magnetic field, local Grashof number, interaction of magnetic and local Biot number parameters positively influenced the velocity profiles. Conversely, as the value of inclination angle of magnetic field, local Grashof number, interaction of magnetic parameters increased, the temperature profile decreased. However, an increasing in value of nanoparticle volume fraction and local Biot number elevated the temperature profile. The numerical results revealed that the value of skin friction coefficient was the highest when the plate moved against the flow while the value of Nusselt number was the biggest when the moving vertical plate moved with the flow of magnetic nanofluids. The study also concluded that Fe_3O_4 - kerosene was the most suitable magnetic nanofluids that can be used to enhance the rate of heat transfer since the value of Nusselt number in Fe_3O_4 - kerosene magnetic nanofluids was higher than Fe_3O_4 - water magnetic nanofluids in all states of plate. Comparison of the results obtained with the results from previous study was performed to prove the consistency of the results and excellent agreement was achieved.

Keywords: Aligned MHD, Free convection flow, Moving vertical plate, Convective boundary condition, Fourth – Order Runge – Kutta method.

OPTIMAL TIMETABLE SYNCHRONIZATION FOR GREATER KUALA LUMPUR USING MIXED INTEGER PROGRAMMING

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ABSTRACT

Greater Kuala Lumpur transportation system (GKL) operates 11 rail lines and 192 stations. Passengers using GKL often missed the next connecting train to their destination. They also frequently must rush to catch this train. This problem may have been caused by unsynchronized tabling of train schedules. The study aimed to produce an optimal synchronized timetable for GKL. Using Mixed Integer Programming and Heuristic Approach in Code Blocks platform, it was able to determine the estimated departure times during Rush-Hour and Non-Rush-Hour periods to produce arrival times for the new timetable. Maximum number of synchronizations obtained for Rush-Hour and Non-Rush-Hour periods were 108 cycles and 66 cycles, respectively. A comparative analysis was made between waiting times of the original timetable and the newly developed timetable. The efficiency rate for the Rush-Hour period was 86.11% while the Non-Rush Hour was 31.03%. Therefore, the study has achieved its objective and four timetables for routes 1 and 2 were able to be constructed. Future research works in this area may consider expanding this optimal synchronized timetable by including the other 10 lines and all other train stations in GKL. The study also recommends adding new variables such as headways, dwell times and runtimes.

Keywords: Heuristic Approach, Mixed Integer Programming, Timetable Synchronization

A SINGLE OBJECTIVE FUZZY LINEAR PROGRAMMING IN OPTIMIZING HAND SOCKS PRODUCTION

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ABSTRACT

There are a lot of production companies in this world. Each production company has their own product that they produce. However, there are two or more companies that produce the same product such as hand sock production company. Each company has its own hand socks design that they produce and sell according to customer preference. Then again, to satisfy all the demands from the customer sometimes can be confusing. The problem is the production company always have the difficulty in identifying or estimating the optimal demand for their product to fulfil the demand from customer and get the maximum profit at the same time. Thus, this study is performed to optimize the production of hand socks by using a single objective fuzzy linear programming to determine the maximum profit. The data for this study is a secondary data from Q Nisa Journey Enterprise. Then, this research will apply a fuzzy linear programming method to implement the objective of this study. To get the optimal solution for fuzzy linear programming this study will use Excel Solver. The results obtained are varies depending on the value of the auxiliary variable. It also shown, when the value of Basic, 3 Ruffles and Alhambra hand socks were 20372, 188032 and 1536 the highest profit that can be obtained by Q Nisa Journey Enterprise is RM 1,836,863.68 at auxiliary variable 0.0. Finally, the result shows that fuzzy linear programming is the best method when decision making is involved because it can deal with data haziness and sometimes fuzzy number can represent the situation in the method.

Keywords: Fuzzy linear programming, Single objective, Optimizing, Production.

SELECTING SUPPLIER FOR AN OPTICAL SHOP BY USING YUEN'S FUZZY TOPSIS METHOD

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ABSTRACT

In today's world, there exists an intensive competition between enterprises especially those in the same sector or selling similar products as others. Adenium Optical is one of the enterprises facing competition in meeting the customer needs and wants in selling eyewear products. One of the issues that has arisen in this shop is abundant untouched products are being ignored by the customers that is causing losses to the business. There are several factors that resulted in such predicament, and wrong supplier selection is one of them. Therefore, this study will assist the owner of Adenium Optical to select the best supplier who will be able to supply the right quality products with the right price and able to give services at the right time with the right quantities. Yuen's Fuzzy TOPSIS has been applied in this study to select and rank the five selected suppliers in order to handle the linguistic variables evaluated by the decision makers. Five criteria have been taken into consideration and Best Non-fuzzy Performance (BNP) method was employed in ranking these criteria; quality, price, delivery, technology, and supplier profile. Yuen's Fuzzy TOPSIS results were generated using Microsoft Excel. It shows that the first-ranked supplier is Supplier 5 with the value of closeness coefficient is 0.886. This value is chosen based on the nearest to Positive Ideal Solution (PIS) and farthest from Negative Ideal Solution (NIS) which are nearest to 1 and farthest from 0. Meanwhile, the lowest value of closeness coefficient is 0.160 and it belongs to Supplier 2 with the lowest rank. Regarding the BNP's calculation result, it is shown that there are three criteria having the same value of 0.811 which are quality, price, and technology. They were classified as the most important criteria in evaluating the supplier and the least important criteria are delivery and supplier profile which both have identical BNP value which is 0.756.

Keywords: Supplier Selection, Yuen's Fuzzy TOPSIS Method, Best Non-fuzzy Performance, Multi-Criteria Decision Making, Eyewear Products

THE EPIDEMIOLOGICAL MODELS FOR NEWS DISSEMINATION VIA TWITTER

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ABSTRACT

News is very essential in daily life as it is the main source of information. Nowadays, Twitter has become one of the tools used by people to update with current news. Twitter also helps the mainstream media such as newspaper to report and spread the news via online immediately. Some of the breaking news become viral as soon as they were posted. However, the duration of its virality is uncertain. Thus, this study was conducted to investigate the dynamic of news dissemination via Twitter using an epidemiological model known as Susceptible-Infected-Recovered (SIR). The variables of interest are the users who are exposed to the news (active Twitter user), the users who receive and share the news (transmission) and the users who stop sharing the news (immune Twitter user). The SIR models with constant population and dynamic population were considered. News regarding chemical pollution in Pasir Gudang, Johor and mosque attack in Christchurch, New Zealand were selected as case studies. The data was observed approximately 14 days after the news was reported from two newspapers' Twitter accounts which are @staronline and @bharianmy from The Star and Berita Harian, respectively. The number of the people retweets, the number of likes and replies of the tweets and the number of followers of the related account have been collected. The linear stability analysis has been performed and numerical experiments have been conducted. The result showed that the duration of the virality of the news is longer in the model with a dynamic population than in the model with the constant population. Furthermore, the model with the dynamic population is more realistic in describing the spreading of news.

Keywords: News dissemination, Epidemiological models, Constant population, Dynamic population, Twitter.

THE ANALYSIS OF E-COMMERCE WEBSITE FEATURES ON CUSTOMER'S PURCHASE INTENTION USING FUZZY EXPERT SYSTEM

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ABSTRACT

The rapid growth in internet users over the past few decades indicate a changing in the business model, in which previously the business only focuses on brick and mortar store whereas now, there exists a need to add another store namely the e-commerce store. Business-to-Consumer (B2C) e-commerce is one of the various type of e-commerce, which has turned into an influential key to business channel. In order to meet the demands of the current business model, numerous e-commerce websites have been developed. However, building an e-commerce website is not enough if it does not meet the customers' expectation which influences the customers' purchase intention. This study investigates the features of an e-commerce website that influences the customers' purchase intention as well as the most important feature to an e-commerce website based on the customers' perspective. The e-commerce website features being investigated are website design, information quality, security and privacy which are gained from the literature review. The data is collected through an online survey which consists of 358 respondents who are familiar with purchasing on the e-commerce website. An expert system has been developed by using a fuzzy logic approach to determine which feature possesses the biggest influence on customers in order to perform purchasing on the e-commerce website. The results performed in the MATLAB software shows that the most significant feature in the e-commerce website is the information quality. Findings from this study would assist the owner and the developer of an e-commerce website to improve its website quality in order to influence the customers' purchase intention on the e-commerce website.

Keywords: E-commerce, Purchase Intention, B2C Website, Privacy, Security, Information Quality, Website Design, Fuzzy Logic, Fuzzy Expert System.

THE DYNAMIC ANALYSIS OF DIFFERENT VIRAL CONTENTS IN FACEBOOK USING SUSCEPTIBLE-INFECTED-RECOVERED (SIR) MODEL

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ABSTRACT

One of the world's discoveries in the development of technology is Facebook. On Facebook, there are various types of content such as videos and breaking news. Viral content is a social sharing and website links that spread the content rapidly. It is the most effective way to share content in a given time. The main objective of this study is to analyze the dynamics of the number of sharing from two different forms of viral content on Facebook which are breaking news and video. The sub-objectives are to identify the spreading process of different viral contents over time and to describe the growth and the decline of daily views of the contents based on the SIR model. In this study, an epidemiological model known as the Susceptible-Infected-Recovered (SIR) model is included. The model of the system involves three state variables which are susceptible, infected, and recovered in the system of differential equations. In these three state variables, parameter β exists between susceptible and infected meanwhile parameter γ is present between infected and recovered. The SIR model that is being considered is without demography that excludes the rates of birth, death, and immigration. The result of the reproduction number for breaking news and video indicated that the content was widespread among a population of Facebook users at a particular time. At the end of this study, the results showed that two different viral contents reached the difference in their number of people that have an interest in these two contents. There are four graphs that have been produced to show the dynamic of the population from two different titles of each viral content; breaking news and videos. This shows that the SIR model is a dependable method for analyzing the dynamic of viral content.

Keywords: Facebook, Viral Content, SIR Model.

Analytic Hierarchy Process(AHP) and Fuzzy AHP For Ranking The child Abuse Factors in Malaysia.

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ABSTRACT

Analytical Hierarchy Process (AHP) is one of the best ways for deciding among the multiple criteria structure at different levels. Fuzzy AHP is a synthetic extension of classical AHP method when the fuzziness of the decision makers is preferred. While recently, Malaysia statistic has reported a significant increment of child abuse cases that have reported in this country. The graph presents a steady growth of these cases without showing any sign of decrement. Hence, this study purposed to determine and rank the main factors that contribute to child abuse cases in Malaysia. In this study, AHP (Analytic Hierarchy Process) and FAHP (Fuzzy Analytic Hierarchy Process) are used to rank the main factors that contribute to the child abuse cases in Malaysia. The data from the year 2009 until 2016 was collected from the official portal of the Department of Social Welfare, Ministry of Women, Family and Community Development. This decision is affected by three criteria which are: perpetrators, type of carer occupations and gender of the victim — family dispute preferred by 30% according to AHP and 29% according to Fuzzy AHP. Hence, the family dispute was determined as the main factors of child abuse compared to the other factors. The result shows AHP values are consistent with FAHP values and FAHP is found to be relatively more sufficient because of its fuzziness compared to AHP method.

Keywords: Child abuse, Analytic Hierarchy Process, Fuzzy Analytic Hierarchy Process

EVALUATING THE AVOIDANCE FACTORS IN COUNSELING USING FUZZY ANALYTICAL HIERARCHY PROCESS (AHP)

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ABSTRACT

Counseling is defined as the establishment of professional assistance and guidance in resolving personal or psychological problems. It involves two communication between counselor and client. The objective of this study is to analyze the factors that caused students avoid from joining some counseling session. This research is also to rank the main factors of avoidance from joining counseling by using method of Fuzzy Analytic Hierarchy Process (FAHP). The result that obtained from this study indicates that negative stigmatism is the first factor of why students do not interest in joining counseling. It followed by treatment fears as the second factor and then the factors of anticipated risk and utility as the third factor of this issues. The significant of this project is to change the negative perception of the students in UiTM Perlis about the counseling. Lastly, this study will open the mind of many people about the importance and the benefits of counseling in order to help to create a better performance of life.

A COMPARISON BETWEEN TWO TYPES OF FUZZY TOPSIS METHOD IN RANKING THE CAFETERIA IN UiTM PERLIS

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ABSTRACT

Cafeteria is the main place for students to get their daily meals inside the campus. Therefore, it plays a very important role in the university as it supplies and sell food and drinks to students, staff and outside visitors. Nowadays, the percentage of students has increased, and it contributes to the increasing demands of foodservices and consequently raises the competition among cafeterias in the university. Hence, customers are having hard time to choose which cafeteria that satisfies their wants and needs. Thus, the purpose of this study is to select the best criteria in choosing cafeteria, compared the two types of method in terms of ranking alternatives and steps and then rank the cafeteria. Therefore, in this study the classical Fuzzy Technique for Order Preferences by Similarity to Ideal Solution (TOPSIS) method proposed by Chen in 2000 and the simplified Fuzzy TOPSIS proposed extension by Sodhi in 2012 is used to solve this problem. This study is focused on the criteria of the cafeteria in Universiti Teknologi MARA (UiTM) Perlis. The criteria that are considered in this study are price and value fairness, food and beverage quality, food and beverage variety, food and beverage freshness, food and beverage appropriate temperature, environment, cleanliness of plates and glass provided, cleanliness of dining area, staff performance and service quality. Moreover, this study will give benefits to the owner of the catering business, the customers and the future researcher. The result of this study is evaluated by using Microsoft Excel spreadsheet. As a result, the criteria that are preferred in this study are price and value fairness, food and beverage variety, food and beverage freshness, environment, cleanliness of dining area and staff performance. These criteria were preferred because they get the highest BNP value among other criteria. As expected, the final ranking order of cafeteria showed the same results for both methods. The results showed that Epal Cafeteria was ranked first as it has the highest value of closeness coefficients among the four cafeterias whereas the lowest rank goes to Mangga Cafeteria as it has the smallest value of closeness coefficients among the four cafeterias. Finally, this study can be implemented by using another Fuzzy TOPSIS method which is Yuen's method and can be applied in another case study such as restaurants selection problem.

Keywords: Cafeteria selection problem, Customer satisfaction, Chen's Fuzzy TOPSIS method, Sodhi's Fuzzy TOPSIS method, Best Non-Fuzzy Performance (BNP), Triangular Fuzzy Number (TFN), Linguistic variable.

PERFORMANCE OF TREE-BASED CLASSIFIERS WITH MINIMUM DESCRIPTION LENGTH DISCRETIZATION TECHNIQUE FOR EPILEPSY DATASET

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ABSTRACT

A decision tree classifiers represented by a tree-like structure is a hierarchical model composed of internal nodes, leaf nodes and branches. There are several reasons why tree-based classifiers is quite popular among the other classifiers, this is because decision trees are easy to construct and the resulting trees are readily interpretable. However, different tree-based classifiers with different setting will give different results, hence the objective of this research are to identify the performance of tree-based classifiers with Minimum Description Length discretization technique for epilepsy dataset where specific objective are to compare the performance of tree-based classifiers based on the discretized epilepsy dataset with Principle Component Analysis, and to identify the optimal parameter for the best tree-based classifier. Minimum Description Length is the discretization method that was used to discretize an epilepsy dataset. Type of tree-based classifiers that were compared are Decision Stump, J48, Random Forest and Random Tree. From the result, it shows that Random Forest is the most appropriate tree-based classifier with setting number 1. Where several default settings were changed and the result was improved. The changed settings for Random Forest are Break Ties Randomly was changed to True and the Number of execution Slots is 1. The actual accuracy percentage of Random Forest has increased from 95.313 % to 95.3652 % after setting number 1 was applied. Besides that. The value of accuracy percentage has also shows improvement after Principle Component Analysis was applied.

Keywords: Discretization, Minimum Description Length, Tree-Based Classifier, Epilepsy

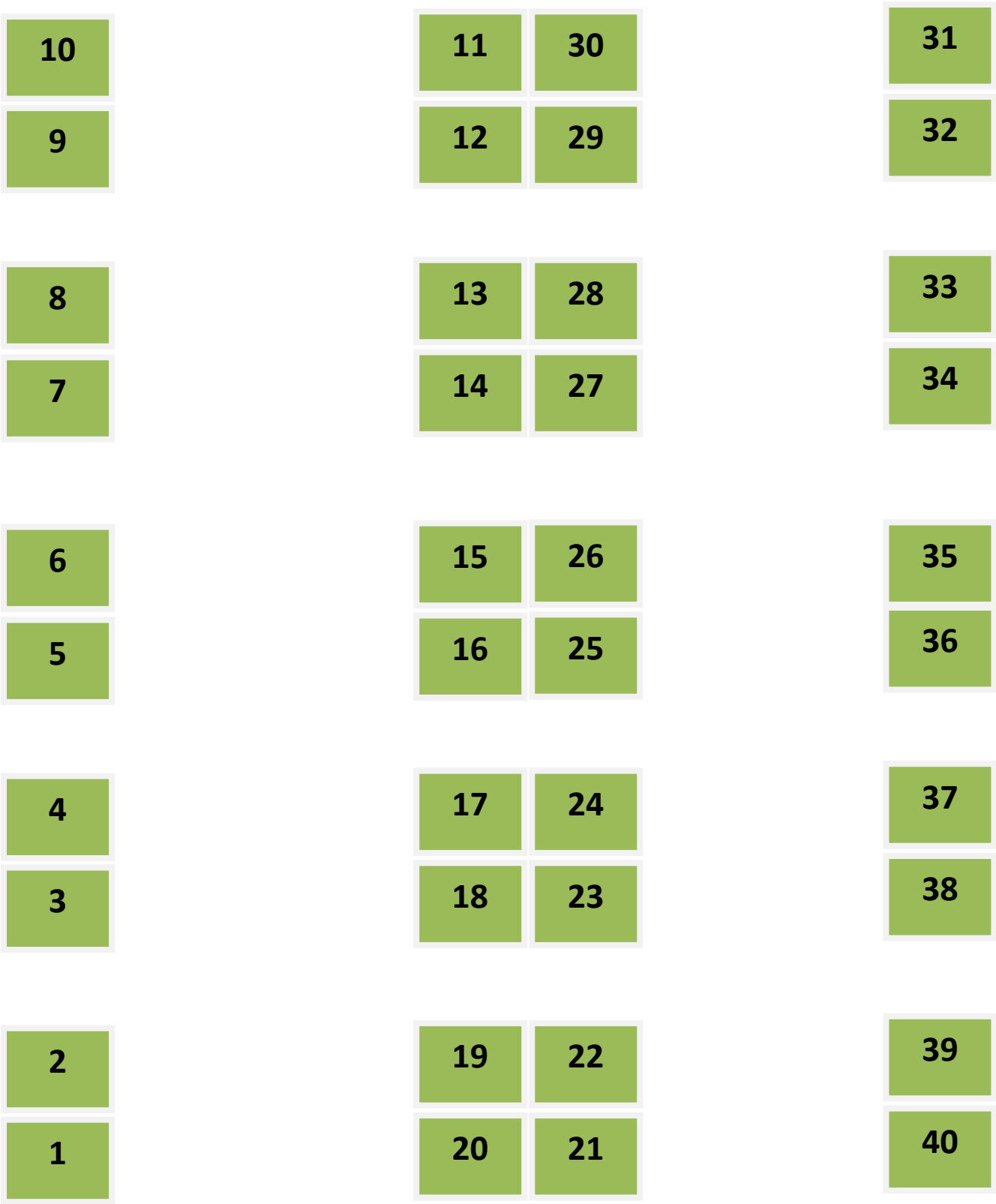
SELECTION OF VOLLEYBALL PLAYERS USING FUZZY PROMETHEE¹Khairunnisa Anuar & ²Raihana Zainordin¹nisafera26@gmail.com²raihana420@perlis.uitm.edu.my**ABSTRACT**

One of coaches' roles is to select players. However, selecting players is not an easy task. This is because there are many criteria that need to be considered and because a coach's judgement is subjective. This study seeks to determine the most important criterion in selecting volleyball players and to rank volleyball players in order to do the selection. In this study, twelve MAKSAT Perlis volleyball players were evaluated based on six basic volleyball skills namely serving, setting, spiking, blocking, digging and receiving. Two coaches were responsible in doing the evaluation of players for this study. A fuzzy multi-criteria decision making method called fuzzy PROMETHEE was used in this study to rank the players. The result showed that the most important criteria in selecting volleyball players are serving, spiking and digging. The twelve players were successfully ranked and the result of the ranking allowed the selection of players to be made. The result of the ranking also allowed the main players and reserved players to be determined. This study showed that fuzzy PROMETHEE can be used as a practical method for coaches to select players.

Keywords: fuzzy PROMETHEE, multi-criteria decision making, selection of players

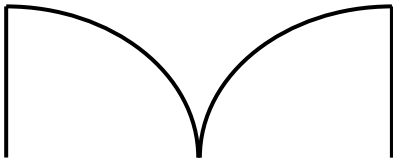
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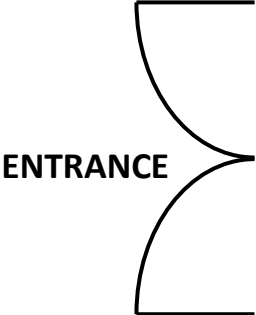
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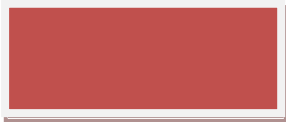
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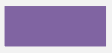
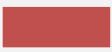
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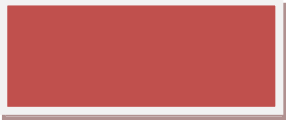


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