the BIT

the Bullettin of Information Technology

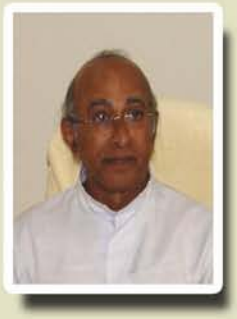
OCTOBER 2008

IT GRADUATES IN THE FRONT LINE

Department of Information Technology
RAJAGIRI SCHOOL OF ENGINEERING AND TECHNOLOGY
Rajagiri Valley, Cochin - 39

Welcome

Message from Director`s Desk



Rev.Fr.Jose Alex, CMI
Director, RASET

I am glad to know that IT department of RASET is releasing their bulletin. I hope, the bulletin will bring out the versatile & progressive ideas of members of RASET family and that it will also be an expression of their literary talents. Wish you all the success.

Message from Principal's Desk

Dr.J. Isaac
Principal, RASET

I sincerely hope that this bulletin will gesticulate the protuberance which sprouts in the tender minds of the campus.Hope this bulletin would provide a platform for the members of RASET to exhibit their potential to the panorama of literature.

BUTTERFLIES OF IT DEPARTMENT

As the results of VIII semester MG University B-Tech degree exam was published, students of Rajagiri bagged the maximum number of ranks. IT bagged 4 ranks including 2 first ranks. The rank holders are

1st Rank : Prabha Krishnan, Tara Varghese
2nd Rank : Tina Babu
3rd Rank : Tanu Diamond

By sweeping all the ranks of IT in MG university, the IT department has added one more feather to its cap. Each and every teacher of IT department has played a key role in helping the students to achieve this. With this the IT department has proved their mettle in moulding committed professionals.

Hacking?.. Impossible

Dr.Varghese Paul
presenting his research paper in computer security organized by ITrax & RRCC

Rajagiri Research & Consultancy Centre (RRCC) in association with I-Trax organised a seminar on "*Cipher Security System*" by Dr.Varghese Paul, who is an eminent personality in technical studies. Dr.Varghese Paul ex-officio of CUSAT and presently the dean of Toc-H Institute of Science and Technology have his hands laid on all departments of Engineering. He is basically an electrical and electronic engineer, but has done through other braches also. Other than his own stream he was well interested in Computer science and Information technology. His main area of research was Security in Computing and Internet communication. He won his Doctorate for his new Cipher Security system.

In his seminar he explained how he developed his security system, what algorithms were used and how he implemented it. He designed his own algorithm and designed his own codes called cipher codes to implement this. It had an encryption and decryption algorithm associated with it. He explained how it worked based on that algorithm. With this, the information to be sent can be encrypted so that it reaches the destination safely. In that he did tell us about a contest that is on for past 10 years. The contest is that he had encrypted a message with the cipher code he created. Anyone who decodes that will get a prize of "Rs. 1 Lakh"!!!!!!!!!!!!

The seventh semester students of IT had an enriching experience by attending the seminar and got an idea on the importance of security in computing. It helped the students to understand how much secure is their computing system. Thus the seminar was very informative and had a very depth effect on the students.

Rendezvous with Ajmal Khan

Ajmal Khan
Chief of Centre
IBS Software Solutions, Kochi

Q: IBS basically deals with Travel, Transportation and Logistics Industries. Is there any particular reason for concentrating only in these sectors? And will IBS further expand into other industries?

Transportation forms the backbone of business – the major sector of any economy. Millions of people rely on an extensive, inter-related transportation network. The Travel, Transportation and Logistics (TTL) industry is a huge domain where billions of dollars are being spent on IT alone. There is a big scope for further development. The transport industry is in an era of unprecedented change and transition marked by demands for improved services. The industry is exploring new horizons in the way it does business, and so is IBS. Since there is the scope is huge in TTL, we are currently not looking for further diversification.

Q: How do you see the recent crash in the US economy affecting the IT industry?

There is a definite slowdown in the US economy, which has affected banking, Insurance and many other Industries across the world. Travel Industry is also affected. However, IBS has not faced any major impact because of our strategic business model.

• *Our new-generation solutions reduce cost of operations. So buying our solutions is only going to cut costs further for our customers well.*

• Unlike services a company, we do not have to hire people on a project basis. The relationship between revenue and head count is non linear. We are pretty comfortable with our current staff strength of 2200.

• IBS' business is spread across all the five geographies (14 business centres worldwide). So a slowdown in US economy does not affect our functioning. The revenues are coming in from other regions as well.

In fact we have added 45 new customers to the IBS client list in the last six months.

Q: Since IBS comes to Rajagiri also for recruitment, how does the crash reflect on Campus recruitment?

We had recently recruited over 100 students from various campuses. Our next campus recruitment plans are being formalized. Rajagiri, being a premier institute, should figure prominently in our scheme of things.

Q: How does recruiting from every branch of engineering benefit an IT solution company like yours?

In the TTL domain, engineers are able to add a lot of value to product development. Just being engineers, irrespective of their branch, they are able to add value due to their structured thought process. Our focus being on Product Development rather than System development, we find that electronics graduates do equally well as computer science graduates.

Q: There is a lot of job hopping that takes place in IT companies. How does this affect the company?

Attrition hurts companies. It is both a knowledge loss as well as extra expenditure in recruitment and training. As far as IBS is concerned, we have been fortunate as the number of employees leaving us is very low. In fact, at IBS Cochin, the attrition is only around 1%. At IBS, in general, due to the good HR policies and the congenial job environment, employees love their work and their workplace.

Q: Do you face any difficulties being in Kerala?

I think you ask this question personally, since I am a non-Keralite. What I have experienced during the past 10 years in IBS, is that engineers coming out of Kerala universities and selected into IBS are of very good quality and calibre. They are very adaptable, creative and come out with good ideas and ways of implementing them. Many of our US and European customers have also acknowledged this and appreciate the quality of engineers in our company. This is definitely a great strength for the company and for me, personally.

From the Company perspective also we have no problem at all being in Kerala. We have our own campus in Technopark which has a world class infrastructure and planning to build another in Cochin. There are over 85 engineering colleges in the state which means abundance of talent. Setting a business in smaller cities is well supported by the state government. Cost of operations are lower vis a vis the metros in India. We are indeed happy that we started our operations in Kerala.

Q: What is IBS' plan for the future?

We hope to significantly ramp up our top line means the sales revenue. Our aim is also to be the most productive IT Company in the TTL sector. Making IBS a Dream Company for employees is also high on our agenda.

Q: Do you have any word of advice for us Rajagiri students?

We are living in a highly competitive environment. You need to benchmark yourselves with the best talent in the country. For this, you must start your preparedness even before you start working. This preparedness comes from being aware of the global markets, understanding the tactics employed by companies worldwide and keeping track of the latest developments in IT. Enhancing soft skills is of paramount importance. RASET, being an Institution of repute, I am sure you will achieve all this.

I wish all the students of Rajagiri the very best of luck in life!

Interviewed by Surya Somanpillai
7th Semester, IT

Faculty Area

Green IT through Cloud Computing

Green Computing (Green IT) is the study and practice of using computing resources efficiently. It includes - Virtualization of server resources by combining several physical systems into virtual machines in a single powerful system and there by reduce hardware and power and cooling consumption-Efficient energy management by using energy efficient components (CPU, Display Devices, Storage Devices, etc.) and by setting power options of the computer when it is not active - Disposal / recycling of electronic waste properly (use eco-friendly material) - Telecommuting / teleconferencing by which space, energy consumption, travel etc. are reduced .

Cloud Computing is the best way to attain this. Cloud computing is the technology in which the computer recourses (hardware and software) are shared / accessed through Internet. In cloud computing infrastructure currently consists of reliable services delivered through next-generation data centers that are built on compute and storage virtualization technologies (less hardware), owned by a third party, located anywhere (in Himalayas or Iceland or in shipping cartons, so that adequate power and cooling), can be accessed from anywhere 'east or west', and at any time 'day or night' (maximum resource utilization). One can reduce the number of applications deployed on data centers by using similar applications hosted by SaaS (Software-as-a-Service) providers. So, cloud computing means different things to different people from single point.

Green IT through Cloud Computing will result in energy conservation, money savings and eco-friendly atmosphere.

Prof. Kuttyamma A.J
Professor & HOD IT

Fault Attacks on Cryptographic Hardware

Biju Paul, DIT

Fault attack is one of the main problems in state of the art cryptographic hardware design. It has been shown that transient faults injected in a cryptography core can lead to reveal the encryption code. This kind of attack is a real threat to tamper resistant devices such as Smart Cards. To tackle such attacks, the cryptography core must be immune to faults. First step is to show how an attack against different crypto standards, such as DES (Data Encryption Standard) and AES (Advanced Encryption Standard), is performed through a fault injection. Then, a countermeasure based on partial hardware replication could be used. The above solution is independent of implementation and can be applied to other cryptography algorithms. However, bilinear maps, or pairings, have presented theorists with a new and increasingly popular way of constructing cryptographic protocols. Most notably, this has resulted in efficient methods for Identity Based Encryption (IBE). Since identity based cryptography seems an ideal partner for identity aware devices such as smartcards, it has been shown that the security of concrete pairing is better in terms of fault attack.

An Incremental Approach to Language Processing

The incremental compiler operates on an incremental basis, line-by-line. If only one line is changed in an edit session, then only that line need to be recompiled, if no other code is affected. Lexical analysis is performed incrementally, and the resulting token list saved in memory. All of the linking tables are saved in memory so there is no need to generate link tables for increments of code. The parser has the ability to skip lines or blocks of lines of source code which haven't been changed. For this purpose, each line of source text in the editor has a change-tag to indicate whether this line has been changed. From the change-tag information a clean-lines table is built, indicating how many clean lines follow the present line. All of the source code modules, the token lists, symbol tables, code tables and related data structures are maintained in virtual memory rather than in files to improve speed of operation. Also, the object code created is maintained in memory rather than on hard disk, and executed from this memory image, to reduce delays. A virtual memory management arrangement for the system assures that all of the needed data modules and code is present in real memory by page swapping, but with a minimum of page faults, again to enhance operating speed.

Binu A., DIT

Plug-point Anyone ???

Mathew Joseph
7th Semester, IT

The perennial nail in a Notebook user's sole is the question of a power source. Forget the system configurations and space age performances backed by a similar hardware backup, none of these make any difference if the thing doesn't have an adequate power supply, keep aside the adequacy; if you give zilch, you get zilch. Most of the Notebooks these days provide a maximum of 3-4 hours of optimum backup supply. But what if you had more, not just a few more hours of supply squeezed used some darn-fangled method most laymen couldn't even possibly come around to pulling off. Now think in terms of a Notebook that leaves you nothing to do but be an ordinary user, its nothing in how you use the Notebook, its all inside, a really powerful battery. It would like literally running your notebook on nuclear power when compared to conventional laptops. HP provides just that solution to all Businessmen, Students who are on the move without a plug-point handy.

The HP EliteBook 6930p drives an ultra-capacity battery that keeps the Notebook running for nearly 24 hours. That's 4 hours more than their competitor DELL. This allows the user to go about with their work without worrying about finding a spot to recharge their drained battery cells.

The 14.1-inch rugged-type, super-encrypted, Linux-boosted notebook that can go against extreme temperatures, humidity, dust, bumps, and other torture is a handy and versatile competitor that will edge out all others in this business.

Some of its specs includes the heart and soul of this Notebook; HP batteries that benefit from a combination of HP engineering and energy-efficient notebook components such as Intel® solid-state hard drives (SSD) and mercury-free LED displays. The highly efficient HP Illumi-Lite LED display boosts battery run time by up to 4 hours compared to traditional LCD displays, while the Intel SSD provides up to a 7 percent increase in battery life compared to traditional hard drives.

The Hp EliteBook really brings a facelift to the Notebook Industry and soon competitors will be catching up on it. In terms of bringing such a marginal increase in Battery power capacities, it really does change how a Notebook will be used; this removes some of the limitations faced by any conventional Notebook user

Information Technology : A sector for NEW and MORE

Jithin Nazeer P.C
5th Semester, IT

We live in the eighth year of the twenty first century. So with it of the third millennium. Gone the days where man interpreted computer as a 'rare miracle'. Today IT rules the world. It gets better as it grows and it never stops growing.

A series of new trends linked with more recent ones will significantly change the way corporation adopt and use technology. Bobby Cameron, a Forrester, vice president and principal analyst writes in a just issued report "we are witnessing a multiple trends that when combined will drive a dramatic change in technology adoption and use. Some of trends like internet, mobile, SOA and BPM have been around for few years but are just gaining the footage required to launch then into enterprise use.

According to FORRESTER RESEARCH REPORT 2008, The new trends identified are

- Technology populism
- Dynamic business application
- IT ecosystems
- Enterprise data management
- Dynamic business architecture
- Information workplace

The IT everywhere emerging technology wave has no single transformative technology that will single handedly drivebusiness change. Instead each wave in this will have the greatest impact through collective adoption. Thus its high time, we, destiny bearers of tomorrow identify this and get ourselves constantly updated.

Internet use boosts brain power

Researchers have discovered that using the internet can increase the power of your brain. Internet searching engages complicated brain activity, which may help exercise and improve brain function.

Security industry falling behind hacking technology

The rapid rate of application development has outpaced information security technology. The five key areas that need addressing; botnets, Web 2.0 attacks, targeted messaging, telecommunications and RFID hacking. Around ten per cent of the world's computers are currently part of a botnet, and the rate of infection was increasing. Improvements in anti-spam technology have caused hackers to move towards more targeted messaging to steal data. AS phishing sites get shut down faster these targeted messages will attempt to install permanent malware on user's computers to steal information directly.

Microsoft fixes 20 security flaws

The latest release includes 11 bulletins addressing a total of 20 security vulnerabilities. Four of the bulletins are rated 'critical,' six are listed as 'important' and one as 'moderate'. Three of the six bulletins rated 'important' address remote code execution, including fixes for the Windows Server Message Block and Internet Printing Service, along with a flaw in the Message Queuing component for Windows 2000. Three more 'important' bulletins fix privilege-elevation flaws in the Windows Kernel, Virtual Address Descriptor and the Ancillary Function Driver.

ITRAX EVENTS

IT association ITRAX conducted a series of technical events as a part of talent hunt among students. The events were scheduled in the month of September.

Various events such as

- Webpage design
- Wallpaper design
- Codewhiz

were held.

Webpage design : The participants were made to design a webpage, based on the theme "webpage for a world peace organization". In web designing, Manzoor Ilahi & Nithin Bose of S7 IT shared the second prize and Priyanka Mathew (S7 IT) bagged the third prize.

Wallpaper design : Participants who took part in wallpaper designing had to design wallpaper based on a theme -ABHIYANTHRIKI '08. In the wallpaper design contest, first prize was shared by:Renju George (S7 IT), Manzoor Ilahi (S7 IT), Nithin Bose (S7 IT).

Codewhiz : Participants who took part in codewhiz had to debug an erroneous C code given on the spot.

Achievements

- Binu A. of IT was invited to present a conference tutorial on "Knowledge Management in Higher Education through Institutional Repositories" in **Confer'08** - A national level conference organised by CSI and Vellore Institute of Technology.
- The cyber security wing of Kochi City police organized an awareness program for the public which lasted for three days from 31st July to 2nd August 2008. Sixty stalls were arranged as part of the exhibition in the program. One stall was reserved for RASET students. Few students from IT (Nithin Bose, Nishanth P.R) and CS (Kiran B, Sreeram T.K, Kevin Kuruvila) took part in the exhibition with the intention of marketing their software projects. Lot of people visited the stall and it got a good response. They also conducted a technical quiz competition in which our IT students (Sachu Kurian, Aarathi Meenakshy and Nithin Bose) bagged the first prize. One of the highlights of the program was a seminar session in which Nishanth P.R and Amritha M.M of S7IT presented a paper on 'Quantum Cryptography', as a public awareness building measure on the cyber security system. The awards were distributed to our students by cine actor Jayasurya in a function arranged at Darbar Hall ground on 14th September.

On Desk : **Prof. Kuttyamma A.J., Biju Paul, Binu A.,Jis Mary Jacob, Nishanth P.R.** Illustrations : **Mr.Jithin P.S.**

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This internal newsletter is intended to provide a source of information for both staff and students that will hopefully help to improve communication and awareness among faculty and students.