

FIGUARA

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UNIVERSITI
KEBANGSAAN
MALAYSIA
The National University
of Malaysia



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Their Researchers*

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EDITOR'S COLUMN



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Assalamualaikum wbt & Salam Sejahtera,

Once again FIGURA meet readers in the combined 3rd and 4th editions (April – August 2015). The past few months have been busy times for everyone - managing students' final examinations, and eid-ul-fitr celebration, which as always involved the tradition of 'Balik Kampung' and celebrations at UKM and FTSM. We shared some visuals of FTSM's eid-ul-fitr event in this issue. Various other news includes members and research groups' activities,

research achievements, projects and activities involving communities/industries and news related to Teaching & Learning, which involves industries for students exposure to real industrial practices.

FIGURA is a medium to link SOFTAM members via sharing of news of activities, besides the creative writings showcasing our researchers' creativities

– balancing our analytical left-brain with the creative right-brain capabilities. We also welcome other short relevant articles related to SOFTAM activities.

Our hope is that this news can motivate members by providing ideas to venture towards further research excellence specifically and in achieving the university's KRAs.

Salam hormat,

- Assoc. Prof. Dr. Nor Azan Mat Zin -



The Journey Towards Excellence



Softam's goal is to be the regional centre of excellence for Software Technology and Management. In its four year history as a research centre, Softam has succeeded in securing a promising amount of grants both locally and internationally and has also succeeded in several community engagement projects. Researchers in Softam have also been successful in publishing a significant amount of research papers in reputable journals. These successes are the springboard that will hopefully land Softam firmly on the path towards excellence. However, this road towards excellence is not without challenges. Excellence cannot be achieved overnight and it also cannot happen by

chance. Excellence can only be realized with intention and commitment. To be excellent Softam has to work as a team of researchers who are dedicated, professional and ethical in their work. Researchers must be able to break away from self imposed silos and work collaboratively both within Softam and also with researchers outside Softam. By doing so, we will be able to build on our collective strengths, thus leveraging on individual members' expertise and experience. This is in line with the spirit of "Yang berat sama dipikul dan yang ringan sama dijinjing" which loosely translates into "sharing of burden and benefits". It is hoped that Softam's researchers are continuously driven by the common vision of excellence and by the desire to contribute to the community and country at large.

- Assoc. Prof. Dr. Muriati Mukhtar -

SOFTAM'S RESEARCH COLLOQUIUM

Colloquium 2/2015

Date & Time : 16 April 2015, 2.30 - 4.00 pm
 Venue : Bilik Mesyuarat 1, FTSM
 Title : ESQ: Balancing and Tuning
 Speaker : Assoc. Prof. Dr. Maryati Mohd Yusof

Colloquium 3/2015

Date & Time : 21 May 2015, 2.30 - 4.00 pm
 Venue : Bilik Mesyuarat 1, FTSM
 1. Prof. Madya Dr. Rosilah Hassan, (Sharing Session on Network and Communication Technology Lab)
 2. Prof. Madya Dr. Noraidah Sahari @ Ashaari, (Multimedia Application- Conceptual Framework)

Colloquium 4/2015

Date & Time : 25 June 2015, 2.30 - 4.30 pm
 Venue : Bilik Mesyuarat 1, FTSM
 1. Prof. Dr. Zarina Shukur, (Do You Know What I Did Last Summer?)
 2. Prof. Madya Dr. Rozilawati Razali, (Unmistakably Softam: The Art of Our War)

SOFTAM'S PROPOSAL DEFENSE

In order to determine the suitability of the research projects and to gauge the progress of postgraduate students, Softam's proposal defense session is held every three months. The list of candidates who defended their research proposals are as follows :

April 2015 Session

1. Rami Ahmad Abdallah Alshwaiyat, Phd. The Relationship between Mobile Handover Time Delay and the Download Process from the Cloud. *Main Supervisor : Assoc. Prof. Dr. Elankovan Sundararajan.*
2. Narjes Khatoon Naseri, Phd, A Novel Plant Root-based Combinatorial Algorithm for Solving Optimization Problems *Main Supervisor : Assoc. Prof. Dr. Elankovan Sundararajan.*
3. Naeimeh Elkhani, Phd, Membrane-Inspired Feature Selection and Classification to Enhance Efficiency and Accuracy of Processing Microarray Cancer Data. *Main Supervisor : Dr. Ravie Chandren Muniyandi.*
4. Hanif Mohaddes Deylami, Phd. Malware Dynamic Behavior-based Detection by Using Fuzzy Logic. *Main Supervisor : Dr. Ravie Chandren Muniyandi.*
5. Khairul Bariah Ahmad, Phd . *Model Intervensi Ketidakpatuhan Terarah Berasaskan Teknik Perubahan Tingkahlaku bagi Acute Lymphoblastic Leukimia (A.L.L).* *Main Supervisor : Dr. Zurina Muda.*

June 2015 Session

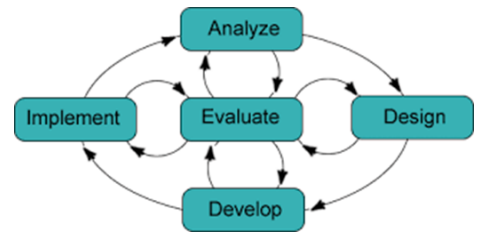
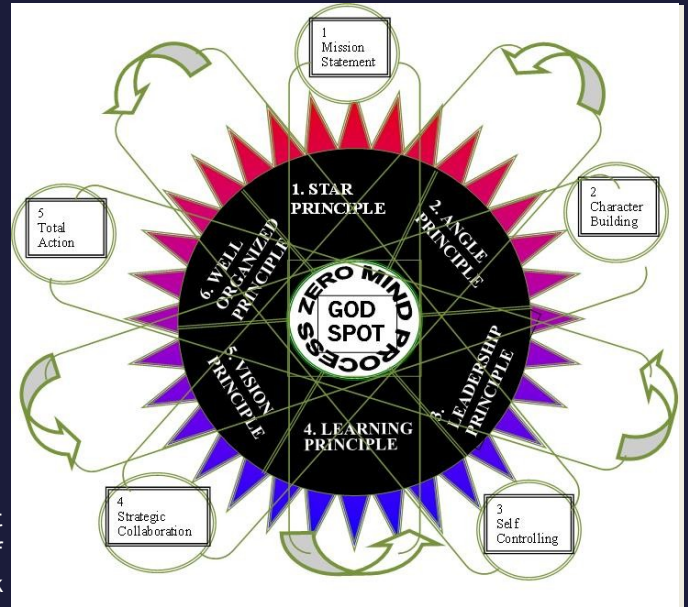
1. Waleed Mohammed Ibrahim Al Khofani, Phd. A Framework For Digital Records Management in National Information Centre in Yemen. *Main Supervisor : Prof. Dr. Zawiyah Mohamad Yusof.*
2. Kamaliyah Bt. Sarjo @ Hj. Ahmad, Phd. *Pembangunan Kerangka Kerja Pengurusan Projek ICT Menggunakan Pendekatan Pengurusan Proses Bisnes di Sektor Awam Malaysia.* *Main Supervisor : Assoc Prof. Dr. Yazrina Yahya*
3. Nadia Akma Bt. Ahmad Zaki, Phd. *Model Rangsangan Kognitif Dalam Permainan Serious Untuk Kanak-Kanak Lambat Bertutur dan Berbahasa.* *Main Supervisor : Dr. Tengku Siti Meriam Tengku Wook.*
4. Mahmoud Abdulwahab Alawi, Phd. QoS-Enable and Offloading Cellular Infrastructure Scheme for Heterogeneous Vehicular Network. *Main Supervisor : Assoc. Prof. Dr. Raed Alsaqour.*
5. Wan Muhamad Nor Azam Wan Ya, Phd. *Model Pembangunan Kemahiran Bentuk-T untuk Usahawan ICT .* *Main Supervisor : Assoc. Prof. Dr. Muriati Mukhtar*

SOFTAM'S RESEARCH COLLOQUIUM 2/2015

Date : 16 April 2015
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 Title : ESQ: balancing and Tuning

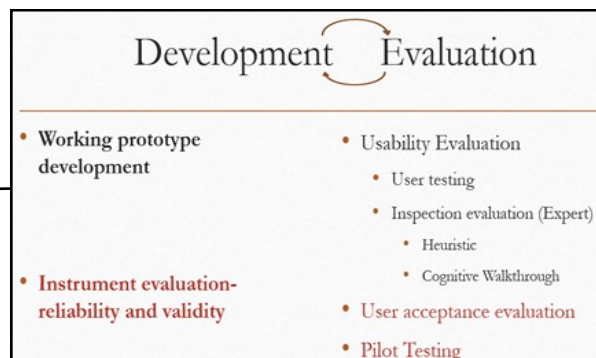
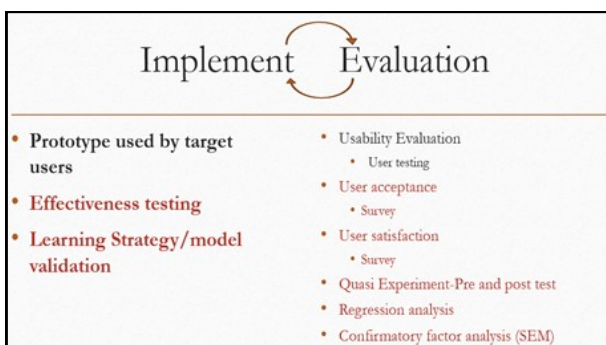
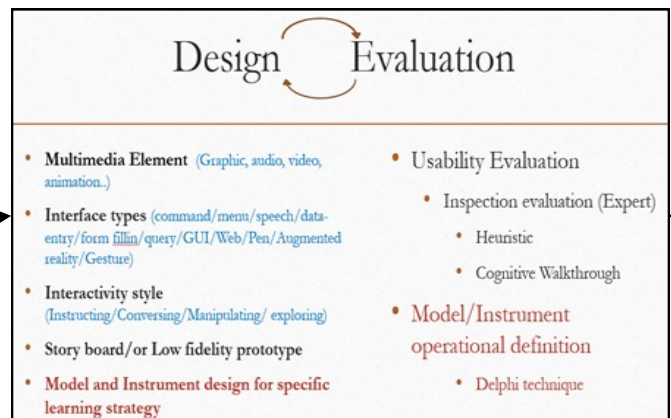
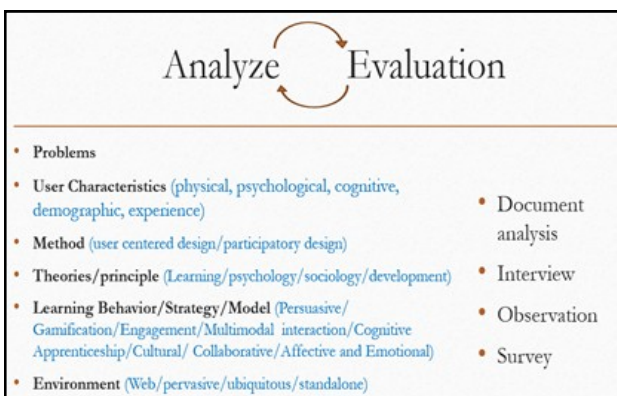
By the Soul, and the proportion and order given to it;
 And its enlightenment as to its wrong and its right;-
 Truly he succeeds that purifies it,
 And he fails that corrupts it! (The Sun: 7-10)

Purification of the soul in these verses is a continuous process that human should strive for in order to achieve a balance state of Emotional and Spiritual Quotient (ESQ) so that he could revert back to his natural good personality and complement his IQ to optimize his performance. EQ enable us to act ethically through our intuition while SQ act as a compass to guide us in giving ultimate meaning to our act. In order to combine and balance these three quotients, IQ and EQ should be based on SQ. The steps include enlightening the "God spot", developing mental building, and strengthening personal characteristics and social network as illustrated in the figure on the right, based on "6 pillars of faith" and "5 pillars of Islam" (Ary Ginanjar Agustian).
 - Maryati Mohd Yusof -



Date : 21 May 2015
 Time : 2.30 - 4.00 pm
 Speaker : Assoc. Prof. Dr. Noraidah Sahari @ Ashaari
 Title : Conceptual Framework for Multimedia Learning Research (Learning Technology & HCI Lab)

Assoc. Prof. Dr. Noraidah presented guidelines on how to construct a conceptual model for multimedia learning application research. For this example an ADDIE model is used. There are four main phases and each phase is presented in the following diagrams. - Noraidah Sahari @ Ashaari -



Workshop on Data Analysis for PTS 2013-167-4

On August 20th 2015 a workshop by PTS-2013-167-4 project teams was held at Puri Pujangga UKM. This project aims to identify graduate student satisfaction on learning and research facilities in UKM. Participants of the workshop were all project teams from Faculty of Information Science and Technology (FTSM), Islamic Studies Faculty, Medical faculty and Engineering



faculty and led by the head of project, Assoc. Prof. Dr Noraidah Sahari from FTSM. The purpose of the workshop was to analyze and interpret data collected from March to May 2015. Members were divided into four groups representing faculties and institutes which were grouped based on locations in UKM. Data were analyzed based on those groups. At the end of the session, the outcome of the analyses were presented by each group representative. - *Noraidah Sahari @ Ashaari* -



Service Science Student's Monthly Presentation

Service Science Research Unit (SRU) has conducted a monthly presentation of student progress. The students receive feedback from lecturers and other students during the presentation. The presentation session will be continued as a medium for sharing knowledge and exchange of ideas. The list of students who presented their progress :

No	Date	Student/Researcher
1	9 April 2015	1. Ali Alawamreh 2. Nik Hazlee
2	7 May 2015	1. Qadri K. Alzaghhal 2. Ayman Hussein Saleh Al Madani
3	15 June 2015	1. Mohammed A. F. Salah 2. Wan Nor Azam Wan Pa



IEEE Xplorer Workshop

The workshop was organized by SPM Lab on 24th August 2015 at BK9, FTSM. Professor Dr Azuraliza Abu Bakar, Deputy Dean of Research and Innovation officiated the workshop. The IEEE representative, Mr Nurhazman Abdul Aziz who is IEEE Client Services Manager, Singapore delivered a great talk on searching strategies on IEEE Xplore and research sharing and publication. The participants were from academicians and post graduate students of FTSM. - *Zulkefli Mansor* -



Python Workshop



Python workshop was held on 3 August 2015 at Makmal Khas, FTSM from 9am-5pm. Qais (QAIS SAIF QASSIM) was the instructor for this workshop. The workshop benefited some 15 participants, most of whom are new to Python.

- *Elankovan Sundararajan* -

Python is a widely used general-purpose, high-level programming language. Its design philosophy emphasizes code readability, and its syntax allows programmers to express concepts in fewer lines of code than would be possible in languages such as C++ or Java. The language provides constructs intended to enable clear programs on both a small and large scale.

Python supports multiple programming paradigms, including object-oriented, imperative and functional programming or procedural styles. It features a dynamic type system and automatic memory management and has a large and comprehensive standard library.

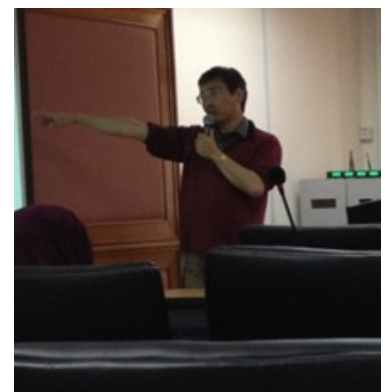
Python interpreters are available for installation on many operating systems, allowing Python code execution on a wide variety of systems. Using third-party tools, such as Py2exe or Pyinstaller, Python code can be packaged into stand-alone executable programs for some of the most popular operating systems, allowing the distribution of Python-based software for use on those environments without requiring the installation of a Python interpreter.

MODULE WRITING WORKSHOP

Multimedia and Usability Research Group (MURG) has conducted a Module Writing Workshop on 14th April 2015 at Puri Pujangga, Universiti Kebangsaan Malaysia. The output are six related modules; 1) Virtual Environment and User Requirements Analysis, 2) Artifact Photography and Digitalization, 3) Design of Virtual Environment System Interface, 4) Development of Virtual Environment System Database, 5) Development of Multimedia Search Engine, and 6) Evaluation of Virtual Environment System. The modules are important research outputs from the Virtual Museum Project funded by ETP-2013-057 grant. Members of the project who were participants of the workshop are from diverse disciplines, across different research group i.e. MURG, ATUR, Service Science and Knowledge Technology. Interdisciplinary collaboration as shown by the good progress of this project is an excellent approach for a successful project. - *Tengku Siti Meriam Tengku Wook* -



Talk by Prof. Dr. Mizuhito Ogawa (JAIST)



Title : "Binary CFG Rebuilt for Malware and Obfuscation Localization"

Date : 11 May 2015

Time : 2.30 pm

Venue : Bilik Mesyuarat 1, FTSM

International Conference on Computer Science and Education (ICCSE)



Attending conferences, presenting papers and sharing research works with others are parts of the academic obligation and responsibility. Assoc. Prof. Dr. Jamaiah Yahaya attended the 10th International Conference on Computer Science and Education (ICCSE), which was held in Fitzwilliam College, Cambridge University, United Kingdom during July 22-24, 2015. ICCSE 2015 brought together educators, researchers and practitioners worldwide to discuss new research results, perspectives on future developments, and innovative applications relevant to computer science, education, and related areas. Dr. Jamaiah has contributed as a paper presenter as well as a chairperson in this conference. The title of her paper was "PERSPECTIVE AND PERCEPTION ON SOFTWARE AGEING: THE EMPIRICAL STUDY" which was authored by Jamaiah H. Yahaya, Zaiha Nadiyah Zainal Abidin and Aziz Deraman. This paper discussed and reported the findings from the empirical study conducted in the research project funded by Malaysian Ministry of Higher Education under the Fundamental Research Grant Scheme (FRGS/1/2012/SG05/UKM/02/10). - *Jamaiah Yahaya* -



UKM MOOC (Massive Open Online Course) for Discrete Mathematics

The MOOC initiative is part of the Ministry of Education's strategic plan to increase the quality and accessibility of higher education, and based on a blended learning approach that combines online and in-class activities to form deeper understandings. Discrete Mathematics is one of the course chosen by UKM to be in the MOOC plan. Researchers involved in this MOOC for Discrete Mathematics are Associate Prof. Dr. Muriati Mukhtar, Associate Prof. Dr. Haslina Arshad, Associate Prof. Dr. Noraidah Sahari@Ashaari, Dr. Ang Mei Choo, Dr. Syaimak Abdul Syukor, Dr. Nur Fazidah Elias, Dr. Ruzzakiah Jenal and Mrs. Amelia Natasya Abdul Wahab. We have a weekly workshop since 28th May 2015 until now to discuss the design and development of MOOC for Discrete Mathematics.

- *Ruzzakiah Jenal* -



IEEE ICEEI The 5th International Conference on Electrical Engineering and Informatics 2015

Assoc. Prof. Dr. Rosilah Hassan and Dr. Nor Effendy Othman attended the 5th International Conference on Electrical Engineering and Informatics 2015 in Bali, Indonesia from 10th to 11th August 2015 (<https://iceei2015.stei.itb.ac.id/>)

Papers Presented are :

- Improving Security for IPv6 Neighbor Discovery (Amjed Sid Ahmed Mohamed Sid Ahmed, Rosilah Hassan and Nor Effendy Othman)
- A study on improvement of Internet Traffic Measurement and Analysis Using Hadoop System (Lena T. Ibrahim, Rosilah Hassan, Asrul Asat and Kamsuriah Ahmad) and
- Modularisation of State-dependent Crosscutting Concerns using TinySAOP, (Noorazeen Mohd Ali and Rosilah Hassan)

- Rosilah Hassan -



Keynote session



UKM and ITB faculty attending the conference

Seminar on Electronic Records



On 12th August, 2015, Dr. Umi Asma' attended a seminar on electronic records entitled 'Digital preservation: Are we on the right track?' which was organized by National Archives of Malaysia. The seminar was held to provide the platform for sharing information and experiences among the archivists and other related fields within the ASEAN region in preserving digital collections. - Umi Asma' Mokhtar -

International Conference on Computing and Informatics (ICOCI2015)

Associate Prof. Dr. Noraidah and Associate Prof. Dr. Nor Azan attending the International Conference on Computing and Informatics (ICOCI2015) in Istanbul, Turkey (11-13 August 2015). - Nor Azan Mat Zin -



With conference chair and MURG PhD stu-



Potluck Event



Scholar's Talk (Bicara Malam) - Prof. Dr. Abdullah Mohd Zin



SOFTAM'S RESEARCH COLLOQUIUM



Scholar's Talk (Bicara Malim) - Prof. Dr. Zarina Shukur



“ We propose a complete solution to secure the regulated instruments at three crucial stages of their life-cycle ”

- Zarina Shukur -



Industrial Engagement with National Instruments (NI)

"A day with NI" is a program held on 28th May 2015 at the Multimedia Hall in FTSM. The program was organised as a joint effort from both parties to initiate a new industry engagement between FTSM and National Instruments. Two representatives from NI were Ms. Beh Bee Luan IT Application Manager and Ms. Tock Bee Keng (IT Programmer Analysts). The program consists of three sessions; a career talk, recruitment screening interviews and academic course review.

The program started with a career talk by NI representatives to audiences comprising of second and final year students. The talk includes a brief introduction to the rising prominence of bespoke software and systems development as part of the NI business. The representatives also shared their experiences as IT professionals with the students as to prepare them for what to expect in the working environment. After the talk, the second session commenced where 16 final year students were selected for screening interviews for potential IT job positions in NI. The screening interview was intended to enable NI to select potential candidates for the next phase of recruitment interviews at NI Malaysia headquarter in Penang.

Finally, the program concluded with a session of academic course reviews where the NI representatives were invited as industry panels to review the content of selected courses. The selected courses were TS3353 (Project Management), TT1964 (Database), TU2323 (Principles of Information Systems) and TK2093 (Human Computer Interaction). The reviews were in accordance to quality assurance requirement of ensuring the courses content are continuously relevant to industry needs.

The program was organised by HEJIM FTSM and operationalized by a team of Imagine Cup Club members advised by Dr. Dian Indrayani Jambari and Associate Professor Dr. Dalbir Singh.
- Dian Indrayani Jambari -



E-Aedes System page 13

The dengue fever is currently considered as a very critical outbreak. The dengue virus spread (other than due to the weather) due to the cleanliness of the environment, which can be directly linked to human bad habit or lack of awareness.

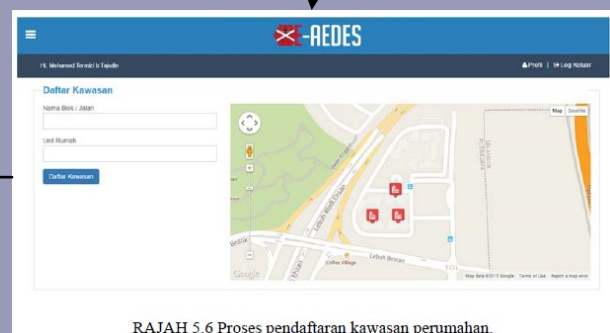
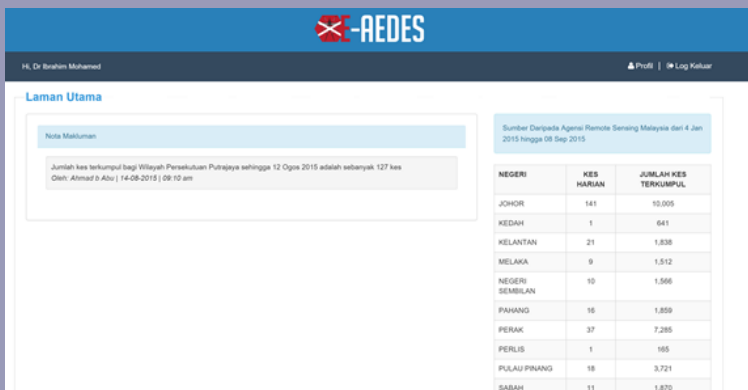
The incidence of uncontrolled epidemic could also indicates the failure of the public health system in providing efficient and effective response to the threat of the emergence of dengue fever. This project proposes an early warning system on the Aedes breeding hotspot (which may lead to dengue outbreak). This is a web-based system that uses Hypertext Preprocessor (PHP) and MySQL.

There are three stakeholders that may get the benefits from the eAedes; UKM (as research centre & service to the community/nation), community (to educate & reduce/eliminate Aedes breeding areas), and Health Department (to monitor the possible hotspot areas). - Ibrahim Mohamed -



Workshop on Entrepreneurship Fundamentals and Awareness (MySTA)

MySTA was organized by Dr. Ibrahim Mohamed and the involvement of Kelab iBisnes and CESMED. It was held on 8th April 2015 with the aim to educate, train, and get feedback from the stakeholders particularly high school students about entrepreneurship and cloud computing. The project is one of the UKM targets to benefit the community by spreading and sharing the knowledge from research to the community. There were 131 people involved including 7 facilitators from UKM, 102 high school students, 7 secretariat and support staffs, and 1 moderator. Positive outcomes garnered from the MySTA particularly is the awareness of high school students towards career in entrepreneurship before and after the workshop was held, hence indications the success of the workshop .
- Umi Asma' Mokhtar -



E-Aedes System

TK2093 Human Machine Interface (Human Computer Interaction)

Poster Presentation



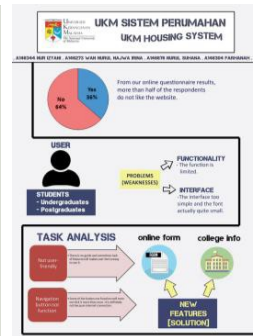
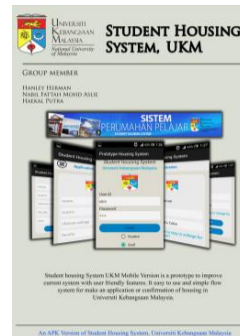
On 28th and 29th May 2015, student's poster presentation sessions were held for TK2093 Human Machine Interface course in Semester 2 2014/2015. Total of 41 groups for 156 students presented their posters. The presentation was divided into two sessions and took place at the Innovation Space, Block D, FTSM from 8.30 am to 4.00 pm. Time given for every group were 8 to 10 minutes followed by five minutes of Q & A session by the assessor.



The poster presentation is one of the conditions to be fulfilled by TK2093 students and it carries a total of 25 marks. Each group was given a dedicated space and they need to put up and present at least an A3 sized poster, with a demo of their mobile application interface. The posters and demos were assessed by three judges Dr. Zulkefli bin Mansor, Mr. Akmal bin Aris and Mr. Mohd Nor Hafizi bin Abdullah

The judges are satisfied with the creativity of posters and

projects presented by students. Students also gave good responses to the activity and were all very excited. This poster presentation activity will also be implemented in the next semester and hopefully become an inspiration to students, educators and researchers in FTSM.
- Zaihosnita Hood, Afzan Adam and Dr. Dalbir Singh -



HIGH IMPACT JOURNAL

- Umi Asma' Mokhtar & Zawayah M. Yusof. 2015. The requirement for developing functional records classification. *International Journal of Information Management*. 35(4):403-407. Q1. IF: 2.042
- Mueen Uddin, Roop Chand Hindu, Raed Alsaqour, Asadullah Shah, Tanzila Saba, Knowledge Management Framework using Green IT to Implement Sustainable Entrepreneur Ecosystem, *International Journal of Applied Mathematics & Information Sciences*, vol. 9, no. 5, pp. 2703-2714, 2015. (Indexed by Scopus & ISI, IF: 1.232, Q1).
- Yusof, MM. (2015) A case study evaluation of a Critical Care Information System adoption using the socio-technical and fit approach. *International Journal of Medical Informatics*, 84(7): 486-499. Q1.
- Amjad Qtaish, Kamsuriah Ahmad. 2015. Model Mapping Approaches for XML Documents: A review. *Journal of Information Science*. vol.41(4), pg. 444-466. Q2.
- Ahmed Mohammed Elakloun, Nor Azan Mat Zin and Azrulhizam Shapii. 2015. Investigating therapists' intention to use serious games for acquired brain injury cognitive rehabilitation, *Journal of King Saud University - Computer and Information Sciences*. 27(2):160-169. <http://dx.doi.org/10.1016/j.jksuci.2014.03.019> (Q2)
- Hothefa Shaker, Raed Alsaqour, Multipath Routing Algorithm using an Electromagnetic-like Mechanism with Threshold Acceptance for Mobile Ad hoc Networks, *Wireless Personal Communications (Springer)*, vol 81, no 2, pp. 607-630, 2015. (Indexed by Scopus & ISI, IF: 0.979, Q3). doi: 10.1007/s11277-014-2148-6
- Mohd Norhadi Muda & Zawayah M. Yusof. 2015. Information and Communication Technology in Knowledge Sharing Practices: Needs for the Establishment of Repository. *Mediterranean Journal of Social Sciences* vol.6(5):69-78, (Scopus, Q4).
- Ravie Chandren Muniyandi, Ali Maroosi, 2015, Enhancing the simulation of membrane system on the GPU for the N-queens problem, *Chinese Journal of Electronics* (IF: 0.325, Q4)
- Batch Y, Yusof MM (2015) Organizing Information In Medical Blogs Using A Hybrid Taxonomy-Folksonomy Approach. *Journal of Web Engineering*, 14(3&4):181-195. ISI indexed Q4.



Kick-Starting FTSM Imagine Cup Club with Microsoft Malaysia

Every year, Microsoft organises an international students' innovation competition called Imagine Cup. FTSM students have been actively participating in the competition for the

Malaysian chapter since 2011. In the spirit of nurturing healthy competitive spirit among students, FTSM Imagine Cup Club was established. The club is a student co-curricular club inspired by the Imagine Cup competition and set as a platform for our students to engage in creating innovations in IT. Part of the club activities is to engage with the real world outside the classroom boundaries to gain exposure and better understanding of what is happening around us. To initiate the club, a series of field trips to several companies in Malaysia has been planned for students to learn and be inspired. And where better to start than a trip to Microsoft Malaysia!

The trip arrangement was made by the club members and advised by Dr. Dian and Mrs. Norleyza. The trip was scheduled on 26th May 2015 by bus (the traffic was not fun!). We were welcomed by Ms. Zalina Abdul Halim and Dr. Dzahar Mansor whom have graciously spent some time engaging and interacting with the students on the many IT innovations through Microsoft. All in all, we had great fun and the students were excited and inspired!

- Dian Indrayani Jambari -



The Marshmallow Challenge, A Break from Paper-Based Exercises

The Software Management (TK3333) class enjoyed a game during one of the tutorial sessions. The game “The Marshmallow challenge” was adopted from TED 2010 Talk by Tom Wujec.

The game was chosen because it suited the topics taught and discussed prior to that week, which were Project Manager, Project Team and Project Communications. Moreover, the items and setting up required are simple.

An announcement for the game was made three days before the session. On the day, the class had full attendance; which is normally short of at least three students.

Setting up



Each kit contained 20 sticks of spaghetti, 1 meter of string, 1 marshmallow and 1 meter of masking tape (masking tapes were not put in the envelopes; the students helped cut them in the class). Each group were asked to bring a pair scissors. The name and the description of the challenge were revealed. The challenge’s goals and rules were explained, aided with PowerPoint slides. As Tom Wujec suggested, the rules were repeated three times. Students were allowed to ask questions, as well as to check the kit before starting.

The goal of the challenge was to build the tallest freestanding structure. The entire marshmallow must be at the top. The height of each structure was measured from the floor surface to the top of the marshmallow. Students used as much or as little of the kit, and allowed to break up the spaghetti, string or tape. Students had to build the structure in 18 minutes. A countdown time was displayed during the challenge, using a basic Orzestek Timer.

Chairs were put aside to make space to work on the floor. Students sat in the groups formed for the class’ group project; there were 8 groups of 4 to 5 students each. A sealed envelope of marshmallow challenge kit was given to each group.



During the challenge

All groups were observed to discuss and plan the look of the finished structure and to divide tasks before building the structure. To encourage the students to work quickly, the energy of the challenge was brought up by calling out groups progress, for example, “this group here is fast, they work together as a team!” or “the group here already built a good base!” Time countdowns were also reminded at several intervals.

At the end of the challenge, at minute 18, we began the measuring process. Two groups did not manage to complete their structures. Three groups managed to have freestanding structures while three groups were seen supporting and holding their toppling structures. The winning group built a 25.5-inches tall structure (the tallest structure Tom Wujec had seen so far was 39 inches). Interestingly, it was noticed that the members in the group kept testing to fix their marshmallow on the structure from early in the building process.

Lessons learned

The students enjoyed extra marshmallows while reflecting on the challenge. Although the challenge seemed simple, the students found that it was pretty hard. The marshmallow was not as light as they thought it would be. As they put the marshmallow on top of their structures at the very last minutes, the structure toppled. For one group their structure collapsed before it could be measured. The challenge is beneficial to train people to collaborate quickly. It encourages timing and improves communication. The game also teach prototyping, that is, to build a small structure and add the marshmallow and then add more spaghetti sticks to build bigger structure. The latter was reflected in the way the winning group built their structure.

In general, it is a good challenge for any course. It may serve as icebreaking activity to newly formed groups or it may help to improve collaboration skill among students in the class. You may see the Marshmallow challenge page: <http://marshmallowchallenge.com/Welcome.html>

- Hana Yasmien Ishak -



Visit to Zoo Melaka

MAD (Mobile Application Development) Club visited the Zoo Melaka on May 24, 2015 to fulfil the competence course of Pusat Citra Universiti, namely LMCK1531 for Leadership and Creativity, and LMCK2711 for Environmental Responsibility. Each group in the club is asked to develop environment-related mobile apps, especially regarding the preservation of animals in zoos.

This activity exposed to the members the development of mobile apps and the importance of animals in the environment. During the visit, members also volunteered cleaning the animals' cage and fed them. The Advisors of MAD Club are Dr Zainal Rashid Mahayuddin, Dr Nur Fazidah Elias, Dr Ruzzakiah Jenal and Mrs. Siti Aishah Hanawi.

- Ruzzakiah Jenal -



VIDEO INNOVATION COMPETITION (VIC)



Organizers with the winners

VIC was organized by students under CITRA or co-curriculum activity. The advisor is AP Dr. Nor Azan Mat Zin. The final event was held on 24-26 April 2015. Judges for the final selection were from various production companies and also MDec. Participants are students from several universities such as Universiti Malaysia Pahang, Multimedia University and Taylor's University.

- Nor Azan Mat Zin -



Opening ceremony by the Dean, Prof. Dr. Abdullah Mohd Zin



Speech by program director, Muhammad Hafidzi Bin Mohd Isa



VIC committee members with the faculty (dean, deputy dean, advisors)

Highlights of SOFTAM Research Outputs

SOFTAM researchers continue to produce excellent research outputs through the completion of doctorate and masters projects. In this issue, we highlight three research projects that have significantly contributed to the body of knowledge focus all in SOFTAM, namely, in programming and software technology, strategic information systems, and multimedia and usability.

The first research is titled "LABC: 6LowPAN Local Repair using Bio Inspired Artificial Bee Colony Routing Protocol" by Nurul Halimatul Asmak Ismail and Assoc. Prof. Dr. Rosilah Hassan. The emergence of Internet of Things (IoT), based on the IEEE 802.15.4 standard introduces wireless sensor network (WSN) from personal area network (PAN) into low power personal area network (LowPAN). One of the key challenges in 6LowPAN is route breakage in its routing protocol. Therefore, they have proposed a new mechanism namely 6LowPAN Local Route Repair Using Bio Inspired Artificial Bee Colony Routing Protocol (LABC) in 6LowPAN network to enhance the routing against route breakage. The research found that LABC provides lower packet delay and power consumption, and higher packet delivery ratio.

The second research highlighted is titled "A Risk Assessment Framework for Requirement Change Implementation in Software Systems" by Marfifah Abdul Rahman and Assoc. Prof. Dr. Rozilawati Razali. Software change happens due to addition and modification of user, environment and technology requirements. Any assessments involving requirements change request that do not consider the influencing factors would lead to system failure besides affecting resources and cost. The decision to approve or reject a requirements change request, which has to be made by the Change Control Board (CCB), is therefore difficult and risky. This research identifies and incorporates the influencing factors as a risk assessment framework for requirements change implementation concerning software systems. The framework can guide CCB to make accurate decisions about requirements change requests and subsequently ensure the sustainability of the respective software systems.

Another highlighted research is by Mohammed A.S. Ghazal and Assoc. Prof. Dr. Nor Azan Mat Zin and Dr. Zurina Muda titled "Learner Modelling Using Herrmann Whole Brain Model (HWBM) Learning Style for Adaptive Web-based Educational Systems". Adaptive Web-based Educational System (AWBES) personalizes learning according to learner's characteristics such as learning style (LS). Most current AWBES focus on modelling domain-specific information such as knowledge level, to adapt learning content rather than interface features of AWBES to improve the adaptive learner model. However, these models are more suitable for traditional classroom environment since they did not consider interface features of Web-based Educational System (WBES). Therefore, this research designs and validates a learner model for AWBES, based on HWBM. The HWBM LS design patterns can be used instead of perception questionnaire to model learners in adaptive web-based educational systems.

The research outputs highlighted are some of the many sophisticated research carried out by SOFTAM researchers in solving different world and national issues. The continuous spirit and dedication of SOFTAM researchers in performing significant and important research is aimed to put SOFTAM and UKM as one of the most sought after pool of experts in information technology fields. - Dian Indrayani Jambari -

FEATURED LAB : Network and Communication Technology Research Lab



Lead by Associate Prof. Dr. Rosilah Hassan, is the network and communication technology laboratory (NCT Lab).

Much of our work is guided by the notion that people have an essential part to play in modern engineering and technology. We aim to be a leader in networking and we welcome students, PhD and master, who desire to learn more about networking, information technology and computer science. At NCT laboratory we carry out research that are related to network such as IPv6, wireless sensor networks, Big Data and mobile Ad Hoc Network (MANET).

FACILITIES:

- NS2 and Qualnet Simulators.
- Comfortable work spaces for students.
- Routers, switches, rack able server, wireless access point and ongoing test bed setup.
- Workspaces, Printers and scanners for comfortable work space.



ACTIVITIES, COMMUNICATION AND NETWORKING:

- Tuesday weekly meeting from 2:30 to 4:30 PM.
- Local and international conferences participations and journals articles publications.
- Student of the month birthday celebration and Quarterly outside food gathering.

For more information like our page @ www.facebook.com/nctlab.ukm or visit www.ftsm.ukm.my/network
www.nctlab.net

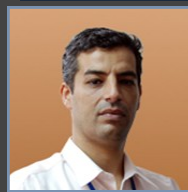
- Rosilah Hassan -



RESEARCHERS :



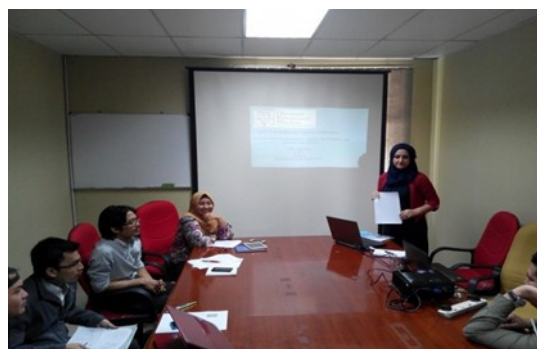
Assoc. Prof. Dr. Rosilah Hassan (*Leader*)
8 PHD students (2 on deferment),
6 master students



Assoc. Prof. Dr. Raed Ali Helal Al- Saqour
(*Principal Researcher*)
2 PHD students, 9 master students



Dr. Nor Effendy Othman
(*Principal Researcher*)
2 PHD students, 6 master students



A Personal Reflection on A Quest for Knowledge

"The PhD journey has undoubtedly marked a significant learning process in my life, both academically and personally. During the early stage of the process, the journey seemed very lonely, dark and impossible. Persistence and determination have kept the process going during the times when I felt that I will never make it and that I am not "intelligent" enough to embark on it in the first place. It felt like facing an endless journey as more literature was reviewed. Nonetheless, it was a rewarding process that led the 'penny to drop'. The first light was finally visible at the end of the tunnel which helped to jump start the whole process and built my self-confidence. I know thereafter where I was heading to despite the lights that went off every now and then. From then on, this bittersweet journey became more meaningful and satisfying. The PhD is not just an academic quest; it is a rewarding live survival that pushed me to the limit. Although difficult, keeping life in balance and having a strong faith and support system are key, so that you would not trip and stumble upon reaching your noble contribution to the body of knowledge" (Yusof, MM., 2007).

Upcoming Events

1. **Proposal defense 3/2015—9 September 2015**
2. **Postgraduate Seminar 2015— 12 November 2015**
3. **Propodal Defense 4/2015—21 December2015**

CONGRATULATIONS

Congratulation on your promotion Dr. Elax !



The wheel on your career are spinning in full speed. Keep going and don't hit the brakes now!

CONGRATULATIONS
DR. UMI

ON COMPLETING YOUR PHD!

Congratulations
Dr Raed
on your baby



So happy for you!

Congratulations
Dr Nor Azan



ON THE BIRTH
OF YOUR
NEW GRANDDAUGHTER