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**Institute of Technology & Science**  
**Mohan Nagar, Ghaziabad**

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## Ultimate wearable tech: NASA using 3D printing to design Mars spacesuit

One of the most recognizable tech wearables, the spacesuit, is being redesigned and 3D printing is helping the development process.

Amy Ross, NASA's leading designer for the Z-series spacesuits, delivered the opening keynote address at the UbiComp and ISWC 2014 conference in Seattle on Monday. She's spearheading the first total redesign of the prototype Mark III since it debuted in 1982.

"Spacesuits, why do you have to have them? Because you would be dead without them," Ross said during the keynote. Ross provided details of the Z-2 spacesuit, the follow-up to the earlier Z-1 spacesuit that she also designed. 3D scanning and printing is a significant step in the development of the Z-2. A sub-contractor was used for the 3D work. "We used Solid Concepts in Austin Texas. The process used was Selective Laser Sintering (SLS) with Glass filled Nylon 12," Ross said.

### Mars as the baseline for design

The Z-2 suit is a planetary walking suit also designed for use in microgravity environments. It features a pressurized design with layers that can be inflated until taut. As a planetary suit, it fulfills different needs than what might be required on the space shuttle, or on space stations. But it can be modified to suit other purposes. Ross is designing it so that it will allow astronauts to walk on the surface of Mars, which is used as the baseline for the suit. A spacesuit that works on the extreme conditions found on the surface of the red planet can be modified for other uses.

### 3D printing in spacesuit design

The Z-2 will be the first suit design with the help of 3D printing, Ross said. By printing the upper torso of the suit, the team was able to determine that the shoulder to crotch distance was too long. "We'd made assumptions about how the humans would want it, but we were wrong. We had to shorten the torso based on actual human feedback about the fit," she said. Multiple 3D scans were made of the potential wearers of the spacesuit, in multiple positions, to allow the team to create a mockup for fit checks.



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## Quality product depends on good relationship between Tester and Developer, How?

Yes, this is quiet true that behind the glory of a quality product there is healthy QA - Developer relationship, at the time when the product was being developed. As per my experience, as a software tester, to build-up a quality product there are two things that are so important: one is teamwork and the other is friendship with developer. If you are tester and having a good friendship with developer then you can summons him to issues, and it is quite certain that he will take this in a positive manner and will work on it in a better way. For ensuring of an ultimate output of a product, both(QA and Developer) have similar responsibilities. For developers, they guys should fortify that the product what they developed there are no defects. On the other hand testers, they should fortify if there are any defects they should challenge those defects to developers within a correct scope and time where it comes in toward completion.

If you are a tester(QA) and you are working with a team for a long time then it is obvious that your relationship with developers becomes good as well as much friendlier. In order to give a quality product to stakeholder you(QA and Developer) are able to work as a team and your work would always be appreciated. QA and developer both should have a mind-set that how they can release a quality product by discussing on designs and the solutions of a quality product. By this a developer would be able to know the number of quality defects as well as concerned areas which would be helpful to improve quality.

If your are a tester then better practice of testing a product is not only to find a defect but also share some of the ideas with developers to test before the delivery of the product. The all scenarios can work if all members form developers end as well as QA end are co-operative and they eager to look forward the final target which is "The delivery of product with quality".

By:



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## How Facebook saves electricity by using its Autoscale load balancing technology

According to Wikipedia, load balancing was designed to distribute workloads across multiple computing resources: to maximize throughput, minimize response time, and prevent the overloading of any single server.

In Facebook's never-ending quest to improve data-center efficiency, it looked hard at load balancing as a possible way to save electricity. Qiang Wu, infrastructure software engineer at Facebook, wrote the blog post Making Facebook's software infrastructure more energy efficient with Autoscale to highlight what he and other engineers at Facebook have learned.

Wu described Facebook's current load-balancing policy as being based on a modified round-robin algorithm. Wu wrote, "This means every server receives roughly the same number of page requests (Facebook handles billions of page requests each day) and utilizes roughly the same amount of CPU."

### The problem with the round-robin approach

Wu stated that engineers ascertained certain web servers consume power at the following rates:

- 60 watts when idling
- 130 watts at low-level CPU usage
- 150 watts at medium-level CPU usage

Because of the above numbers, Wu and the other engineers realized Facebook's current load-balancing system did not take into account off-peak hours (late at night) when the number of page requests dropped off. Rather than filling every server at a reduced level, it made more sense and saved electricity to load servers until they were using 150 watts of power, and idle the unused servers.

### Introducing Autoscale

Knowing what to do and accomplishing it are two different things. Wu described the task ahead of them, "Though the idea sounds simple, it is a challenging task to implement effectively and robustly for a large-scale system."

However, not to be denied, the engineers came up with an idea they call Autoscale.

1. Autoscale collects usage information (CPU load and request queue) from all active servers.
2. Autoscale decides the optimal number of servers to keep in the active pool.
3. Autoscale informs Facebook load balancers as to the number of servers in the active pool.
4. The load balancers spread the work amongst the active servers.

## *Happenings @ Department of I.T in the month of September, 2014*

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### **C-CLUB organized SPARDHA-2014 for BCA and MCA students of ITS, Mohan Nagar**



Department of IT, ITS- Mohan Nagar Ghaziabad, in association with CSI-Student Branch @ ITS, Ghaziabad, organized an intra-Institute contest SPARDHA 2014 on Saturday, the 6<sup>th</sup> September 2014. Through this event, C Club @ ITS provided a competitive platform for BCA and MCA students of the Institute to participate in various technical and non-technical activities.

Spardha-2014 had a spectrum of activities including Online C Programming Quiz, On-the-Spot Programming, Blind Coding, Logo Design Competition, and Anthem Composition. There was a tough competition among participants at each level of Spardha-2014. The kind of spirit they showed to compete and excel was really commendable. At the end of the competition, Prize Distribution Ceremony was held where Prof. Shekhar Ghose ,Director General ,HOD-IT, Dr. Sunil Kumar Pandey, IT Faculty members and students of BCA and MCA were present. Director General, Prof. Shekhar Ghose illustrated the true sense of word “Spaardha” with a motivational story of a company. HOD-IT, Dr. Sunil Kr. Pandey pointed out the importance of hard work and healthy spirit of participation & involvement to spur in any walk of life.

Raja Kar of MCA 1<sup>st</sup> Year, Vivek Kumar of BCA 3<sup>rd</sup> Year and Kanika Goel of MCA 2<sup>nd</sup> Year were respectively the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> winners in Logo Design and Anthem Composition Contest. Vishal Tiwari of MCA 2<sup>nd</sup> Year, Anuradha Sharma of BCA 3<sup>rd</sup> Year and Ranjan Kumar Sahu were the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> position holders in On-the-Spot Programming and Blind Coding Contest of Spardha 2014.



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## DOT NET Club conducted “ABHIKALPAN -2014” a workshop cum Quiz Contest on .NET Technology for both BCA and MCA students of ITS, Mohan Nagar



DOT NET Club of Department of I.T, ITS, Mohan Nagar organized “ABHIKALPAN -2014” a workshop cum Quiz Contest on .NET Technology in association with CSI-Student Branch @ I.T.S Mohan Nagar on 12<sup>th</sup> September, 2014. Prof. Sauresh Mehrotra and Prof. Abhay Kumar Ray were the resource persons. This workshop was focused towards making the students aware & sharpening the skills about the .NET Technologies, ADO DOT Net ,ASP Dot Net ,Rapid Application Development using .NET Framework and C# Language and a quiz competition was also organized at the end of the workshop to test their skills of solving varied problems with analytical and technical expertise.



In the Quiz competition, First Prize was bagged by Abhilesh Rastogi while second & Third prize was won by Kunal Kishore Pandey and Manoj Chauhan from MCA final year. Prize Distribution ceremony was held in SAMAGRA-2014 on 26<sup>th</sup> September, 2014.



*ESPERANZA - 2014, a fresher's party for the newly admitted students of 18<sup>th</sup> Batch of MCA*



*Raja Kar and Jagriti were adjudged as Mr. & Ms. Evening while as Mr. Vaibhav & Ms. Priya Tyagi respectively were adjudged as Mr. Fresher and Ms. Fresher.*



SAMAGRA-2014, an Inter-Institutional Techno Cultural Fest @ ITS, Mohan Nagar





## *SAMAGRA-2014, an Inter-Institutional Techno Cultural Fest @ ITS, Mohan Nagar*

Department of I.T, ITS, Mohan Nagar in association with CSI Student Branch@ITS organized “SAMAGRA-2014, an inter-institutional Techno-Cultural Fest on **26<sup>th</sup> September, 2014**. The event received registration from 50 institutes in various activities and witnessed huge participation from institutes of NCR and far off places with about 400 participants. The event comprised of 11 activities under four categories including Technical, Cultural, Literary and Fine Arts. The event was full of fun, great display of talent, commitment, high class performances in all the categories.

I, II and III winners for all the activities were announced. In Solo singing the first position was won by Sudhir, Satyawati College, second position was bagged by Ankesh Jah, HRIT and Abhishek Das won third position. In group dance competition the winners were D-3 Group,K.N.Modi, second position was taken by EdgeTech Group from ITS, Mohan Nagar. In Solo dance competition the I, II and III winners were Ayush Sharma, DU, Vikrant,IMS, Noida and Abhishek from K.N.Modi. In C-Twister First, Second and third position were bagged by Nivideta, ITS,Mohan Nagar, Sumesh, ITS and Ankit Verma, Nitra,Ghaziabad. In Java Junkies the first position was bagged by Bharat Pandey, ITS, second position was bagged by Pinky Mondal, ABES, and third position was taken by Shashank Sharad, ITS. In the event Web Rachna I, II and III position was taken by Ankur Kumar, D.K.E.S, Shubham Aggarwal, ITS and Bhavik Garg, RKGIT. In the event Web Booster the winners were Ekansh Mittal and Vishwas Mendiratta,ITS, Ravikant Tyagi and Mayank Gupta, ITS and Shivangi along with Joyti Singh, Nitra, Ghaziabad. In Sansad, the debate competition the first position was bagged by Aman Tandon, ITSMeenakshi Sharma, K.I.E.T bagged second position and at third position it was Rakshit from ITS. In the event Heena the first position got to Ekta Verma, ITS, second position was taken by Priyanka, ITS and third position was bagged by Vishakha from ITS. In the event Mukhuata, the winners were Vishakha, ITS, Anchal, ITS and Gopansha, IMS. In the event Rangavali, first position was bagged by Preeti alongwith Jyoti, ITSand LBC, second position was taken by Nancy along with Archana, ITS and third position was bagged by Anchal alongwith Deepa, ITS.



*Congratulations to all the winners of SAMAGRA-2014*

## FACULTY PARTICIPATION

Faculty Name	Date	Event_Participation	Venue
<b>Dr. Rabins Porwal</b>	6th September, 2014	Attended Golden Jubilee Celebration and CSI IT Excellence Awards Ceremony organized by CSI Ghaziabad Chapter. 20 students of MCA had also attended the same.	ABES, Ghaziabad
<b>Dr. Sunil Kr Pandey</b>	11th & 12th September, 2014	Attend National Seminar on "Information Science & Environment" as a Key Note Speaker.	Gajadhar Bhagat College, Naugachia a constituent college of TM Bhagalpur University, Bhagalpur
<b>Dr. Sunil Kr Pandey,</b> along with Dr. Umang	24th September, 2014	Attended a workshop on synergy of all engineering streams whether Computer Science & Applications, Civil, Mechanical, Electrical, Electronics, Thermal, Biotechnology leading to creation of Green Computing Environment	Sify's Green Data Center, Noida

## MOST ACTIVE CSI STUDENT MEMBER @ ITS



**Mr. Ayush Bhardwaj, MCA 3rd Year CSI Student member@ITS** is awarded as "**Most Active CSI Student Member@ITS**" as nominated by CSI Student Branch@ITS in the Golden Jubilee Celebration and CSI IT Excellence Awards Ceremony organized by CSI Ghaziabad Chapter on 6th September, 2014 at ABES Engineering College, Ghaziabad. Before Award Ceremony, a panel discussion on "Need for skill development of Engineering Students to meet Industry expectations - Demand & Supply Gap" was also conducted by a Journalist, Nav Bharat Times as Moderator. The Award Ceremony was presided by Mr. R. K. Vyas, Vice-President, Region-I, CSI in the presence of Prof. K. K. Agrawal, Former National President, Computer Society of India & Founder & Ex-Vice-Chancellor, GGSIP University as Chief Guest and Mr. Vinod Bhatt, Delivery Head (Retail & CPG) & Delivery Centre Head (Noida) - TCS as Guest of Honour.



## Answer to last Placement Quiz Series



1. C
2. B
3. B
4. B
5. D

### Announcement and Contact Details

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