ELECTRONICS CLUB

Year Review 14-15

Electrified Sessions
Three installments electrified sessions were organized, especially targeted for freshmen to get them introduced to basic electrical components and concepts. The first installment covered the basic electrical instruments and techniques like soldering and using a multimeter. The second instalment covered all basic sensors which are required for hobby electronics. The third installment covered logic gates and opamps and basic analog IC's. All the sessions were totally hands on and we as a club provided with interactive demos which were received pretty well.

Total participation : 250 on an average in each installment
Response: Positive

XLR8(RF Modules)
Electronics Club designed the RF modules which were used in this year's XLR8 competition by robotics club, we got the modules printed at the cost price of 320 rupees. The previous xlr8's used rf of the china cars which were totally unreliable and were never used again. We used ASK modules which increased both the reliability and usability.

Positives: Own Hardware, can be used at other places, cheap and reliable.
Negatives: Not fully tested as it was the first year, have identified the bugs and are planning to improve the design in the coming years.

Hardware Hackathon
We organised one of the first hardware hackathon, in collaboration with weekend ventures. It was aimed at providing platform and opportunity for the people who are aiming for some hardware startups. It was a 48hr events with a presentation and sales pitch at the end in from of the judging panel. We also had mentors from successful hardware startups like BioSense and IdeaForge. The Judging panel included people from Intel, Mumbai Angels and other influential people in the field

Participation: 12 Teams Participated, 9 gave the presentation
Feedback: was well received, needs improvement.
Positives: First ever hardware hackathon of India, lot of senior participation, great opportunity for hardware enthusiasts.
Negatives: Lack of Publicity, Timing could have been improved. More sponsors and better incentives needed. Follow up was not done.

Electric Jatka (Low-Prep GC)

Electronics Club low prep GC was well received. The questions were designed to test logic, circuit designing and implementation. The paper was designed in a way so that even non-electrical people can attempt it to quite an extent, the problems were more challenging and based on logic then knowledge. We also provided with all necessary datasheets and a 30min introduction on how to use various instruments before the competition.

Participation: 12 hostels participated
Feedback: paper was appreciated
Positives: Was not biased towards just electrical people

Line Follower
Freshmen competition wherein participants had to complete the track in minimum possible time. Small, interesting challenges were kept as well (independent of the main track) which helped the teams earn bonus points.
30 teams participated eventually and 10 teams completed the track.
Improvements:

1. Better technical mentorship is required to cope up with arbitrary pains in arduino
2. Keep documentation specifically pertaining to arduino bugs
3. Structure can be improvised so as to ensure no procrastination till the day of competition

SSTeP (Theme: Smart Campus)
A week long workshop (STAB event) was organized which saw a participation of about 60 students including post-graduates as well as undergraduates. Participants were expected to identify one of the existing problems on the campus and come up with an idea and minimal working prototype technically feasible and implementable solution for the same. Teams prepared story-boards to demonstrating the identified problems and probable solutions. Mentoring on regular basis was provided by Arduino India, Texas Instruments, Grampower, Nanosniff. The event ended with judging of the 7 teams by Mr. Jobin Vijayan.
After the completion of the event, interested teams put up their project under Techovation and continued to work on it with larger team and consistent mentoring.
Improvements:

1. Event should not have been scheduled in the week immediately following end-sems as PGs have other academic commitments then
2. Incentives could have been planned better
3. Publicize more so as to aim for almost equal participation from all fields including IDC

AVR Workshop
This was organised in mid January for a week, we had four different sessions of 1 hour each. The sessions were “Intro to Microcontrollers and AVR coding”, “LCD interfacing with AVR”, “Timers and Interrupts” and “ADC interfacing and PWM generation”. All these sessions were hands on with demos.

Participation: 35 on an average per session
Positives: Hands on were successful and demos made a good impact
Negatives: There was a follow up suppose to happen in form of TYR which didn't happen due to time constraints

Processing

The session was aimed at introducing a very versatile software called “Processing”, this can be used for graphics design, sensor interfacing, image and signal processing and various other things. This was organised in 1st week of march and the 2 hr long session was followed by a techify your room, which saw several projects developed on processing by freshies.

Participation: 60 people attended
Positives: Good session with good publicity
Negatives: Session was a bit too long.

Techify Your Room

It was a new initiative planned by us intended as follow-ups for major workshops like arduino, avr and processing. It involves freshies working on a pre-assigned projects in teams of 6-7 right after the workshop, throughout the night and developing a good enough prototype. Club conveners mentored the teams. Two installments were organized this year for arduino and processing.
Success: Extremely well-received by freshmen
TYR1 - 6 out of 7 projects were successful
TYR2 - 6 out of 10 projects were successful
Improvements:

1. Post event publicity
2. Project documentation should be taken care of as well

Talks

1. **Brain Machine Interface**

Speaker: Nikunj Bhagat, researcher at university of Houston (an IITB alumni). On processing brain signals to provide rehabilitation of physically disabled, especially for stroke patients.
Participation: 30-40 students
Feedback: People requested more such talks.

2. **Communication Protocols**

Speaker: Kamal Galrani
A talk explaining various protocols of communications like UART,SPI and I2C. Different wireless devices and their working were also explained like bluetooth and Xbees.
Participation: 5 people
Negatives: Session itself was good, should have been well publicised and kept at a different time.

3. **Declutter Design**

Organized Immediately after SSTeP workshop.
Speaker: Mr. Jobin Vijayan, Head, Arduino India
Topic: Tips and tricks on optimal design.
1) Common mistakes in design
2) Choosing the right parts
3) Tips on efficient design
4) Cutting down on components
Participation: 30 people

BLAH (Informal discussions and talks)

1. **Image Steganography**
2. **IOT-Cloud ecosystems**
3. **Cryptology**

A new initiative with an aim of encouraging informal meet-ups and discussions for the students and by the students. It was launched as a platform wherein people can showcase their work to other interested people. After a first few initial session we want this to be a self sustaining process.
Average participation of about 10 students was seen in these talks.

Improvements:

1. It needs to be publicized more as an 'informal discussion' event than as a talk
2. Post-session follow-up is required and also students should be well-informed before the session about what exactly it is going to be - may be a small write-up or trailer video

Annual Robotics Challenge (Theme: Smart Object)

High-prep GC in collaboration with Robotics Club. The GC was divided into three milestones and ranged over one month. Hostels were expected to submit the abstracts pertaining to the theme of smart objects which included 'Smart Dustbin', 'Smart Bag', 'Smart Board', 'Smart Chair'. Teams were evaluated continuously at each milestones by experienced seniors as judges, reviews were given. Finally every hostel has to come up with a complete documentation and prototype of one of the features.
9 out of 16 hostels participated with no participation specifically from PG and UG freshmen hostels.
Improvements:

1. High-prep and mid-prep GCs in general do not get as good a response as low-prep GCs

Over-all critics

1. More sessions involving seniors should have been organized. e.g) More talks by dignitaries, start-up
2. Minutes of the talks and informal discussions should be put up immediately after the event
3. Post event publicity of ‘Techify Your Room’ is necessary. May be just on club website, it will give a sense of recognition to the participants
4. Documentation of all the events and workshops to be maintained.

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