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## ComSPEC '09

Software Project Exhibition And Competition 2009  
Arranged by  
*Department of Computer Science*  
*CIIT Lahore*

### SOFTWARE MELA

Dr Mirza J S, advisor CS dept CIIT Lahore



The April 2009 newsletter of Computer Science Department of CIIT Lahore is a special issue

which covers in detail the activities of the first ever software mela held at the COMSATS Institute of Information Technology Lahore on 25<sup>th</sup> Mar 2009

An illustrious one-day event, software mela, was held on 25 Mar 2009 in the department of Computer Science of COMSATS Institute of Information Technology. Myriad strenuous efforts poured into its planning. It was a brainchild of the Head of the Computer Science Department, Dr Asad Hussain, who foresaw its effectiveness to put a learning shot into the arms of the students.

### AIMS AND OBJECTIVES

The primary objective was to jolt in a sense of competition among COMSIANS with other students within or without the campus; to enthuse COMSIANS to participate in academic competitions and strive to excel the competing competitors; to think independently and come up with solutions of their own; to be brave enough to project, present and defend one's ideas; to be known as idea generator and implementers.

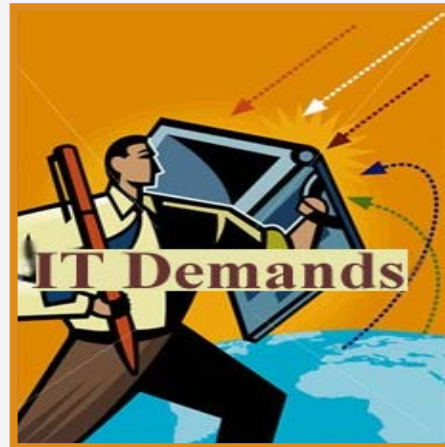


Happily the COMSIANS virtually scrambled to take part and they did so with much of enthusiasm. What is more, the computer science faculty of CIIT whose projects were displayed had a high sense of respectability for themselves and hoped to do much better in the future.



## RAVING REVIEWS

It gives immense pleasures to me to say that the event and its great success has been able to gather great raving reviews form all quarters from within and without the campus. It has not only strengthened our resolve to go ahead for the same in the future but has also heightened our importance in our eyes.



## TEAM EFFORT

A multitude of committees were constituted to handle the enormity of the task. Without these committees the software mela would not have existed. We would rightfully appreciate them by acknowledging their efforts whole heartedly and mentioning their names.

The department gratefully acknowledges the moral and financial support provided by the worthy Director CIIT Lahore.

The convener of the exhibition was Dr. Asad Hussain (Head of CS Department), Mr. Atif Saeed was the coordinator. Main responsible person of the events were Mr. Aman Ullah, Mr. Abdul Karim Shahid, Mr. Atif Saeed, Ms. Sana Rizwan and Nasir Rauf. Project Technical committee was handled by Dr. Ahtesham Aslam, Mr. Nadeem Ghafoor Chaudhary, Mr. Emran and Mr. Imran Raza.

Printing Committee worked well under the supervision of Mr. Aman Ullah. Graphics were designed by Ms. Sana Rizwan. Mr. Abdul Karim Shahid arranged for their displayed within and without the campus.

Mr. Naeem Akhtar (Senior System Administrator) facilitated infrastructure network support and CISCO Academy stall was arranged by Mr. Kashif Ejaz. Mr. Nasir Rauf (DCO) looked after display of research publications and the smooth working of the infrastructure. Special thanks are due to Mr. Emran for taking of photographs and Mr. Shahid Bhatti for publicity on media. Quiz and speed programming events were helped by Mr. Faisal Tehseen Shah, Mr. Imran Raza, Mr. Mazhar, Mr. Hannan and Mr. Abdul Qayyum. Mr. Imran Raza performed vital role to achieve the goals of these events very smoothly.



## OPENING CEREMONY

The ceremony was opened with a great pomp and fanfare by the Institute director and was accompanied by two of his lieutenants:

- Dr Shaukat Ali Hayat, Director CIIT Lahore Campus, who was accompanied with
- Dr Qanbar Abbasi, Chairman of the Math Departments of CIIT, and
- Mr. Sheikh Muhammad Hanif, the Advisor Admin of the Institute.

The inauguration was held in the Block C room # C14. The event would not have been possible, had the director not shown enthusiasm and personal involvement in its progress. His encouragement and department's tenacity to make a resounding victory out of it is praiseworthy.

Dr Asad Hussain, the Head of the Department of computer science, along with some of his colleagues were present besides others.

## PROJECT EXHIBITION AND COMPETITION

14 projects entered the competition, 11 projects were selected for display; 10 were exhibited; one project could not be displayed because the exhibitors did not show up. 3 projects won the prize. The Technical committee evaluated the projects Room C14 of the computer science dept was decorated and furniture was laid in a tasteful manner for projects exhibition.

## STUDENT PROJECTS

### Human face detection and recognition

Exhibitor : Jameel Khan  
Supervisor : Mr. Faisal Tehseen Shah



### Automated rice quality inspection system

Exhibitor : Waqas Iqrar, Atif Abbas, Kamran Shahid  
Supervisor : Prof Dr Rafiq Asim



### Hospital management information system for Mumtaz Bakhtawar hospital

Exhibitor : Mansoor Shahzad  
Supervisor : Mr. Faisal Tehseen Shah



### COMSATS Open source health care management system

Exhibitor : Atif Shahzad, Tahir Alam  
Supervisor : Mr. Nadeem Ghafoor Chaudhary



### Wireless sensor based vehicle monitoring and parking system

Exhibitor : Sher Ali  
Supervisor : Mr. Emran



### GPS based vehicle tracking system

Exhibitor : Rehan Aqeel, Ahmed Saleem  
Supervisor : Mr. Emran



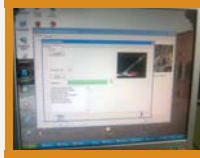
### Muallem

Exhibitor : Hafiz Rizwan Iqbal Sheraz Mansoor  
Supervisor : Mr. Nadeem Ghafoor Chaudhary



## Steganography

Exhibitor : Jameel Khan  
Supervisor : Mr. Faisal Tehseen Shah



## X-Gear

Exhibitor : Ali Shan Rao  
Supervisor : Mr. Nadeem Ghafoor Chaudhary



## DB to OWL extraction synchronization

Exhibitor : Waqas Ahmad  
Supervisor : Dr Ahtesham Aslam



## Game

Exhibitor : Jameel Khan  
Supervisor : Mr. Faisal Tehseen Shah



## The judges were:

- Mr. Nadeem Ghafoor Chaudhary (Assistant Professor)
- Mr. Rizwan Qureshi (Assistant Professor)
- Mr. Mazhar (Lecturer)

## The winners were:

- **1<sup>st</sup> prize:** Abdul Manan and Mohammad Ijaz



- **2<sup>nd</sup> prize:** Arslan Ali and Suleman



## SPEED PROGRAMMING

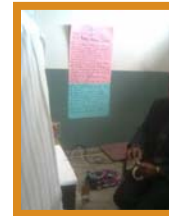
Speed programming contest was arranged by Mr. Imran Raza, lecturer of CS dept of CIIT Lahore and was held in C block at 1:30 PM in Lab B. 15 teams, each of 2 members, participated. Three problems were given to be solved in a time slot of 1:30 hrs. Each team was provided a PC and the problems were to be solved in a computer language C or C++. Two winning groups emerged.

## GUESTS

For this fabulous event we had many guests from outside the university for the encouragement of our students and project evaluation. Guests were from different software houses, industries and institutions. We had 2 judges from ITS software house and 1 from MCB for students' project evaluation.

## BRIEF WRITE-UP OF THE WINING PROJECTS

rays, one for incoming cars and the other for outgoing cars. This is done using sensor based nodes. Two sensor based nodes are deployed at entrance and two nodes are deployed at exit point.



### 1<sup>st</sup> PRIZE

#### Wireless sensor based vehicle monitoring and parking system

The aims of this project is to look and suggest better technique for existing and future sensor-based parking system to provide better services and management by using different software functions and hardware technologies. We are of the view that the vehicle monitoring and guidance in parking system provides better occupation of the parking slots and monitors the vehicles. Wireless Sensor-Based Vehicle Monitoring and Parking System is used for efficient time and space management. In this system, car's driver is informed whether the parking is full or not by using LED screen. If parking is available, car is parked in the parking area and counter is incremented. It is decremented when the car exits by using two devices which emit

Our proposed scheme is to provide two way wireless communication systems, based on hardware and software. Vehicles are detected by sensors and the information is transmitted to management section to save the data in a database. After saving the information in database the updated information is again sent to monitoring and guiding section and finally the updated information is shown on a LED screen. The connection between two sections, management, monitoring and guiding are based on two way wireless communication.

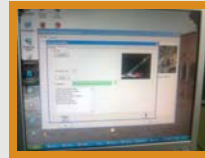


In this system there are three kinds of sensor nodes deployed in parking area, monitoring node, guiding node and a sink node. Monitoring node is deployed at entrance and exit of parking areas and sink node are deployed with the management system. Guiding node with LED screens at the entry point provides information of remaining parking slots in the parking area. The parking management software runs at the management station. When we execute the system, the monitoring nodes check availability of a parking slot and transmit the signal to the sink node. The sink node will receive the signal and deliver it to the management station, and the user can see the information of the whole parking spaces on LED screen. When we park a car in the parking slot, the monitoring node would notify that one parking space is going to be filled and send a signal to the sink node. After receiving the signal, the sink node would notify the management station of the update. Consequently, the management station would update the necessary information in the database and transmit the updated information to the guiding node through the sink node which will display it on the LED screen.

## 2<sup>nd</sup> PRIZE

### Embedding a file into a bitmap file using Steganography Techniques

There is only one safe place for private data and messages: the place where nobody looks for it. A file encrypted with algorithms like PGP are not readable, but everybody knows that there is something hidden, and may try to decrypt your file or any message.



It wouldn't be nice, if everyone could open your encrypted files, and see plain photos of some old friends instead of your private data? They surely wouldn't look for pieces of encrypted messages in the picture and moreover wouldn't it be nice if your data is encrypted with algorithms like PGP and yet what everybody sees is just a beautiful image(s)? That means nobody will look for your private data in a photo(s) and even if they try to look for it; they won't be able to extract it because only you know what your data was.



## 3<sup>rd</sup> PRIZE

### Muallem

Arabic is currently one of the most widely spoken languages in the world with an estimate number of 250 million speakers. Keeping in view the emerging demands of speech recognition, MUALLEM is a ‘SPEAKER INDEPENDENT ARABIC SPEECH RECOGNITION SYSTEM’ that will help students in learning recitation of Holy Quran without the human guidance. The need for this kind of a system arose to accommodate native accent of the learner accurately. The software will train the student on basic Quran utterances with proper articulations and “Tajweed” rules. It will identify and correct the mistakes during the recitation. The research started from simple phoneme classification and has matured to the level of elementary continuous speech segmentation and off-line recognition.



Various sub-modules of a complete speaker independent speech recognition system have been developed, that include:

- Continuous Arabic Speech Segmentation Using FFT Spectrogram.
- Automatic Recognition of Arabic Stop Consonants.
- Automatic Vowels (Zabar "الفتحة", Zair "الكسرة", Pesh "الضمة") Identification from Quranic Recitation.

Recognition of Mudood (i.e. Lengthened Vowels) Rules in Quranic Arabic.



## GAZEBO STALLS

Beside other activities of exhibition, there were some stalls from the departmental upgrading activities like Cisco Academy, Conferences and workshops, Research Publications etc



**1<sup>st</sup> prize:** Haad, Sannan, Usman

**2<sup>nd</sup> prize:** Arslan, Sohaib, Hanan

**3<sup>rd</sup> prize:** Kashif, Imran, Farhan



## QUIZ COMPETITION

The master of the quiz competition was **Mr. Imran Raza** (lecturer). The competition was held in Block A Conference Room of CIIT Lahore at 10:30 AM.

17 teams, each of 3 members, took part; the participants were mostly from Electrical Engineering and CS departments of the CIIT Lahore. These participants were quizzed in three categories:

**1. Computer Science related general knowledge questions.**

**2. Subject specific questions in:**

Introduction to programming  
Object oriented programming  
Database  
Algorithm and Data Structure

**3. Judges' questions**

Out of 17 teams 6 were selected based on their achieved scores in category 1. The 6 teams were subjected to a round of category 2. And the 3 teams emerged winner. Last of all in category 3, judges posed questions in '**Rapid Fire Round**'

## CLOSING CEREMONY

The closing ceremony was originally scheduled to be opened by the director Dr Shaukat Ali Hayat, who because of his myriad engagements could not grace the occasion. The closing ceremony instead was initiated with an address from HOD, Dr Asad Hussain. Who resolved that he would strive to hold such events regularly at ever-expanding level



He said he had a day-dream to initiate, implement and render successful an event of this type whatever it takes—bravo, he did it. He spoke at length eulogizing the importance of such events and determined that he would spare no stone unturned to continue with the same enthusiasm and the hallmark of the present one.



He spoke about the aims and objectives of the mela and desired that students of COMSATS be truly subjected to steep learning curve. His address was followed by distribution of the prizes for the winning teams:  
Dr J S Mirza and Dr Asad Hussain took turns to hand over the certificates and prizes



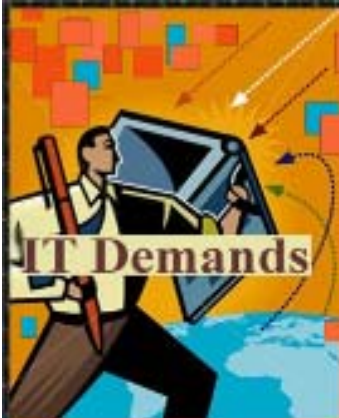
## MEDIA COVERAGE

Last of all but not the least, a mention is necessary of the media coverage. The news of the event were given by the TV channel (Channel City 42) as well as by the print media/ different newspapers, clipping of one of them below for perusal.



### کام سپیس یونیورسٹی میں سافٹ ویئر میلہ

لاہور (خصوصی رپورٹر) کام سپیس یونیورسٹی میں سافٹ ویئر میلہ منعقد ہوا جس کا افتتاح کیمپس ڈائریکٹر ڈاکٹر شوکت علی حیات نے کیا۔ سافٹ ویئر میلہ کے لیے 11 پروجیکٹس سلیکٹ کئے گئے، ہیومین فیس ڈیپارٹمنٹ، ہاسپٹل مینجمنٹ سسٹم فار ممتاز بختاور ہاسپٹل، آٹومیٹک راکس کوالٹی انسپکشن سسٹم، موسٹ ماڈرن ٹرانسپورٹیشن سسٹم، اوپن ہیلتھ کیئر مینجمنٹ سسٹم، وائز لیس سنسر بیڈ و ہیکل ٹریکنگ سسٹم، جی پی ایس بیڈ و ہیکل ٹریکنگ سسٹم، نمایاں سافٹ ویئر پروجیکٹس تھے۔ وائز لیس سنسر بیڈ و ہیکل ٹریکنگ سسٹم کو پہلا سٹینڈنگ گرافی کو دوسرا اور معلم کو تیسرا انعام ملا۔ کمپیوٹر کونٹریکٹیشن بھی ہوا جس میں 17 ٹیموں نے حصہ لیا۔ بی سی ایس کی ٹیم نے مجموعی طور پر پہلی پوزیشن حاصل کرنے والے سٹوڈنٹ حامد بودلہ صنم خالد اور عثمان ارشد شامل ہیں۔ سپیڈ پروگرامنگ کے مقابلہ میں عبدالمنان اور محمد اعجاز نے پہلی اور سرسلان علی اور سلیمان نے سیکنڈ پوزیشن حاصل کی۔ تقریب کے اختتام پر کامیاب سٹوڈنٹس میں ڈاکٹر جاوید سکندر مرزا نے انعامات تقسیم کیے گئے۔



'One Step Ahead Towards Innovative IT Solutions'

# ComSPEC '09

Comsats Software Project Exhibition and Competition 2009

Department of Computer Science, COMSATS has arranged the exhibition of its students' projects.

### Venue

C - Block  
COMPUTER SCIENCE DEPARTMENT

### Date and Time

12 March 2009, Thursday At 10:00 am

### Focal Project Areas

- ~ Computer Vision
- ~ Graphics
- ~ MIS
- ~ Databases
- ~ Software Engineering
- And Many Others

### CS Gazebo

- ~ CIIT- CS Entrepreneurs
- ~ Research Papers and Publications
- ~ Cisco Academy

### Speed Programming

12th March 2009  
Lab B C-Block  
at  
1:30 pm

### Quiz Competition

12th March 2009  
Conference Room  
A- Block at  
10:00 am Sharp



### CIIT LOGO

COMSATS INSTITUTE OF  
INFORMATION TECHNOLOGY

M. A. Jinnah Campus

Defense Road Off Raiwind Road  
LAHORE

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