A.K.S.
Presents
Footprints
(2016-17)
Winning moments of Mastek’s Project Deep Blue Season 2.

Team Tech Infinity being felicitated by the HRD Minister Shri Prakash Javadekar on the occasion 90th anniversary celebration of of Anjuman-i-Islam’s Peermohammed Campus for their achievement in Smart India Hackathon 2017.
ACKNOWLEDGMENTS

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Editorial

This year has been more momentous than we had possibly imagined. From being an entrant in the magazine business to setting standards that reflect the magnificence of this institution, the journey of AKS and AKS v2.0 has been phenomenal so far.

This year’s theme – Footprints – emphasizes on the numerous benchmarks set by our students and serves as an inspiration for those who wish to embark on a long journey, regardless of the outcome.

The initial pages present you with words of wisdom from our mentors and seniors who have excelled in their path to success and have left a trail for others to follow. You are going to be meeting the toppers all through your reading and hear stories of great accomplishments of fellow students.

Imagine a tool that would not just record conversation but would automatically create a textual extract of the conversation. Listen to the story of the winners of the Mastek’s Project Deep Blue Season 2 with their voice-to-text app that has taken shape just to do that.

Are machines more intelligent than humans? As intriguing as the question can get, realise the imperative that we humans remain in total control of the Artificial Intelligence that we are the creators of it and not let it turn into a Frankenstein monster.
How can technology protect women in danger?

Meet the team that has won accolades in Smart India Hackathon 2017 with their BeBrave mobile app.

Life is only as beautiful as you are at heart. Look up, stay positive and embrace change with The Mirror.

Get bedazzled by the facts and figures about the game of chess and more.

Lastly, be a warrior to take on the challenges of life as we leave you at the end with a life lesson that encapsulates the harsh realities in life and the ways to endure them.

Once again, I, on behalf of the entire editorial team, thank the committee for vesting your invaluable trust in us for publishing this magazine and carrying the torch forward.

Happy Reading!

R. Ihsaan Muhiyadheen
(SEIJ)
Anjuman-i-Islam’s M.H. Saboo Siddik College of Engineering is the pride of Maharashtra. It is one of the top Engineering Colleges not just in Maharashtra but in the entire country. It aims to impart excellent quality education to the young minds of nation. Overall excellence of the students is our prime motive.

AKS, the MHSSCOE-ACM’s annual magazine brilliantly highlights the salient features of the I. T. Department and the college as a whole. It not only helps the students to showcase their talents but also portrays their achievements which inspire many other young minds. I would like to congratulate and wish the best to the ACM team for their future activities.

Dr. Mohiuddin Ahmed
(Principal, MHSSCOE)
MHSSCOE - ACM encourages students to mould their thoughts, ideas and creativity and bring their hidden talents to the world stage. This magazine provides a wonderful platform for the same, and I am immensely delighted that our students are taking this opportunity by publishing the second edition of this magazine.

The first edition, AKS presents BYTE, showcased various talents of our students, right from academics to extra-curricular activities, and it felt great to see our students’ growth. I wish all the good luck to all my students to keep growing, learning and getting ready to face the professional world with confidence and smile. Good luck to this second edition, and we all hope to see more blossoming flowers in the garden of our talents.

Best wishes to all my students and the entire ACM team!

Er. Zainab Mirza  
(HOD, Dept. of I. T.)
I am gladdened to know that the department of Information Technology is bringing out the second edition of their annual magazine AKS present Footprints for the academic year 2016-2017. New technology is bringing in opportunities along with new skill set requirements and challenges. Engineers have to fit into the requirements of the companies that recruit globally.

Our world is moving very fast and new technologies are coming up every week. We need to be proactive and enthusiastic in learning about the cutting-edge tools and research. The IT department’s magazine makes a gracious attempt at imparting knowledge to the students who may be interested. It provides them with a perspective of the global advancement that is happening in the computing sector and makes their knowledge technologically rich. Not only does this magazine cover the technical content, but also includes a varied bunch of non-technical content.

I wish this organization a very big success in all their ventures. I also applaud the coordination and efforts behind the team to bring out this edition. I wish them all success.
Er. Sanam Kazi
(Asst. Professor, Dept. of I. T.)

Competing against yourself is self-improvement, it’s about being better. I am glad to pen down for this second issue of the wonderful magazine. The ACM magazine is a skill developing and enhancing tool for the students to inspire their passion and showcase their creative, extraordinary talent. Building personality, improving leadership skills along with great performance in academics and extra-curricular activities makes a student distinguishable. I wish ACM all the success and applause as an appreciation of the commendable efforts of the team.
MHSSCOE-ACM Student Chapter brings together students with various talents and provides each one of them with a platform to put together the best of their skills. Every event conducted by the team gives an opportunity to enhance their leadership skills and learn new ones. It gives a boost to individual personality and also makes the team stronger and better. During my tenure, I have seen numerous students come out of their shell and grow as individuals and in the team. Growth of the students outside the classroom to make better professionals in all walks of life is what the chapter aims for.

The ACM magazine, consecutively for the second year, proves to be a stage to the entire institute which showcases the achievements and calibre and the hard work put in by each individual to make this chapter a success. Kudos to editorial team for doing an amazing job with the magazine!

I wish good luck to the entire team of ACM.

Keep learning, motivating and leading. All the best!

Zoya Ansari
(BEIT)
It gives me immense pleasure to learn that MHSSCOE-ACM is making all effort to bring out its 2nd edition of its annual magazine, and I feel privileged and delighted to be writing for it. The journal that affords an opportunity to the students to showcase their hidden talent, vivid imagination and creativity, while at the same time penning the diverse and multiple activities of the committee in a highly readable manner.

MHSSCOE-ACM has been striving hard to instil the qualities of selflessness, team spirit, fair play, hard work, civic sense and respect for others among other values in the students which would help them become responsible and well educated citizens. I would like to congratulate the Chapter Convenor and all the staff members who have dedicated so much to the members and have provided all the assistance and time to nurture the young members of ACM.

More needs to be done and I wish the team the very best in their efforts.

I convey best wishes and congratulations to all those who have made their valuable contribution to bring this annual magazine to the limelight.

Rahul Gurjar
(TEIT)
THOSE WHO ACED IT

Sana Ansari (BEIT)
CGPI: 9.12

Shaikh Farheen Feroz (TEIT)
CGPI: 9.50

Needa Mittha (SEIT)
CGPI: 9.04

“It always seems impossible until it’s done.”
– Nelson Mandela
Semester Toppers

Sana Ansari  
Sem VIII  
(9.69)

Maaz Ansari  
Sem VII  
(8.78)

Shaikh Farheen Feroz  
Sem V (9.38)  
Sem VI (9.68)

Needa Mittha  
Sem IV  
(9.71)

Khadija Sayyed  
Sem III  
(9.64)

Mubashshira Mansuri  
& Shanawaz Chachiya  
Sem II  
(9.41)

Shahanawaz Chachiya  
Sem I  
(9.04)
Shahanawaz Chachiya
Engg. Mechanics (87/100)
App. Mathematics I (90/100)
App. Mathematics II (87/100)

Needa Mittha
DBMS, AT (90/100)
COA (91/100)
App. Mathematics III (91/100),
DSA (86/100)

Shaikh Farheen Feroz
CGVR (89/100)
ADBMS (72/100)
SE, DS (86/100)

Sadiya Ansari
OS (90/100)
MES (79/100)
SWS (87/100)

Burhanuddin Netterwala
IP (89/100)

Burhanuddin Netterwala, Burhanuddin Madraswala & Joya Sayed
STQA (88/100)

Joya Sayed
SPM (77/100)

Bata Hozefa
CC (81/100),
E-Comm. & E-Business (82/100)

Daanish Sarguru
IS (83/100)

Mohit Jain
WT (76/100)

Sana Ansari
SNMT (83/100)

Dipesh Rane & Sana Ansari
BDA (75/100)
Teams in ACM

CORE COMMITTEE

Chairperson: Zoya Ansari
Vice Chairperson: Rahul Gurjar
Secretary: Ruhina Khan
Jt.Secretary: Abrar-ul-haq Adi Shaikh
Treasurer: Ruhin Shaikh
Jt.Treasurer: Hitesh Ingale
Event Manager: Saniya Sayyed
Jt.Event Manager: Deepali Rajendr Mane

TECHNICAL TEAM

Technical Heads: Rinki Naag
Bhavesh Buwa
Jt. Technical Heads: Hozefa Bata
Joya Sayed
Yash Tomar
Team Members: Uzma Ansari
Shubham Dinesh Singh
Abbas Damarwala
Khan Shaheer Ahmed
Nerekar Shadab Rauf
Amreliwala Husain Shabbir
Tripathi Saurabhkumar Udayraj
Shaikh Maruf Abdul Majid

SOCIAL TEAM

Social Heads: Nausheen Ansari
Ankita Sawant
Jt. Social Head: Rahul Gupta
### PR TEAM

**PR Head:** Faimin Malik  
**Jt. PR Heads:** Arif Khan, R. Ihsaan Muhiyadheen  
**Team Members:** Shaikh Ruhin, Khan Danish Ayub, Mulla Mehvish Kayyum, Ansari Tanzil Ahmed, Prajapati Dipak Parasnath

### CREATIVE TEAM

**Creative Head:** Shaikh Umraan  
**Jt. Creative Head:** Firdaus Rangrez, Ankita Sawant  
**Team Members:** Khushboo Shaikh, Mondal Moushumi Surja Madhuri, Mulla Mohammed Sufiyan, Ameriwala Husain Shabbir

### CULTURAL TEAM

**Cultural Heads:** Ali Hussain Sorathiya, Sayyed Anamta Fatima  
**Jt. Cultural Head:** Mohammad Taufiq  
**Team Members:** Shah Sufiyan Mohd. Hanif, Shaikh Amanulhaque, Dharwala Hussain Mannan
WEB DEVELOPMENT TEAM

Web Developer: Salima Khatib BE
               Burhanuddhin Mustafa TE

Jt. Web Developer: Murtuza Bagasrawala TE
                  Mohd Shibli SE

Web Master: Maaz Ansari BE
            Tamboli Tehseen BE

Jt. Web Master: Ansari Sadiya TE
                Electricwala Faraaz TE
                Farhan Khan TE
                Shaikh Maruf Abdul Majid SE

TOUR TEAM

Tour Head: Amir Lakhana BE
           Adiba Shaikh TE
           Mulla Mohammed Sufiyan SE

SPORTS TEAM

Sports Heads: Khalid Walge BE
             Pranali Sawant BE

Jt. Sports Heads: Afsar Jalal BE
                 Burhanuddin Esufali Netterwala BE
                 Shariq Shaikh TE

Team Members: Sharief Wajeed Faheem SE
              Dhanani Aamir Farook Raziya SE
              Jagirdar Mohammed Zeeshan SE
              Patel Fatima SE
              Danish Bihari SE
Why Do Electronic Devices Age?

World around us is controlled by millions of transistors integrated on the single IC chip which is the basis of most of the micro-controlled and micro-processed devices. The actual magic that leads to these creations is what the modern world knows as Electronics. Electronics is the science of controlling and managing the electron generated electrical energy. Since the emergence of the 21st century, there has been an extensive increase in the world of electronics and computers. Although this point is a perfect subject for the vast discussion, let us only explore an important aspect of electronic devices.

Here we are talking about the relationship between time and an electronic device. Gradually, every entity in this world ages with time. We humans age for a certain period and then the life ends. Similarly, every electronic device has a certain period of functioning. It can be keenly observed that the size of the chip, and, hence, the lifetime of computers decreased with every advancing generation of computers. Even today, old TV sets with Cathode Ray Tubes (CRTs) have a much longer lifetime as compared to the modern Liquid Crystal Displays (LCDs) and Light Emitting Diodes (LEDs). Some CRTs even have a lifetime of up to 20 years. But such a great lifespan for an electronic device is not easy to achieve when we have such critical surroundings. So how does one make the electronic devices to function for a long time? The answer is the maintenance. Such devices are maintained carefully and periodically for better results. The technology used in current times does not call for maintenance because they are not designed to be lifelong. They have a certain life span after which they need to be either replaced or just be rightly disposed off.

Let us take a very basic household example of washing machines. Such consumer electronics also show versions of decreasing lifespan. The existing older versions are in better working conditions than the current versions. Automatic washing machines too show extensive signs of early ageing and they require regular maintenance, thereby increasing expenses for a consumer. Although we cannot deny the fact that as an electronic device ages, the energy consumption of the device increases with time. In comparison to older technologies, current devices consume much less energy in terms of power.

In conclusion, we can infer that there is a trade-off between quality, energy consumption and lifetime of an electronic device. Basically, whether one uses an older technology device or a modern technology device, the various costs will ultimately harm the consumer’s savings. Proactive maintenance is one such technique to preserve the older electronic devices. Technological realities also suggest that certain electronic devices do not age. They possess no lifespan but developing such electronic appliances will take a huge trade-off. Such a trade-off is not sustainable, but we never know what science has in store!
Some steps to slow down ageing:

1. **Organise the wires and cables** – Never let the electrical cords get tangled.

2. **Use heavy electronic appliances properly** – Never over stuff your fridge, which can result in it getting damaged.

3. **Keep electrical tools away from direct sunlight** – Do not expose electrical tools to bright, direct sunlight as it can have an adverse effect on them.

4. **Keep chargers unplugged when not in use** – Emergency lights, laptops, mobile phones – many electronic gadgets need to be charged at regular intervals. Taking good care of the chargers of these devices is of essence too. Make sure that that you unplug the chargers from the gadgets, when the latter are not being charged. Use cable ties to keep the chargers properly organised.

5. **Clean electrical equipments regularly** – Dusty electronic gadgets are often the ones that are most likely to start malfunctioning first. Wipe all the household appliances with a clean piece of cloth.

6. **Monitor the condition of the wires** – Hire a professional electrician to inspect all the connections.

7. **Consult the user manual whenever in doubt** – All electronic goods come with detailed user manuals. You should always refer to these guides.

Husain Amreliwala  
(SEIT)

**SOMETHING TO THINK ABOUT!**

To realize the value of one year, ask a student who has failed in final exams.
To realize the value of one month, ask a mother who has given birth to a premature baby.
To realize the value of one hour, ask the lovers who are waiting to meet.
To realize the value of one minute, ask a person who has missed the train, bus or plan.
To realize the value of one second, ask the person who has survived an accident.
To realize the value of one millisecond, ask the person who has won a silver medal in Olympics.

Time waits for no one.
Treasure every moment you have.
You will treasure it even more when you share it with someone special.

Alfiya Ghaawte  
(FEIT)
The Mirror

I look in the mirror
And what do I see?
A strange looking person
That cannot be me.
For, I am much younger
And not nearly so fat
As that face in the mirror
I am looking at.

Oh, where are the mirrors
That I used to know
Like the ones which were
Made thirty years ago.
Now all things have changed
And I'm sure you'll agree
Mirrors are not as good
As they used to be.

So never be concerned,
If wrinkles or extra flabs appear
For one thing I've learned
Which is very clear.
Should your complexion
Be less than perfection,
It is really the mirror
That needs correction.

Ali Husain Sorathiya
(BEIT)
PRIZE DISTRIBUTION CEREMONY
On 22nd January, 2017, five students from TEIT finally found the precious pearl that they had been long searching for. Amir Sayed and Mehwish Mulla from SEIT have a word with the winners of Mastek’s Project Deep Blue Season 2.

1) What was your instant reaction when you realized that it was you who had been called on the stage?

Farhan: First, we started screaming on the stage.

Burhan: It was our dream come true, because we have been working on this for so long and now finally we have won it. It felt like all our efforts have paid off.

Yash: It was amazing!

2) Throughout the journey, did you have the belief that you can win this?

Burhan: Yes, definitely. We worked really hard because we knew that there is a good chance that we can win. We wanted to develop an app which was useful. We didn't just do it for the sake of winning. We did it to provide a good solution for the NGO we were assigned to.

Rahul: We are not going to leave the app after this. We are planning to develop it, add more features and give it to the NGO so that they can use it.

3) Tell us about your project in brief.

Yash: So basically, the NGO volunteers, they are counsellors who go to rural areas and slums. There are pregnant women who cannot afford the healthcare or normal services during that period. The counsellors go there and council them at regular intervals about what to do and precautions to be taken.

Arif: Our app was all about recording all the conversations they had between them and analyse and extract the key information put
them into a database, and summarize it for them. The basic concept of our application was ‘voice to text’. We had to save the audio and the text files for them so that they can refer to that during the period of pregnancy.

Rahul: Main feature is that there is no such app which works on Voice to text without online access. Our app is totally offline. We can build the dictionary, the acoustic model according to our requirement and then use the app.

Burhan: Also, it's open source.

Farhan: The engine we used was ‘CMU PocketSphinx’.

4) What was your approach to this project? Where did you start from?

Burhan: First we started from the basics - just the structures and stuff. Then we divided it into small tasks. As tasks got bigger and things got complex, we teamed up.

Farhan: We prepared the flowchart of the approach towards solution of the project like, and decided how we will work.

Rahul: We worked on one formation called ‘AGILE’ formation. Our mentor was a senior business analyst who taught us about factors affecting our product formation and about the parts of the product like tester, developer and that the product will go to the analyst who will provide all the interfaces and analyse the product.

Yash: We visited the NGO as we wanted their inputs on our basic model and to learn more about how they work. This helped us to decide better on which features to add and which ones to discard.

Burhan: To be honest, we scraped a lot of things that we planned in the beginning as time passed by. We first planned for an online solution and then scraped the idea as it won’t work in rural areas. So, we had internet checking and, we discarded the input data part.

5) What is that one thing which motivated you to this direction and choose this topic?

Farhan: Right since our FE days, we wanted to develop something that will be of greater use to those in need. We got this opportunity in the third year and so we decided to make it worthy.

Burhan: And it was for a good cause. The NGO was helping us without any obligation. So we wanted their efforts to win and we wanted to avoid their time wastage in typing, rather they should concentrate more on patients. So this one thing motivated us a lot.

6) What kind of competitors you faced during this competition?

Yash: Really tough ones.

Rahul: Last season the winners were from VJTI and DJ Sanghvi and this year maximum participation was from VJTI, DJ Sanghvi and Datta Meghe. So at first we were worried about this because competitors were not only from BE, some were from MCA (Master in computer applications).

Arif: In the final round, there were 27 teams that presented their working application and only 5 teams got selected and there were no teams from VJTI or DJ Sanghvi.

Burhan: Competitors were pretty good both in technical aspect as well as reporting
aspect because there were points for reporting weekly updates, etc.

Rahul: We scored 107/115 in non-technical part.

7) In what ways the college and faculty helped you?

Rahul: First of all, we are very thankful to Ashfaq Sir. It is only because of him we got to know about the competition. He helped us throughout our journey. He was very supportive and guided us through each step. His contribution to the project was also immense. At times, his motivation was what that kept us going.

8) Did you consider any other idea before selecting this one?

Rahul: Yes, we had other ideas too. If we would have taken much more complex problems than this one, our chances of selection would have been more.

Burhan: We wanted to strike a balance between challenge and the practicality of its implementation.

Yash: The other problem statements were mostly related to database only. We wanted to do something innovative and challenging enough to make a difference.

9) What were the physical obstacles that you faced?

Farhan: Travelling and communicating with the team and mentors was a major problem. The fact that we all stay far away from each other made it worse.

Burhan: We had to meet at a place, plan and divide the task among ourselves and get going. Optimizing the voice recognition was also a major hurdle.

10) What are your future plans for implementation of the project in real life scenario?

Burhan: First of all, we shall test the app so as to minimize its bugs and errors. Currently, the app works fine in controlled and noiseless environment. We want to improve on that.

Farhan: The app has currently 200 words in its dictionary. We want to add up to 50 thousand words in it.

11) Any advice to your colleagues?

Burhan: Whenever you get opportunities, grab them and don't let them go. Opportunity knocks your door only once. When we first set out, we hardly knew anything. But we learnt as we progressed and finally made it to the top. If you don't participate and challenge yourself, how can you realize your strengths and weaknesses?

“Impossible is just a big word thrown around by small men who find it easier to live in the world they've been given than to explore the power they have to change it. Impossible is not a fact. It's an opinion. Impossible is not a declaration. It's a dare. Impossible is potential. Impossible is temporary. IMPOSSIBLE IS NOTHING.”

– Muhammad Ali (3-time Lineal World Heavyweight Champion)
The Negative Side of Artificial Intelligence

Artificial Intelligence, or more commonly, ‘AI’, is the theory & development of computer systems able to perform tasks that normally require human intelligence. More simply, it is the power of a machine to copy intelligent human behaviour.

AI is now employed in almost every field from optical recognition to choosing successful IVF embryos. Apple’s Siri or Microsoft’s Cortana are common examples but, the level of "intelligence" in these platforms is minimal.

AI was adopted to ease human work as computers can perform tasks at a very high speed with much greater efficiency. The problem that can arise is that too much of AI employment could lead to human unemployment. A highly skilled labour is required to develop systems that use AI & the unskilled job will be done by the systems. This could lead to massive unemployment.

Apart from this, another drawback of AI is "The Singularity" described by Computer Scientist Ray Kurzweil. According to the Oxford Dictionary, the singularity is “a hypothetical moment in time when Artificial Intelligence & other technologies have become so advanced that humanity undergoes a dramatic & irreversible change".

Other scientists & tech luminaries like Bill Gates have warned that AI could lead to tragic unforeseen consequences. This means that a SKYNET driven "Judgment Day" like the one in 1991 the film "Terminator 2" is absolutely possible. Recently, Facebook had to shut down two of its chatbots as they started to interact with themselves in a language that was creepy to some people. Researchers at the Facebook AI Research (FAIR) Lab found that the chatbots had deviated from the script. Though this might sound a little fascinating, it actually is concerning.

The need is to ensure that technologies developed must not design systems to be superior to humans and there should be an option to shut these off when need be.

Amina Bhatkar
( FEIT)
College Life

Stepping into a new life where one faces oneself.

Some consider everything a race and chase after them all, While others find it difficult to even tie their shoe lace.

Many here care for you, but you care for a select few.

Lots of leisure, lots of pressure, In the midst of which, some search for the treasure.

The greatest invention being the headset without which no one's head is fit, More sleep, less work, but still feeling tired every other minute.

Sudden decisions rare output even don't care for taking next, More dance, more wishes, many an exam and test.

Suddenly, when you look back, the poster says 'The End', The 35040 hours of these four years are just like the three hours of a movie.

Passing by in the snap of your fingers, Leaving behind many a memory that lingers.

Joya Sayed
(BEIT)

The Man Who Lost

A little boy was crying in his crib. Neither Lily nor James had brought him any snack. Despite the white moonlight outside, his house and room were under a thick and absurd green glow. He was cold, he was hungry, but what made him cry was the pain of the lightning scar on his forehead. A cat meowed somewhere in the house.

A little away from the house, in the quiet streets of the seemingly deserted settlements of Godric's Hollow, a loud crack awoke a sleeping rat. It scurried
away as a man in a mask stumbled across the street. The man then walked briskly towards the green light. His pace weakened and steps were shortened as he came nearer to the house. Severus Snape removed his mask and looked at the destruction of the house before him. Half the house was in ruins. A warm hand groped his heart. Hope. Hope. Hope. The door was关, but he tried pushing it open. It opened with a small creak. The light inside the house was flickering, under which an ugly, ginger cat meowed loudly by its owner's feet. It sat there against the cold feet of James Potter. His glasses were askew and the hand which clenched his heart turned cold. Then he heard the baby's cry. The grip on his heart loosened, but the coldness wouldn't leave. The cat meowed, the baby cried on.

Severus Snape stepped over his body. Climbing up the stairs, he has more aware of the baby's cry now. He stopped, staggered a little, the hand playing with his organ. The boy which was the downfall of the Dark Lord had lived, the boy had lived. There was hope then. That the Dark Lord had been killed, the boy had somehow defeated Lord Voldemort! He climbed at a calmer pace now. The cat meowed, the baby cried on.

The living room door was shut. He opened it slowly. The wind through the open ceiling howled like a mad wolf. His gaze fell on a fallen person. Lily Potter was lying in a pool of red hair. Her eyes were shut. The wind urged the hand to close and the hand obliged. The heart broke under the stress. Broken into pieces. Grief fell on the Death Eater's shoulders and his knees buckled under its weight. A heavy, lone teardrop fell on the beautiful red hair. Severus Snape wrapped his arm around the sorrowful body of Lily Potter and mourned his life out. Her body was colder than stone but warmer than the man. His free hand found his mask and crushed it into pieces. This mask had cost him more than his life. He held her tighter. The cat meowed, the baby cried and the man wailed on.

Parag Vadher

(FEIT)
Smart India Hackathon 2017

Smart India Hackathon 2017 was an initiative by the Government of India to promote innovation and out of box thinking among engineering students.

Over 42,000 students from all over the country participated in what is regarded as the ‘World’s Biggest Hackathon’, out of which only 10,000 got selected for the final round which was held across the country. The finale consisted of a 36-hour nonstop coding session in which the participants had to build a working model of their idea.

MHSSCOE’s Team Tech Infinity, which consisted of second year students from the I. T. Department, made significant achievement at their nodal centre at Udaipur as they clinched the fourth place (Persistent Systems Award) for their work under the category of the Railway Ministry of India.

The dream of achieving something this big turned into a reality due to the will of the Almighty, the constant support and push of our mentors – Er. Zainab Mirza and Er. Sanam Kazi, our parents, classmates and friends who stood by us throughout our journey.

It was an amazing experience, given that we were only in the Second Year. When we first started out, we had the faintest of ideas of what we’ll achieve. The only thing we had in our minds was to give our best and leave the rest to the Almighty. SIH2017 changed our lives from being the audience to facing the audience.

When we entered the implementation of this project, we did not have any knowledge of Android programming. Not even the basics. But we believed that impossible is nothing. We learnt the basics of Android in just 15 days and successfully implemented our application on a small scale.

When we competed in the final round, we presented our idea and prototype in front of different panels of judges and field experts more than 5 times.
BeBrave is a women’s security app. It has numerous unique features and most importantly, it works without the internet connectivity. Whenever a woman finds herself entangled in a dangerous situation, she just needs to press a panic button. This button triggers different actions including:

1) Sharing her current location with a list of predefined emergency contacts as well as the nearest GRP (Government Railway Police Station).
2) Acknowledging the women with the estimated time of arrival (ETA) of the police so that she can tackle or handle the situation till that time.
3) Broadcasting the live audio and audio footage of the women along with the audio to the GRP.
4) Triggering the service of the ‘BB-Circle’ which notified the app user within 100 meter of radius of a situation nearby.

BeBrave was more of a giving-back-to-the-society responsibility than a project for us.

For this, we got felicitated by Shri. Prakash Javadekar, the HRD Minister of India and various other organizations. It boosted our confidence to give back more to the society. If there’s one lesson that I want to share then that would be that there is NO limit for learning. Knowledge is never wasted. Initially you may fail but can you name one great human who never failed?

Aliza Shaikh
(SEIT)

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LAST DAY OF COLLEGE

Raah dekhi thi is din ki kabse,
Aage ke sapne saja rakhe the naajane kab se.

Bade utavle the yahaan se jaane KO,
Zindagi ka agla padaav paane KO.

Par naa jane ky... dil mein aaj kuch aur aata hai,
Waqt ko rokne ka jee chahta hai.

Jin baton ko lekar rote the aaj un par hansi aati hai,
Na jaane kyon aaj un palon ki yaad bahut aati hai .

Kaha karte the... badi mushkil se char saal seh gaya,
Par aaj kyon lagta hai ki kuch peche reh gaya.
Na bhoolne wali kuch yaadein reh gayi,
Yaadein jo ab jeene ka sahara ban gayi.

Meri taang ab kaun kheencha karega ,
Sirf mera sir khane kaun mera peecha karega.

Jahaan 2000 ka hisaab nahin wahaan 2 rupay ke liye kaun ladega,
Kaun raat bhar saath jag kar padega,
Kaun mere naye naye naam banayega.

Mein ab bina matlab kis se ladoonga,
Bina topic ke kisse faalto baat karoonga.

Kaun fail hone par dilasa dilayega,
Kaun galti se number aane par gaaliyaan sunayega.

Canteen me Chaay kis ke saath piyoonga,
Wo haseen pal ab kis ke saath jiyoonga.

Aise dost kahaan milenge Jo khai mein bhi dhakka de aayein,
Par fir tumhein bachane khud bhi kood jayein.

Mere gaano se pareshaan kaun hoga ,
Kabhi muje kisi ladki se baat karte dekh hairaan kaun hoga.

Kaun kahega saale tere joke pe hansi nahin aai,
Kaun peeche se bula ke kahega... aage dekh bhai .

Achanak bin matlab ke kisi ko bhi dekh kar onion ki tarah hansna,
Na jaane ye fir kab hoga.

Doston ke bye professor se kab lad payenge,
Kya hum ye fir kar payenge.

Kaun mule mere kabiliyat par bharosa ditayega,
Aur jyada hawa mein udne par zameen pe layege.

Meri khushi mein sach mein khush kaun hoga,
Mere gam mein mujse jyada dukhi kaun hoga.

KEH DO DOSTON YE DOBAARA KAB HOGA?

Joya Sayed
(BEIT)
In Conversation with the EOY(s)

For the second year in a row, an SEIT student was crowned the Engineer of the Year. In an unusual competition this year, the powerhouse trio of Maruf-Aflah-Moiz showed spectacular teamwork and outstanding sportsmanship that got the judges and the audience on their feet. Saad Naik from SEIT sits down with them to have a word…

1) Having won the EOY title while still being in the second year is quite impressive. Was it so simple? What is your opinion on the complexity of this event?

Maruf: It’s a universal fact that simplicity and complexity are relative. Something which seems complex to you it might be simple for me. I got an expert for each round in my team. So, this might be the reason we were able to reach this far.

Aflah: Being in second year and competing with our seniors without any experience… it wasn’t easy for us. The events were quite challenging and interesting. The complexity of event was raised by our opponents.

Moiz: Yes, it had to be impressive because, we had beaten 28 teams participating from all branches to win the EOY title.

2) Teamwork is something that is necessary in order to reach the further stages of the competition. What are the factors that you considered while forming this team?

Maruf: The most important factor that I had in mind was friendship. So I decided to team up with two of my best friends: Moiz and Aflah in my team.

Aflah: In any competition that requires teamwork, understanding each other plays a crucial role in order to advance to further stages. In our case, we had a good combination of intelligence, skill & accuracy.

Moiz: Initially, we were unsure if we would participate in EOY. But had the idea that
whatever event it is, we would go forward with this team.

3) What was your mind-set before the start of the event or was there any nervousness considering the participation of seniors who might have an extra edge in terms of technical knowledge?

Maruf: We didn’t actually have any plans to participate in this event. But somehow by fate, you can say, we ended up participating in this event. As far as competing with seniors is concerned, we all knew that it's just an event. So, we were not particularly thinking about who had the extra edge and who didn’t.

Afihah: I was a bit nervous at the start about what would be our team's strategy in order to progress to further stages. But we managed to clear all rounds using our skillset in a proper manner. We not only cleared the rounds, but also were ranked first among all the teams in every round which gave us confidence. Our mind-set was quite clear: “we can!” and at last, “we did it!”

Moiz: Nothing was pre-planned as such because we all know EOY events can be tricky however we were confident about ourselves.

4) What is the most challenging aspect of the event and what according to you will help take this event to the next level?

Maruf: My strength in this competition was my team. That’s why the last round was very challenging as it separated us. It was an interview round, and definitely it was very challenging as I had to compete against my friends.

Moiz: We shared the same mindset however we differed when it came to our skill set. So, when we are together it doesn’t really matter. Whatever challenges come our way we can handle it. For me “tic tac toe” round was something unique and also challenging. Also the competitors for that stage were pretty good.

5) Which life would you say you like the most – ‘life before becoming EOY’ or ‘life after becoming EOY’ considering the fact that now people have set certain expectations from you?

Maruf: I like the life after becoming EOY because being recognised by others definitely feels good. Talking about expectations, I’ll try my best to meet those expectations whether it is regarding organizing such events or advising other teams and students on how one can win EOY.

6) Everybody knows that there can be only one EOY so did your team. On what basis was it decided to finally crown you with the EOY title?

Maruf: The judges mentioned that it’s very difficult for them also to choose since, we all showed equal participation and enthusiasm. But I think in that last round i.e. in the interview round, My will to sacrifice the title for my friends was the factor that made me clinch the title.

Moiz: We consider Maruf as a winner of EOY because without his contribution we never could have made it to the final round. He was awesome in all rounds.

“**My will to sacrifice the title for my friends was the factor that made me clinch the title.”**

- Maruf Shaikh

(EOY 2016-17)
7) "Good pointers make you good an engineer" what is your opinion on this ideology?

**Maruf:** An engineer isn't some regular guy with degree and just good pointers. He/she should also have certain skills and qualities that the society sadly lacks in. This is because your skills and talent are something you can use for others, but pointers are something that is restricted to one particular individual.

**Aflah:** Good pointers will surely make you a good engineer. But good pointers and skills together will make you a better and successful engineer than others.

**Moiz:** Well, to be honest who doesn’t like to get good pointers? For me pointers are very important. They act as a tool which can show others my true capability to some extent.

8) All of you won’t just stop after winning the EOY title. We would like to know about your ideas that you three plan to implement in the coming years.

**Maruf:** It was a wonderful experience to be a part of such a great event. So, we have decided to organise similar events so that we can share the same experience which we had or even better with others.

**Aflah:** Winning EOY title was a great achievement for us. We are seeking for technical and skilful events which will brush up our skills in near future.

**Moiz:** We plan to participate and also host such events that boost young talents in our campus in the future years.

9) Lastly, any advice to other students who also wish to participate and win this title? Or does your team plan to retain it till the final year?

**Maruf:** I think it will be unfair for others if we keep participating and winning. So, my advice to other teams is to have self-confidence. Take this as a challenge and at the same time, don’t underestimate yourselves. Most importantly form a team with your close friends with whom you can share this wonderful experience.

**Aflah:** Being a student, it's important to focus on your task and give your best. While in team work you should trust your team members and encourage them as well. As far as retaining the title is concerned I would like to say “may the best team win”.

**Moiz:** My mantra is to participate to learn new things and not just to win. Winning is secondary but getting such an experience is what matters more.

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“Participate to learn new things and not just to win.”

- Moiz Khan

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“I do think it's important to follow your dreams and do something which you are excited by. If you follow your heart and do what you like, you will always do much better. It doesn’t matter what your educational qualification is.”

— Sundar Pichai (CEO, Google Inc.)
Testimonials from the Mentor – Dr. Ashfaq Shaikh

Students from our college participated in Mastek’s Project Deep Blue Season 2 competition conducted by Mastek in the year 2016-17. Mastek provides a very good platform for engineering students to showcase their skills and talent in solving real world problems and to come up with innovative solutions. As a mentor from M.H Saboo Siddik College, it was an amazing experience for me to work with the students and to mentor them throughout the journey. It is a wonderful way for the teacher to exchange knowledge and experience with students.

In the Project Deep Blue Season 2, a total of 6 Teams from Saboo Siddik had qualified for the finals out of the top 55 teams from all over Mumbai, from over hundreds of project abstracts shortlisted by Mastek experts in the First Round. Mastek provides an individual mentor for each team which is really great. Mentors interact with team members and guide them in their project development. My role was to ensure that all the teams are on track and keep motivating them to complete the task on time which is very important for the students. As a mentor, my role was to motivate all teams to compete and grab the opportunity to shape their careers.

The students from M.H. Saboo Siddik College of Engineering, who won the Project Deep Blue Season 2 had built an innovative solution which was an Android Mobile Application called “LAFZ”, which converts speech conversations into text from a built-in dictionary for recording the counselling sessions’ conversations with the patient which can be further used for analysis by the health experts for better services by the healthcare organization. For developing this solution, our team won the first prize which was a cash prize of Rs. 1L and Trophy along with a placement offer from Mastek.

What our students got from Project Deep Blue Season 2:
- Winning team won a cash prize of RS. 1 Lakh with trophies and certificates.
- 2 Months Project Internship from Mastek on latest technologies.
- Job Offer letters for all 5 Team Members.
- Certificates for top 20 Super Teams.

Dr. Zahir Kazi (President, Anjuman-i-Islam) felicitating the team.
HEALTH CHECK – UP CAMP

M. H. Saboo Siddik College of Engineering
HELPING HANDS
Organizes FREE HEALTH CAMP in collaboration with
SAI GROUP OF HOSPITALS
Date: 16th Feb 2017
Time: 10AM to 5PM
Venue: Alma-Latifi Hall
BMI | Blood Pressure | Blood Sugar | Eye Checkup
Diet Recommendation | ECG | Neuropathy | BMT
Is This the Future of Chess?

Once again, I am glad to write about some advanced and interesting topics in the field of Mathematics and Artificial Intelligence. Let’s take a tour in the world where the possibilities obtained is exponential in growth - ‘SHATRANJ’

The Arabic word *shatranj* is derived from the Sanskrit chaturanga (catuḥ: “four”; anga: “arm”).

A breath-taking moment in the history of chess competition of human vs. computer happened in 1997 when the program Deep Blue beat the world champion Garry Kasparov. Then even the most optimistic proponents of the theory of human superiority realized that in this kind of competition, we are doomed. So, instead of the "humans are smarter than computers" mantra, we comforted each other with “yes, computers play stronger, but they don't understand chess, they just calculate better!"

After that, Stockfish – which for most top players is their go-to preparation tool, won the 2016 TCEC Championship and the 2017 Chess.com Computer Chess Championship.

Stockfish, however, was not able to stand against the DeepMind AlphaZero which is purely based on Machine Learning Algorithms. Google’s AlphaZero destroyed Stockfish in a 100-game match. AlphaZero proved that AIs can be indefinitely advanced with respect to humans in learning and calculation even for such complex brain game which is in play for more than 1400 years.

This is the stats of the 100 games played between Stockfish and AlphaZero →

<table>
<thead>
<tr>
<th>Chess Engines</th>
<th>Win</th>
<th>Loss</th>
<th>Draw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockfish</td>
<td>0</td>
<td>28</td>
<td>72</td>
</tr>
<tr>
<td>DeepMind AlphaZero</td>
<td>28</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

A very alarming fact is that it took only four hours for AlphaZero to learn and master the sport the chess. That's all! It takes less time to watch the ‘The Dark Knight Trilogy’. The program had four hours to play itself many, many times, thereby becoming its own teacher.

The programmers of AlphaZero, housed within the *DeepMind* division of Google, had it use a type of “machine learning”, specifically reinforcement learning. Put more plainly, AlphaZero was not “taught” the game in the traditional sense. That means no opening book, no endgame strategies, and apparently no complicated algorithms dissecting minute differences between center pawns and side pawns.
Part of the DeepMind research group is Demis Hassabis, a candidate master from England and co-founder of DeepMind (bought by Google in 2014).

“It doesn’t play like a human, and it doesn’t play like a program,” Hassabis said at the Neural Information Processing Systems (NIPS) conference in Long Beach. “It plays in a third, almost alien, way.”

Josh Tenenbaum, a professor at MIT who studies human intelligence, said that if we want to develop real, human-level artificial intelligence, we should study the flexibility and creativity that humans exhibit. He pointed, among other examples, to the intelligence of Hassabis and his colleagues in devising, designing, and building the program in the first place. “That’s almost as impressive as a queen in the corner,” he quipped.

Some interesting facts about Chess →

1. Did you know the number of possible ways of playing the first four moves for both sides in a game of chess is 318,979,564,000?

2. The longest game of chess that is theoretically possible is 5,949 moves.

3. The first chessboard with alternating light and dark squares (as it appears today) was made in Europe in 1090.

4. According to the America’s Foundation for Chess, there are about 169,518,829,100,544,000,000,000,000,000,000 (approximately $1.70 \times 10^{29}$) ways to play the first 10 moves of a game of chess. And they thought a computer would solve chess!

5. The word “checkmate” in chess comes from the Persian phrase “Shah Mat,” which is often translated to “the king is dead”, although more accurate may be “the king is trapped” or “the king is without escape” (Treadwell).

6. The longest chess game ever was I. Nikolic – Arsovic, Belgrade 1989, which ended in 269 moves. The game was a draw.

7. There are 400 different possible positions after one move each. There are 72,084 different possible positions after two moves each. There are over 9 million different possible positions after three moves each. There are over 318 billion different possible positions after four moves each. The number of distinct 40-move games in chess is far greater than the number of electrons in the observable universe. The number of electrons is approximately $10^{79}$, while the number of unique chess games is $10^{120}$.

8. The new pawn move, where pawns could advance two squares on its first move instead of one, was first introduced in Spain in 1280.

“‘If you have knowledge, let others light their candles in it’” - Margaret Fuller

Dipak Prajapati
(Seit)
A City So Fearless... Mumbai!

Watching upon a part of my city, I stood at the terrace of a tower,
The glitter, the shine, the glamour all over.
Realising it was a city full of loving people,
A city full of obstacles, but supporters at the same time.
Eyes reveal the truth here, language is never a barrier,
Smile on people’s faces, be it in traffic or in local trains.

Jealous were those creatures, who had devil minds,
Their hand didn’t even shiver nor felt the cold,
While killing a father, a newly wedded wife, a baby.
Five were those, destroyed were five thousand,
The city fought till the last breath of great legends.
Those who knew won’t be back, still fought for our country.

How can I just forget the moment country lost its legends;
Soon those violent, cruel minded devils lost their breath.
The city relieved but some experienced worse.
Still the city stood up, the day was 26/11, destroyed was a hope,
The city rebuilt it in a countable few days.
On toes once again, busy was the city!

Was this the darkest day of all?
Answer was not appropriate.
Maybe because we were ready for many more.
The city is ready, Unity is hopeful;
Nowhere was the fear seen among the eyes.
because then everyone knew this was a city;
A City So Fearless... called MUMBAI!

Mehvish Mulla
(SEIT)
TECH-VISION 2017

WINNING PAPERS
Offline E-commerce for online products For Smart Villages

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ABSTRACT - The Government of India launched the Smart Cities Mission in June 2015. Its objective is to promote sustainable and inclusive cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of ‘Smart’ Solutions. Indian government follows ‘Sab ka Saath, Sab ka Vikas’. Also, the movement of Digitalization has been on top of all. The best example of Digitalization is Online business. Trending application of online business is online shopping. But is India really getting digitalized? According to the census report of year 2011, out of the 121 crore Indians, 83.3 crore live in rural areas. There are numerous issues associated with rural areas education, transportation and many more. The main key of digitalization is Internet. The biggest problem of rural areas is that many of these don’t have web access. Due to this, they are unaware of the reality of online business. Online shopping is like daily practice for people in urban area. But for people in rural area it simply means going to shops at far distances sometimes in other villages too and get the things they need. So, to overcome this problem we are proposing an android application, it can be the suitable approach to know needs of rural areas. This application can be revolutionary for the online shopping world, as it can be defined as ‘offline shopping for online products’. It will have all the features of any online E-commerce website which will work without using Internet. Communication between server and user will be done through GSM messaging only. User interface with simple GUI at both sides shopkeeper for maintaining availability of product and customer for ordering products which will have multilingual Support as well as offline voice search.

Keywords - Android, offline, online, digitalization, shopping, rural, urban, ios, firebase.

I. INTRODUCTION

We all know, India is getting digitalized. But when we say term digitalization we only refers to urban area. It is not related to rural at all. Statistically when we look at the modernization of rural in terms of online reality or online business. According to the report published in report 2011, around 81% of people in India are having mobile phones. That shows India is on the way to get digitalized. As we probably are aware of the fact that most of the population of India lives in the rural area. There are numerous issues are there associated with the rural population and some of them are:

- Transportation
- Internet availability
- Agricultural development
- Educational awareness

In this, we are proposing a technology for which can be referred as “offline shopping for online products”.

We all know that , Internet has always been the base of Revolution. But the issues regarding internet connectivity has always made people from rural area ignorant to the reality of online business. Due to this, they are unaware of reality of online business. Online shopping is like daily practice for people in urban area. But for people in rural area it simply means going to shops at far distances sometimes in other villages too and get the things they need. So, to overcome this problem we are proposing an android application. It can be the suitable approach to know needs of rural areas. We are trying to address the problem of internet connectivity which is the biggest barrier in the online business. We are proposing a system which will work offline. The facilities provided by the proposed system will be same as any online e-commerce website. The communication will be done through GSM messaging which does not need internet connectivity.
II. Existing System

Existing system for rural area shopping works in two methods:

1. Traditional Method

There is one solution to the problem of shopping that exists today also in rural area called as "Itvaari bazaar (Sunday market)" Where people go and buy the stuff by considering the whole week. It basically means shopping manually. Itvari bazar is kind of centralized market where all the farmers gather to sell their products. Since it is centralized market people come by travelling from long distance to do shopping for the whole week like groceries or any other things they will need. It’s a full day job for them i.e. they have to invest their whole day just for shopping of daily needs.

2. Application based approach

At industry level too this problem has been tried to solve. The leading E-commerce players Amazon, flipkart, snapdeal tied up with the one common brand named "storeking". StoreKing is an e-commerce website with a catalog of over 50,500 different products. The startup gets in touch with any retail store for e.g. mobile store in the village, and convinces them to buy and install a StoreKing tablet or a kiosk in the store and people then go to that shop for ordering and buying the product.

III. Users of the system

- Farmers
- People from rural area
- Shopkeepers

IV. Problems with the Existing System

There is common problem with the both traditional and application based system. The problem is that people has to go manually to the shop for buying their products which is not the main aim of the online business. The current system will be able to fulfill all the requirements of people in rural area. But the method will not be that easy as online business.

V. Proposed System

Figure 1. Flow chart for user side.
can get all the ordered products by sitting at home.
- All the communication between the user and server will be done through GSM only.

VII. Workflow of the proposed System

Our application will have a simple GUI with multiple language (name of the product) also its will have a speech recognition feature for searching product names and other things which will work offline only. The application will have two interfaces:

Customer interface: By this interface a customer will able to shop a products and other customer facilities. This interface will be completely offline.

Administrative/Supplier interface: By this interface the supplier/shopkeeper can update the quantity of products. Our application is a cross platform mobile application which will work offline for shopping daily needs.

As soon as user selects the product from the list the system will ask user for confirmation of user to order the product. After user confirmed the order system will generate the GSM message having the information of products id and other details. This generated message will go to both server and user.

At Server side, after receiving the message it will track the user’s location. There will be a system for finding the nearest available products and suppliers and the availability details will be notifying to the customer. The customer can track with tracking number anytime some amount of time

Apart from this, proposed system will also have calling system which will be for limited products. User can use this system for daily and urgent basis needs. This system will comprise of calls like customer care calls of the companies. The system also have features for generating bills in multiple language (Specially native language).

VI. Advantages of proposed system

- This proposed application will be working offline which nearly finish the issue of internet connectivity in rural areas. Other than that without using internet, it will give every one of user interface which are there open in each E-business sites.
- Earlier people used to go to the market on that one decided day for the things they require day by day however now, they can get the things they need by sitting at home exactly the way any other Ecommerce website will provide but without using internet.
- Also for people in rural area, there is system of getting things from third party which remains in the middle of the two gatherings i.e. customer and dealer. In any case, this issue will moreover get solved since people will get everything at the genuine market value which reduces the chances of being cheated by anybody. Along with these, the transparency of the system will be maintained.
- This application will solve the problem of travelling too far for the daily things since people can order anything that they want and

Figure 2. Flow chart for suppliers side.
VIII. Implementation of proposed System

Figure 3: home page

Figure 4: displaying selected category

Figure 5: selecting the product

Figure 6: Place or add to cart page

- Jobes citrus
- Milorganite
- Alaska
- Nature’s Touch
- Bonide
- Bayer Advanced

- Agricultural Tools
  - Fertilizers
  - Composters

- Fertilizers
  - Jobes citrus
  - Milorganite
  - Alaska
  - Nature’s Touch
  - Bonide
  - Bayer Advanced
1) we are going to use a technology known as Angular JS with Ionic framework.
2) For server maintenance we are using PHP and Mysql and other server side scripting language. Also all data will be in JSON format so payload of SMS will be light and system will work fast.
3) For speech recognition we will use CMU PocketSphinx Open Source tool kit which works offline.
4) The communication between server and customer will be done via SMS only. For implementing it, we are going to use Ionic’s native SMS feature and some SMS and Notification gateway technologies known as Firebase’s latest features.
5) For communication to mobile to server the proposed system will be configured to work on GSM messaging.

X. Conclusion
The proposed system will be helpful to fill the gap between Rural and urban area. The misconception behind the digitalization will get cleared. People from rural area will also be able to get the online services and proposed system will also be able to solve the issues regarding to the internet connectivity.

It promotes:-
- Digital India Movement
- Enterprenuership
- Everything for Everyone,Anytime

IX. Technology

The proposed application is a cross platform mobile application which will work offline for shopping daily needs. For this

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Raspberry Pi in Attendance Tracking System

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ABSTRACT
In the recent years there has been rise in the number of application based on raspberry pi and RFID (Radio Frequency Identification) cards and has been successfully applied to the attendance tracking system. This project will be used for automatically managing the student attendance process for any given learning organization. This system facilitates automation in terms of aggregating the number of head count and is managed completely by an automated system. In this paper, an attempt is made to solve the current problem of inconsistency, time consumption and also elimination of paper work. The current system has various flaws like class attendance are not secure, time consuming and it can be prone to errors if it is taken verbally or visually. There also persists the issue of proxy as well as a nuisance is created when the attendance is taken manually which ultimately ruins the discipline. There are many ways in which this is performed today such as a sign up sheet which is passed around, attendance taken verbally, or sometimes not taken at all. All of these will be eliminated with the implementation of the system using Raspberry pi. The configuration of the project will consist of a Raspberry pi with an attached RFID card and RFID reader. By using raspberry pi an accurate process will be maintained which will take attendance automatically when the student enters the room. Each student will be required to have their student ID card (RFID card) which will ensure consistency. The Attendance Tracking system will rely heavily on computer hardware and its backend database and an RFID card which does all the processing tasks when the system is interconnected and made ready for implementation. This system facilitates automation in terms of aggregating the number of head count and is managed completely by an automated system.

Keywords
Application of raspberry pi, raspberry pi model, reports, RFID reader, Simplified Attendance Tracking.

1. INTRODUCTION
Attendance is for primarily used to maintain the record of students present in the school or colleges which serves as a basic requirement for the discipline and for providing quality education in an organization. Traditional method used for tracking attendance is by calling names or roll number of each student and then marking present or absent accordingly. There are various flaws in the existing system of RFID as well. Apart from inconsistency and time consumption, it involves lots of paper work and possibly leads to personal error in tracking the attendance. There arises a need for solving all these various problems. With the evolution of technology various new methods are evolving one of them is Attendance tracking by means of using Raspberry pi, Raspberry Pi is a dynamic microcontroller that is capable of just about a computer is. No matter how small the scope of the system may be, it helps saving time by performing an automated and more precise process of taking attendance. It does not add to any more complications to an organization rather simplifies the task and makes less use of resources as not all students have to be gathered around in a room to take attendance. This integration will allow for an automated method to be used for Schools and Universities that need to take an accurate attendance of students in each of their classes. The configuration of the project will consist of a Raspberry pi with an attached RFID card and RFID reader. The RFID device serves the same purpose as a bar code or a magnetic strip on the back of a credit card or ATM card, just as a bar code or magnetic strip must be scanned to get the information, the RFID device must be scanned to retrieve the information which is unique [1]. Each student will be required to have their student ID card (RFID card) on their person when entering the classroom. The backend data will be managed by custom software. This project is initially intended for managing the student attendance for a school, but will be designed such that it can support attendance requirement tracking for any given organization. The Attendance Tracking system will enable instructors and students to get down to the business of learning as quickly as possible without wasting time with the manual process of taking attendance.

2. PROPOSED SYSTEM
2.1 System Overview
The proposed system provides alternative to the existing problems. The manual business process of taking class attendance at a university is the scope of the project. This inconsistent process is the area where the proposed system will add benefit to an organization. The automation of this manual process will allow for more class time to be spent on teaching and less on this mandatory process. The opportunity in this project is the ability to start classes on time without delay. The aim of the project is to dedicate more time for the learning.

The proposed system will process the following types of data:

1. Student information
This will include specific information in regards to each student such as, student id, Name (First, Middle, and Last).

2. Class Enrollment information
This will include the list of registered students for a specific class.

3. Reports
Reports can be generated for the organization, instructors, as well as students interested in their personal attendance; how many times have they missed class, or been late.
The proposed system will have various interfaces such as users, other interfacing systems, as well as hardware and software. They are broken down as follows:

2.1.1 User Interaction:
2.1.1.1 Students (normal operation) - The interface for students will be through and RFID enabled student ID card[2]. This interface for the student will be seamless. They only need to enter the room to be counted as present in the class.

2.1.1.2 Students (reporting operation) – Students would interface with the system via a Web based application. The ability to view their own attendance data will be controlled via account privileges.

2.1.1.3 Instructors (normal operation) - The system will be configurable to run automatically. For example, an instructor of a class would not need to do anything beyond clicking submit, when ready, to have the attendance automatically taken.

2.1.1.4. Instructors (reporting operation) – Administrators of the system would interface with the system via a web based application. It will enable the ability to view, adjust/update, and submit a class attendance. As with the students, access will be controlled via account privileges.

Interface with Locations: Schools, companies, organizations and other offices – Since the Attendance tracking system is a location based system using a RFID and Raspberry Pi [3], the application can be accessed using either a PC or MAC. In addition, a tablet can be used since the database and reports will automatically configure to the screen size. The constraint will be that the application can only be accessed using a Linux system [4] (Ubuntu). This will limit OS breach vulnerabilities. Interface with Other Systems: The Attendance Tracking system will interface with RFID of user’s unique verification card to deploy the application. In addition, the system will also interface with SQL Server to query data needed for the application. Data will include person’s attendance history, logging in and login out timings, follow-up, and other future scope services.

Interaction with other systems: There is no need for other systems to be integrated with our system; our system itself is internally integrated by different technologies ranging from hardware (RFID, Raspberry Pi) to software (backend database system).

2.1.2 System Interface:
2.1.2.1. Locations served by the system
The locations served by the system are local in nature. The University personnel and students with valid credentials would be able to access system via the University’s intranet.

2.1.2.2. Users served by system
It could be used for organizations ranging from handful to thousands of employees. It can be applied in any field that needs an automated attendance management system.

2.1.2.3 Interaction with other systems
There is no need for other systems to be integrated with our system; our system itself is internally integrated by different technologies ranging from hardware (RFID, Raspberry Pi) to software (backend database system).

2.2 System Design

The Attendance Tracking system data will be stored in a database on a local server, inside the university’s network. Data from the database will be retrieved via the application, which will provide a graphical user interface using web technology. The Raspberry Pi’s will be limited to running the Linux OS [5] platform while the application can be deployed using a laptop or tablet, regardless of operating system. Only those employed by, or are a registered student at, the University may access and use the system. Employees and Students of the university will be provided permission to the system from the University itself. The University may forbid a person from using the system if required.

![Fig 1: Context Diagram](image)

2.3 System Architecture

The architecture will incorporate RFID technology to improve the process of taking attendance in a University setting. The design will employ RFID cards as well as RFID readers to track persons entering and exiting the room. This data will then be automatically entered into a database from which data can be viewed and reports can be run. A dedicated database server will be employed to maintain the Attendance Tracking database. Network connectivity will exist between the RFID readers and this dedicated database server. User, either administrator or students, can access system via web for reporting purposes.
3. REQUIREMENT ANALYSIS

3.1 Functional Requirements

1) Instructors, Administrators, and Students must be able to register to use the system.

2) Instructors, Administrators, and Students must be authorized to login to the system based on user credentials.

3) The system must be able to lock out a user and track failed attempts to login.

4) The system must be able to perform room entry/exit transactions in real time.

5) Instructor’s ability to set “Late” thresholds for their respective class.

6) A student must be able to view their attendance record for a specific class.

7) A student must be able to view their attendance record for a specific Semester.

8) Access to the system data must be done via a user interface.

9) The system must allow instructors to submit the class Attendance for a specific class.

10) The system must allow for auto-submit of attendance.

3.2 Non Functional Requirements

1) The system must be available for reporting purposes at all times.

2) The Attendance tracking system needs to be delivered on time.

3) Training plan is required.

4) Help is available from the user interface.

3.3 Problems in Existing System

1. Current process for taking attendance is time consuming.

2. Current process for taking attendance inconsistent and inaccurate.

3. It is not secure and confidential.

4. There is no proper management of reports.

3.4 Advantages of Proposed System

1) It will save time, manual efforts and more over majority of the costs involved in implementing this system are one-time costs which could be considered as an advantage over the traditional procedure.

2) Attendance tracking is completely customizable and using the Raspberry Pi (manual chip interface) [6] all the students entering the classroom with a valid RFID card will be automatically marked present and their attendance will be marked in the database for that particular class on that particular day.

3) The Attendance tracking is very much technically feasible because it involves automation and students and the professor would practically mark their own attendance by just walking across the Raspberry Pi (a chip interface) carrying a valid RFID card [7].

4) The information is passed to the database connected to Raspberry Pi system which will ensure complete accuracy of the data.

5) Records are kept safe and confidential.

6) Reports to be generated after brief interval of time, or monthly records can be maintained and can also be exported to other inter organizational departments in .xls format to improve accuracy.

7) Each Student is able to generate record for particular class.

4. IMPLEMENTATION

Figure 3 represents the Login screen wherein the Administrator will enter his/her credentials in order to log-in to the database. If the user/administrator enters any invalid ID/password, the system will inform the user of invalid credentials and will deny access.
Figure 4 represents password saving screen the wherein, the system will ask the user/administrator to save the password, if the user clicks yes, the password will be saved in the cache memory and he won’t be required to re-enter the password every time he tries to enter the database.

Figure 5 represents that after entering the credentials, the system will require a couple of moments to extract, transform & load the data onto the database and then the administrator will be granted access to the actual database.

Figure 6 represents the actual home screen of the S.A.T system containing a table on the bottom left corner of the screen showing the students’ status which will be constantly updating as and when any student enters the classroom and the administrator can also generate hourly, daily or weekly reports based on the organizational requirement.

Figure 7 represents that the administrator can also add a particular student to the database in case there is any new admission. The above screen manifests the student information page wherein the administrator can create a new record by entering the register number, student name & the branch of the student. Many other functions can also be performed on the student records such as adding more records, deleting the existing entry, resetting previous student entries, etc.

5. FUTURE SCOPE
In terms of future scope, it is expected to provide more details report and a complete summary with respect to an organization’s employee’s attendance tracking and enables more privileges for the administrator. It is expected to save time and be more precise in terms of its functional requirement and also to eliminate the vital need and saving time when it comes to tracking attendance.

6. ANALYSE PROBLEMS
6.1 Cause and Effect Analysis & System Improvement Objectives
The following table depicts the Cause and Effect Analysis and the result for the proposed system as well as the System Improvement Objectives. The following analysis is based on the initial analysis of the problem domain. These problems were reviewed and the specific causes and effects are documented. The System Improvement Objective Each problem has been evaluated to determine the cause and effects. The three key problems are as follows:

1) Time consuming
2) Inconsistent
3) Erroneous
<table>
<thead>
<tr>
<th>Problems/Opportunity</th>
<th>Cause and Effects</th>
<th>System Improvement Objectives</th>
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| Current process for taking attendance is time consuming.                            | • The attendance process is taken manually by passing around a sheet to the whole class. This takes a lot of time which impedes the start time for the class.  
  • The attendance process is taken manually with the use of blackboard.  
  • The attendance process is taken manually in some other fashion. Again, time consuming and holds up start time for class. | To enable automation of the process. The system can be setup to be completed automated.            |
| Current process for taking attendance is inconsistent.                              | • Many instructors perform the process in different manners. The consistency and accuracy of the data is at risk based on this inconsistency.  
  • The current system allows for various methods to be used. This flexibility needs to be controlled with the new system to ensure consistency of the process.  
  The system must limit the flexibility around the attendance taking process. | The time to complete the process cannot take any longer than it does today.                        |
| Current process for taking attendance can be inaccurate.                             | The various means by which the attendance data is captured, leads to inaccuracies within the data. A sign in sheet needs to be interpreted by someone and entered manually into the system.  
  The system must ensure complete accuracy of the data related to class attendance. | There must be an override for an administrator of the system for special exceptions.               |

7. CONCLUSION
The Attendance Tracking will serve as a useful approach to automate the system and hence will prove cost effective, more accurate and provide ease of implementation and use, and will slowly diminish the need of the un-conventional method as well as will help to eliminate paper work. Further implementing the Attendance tracking will certainly save a lot of time because of the computerization and the user friendly interfaces involved which will allow the professors to invest all the time in teaching rather than carrying out the manual attendance marking procedure. By reducing the chaos in the learning organization and hence will improve the accuracy of the system. Confidentiality of data is also achieved. Thus we have achieved to develop a reliable develop a reliable and efficient attendance tracking system using Raspberry pi which is consistent, non-erroneous and accurate[8].

8. REFERENCES


[5] Arch Linux Arm : Coding the pi With Linux.


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## TPO Summary for the Department of Information Technology (2016–17)

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</table>
Life won't be Easy!

He seemed to be cornered from everywhere,
Struggling with his life, finding his share;
Hoping for a miracle to change his destiny,
To bring happiness, peace and harmony;
The world is out for the social war,
He wonders if anyone can fix up his scar;
He wonders "why life is taking such a bend?"
Thinking that his life, is about to end;
Living with fake smiles and hypocrisy,
They say hiding the pain is so easy;
Where everyone in the world, needs sympathy,
In Finding true love, who is trustworthy;
What they call love, is just a game of lust,
And for the rich, it’s just the quench of thirst;
That painful heart of one side feeling,
Which is waiting for someone to do the healing;
He feels, His life is behaving too strange,
’Cause he realises that pain makes people change;
A drastic turn,
Let the world burn;
Cause behind the hidden clouds, lies sunshine,
All you need, is to fake a great smile!
So, remove the unwanted "dears",
Control your tears;
Cause life won't be easy;
Until you strive and get busy!

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