



Nine Months In

Has it already been that long since we moved into our new college? It's easy to forget about the passage of time when you work in a place like this. Everywhere you go, your senses keep picking up new things. But things weren't always as good as they are now, especially in the earlier months of our occupation. There were a few teething problems which were understandably inevitable but quickly resolved. This article takes a look at the then and the now.



When we were moving in, there was some concern about the college being far from everything else. Security was on most peoples' minds and the university's decision to stop hiring guards for the colleges only caused for more concern. A spate of thefts served as a reminder why we needed security back. Gratefully, the college management took up the task and we can now rest easier knowing that there is a guard around the

clock. We also have CCTV to monitor movements on the third floor and fourth floors where the computer labs are. As a further measure, the *Security and Housekeeping* committee was formed to ensure the safety of the premise.

The opening of the COIT café was a big welcome. No more need of going elsewhere for a quick bite. Just take the elevator down and lunch is done within twenty minutes. When the café closes at 5 pm, there's the Milo vending machine to quench your thirst. Another vending machine next to the first one sells prepaid top-ups. Perhaps public phone booths will also be available in the future.



Working in this new building is a pleasure with all its available facilities. There are printers for every floor now (we should have more in the future; 10 staff to 1 printer is

reasonable) and should all of them malfunction, there's still the photocopier at the ground floor. Photocopying and faxing is also possible at the fourth and sixth floor. Probably the one thing that consistently bothered us was the dysfunctional air-conditioning (and it *still* does to some extent). In the beginning there were even times when the air-conditioning was too cold but at least then, we could control the temperature of our individual offices – at least for those who knew how to use the device which purportedly allows that. The contractors have worked hard to solve these problems as they arose, though.

Remember the days of taking the trash out? Well, we no longer lack rubbish bins as each floor now has a large green one near the common elevators. Cleanliness has also improved. A certain theatre, notorious for its condition when we had our KPI briefing, was relatively spick and span for the first of the Research & Development Committee's presentation series. The cleaners go on their rounds more regularly now but their number is small so we can't depend on them entirely to keep things tidy.

Speaking of keeping things in their place, parking signs have also been mounted on both sides of the staff car park and that of the students. No more contending for the best spots with the students. Once in a while, the university's policemen come to enforce the parking rules. Although the staff car park is in a satisfactory state, the adjoining bays for motorcycles could be better. There the grass is long at the time of writing and although the area is not utilized by many, it is quite a sore sight for those who are observant.

Just a little bit more on greenery – it is hoped that the potted plants that were brought over for our Chancellor's visit are here to stay. They add a nice touch to an otherwise bare interior. So do the other props that were produced for the same occasion such as the college's organizational chart and photographs of the college's activities. The kiosk that made its brief debut was also impressive and hopefully would soon be a permanent fixture at the foyer.

When a break is what you need, the staff lounge is the place to relax. At the sofa or at the bar, the choice is yours. Electrical appliances such as kettle, toaster and refrigerator are located at the fourth floor. So are crockery and cutlery. Newspapers are not provided for every lounge but one could bring old magazines or books from home to be shared by all. The prayer room or *surau* completes our building even further. Some might remember that back in the BB block, the men had no *surau*.

On the whole, the problems that cropped up in the earlier days have been made right and our situation now is far better than before. Ensuring that our workplace is a productive and pleasant environment is our collective responsibility and we should not forget to take the time to look around us and appreciate what we have. To be fair, we should also not use that as an excuse not to improve further. Keeping those two things in mind our college should hold its grandeur for a long time.

*by Sharifah Junainah
Uwe (pictures)*

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CHIEF EDITOR'S COLUMN

There is often a great misconception about academia and lecturers in particular. Our job involves more than just warming a seat and reading the newspaper. In general, we write academic papers, attend conferences, counsel students, supervise projects, are active members of professional bodies, work for various committees, invigilate exams, do research and part-time study, visit industrial training students, organize short courses, and even do consultancy. Oh yeah, and then there's teaching and everything *that* entails. Perhaps I even missed a few things. Anyway, many of these responsibilities are also in effect at the same time. The point is, in academia, there is usually more to the job than meets the eye. This usually comes as a shock for people who have deigned or 'retired' from industry to join academia as much as say, selling insurance is to fresh graduates who were hoping for much more glamorous and adventurous work in industry. Not that there's anything wrong with selling insurance – we lecturers are, in fact, quite familiar with them. In truth, both academia and industry have their pros and cons but it's always important not to look down on either. Almost everyone has a productive role in society and as such, deserve respect. In some cultures, teachers are respected even more. Nevertheless, we also owe it to cleaners and security guards; who (especially in light of recent events) are actually very important in the grand scheme of things. Anyway, enough about that. This 2nd issue of Veritas features a new layout and the usual sections of interest. We're always short of staff so if anyone from COIT wants to join the committee, just let me know. I would also like to thank all contributors. As always, feel free to contact us with any feedback you may have about this publication. Have a good read.

Mohammed Azlan
Chief Editor
VERITAS

Interview With The Dean

By Bahram Abedi

After we moved to our new building and shortly after the appointment of our COIT dean, Dr Sharifuddin, I was assigned to interview him for the 2nd publication of VERITAS.

I had no difficulty getting an appointment for the task. Our dean immediately agreed on an appointment to be conducted in a very short time. Considering his usual busy schedule I must register our thanks and state our appreciation for the opportunity. Throughout the interview he was open and straightforward. I found him as I am sure most of you have come to the same conclusion by now; accommodating, helpful, and serious. He is here to accomplish a mission supported by years of experience as an engineer, trainer/lecturer and management he has accumulated throughout his working career.

The following are excerpts from that interview. We hope that you will find it informative and interesting.



VERITAS : We understand that you were among the first handful individuals who joined COE (the then I.T. Dept.). Naturally life must have been challenging for those few who were involved in the early stages of

establishing an I.T. Department and its courses in COE. Can you describe the important events you recall from those early days? I mean those events that to your judgment were pivotal in positioning COIT were it is now?

The history of the College of Information Technology reaches way back to 1994 when the present ILSAS was renamed to IKATAN i.e. “Institut Kejuruteraan Teknologi Tenaga Nasional”. In those days, IKATAN was situated at the existing ILSAS grounds when the initial four main blocks were undergoing construction. These four blocks were Admin, Library, BB – BJ and COE. The construction was completed in late 1996. That is the date we moved to the COE building.

During those years of construction IKATAN embarked upon two new academic programs other than its regular training courses:

- *Diploma in Engineering and*
- *Diploma in Business Administration.*

I was the Training Manager of one of the training sections when these developments started. Consequently, I was also assigned to teach the computing subjects for the Diploma in Business Administration. Although my involvement was purely ad hoc, but as something called for attention it seemed by default that I should attend to it and the reason was obvious. You see, at the same time I was also the head of the Computing (Training) Unit of IKATAN too!

Prior to 1996, IKATAN had two schools under its academic wing. They were the School of Engineering and the School of Business Management. The School of Engineering was also put in charge of establishing a program leading to “Diploma in Computer Science”. In order to implement the assigned task, the Head of School, Professor Amir Basha obtained the consent of Universiti Sains Malaysia to offer

their “Diploma in Computer Science” program as a franchised package. As such, together with a group of other I.T. personnel from IKATAN and TNB, we managed to establish and offer our first and only program, “Diploma in Computer Science (EA)” (granted from JPS). The first intake coincided with our move to the new COE building in November 1996 when I was appointed as the Head of the “Department of Information Technology”.

Naturally, such a rapid omni-dimensional and concurrent expansion involves tremendous amount of academic activities. Two such crucial activities were the development of the “Diploma in I.T. ” and the “Bachelor of I.T. (Hons.)” programs in which I was directly involved together with the other pioneer lecturers (En. Zaliman, Dr. Roslan, En. Abdul Rahim and Dr. Jamilin, as I can recall). While all these activities were carried out by just a small number of staff, in mid-1997, TNB was conferred the license to operate a University and naturally IKATAN was renamed as Universiti Tenaga Nasional, “UNITEN”. Our first batch of BIT was only about 60 students. They enrolled in June 1997. We subsequently recruited more lecturers as our new intakes of Diploma and Bachelors students progressively grew in numbers.

In 1998, the Deputy Rector assigned the Dean of the College of Engineering, (Prof. Zainul), to develop a plan to establish the “College of Information Technology” as an independent college. Professor Zainul, the pioneer lecturers and I were directly involved in the planning and identifying the academic and infrastructure requirements of the College including the progressive development plan for future programs until 2005. However, subsequent to the establishment of the plan, I was assigned to the office of the Deputy Dean of the College of Engineering on May 1st, 1999 when En. Abdul Rahim Ahmad took over to lead the continuous development of the College of I.T. . Obviously, I could not be actively

involved any further in the development of the College as the task of establishing the “Department of Civil Engineering” became the prime objective and the top task in the agenda of the College of Engineering.

I left the University for my PhD in late February 2000. Upon returning from my studies, I was happy to learn that UNITEN management had almost fully complied with the specifications of the College and was overwhelmed by the sheer size of the new building.



VERITAS : I could not ask for more! The birth story of COIT couldn't be told better! So it is true that you played quite a molding role in conception of this baby! Now the baby is growing up and as any young entity she is going through the tough experience of survival. And, you are the dean! The father again! Fine! Can you now tell us about the initial objectives, role and responsibilities envisioned by the founders for the then I.T. Department? Also in your opinion, to what extent does the present COIT manifest those hopes?

With the small number of staff we had, we brainstormed to identify the functions of the department. Consequently, we established the following functions:

- To analyze and identify the scope of academic education required by the I.T. industry

- *To develop and implement academic programs to meet their needs*
- *To carry out research and development activities in computer science and*
- *information technology to stay relevant and keep up with the trends*
- *To promote the use of Computing and Information technology to monitor the development of I.T. from time to time*

In my opinion, the main purpose of an academic institution is to generate graduates whose knowledge and skills are required by the I.T. industry. I think it is crucial and important for academicians to monitor closely the development of I.T. and its impact on society. One can observe that the current BIT and BCS programs have been designed with those developments in mind. That is, to provide our students with the relevant skills and knowledge needed by the I.T. industry. Thus, the current programs closely coincide with those planned in 1998. Indeed, kudos to those who have helped in the development of the current I.T. and Computer Science programs.

VERITAS : One can see today that the establishment of college of I.T. owes greatly to your initial involvement as the then HOD, your planning and leadership. As you explained, you started serving as Deputy Dean in COE while En. Abdul Rahim and the rest of the remaining colleagues continued the task at hand. Was there any other I.T. related responsibilities you carried out before you embarked on your PhD? How did you rejoin COIT again upon your return from your PhD Studies? Was it your choice!?

As I mentioned, my attachment to I.T. was purely coincidental. I was serving as the Training Manager for the Computing (Training) Unit for ILSAS/IKATAN since

1984. I was then responsible for the development and implementation of instrumentation and control, electrical, electronic and computer training courses for TNB.

In 1996, after a successful year-long stint at Cranfield University for my MSc, I was lucky to be appointed as the Principal Lecturer and Head of Department for the Department of Information Technology at the School of Engineering. In the three years of my career as the HoD, I have had the pleasure of working with a number of experienced academicians including Prof. Zainul and Prof. Syed Abd. Kader. These two outstanding academicians have greatly taught me the tricks and trade of the academic business. Three years later, I was entrusted to the post of the Deputy Dean of COE. In late February 2000, I left for my PhD being indebted greatly to the understanding, encouragement and kindness of TNB.

Obviously, I was looking forward to serve in UNITEN when I came back in 2004. I was reinstated as the Principal Lecturer and was assigned to the challenging task of lecturing the Ethics course for the first Semester of 2004-2005 at COIT. Subsequent to my success in defending my PhD thesis, I was appointed as the Dean of COIT on the 1st of January 2005.

VERITAS : Obviously, you possessed all the right ingredients to be appointed as the Dean of COIT. You have also acquired substantial academic experience with an engineering background. Having experience in teaching computer subjects, managing I.T. professionals and securing a PhD in Computing and specialization in Multi Agent Systems. Despite all that, I wonder if you could expect to be appointed as the COIT dean shortly after you returned from your PhD studies in UK?! How did it happen?!

Well, it happened as I just explained! As for if I expected it?! Well, the thought did cross my mind as I was told by quite a number of acquaintances and colleagues. However, without a PhD then, I did not expect that the management would seriously consider that option.



VERITAS : Deservingly you are here as the dean. Please accept the sincere and belated congratulations of VERITAS. Now, would you please elaborate on your visions, hopes and plans for COIT during your tenure as the dean? Are there any hurdles you might have observed standing in the way? What is at the top of your agenda?

In coming back from the United Kingdom, I had gathered lots of ideas throughout my rewarding experience of life as a seeking PhD student. Especially ideas I encountered during my research work. Now, although I realize that we are far behind in depth and breadth in all areas of computing research, I nevertheless acknowledge that the College of I.T. is still new and our lecturers are relatively young.

I have observed that we lack the scholarly tradition and environment of an academic institution. I wish to say that at the moment our activities of research and intellectual discourses are quite dormant. Additionally, I have noticed some deficiencies in our student academic abilities. Less than adequate command of English language, not

well developed thinking skills and lack of enough self-confidence.

As such, consequently, I have conceived two main objectives for the College:

- *Firstly, to ensure that our students deservingly graduate with the highest possible CGPA, and*
- *Secondly, to produce more research projects and secure grants to fund those projects.*

I have thought deeply regarding this and to the best of my opinion, I believe we could achieve these objectives via the following strategies:

- *Improvise: That is to improve current situations.*
- *Explore and Exploit: That is to identify our shortcomings and strengths and use our strengths to overcome our weaknesses.*
- *Act Proactively: That is, when action is required, do not wait, step in and tackle the issue pro-actively.*

My experience in ILSAS plus the ideas I have gathered have indeed helped me conjure up suitable plans for the development of academic and research activities in the college. That will be the main thrust in my management objectives. Such plans have been comprehensively outlined in our College Management Framework. This is a structured reference model with which the Management and staff pro-actively and reactively respond to the normal and exceptional academic and research issues with a view to achieve the expected objectives.

The framework outlines, importantly the plans for human resources development, student development, academic and research development and academic infrastructure development. These plans are on top of my agenda. At least during my

tenure as the Dean! I hope and optimistically wish that all staff of the College are in agreement with these plans and that they would willingly and to the best of their ability try to perform all the tasks assigned to them.

VERITAS : Apart from those hurdles you elaborated on, are there any other issues that to your judgment may result in slowing down your planned improvements or even block the path to reaching those goals?

I am in firm belief that most problems are human-generated! I think the major problem that impedes achieving some of those objectives is one's failure to perform his/her duty according to the stipulated plan and guidelines. If everybody willingly cooperates to play his/her part with a sense of belonging and with conviction, then there would be inherently less problems to attend to!

Take the case of problems caused by technical errors or hardware failure. For example, the case where a program stops functioning normally due to a corrupted disk. A willing individual facing such a problem can stop it from prevailing any further and preventing the disk from crashing more till it goes beyond repair just by reporting the disk and asking for a maintenance check. However, an indifferent individual may choose to ignore the problem! You see!?! What will be the eventuality?!

There is also this new issue of having access to lesser funds. Within the last three months, I received a few applications from our lecturers whose papers have been accepted to international conferences. Although we fully recommend and support such requests, we are constrained by the lack of funds to enable all of them to participate in such conferences. This problem, I hope, will be temporary and in the mean time, lecturers can still enter their papers for other nearby

international conferences standing better chances of being founded.

VERITAS : It is true and I can agree no less with you regarding your argument about the pervasive role of one's attitude towards his/her job. For, as you have successfully established, one's attitude is proven to be among the most important factors in achieving intended organizational objectives. However, just to point to another subtle factor in driving and shaping the individual's attitude, I wish to register here that the organization's fair and impartial treatment of individuals affairs has been identified as a major contributor in conditioning one's attitude towards the desired direction! Having said that; I wish to ask you now about the way you have found COIT staff! How do you find them? What are your expectations from them?

Well! After I returned from England I saw quite a lot of new faces in COIT! I noted that more than half of the staff joined the College after I had left the University and during the period of my study.

When I rejoined the College, I did not have ample opportunity to interact or work with

them directly. However, based on my observations during the past three months, I have found the majority of our staff to be hardworking and competent. I have also noticed a few with outstanding qualities. However, about half of them are relatively young and as such, I guess we need to offer them a conducive environment enabling them to upgrade and develop their skills and knowledge especially in academic fields and in research.

As for my expectations from them; well?! I expect the following from each staff:

- *To perform their duties responsibly according to the stipulated rules and regulations of the University*

- *To give their very best efforts and support to achieve the vision of the University*
- *To work diligently to improve the quality of our students*
- *To discuss intellectually and critically on academic and research matters*
- *To avoid conflicts with each other, but agree to disagree*
- *To espouse the sacred values we have inherited from those remarkable individuals who spent their lives perfecting the outline of human morality, dignity and his ultimate existential purpose. Those values are indeed our code of behavior passed to us by people of such conviction who identified so vividly the boundaries separating us as Man from the rest of the creation and the perceived universe. The values that were cherished by our forefathers who delved into the fundamental questions before us: Who are we? Where are we? Why are we here and what for? As such, we owe it to them, to ourselves and to our children, to remain gratefully alert not only to guard those values, but also to religiously spread them throughout our lives by our adherence. Of those values, some are very much related to our work ethics and I expect all my colleagues observe them. Among them are:*

- ❖ *Honesty*
- ❖ *Being Responsible*
- ❖ *Contributing to Teamwork*
- ❖ *Dedication to Work and Quality output*

VERITAS : Well said! Now with regard to those expectations you stated and supported with your arguments, one may wonder if the COIT staff are up-to-the-task? What are the strengths and weaknesses you may have observed?

I have no doubt! There is no question that any team can be up-to-the-task provided the

members are willing to work hard and each and everyone is willing to contribute to the good of the community and its identified goals. This includes the staffs of the College too.

Regarding our strength? I have noticed that our staff come from diverse backgrounds and experiences such as consultancy, academic, research and training. These experiences are crucial for the growth and development of the College. These are our strengths.

As for weaknesses, I think we need to improve on our research capabilities and to increase the number of staff with PhD qualification.

VERITAS : At his point into our discussion, I think it is in order to ask you about your plans as the dean of COIT for staff?

The development of human resources should form the core plan of any organization. We are no different. Indeed, for being an academic institution, we need to upgrade the academic qualification of current staff by any means we find at our disposal. We will try to provide them encouragement and sufficiently supporting them to be able to pursue their further studies. This should be implemented as an ongoing process.

I would also like to introduce an expertise development program for all our staffs. In this program, the staffs are encouraged to work on an area(s) in which he/she is good at. He/She will then undergo through an

intensive skills and knowledge development program to improve his/her skills and knowledge in that area(s). Skills and knowledge development could be implemented via third party training institutions, in-house training programs, self-learning initiatives, involvement in other knowledge-sharing platforms such as colloquiums and Mentoring program.

For the research part, we need to improve our research capabilities by undergoing training in research methodology and forming research groups. In research groups, a key researcher will lead a group of staff to carry out research projects in their area of interest.

VERITAS : Finally, on behalf of the **VERITAS** team, I would like to extend to you our gratitude and thanks for allocating your valuable time to this interview despite your tight schedule. But, just as the last but of course not the

least question: ANY MESSAGE FOR COIT STAFF!?

Well, I always say these to my students on the first day of class. Using your metaphoric title, as a Father! Fatherly advising! It seems it is in order to share the same with COIT staffs too!

- ❖ *Work hard towards achieving your targets*
- ❖ *Think positive!*
- ❖ *Always remember, no one is a hero/heroine in this world, you work for it and you'll get it!*

Outstanding UNITEN Student Receives The PIKOM Best IT Student Awards 2004

By : Sulfeeza Mohd Drus

One of our students, Ahmad Syahiran bin Mohd Nasir (IT072287) made UNITEN, especially COIT proud when he was selected to receive the PIKOM Best IT Student Awards 2004 organized by PIKOM (the Association of the Computer and Multimedia Industry, Malaysia). The award giving ceremony was held on December 17th, 2004 at Istana Hotel in conjunction with PIKOM Annual Dinner.

Outstanding and excellent students from ten different local and private universities were given the awards on that night. Each of the award recipients received a cash prize of RM 1000 and a certificate of commendation from PIKOM. The ceremony was officiated by the Deputy Minister of Science, Technology and Innovation Malaysia, Yang Berhormat Dato' Kong Cho Ha.



This is the first time PIKOM conferred such an award to outstanding students from local and private universities in Malaysia.

According to PIKOM Deputy Chairman and Organizing Chairman of the PIKOM Best IT Student Awards 2004, Lee Boon Kok, the awards and recognition given to the students is part of PIKOM's social efforts in reaching out to the academic community.

The college-level selection process was done a few months back with five of our lecturers being involved in the panel. Among the criteria used in the selection process were communication skills, personality, confidence level, articulation and intelligence. This is to ensure that the student chosen is charismatically able to represent UNITEN to outsiders.

Ahmad Syahiran is actively involved in academic and non-academic activities at the university level. He is also the member of Malaysian MENSA society, which comprises people who achieve a score equal to or above the 98th percentile (a score that is greater than or equal to 98 percent of the general population taking the test) on a standard test of intelligence.

*Syahiran receiving the
award from Yang
Berhormat Dato' Kong Cho
Ha*

Table of Selected Events for COIT

Date	Event	Persons
15 Sep 2004	COIT move to the new BW Building	All IT Staff
14 Oct 2004	<i>Bacaan Yassin dan Doa Selamat Bangunan Baru COIT</i>	COIT Management, Uniten Staff
1 Dis 2004	College Meeting	COIT Staff
1 Jan. 2005	Appointment of the Dean of COIT	Dr. Mohd Sharifuddin Ahmad
12 Jan 2005	First Intellectual Discourse Series by the Dean: A Formula for Success	Dr. Mohd Sharifuddin Ahmad
1 Feb. 2005	Appointment of the new Head of Dept. of COIT	Dr. Siti Salbiah Mohd Shariff
	Establishment of two new departments of COIT: Dept. of Computer Science and Dept. of Informatics.	Dr. Jamalul-lail b. Abd. Manan Dr. Siti Salbiah Mohd Shariff
	Reappointments of four Heads of Unit	En. Salman Yussoff, En. Azmi Mohd Tusof, En. Yunus Yusof, Dr. Roslan Ismail.
21 Feb 2005	Preethi Sheba Hepsiba D. won the Shell/UNITEN Writing Competition	Preethi Sheba Hepsiba D.
2 Mac 2005	UNITEN Chancellor Visit - TYT Dato' Seri Hj Abdul Rahman ke Bangunan COIT	COIT Staff
4 Mar 2005	Consultancy Services and Short Courses Development Perspectives" by Prof Madya Dr Ir Cheong Kam Hoong	Prof. Cheong Kam Hoong.
	Sports Carnival 2005	Recreation & Sports Committee
26 Mar 2005	The first Presentation Series: How to Conduct Research, Write a Thesis and Gain a Ph.D.	Puan Norlaila Hussain
	Farewell lunch for Prof. Syed Abd. Kader Al-Junid, former Dean of CoE and Dr. Jamalul-lail b. Abd. Manan, former HoD of Computer Science, COIT	Prof. Syed Abd. Kader Al-Junid, Dr. Jamalul-Lail b. Abd. Manan
9 Apr 2005	Presentation Series- A panel discussion on different experiences during the Journeys to Ph.D. degrees.	Dr Mohd. Sharifuddin Ahmad, Dr Zainuddin Bin Hassan, Dr Siti Salbiah Mohd Shariff, Dr Roslan Ismail, Dr Djamel Benaouda, Mr Chen Soong Der, Dr Madan Lal Garg
11 Apr 2005	Appointment of the new Head of Department (Computer Science)	Dr Roslan Ismail
	Appointment of the new Head of Unit (Information Systems)	Puan Nor'ashikin Ali
	Appointment of the new Head of Unit (Software Engineering)	En. Mohd Hazli bin Mohamad Zabil
16 Apr 2005	<i>Majlis Pemasyhuran Canselor dan Pro Canselor Uniten</i>	Tun Dato Abd Rahman bin Abbas, Tan Sri Abu Zarim, Dato'Leo Moggie
3 May 2005	Visit by <i>Komanden Angkatan Tentera Malaysia</i>	Dr Mohd Sharifuddin, Dr Zainuddin, HODs
14 May 2005	Presentation Series - A Talk on 'Critical Thinking'	Mr Bahram Abedi
1 Jun 2005	Presentation Series - Using Free & Open Source Software to Teach Data and Computer Security to tertiary Students	Mr Uwe Dippel

A Case For Programming - Musings On The Computer Virus

By : Uwe Dippel

There is always a case for teaching and learning Programming Languages. Joel Spolsky (www.joelonsoftware.com) tends to fill his regular columns with limelight on the topic. Reading those, it seems that students in America tend to overlook the importance of the subject just as much as Malaysian students do.

It is usual to the bafflement of the author's students - whenever he teaches them *Data and Computer Security* - that the topic 'Anti-Virus' is merely scratched. For a good reason; and that is what this article is about.

The expression 'virus' was coined in 1983 by Leonard Adleman, a professor of Computer Science and Molecular Biology at University of Southern California. Probably one has to be a professor in both subjects to create the link. The word 'virus' has actually two meanings when used in conjunction with computers. It is the generic term for any type of (usually malicious) programs that attack and infect computers; and it is a sub-class of itself: It also identifies those viruses that function by forcing the host to replicate the underlying code. The latter, more precise term is normally used by professionals, whereas the general public tends to subsume any such code, be it worms, rabbits, bombs, etc. under the term 'virus'. We will use the term in respect to the usage by the general public; that is all-comprising.

So, why is there no great need to deal with Anti-Virus programs in a subject like *Data*

and Computer Security, then (and this is where our story started, after all)? The layman is convinced of the need to install that Anti-Virus program "to prevent attacks on the integrity of the computer". That is not quite wrong; since these attacks are abundant. But it is also not completely true, because not all computers can be attacked under any circumstances.



Let us get into the generic concept that underpins any such attack by a virus (be it a virus, worm, rabbit, bomb or whatever). When you ask a group of people if they think that a well-written virus can attack any program on a computer, chances are that you see an overwhelming majority of hands flying up into the air.

The response from a group of students of *Data and Computer Security* won't be any different; though the answer is outright wrong. Not all programs are actually vulnerable. The huge majority, actually, isn't vulnerable at all. And when a virus - any virus - cannot attack you, why would you want the Anti-Virus ? There is no need, as long as you can't be attacked, isn't it?! What makes this minority of programs vulnerable, we will ask. And, better : How to prevent all programs from being vulnerable ?

Starting with the first of the two questions, here comes the answer: Programming.

shoddy programming, to be precise. When a program is required, ordered, commissioned; the coder gets exact specifications about the reactions that this program has to perform on well-defined sets of (user) input; sets of data, and so forth. The programmer struggles by him or herself through those specifications and finally ends up with a product that does all of this. Hopefully.

During acceptance tests, the future user will test the program on these specifications. Does it produce the correct output from that well-defined set of input commands and/or data ? If it does, it is considered to fulfil the requirements. It goes into production, to everyone's satisfaction.

Until somehow a virus is found which, successfully attacks the computers this program is running on. Why is this program vulnerable ? It is vulnerable for one single reason: It does what the specifications require it to do. But that is not all. It does *more* than that: It also acts one way or another to input other than the specified type. It has "extra functionalities". Functionalities that neither the commissioner nor the programmer are aware of. These, however, are the functionalities that the virus writer, the cracker, is trying to find. Imagine if the expected input to a field is a phone number.

This will be found in the description and programmed in. Unfortunately, the same field might accept any other character; and any amount of any letter or digit. Without going into too much detail, you can expect these unforeseen characters arriving in large quantities (and not representing a telephone number at all) to cause some action that nobody ever intended to see from that input. The user will not have tested the program on that unexpected input and we don't blame him or her. They do the testing according to their expectation and when a field is supposed to contain phone numbers, and as such of limited amount, nobody can know

what happens if someone just inputs : 10000 capital 'A's.

Nobody ? Not quite ! The programmer ought to be able to predict what happens. Even more, the programmer must be able to predict what happens here. Still more; the programmer must be trained to see the problem while coding. This isn't rocket science. The programmer needs the awareness to note such items without waiting for a virus attack first ! And this leads to the answer to the second question about prevention.



Dr. Edsger Wybe Dijkstra

One of the grand old men of Computer Science, the late E. W. Dijkstra, formulated this for the first time in his book, "A Discipline of Programming" in 1976. He was the first to point out, that testing can never prove the absence of problems; the maximum that testing can do is, to demonstrate the existence of a (specific) problem. When testing does not help at all to avoid vulnerabilities, we need something different. We need programmers who are trained well enough to make sure any input is - as we call it - 'sanitized'.

In order to understand the function of a virus, the programmer must have a very good understanding of the underlying architecture of a computer; he or she must

be aware of memory structures, file systems, stacks and registers. Only then will the programmer be in a state to foresee problems *before* they occur. A single programming course with 'Drag & Drop' tools is like oil to the fire here. Programming must be a state of mind rather

than just stacking modules. Prevention is better than cure, analogous to the case of biological viruses. Let's make this the case with programming as well!

Ed : A good point although 'drag & drop' tools (visual programming) are designed to make the task easier and leave more time for problem solving rather than coding.



Uwe

Higher Education System In France – Part 2

By : Abdul Rahim Bin Ahmad

In the last issue of Veritas, we were introduced to the French higher education system and one of the many ways in which one may obtain higher education in France, namely by taking a two-year professional qualification course.

Here is the second part of to this article, we will take a look at another alternative and that is the university. In France, there are 90 public universities, 230 business schools and 240 engineering schools offering diverse courses in all major disciplines ranging from the humanities and social sciences to business management, sciences and engineering.

Students at French universities start with a two-year foundation course, known as the premier cycle, which terminates with the DEUG (*Diplôme d'Études Universitaires Générales* preliminary degree). In that period, they cover a broad base of background knowledge and do theoretical groundwork to prepare for specialized training in their chosen field. True specialization starts in the third year, which is the first year of the deuxième (second) cycle.

With the second cycle, students can opt to continue their education at a specialized university institution such as an IUP (*Instituts Universitaires Professionnalisés*), which offers more industry-oriented courses, or an IUFM (*Institut universitaire de formation des maîtres*), for teacher training. In the second cycle, the student can choose to pursue a generalist programme, which entails studying for a license (degree) in the

third year and possibly, followed by a *maîtrise* (master's degree) in the fourth year. Alternatively, he or she can choose a more professionally or technically-oriented degree and enroll in a license *professionnelle* or an MST (*Maîtrise de Sciences et Techniques*) or MSG (*Maîtrise de Sciences de Gestion*).

The third university cycle prepares the student for a career in research, in science or engineering, with a DEA (*Diplôme d'Études Approfondies*), or with a DESS (*Diplôme d'Études Supérieures Spécialisées*) in business. Generally, these two prepare a student for the PhD. The most highly valued qualifications are those awarded for the more business or industry-oriented courses, i.e. DESS, MST, MSG and MIAGE (*Maîtrise d'Informatique Appliquée à la Gestion*).

As a general rule, each year at university terminates with an examination giving access to the next year. Exams are also held at the end of each semester of the academic year. Each cycle terminates with a diploma examination.

There is no direct comparison between the French university system and the Malaysian university system. Generally, a Malaysian student with SPM needs to spend two years in a French high school in order to obtain the *Baccalauréat* before entering university and another four to five years in the university to obtain a French degree.

Recently, our Public Services Department (JPA) has been working towards the recognition of a French license (a five-year degree) as the equivalent of a Malaysian Master's degree. However, this effort is mainly directed at engineering courses.

Current Research In COIT

TITLE

Web-Based Procurement System
Development Of A Strategic Sourcing And
Supply Chain Execution

Leader

Marini Othman

Description

Traditional Procurement is commonly rife with problems like process disconnects, lack of integrated planning and decision support, and lack of visibility. These issues, when addressed effectively, can cut spending and significantly improve processes and reduce inventories.

E-procurement is the Internet-based automation of the purchasing and sourcing processes. Online applications integrate procurement and business processes to streamline purchasing, reduce transaction costs, and shorten fulfillment times, both for material used directly for supply-chain operations and for other goods and services companies use to conduct business. Alongside reducing expenditure significantly, E-procurement develops supplier relationships and improves overall processes.

Expected challenges in adopting e-procurement, amongst other things, are interoperability (or the lack of it) between disparate systems, creating and maintaining product data, security of networks, and

organizational culture (preparation to embrace new practices)

This solution or product prototype will be in the form of a complete suite of applications or capabilities covering all enterprise procurement needs right from sourcing through negotiation, planning, and ordering. It enables planning, collaboration, content and execution capabilities throughout this process.

Status

Closing on coding and moving into testing.

TITLE

Active Anycast Server Selection For
Performance Optimizations

Leader

Dr. Jamalul-Lail Abdul Manan

Description

The active *anycast* (communication between a single sender and the nearest of several receivers in a group) server selection method aims to improve the performance of globally distributed Web-server systems in an active network by employing the anycast addressing method of request distribution. Strategically placed active routers provide the means to select and deliver the requests to selected servers among the geographically distributed Web-server replicas. The research is involved in investigating the various methods of request distribution and examining the distribution mechanisms that can be applied to the active anycast server selection method to optimize its performance in globally distributed Web-

server systems in terms of user response time and server load balancing. This research has produced some results from the simulation of an active anycast method that implements an RTT-based server selection strategy with comparisons made to two static methods of server selection.

Status

Classified

TITLE

PEANUTS Courseware

Leader

Badariah Solemon

Description

A portal for course related materials where lecturers and students can access the information about the subjects that they teach or going to teach. This can avoid a lecturer from having to search through documents or other lecturers whenever they have to teach a new subject. It can also help synchronizing the contents of all subjects.

Status

Completed study weaknesses of current system, study requirements for the courseware, identify component of current system for adoption, analyze requirements of new system, analyze requirements of courseware, handle purchase request to finance server, and set-up server application, account, database.

TITLE

Development of Web Traffic Generator For
The Simulation Of An Active Anycast Load
Balancing System

Leader

Yap Chin Hoong

Supervisor

Dr. Jamalul-lail bin Abdul Manan

Description

Traditional client-server model which consists of one server and many clients results the congestion of the link to the server as well as excessive load of the server. Server load balancing is an available solution to the problem. Most server load balancing systems introduced the existence of replicated servers. In this research, the author will be focused on server load balancing method utilizing active anycast technology. Active anycast method has been proposed to perform load balancing and server selection where active router in an active network will select an appropriate server among the replicated servers to response to a client request based on some load information.

In the real world, 80% of the web traffic is generated by HTTP requests. Thus we see the need of the development of a HTTP traffic generator for the research and study of server load balancing systems. This paper reviewed technology related to active anycast server load balancing system, as well as the discussions on the developed traffic generation system.

Status

The current status of this research is in the development of the traffic generation system. Future works includes incorporating traffic generation models into the system and develop the system to support the research of other active anycast load balancing system technologies.

TITLE

Dynamic Data-Filtering in Snort-Based
Honeypots using Rule-Based Approach

Leader

Ali Bakhtiar Nizamani

Supervisor

Dr. Jamalul-Lail Abdul Manan

Description

This research work is being carried out for Masters in Information Technology (by research) program. The research work is about creating a color-coded filter for snort-based honeypots. Different colored zone indicate different threat level, for example packet captures placed in green zone would indicate that it is a harmless packet meanwhile logs placed in the red zone indicate certain danger such as denial of service attack. This novel method for filtering data in honeypots uses a rule-based approach to reduce redundancy (logs/packet captures) and make the whole setup of honeypots more effective and efficient in forecasting attacks towards a network.

Status

Initial prototype has been designed in Visual Basic. It is expected that this research work will be completed in two months time. This research work is supervised by Dr. Jamalul-Lail Ab. Manan (COIT).

TITLE

Print Spooler Management System using
Open Source

Leader

Yunus Yusoff

Description

The purpose of this project is to develop a Linux based print spooler manager. The function of this print spooler manager is to receive all the print jobs and then forward to the appropriate printer based on a number of criteria such as number of pages, graphical contents, etc.

Status

Not given.

TITLE

Staff Attendance Record System – SARs.

Leader

Marina Md Din.

Description

The main purpose of this system is to provide the facilities on recording and tracking staff attendance. The system capabilities include:

- Record login and logout time of each staff.
- Calculate the difference between login and logout time, which must be at least 9 hours per day.
- Automatically produce attendance report at the end of each month.
- Show history of staff attendance for future reference.

With the deployment of the new system, the activities of collecting the staffs' attendance information would be automated. Table 2 below summarizes the automated activities.

Status

Very close to completion. Having some problems with the linking and still touching up with the interfaces.

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4. Adzly Anuar, Salman Yussof, M. Firdaus Effendi Baharudin, Yong Jun Keong and M. Zafri Baharuddin, “**Development of Multi-fingered Robotic Hand**”, Proceedings of the 2nd International Conference on Mechatronics 2005 (ICOM'05), May 2005, Malaysia.
5. Ahmad Qadafi Bin Shaii and Jamalul-lail Ab. Manan, “**Network Congestion Control of IP Networks through Active Queue Management**”, Proceedings of Uniten Student Conference on Research and Development (SCOREd '04), Dec 2004, Malaysia.
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12. Badariah Solemon and Rosnafisah Sulaiman, “**Rapid E-Learning Content Management System (RE-CoMS)**”, Proceedings of the First International Conference on E-Business and E-Learning, May 2005, Jordan.
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 16. Hajar Mat Jani and Dr. Lee Sai Peck, **“Applying Minimalist and Case-Based Reasoning (CBR) Approaches to Object-Oriented Application Framework Documentation: A Research Proposal”**, Proceedings of National Real-Time Technology and Applications Symposium (RENTAS 2004), November 2004, Malaysia.
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 20. Mohd Hakim Abdul Hamid, Mohamed Othman, Jamilin Jais and Azhana Ahmad, **“DIPC, Algorithm that Satisfies Clustered Environment”**, Proceedings of the MMU International Symposium on Information and Communications Technologies 2004 in conjunction with the 5th National Conference on Telecommunication Technology 2004, Oct 2004, Malaysia.
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 24. Renate Kärchner-Ober and Uwe Dippel, **“German: A Typical L3 after English L2 - How do Learners Evaluate Their Knowledge of English in the Context of Learning German as an L3?”**, Proceedings of Malaysia International Conference on Languages, Literatures, and Cultures (MICOLLAC 2005), April 2005, Malaysia.
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1. Ali Bakhtiar Nizamani and Jamalul-Lail Ab. Manan, “**Securing Networks with Honeypots**”, SUARA TEEAM Magazine, 40th Issue, Page no 77-78, ISSN 0128-293X
2. Zainuddin Bin Hassan, “**The Job as A Systems Analyst**”, Courses NOW! Magazine, GTI, Malaysia, August 2004, Issue 6, pp. 62.

Journals

1. Chen Soong Der, “Preserving Brightness in Histogram Equalization based Contrast Enhancement Techniques”, Elsevier Science Journal of Digital Signal Processing, Sep 2004, Vol. 14, Issue 5, pp. 413-428

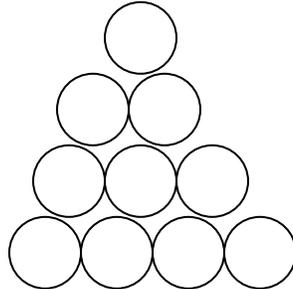
Invited Talks

1. Uwe Dippel, “**Computer Science - inventive, obvious or trivial ?**”, ASEAN Workshop on Search and Examination in the field of Computer Related Inventions, April 2005, Malaysia.
2. Uwe Dippel, ”**Using FOSS to teach IT security to University Students**”, MNCC Seminar on Asean Regional OSS, 14 March 2005, Malaysia.
3. Uwe Dippel, “**Open Source as Business Model / Open Source as commodity**”, TNB/IT, Sept 2004.
4. Uwe Dippel, “**IP Rights in Open Source Software**”, MIMOS Intellectual Property Forum, 5 July 2004, Malaysia.

FUN & GAMES

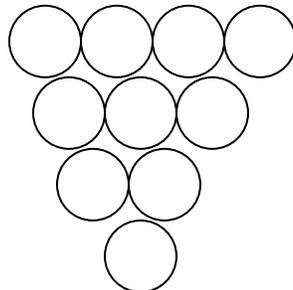
1. Turn it upside down!

A triangle of 10 coins is stacked as depicted below:



Picture A

Turn it upside down using only the minimum number of moves.



Picture B

2. Divide them!

The squares below contain the vowels A, E, I, O and U, with each vowel occurring 5 times. Try to divide them into 5 parts which each part having exactly one of each vowel.

E	A	I	O	I
U	E	U	E	O
O	I	A	O	A
I	U	E	A	I
A	O	U	E	U