

Department of Information Technology  
Half Yearly Newsletter

  **identity.** 

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# IEEEExtreme 12.0

The IEEEExtreme 12.0 24-Hour coding competition was hosted by department of Information Technology and SSN IEEE Student Branch in association with IEEE Madras Section, on the 20<sup>th</sup> of October, 2018.

IEEEExtreme 12.0 had 4040 teams in global level, 1448 teams registered at National level and 314 teams registered under Madras Section. At SSN College of Engineering, the Chennai host, had 29 registered teams and total participants of 65 from various colleges.

The teams “returntosleep” with Murugappan, Rahul, Vignesh, “PodiDosai” with Chandramowli, Saminath (CSE), Hemanth and “MemoryLeak” with Nitheesh Prabu as associated team members from department of Information Technology, SSN CE have achieved remarkable positions at different levels.



TEAM	LEVELS & POSITIONS			
	Madras Section	National	IEEE Region 10	Global
returntosleep	1	2	10	34
PodiDosai	2	5	26	73
MemoryLeak	3	29	102	272



# IEEE Xtreme 12.0

HEAR IT FROM THE PARTICIPANT

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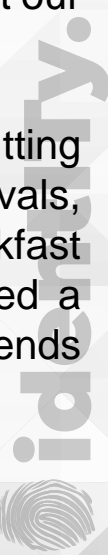
I arrived at the gates of our college by 8pm, one day prior to the event, as requested by the organizers of IEEEXtreme. I was all packed and ready for attending the 12<sup>th</sup> annual instalment of IEEEXtreme at our college, on the 20<sup>th</sup> of October 2018. This was also the second year running, that our college gets to host the event, in collaboration with the Department of Information Technology. Also it was the second year for me, to be participating in this contest.

For me, the fun part begins the day before the actual contest itself. SSN College of Engineering has offered to provide accommodation for all the Madras section participants offering a unique platform for interaction among students of other colleges and regions, and helping build connections that we may not have been able to do so before. This is the very core of IEEE itself – networking. It was an opportunity for me to interact with new people, juniors and peers alike, and also my friends. I've always felt a tinge of regret not being a hosteller in these past years, but both instalments of IEEEXtreme provided me the chance to live the life of a hosteller at our campus, eat from the canteen, stay up late for those long chats, and rest well, for the contest ahead tomorrow.

After four years, I was now used to waking up at 5 am for getting ready to catch the college bus, but now I didn't have to. I just had to walk up to the Career Development Cell and locate my room so that I can start coding. By the time I got to mine, the contest had already begun. I quickly set up my laptop. I noticed that the volunteers had already done a good job of guiding other college students on connecting to the Internet, and had provided us all with scribble pads and pens for rough work. I saw that 3 problems were already up, and I started focussing on my first problem, which seemed doable.

This year was different because I, due to circumstances, had to participate as a single person. Also, this year, our college posted 3 teams, which increased the competition among ourselves. As a result, I set my expectations a bit low, but was determined to do at least as good as last time. This year was also different because apart from the IEEE Madras Section giving out prizes for the top 3 teams in the Madras Section, our college had decided to award the top 3 teams that were participating at our college campus prizes too.

About 10 minutes into the contest, everyone had arrived, and we started putting the pedal to the metal. The volunteers offered us refreshments at regular intervals, which, thank God, kept us pushing ourselves for 24 hours. By the time our breakfast tokens were given to us, I had not solved that problem. Deciding that I needed a breather and a fresh perspective of the seemingly easy problem, I joined my friends from the other two teams to have breakfast.



The thing with 24-hour contests is that, we should not get stuck on a single problem. IEEEExtreme makes it so that, the organizers steadily release problems at regular intervals, and the problems are all of mixed difficulties. By the time we finished our breakfasts, two more problems had been put up, which gave me the opportunity to switch it up and try tackle a different problem, and come back to this one later. Thankfully, I was able to solve one of those, and it gave me the boost of confidence I needed, to try the first one again.

12 hours passed by, and I was able to code solutions for a few more of the newly posted problems, and kept working on the old ones I couldn't do. The volunteers kept up with the motivation and fuelled our efforts by offering refreshments and playing music to lighten the mood. By this time, I had solved about 5 problems, which is already better than my last try at IEEEExtreme 11. So now I just wanted to see how far I can push ahead of my previous record.

The hardest part of the contest is the last few hours, which unfortunately for us, happens to fall during the night and early hours of the next day. Now, solving the problems was not the issue – it was staying awake. Although some of the participants could not help taking the occasional nap, these hours provided the chance to finish strong, and submit a few more partially accepted solutions, so that our points tally increase. And that is exactly what all teams from our college did; we powered through the final hours and tried to solve as many problems as we could, even if it did not garner full points.

I noticed that the leader board held me at 303<sup>rd</sup> in the World rankings, which was a big improvement to the previous run, considering the circumstances. But the peculiar thing was, the rankings within the college campus had held me at 3<sup>rd</sup>, just enough to bag a prize! The other two positions were also held by teams from our college, which wasn't actually a surprise, because they came to win and they deserve it. But it felt like the stars had aligned perfectly for me that day, seeing that if I was able to hold this position for few more hours, I'd be walking home Rs. 6000 richer.

At 5.30 am Sunday, the contest finally came to an end. The final hours saw a fierce battle between the top teams of our college – Returntosleep – for the top spot in the country. It was pretty neck-to-neck, as both teams were trying to score as many partial points as possible at this time. By the end of it all, we were able to bag the second place all over India, but we gave quite a scare to the top team.

The IEEEExtreme Project Lead, Mr. Prasanth Mohan, had stayed with us on campus the entire time, along with staff from the IT department, Dr. T. Sree Sharmila and Dr. S. Karthika. They provided us with much needed support and motivation for powering through the gruelling 24-hour contest. By the time Prasanth sir was reading the results, our eyes were drooping and begging for sleep. But as it turned out, all the three prizes for the teams participating within our campus was bagged by our college teams, and I was placed third. This made my day already, and it had barely begun. Dr. T. Nagarajan, Head of Department of Information Technology, had arrived at our campus to see how the event was going, and was keenly following up on the teams from our college. He also distributed the prizes to us, which summed up to about Rs. 30,000.

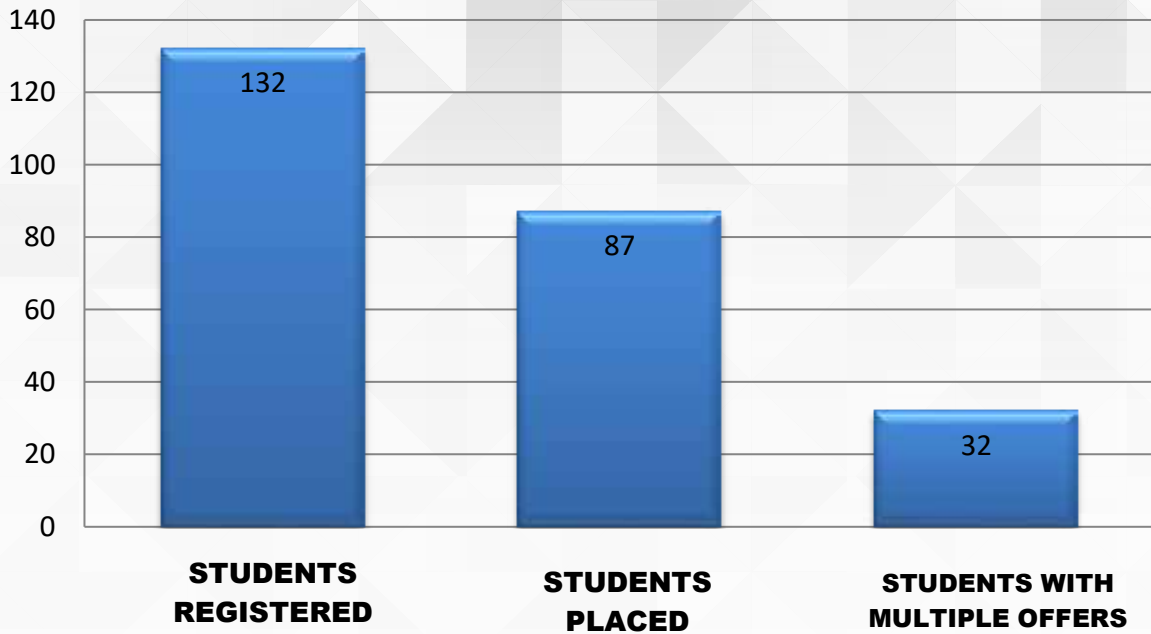
At this point, I would like to thank, on behalf of all the teams participating, our HOD, the staff, and all the lab assistants who stayed awake with us the entire event and supported us throughout, and the college for providing the accommodations for the entire event.

The success of any event calls for a celebration, and the volunteers had arranged for a delicious cake at the end of it all, to mark the happy occasion and bring close to another successful edition of IEEEExtreme hosted at our college. Although this will be my final year of participating in IEEEExtreme as a student of our college, here's to hoping that our college gets to host the event next year too, and I get the chance to come back and participate with my peers!

NITHEESH PRABU S  
IT B, FOURTH YEAR

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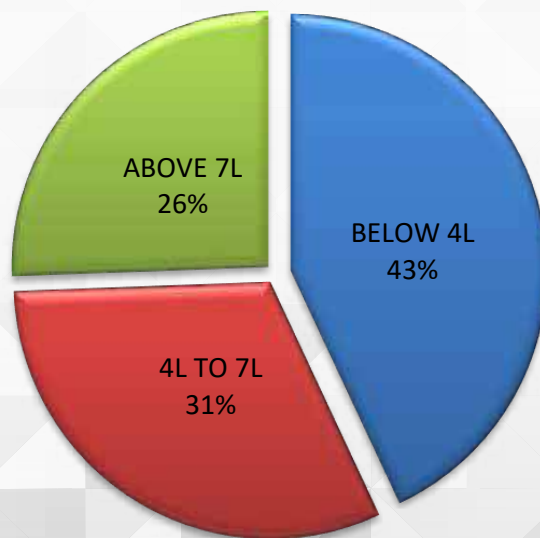
# PLACEMENT INSIGHTS



With every passing year, the focus of our final year students is primarily on setting their career paths carved on stone. Their exceptional skills and guidance from the faculty enabled Batch of 2019, to maintain a remarkable placement record of 60% which is still growing.

A total of 88 companies visited the SSN Campus, including Microsoft, Goldman Sachs, Mckinsey, Citi Bank, Pay Pal among others.

## STUDENTS PLACEMENT TRACK







**IMPORT INVENTE.IT.\*;  
3.0**

The 3<sup>rd</sup> successful version of the annual InvenTe Tech Fest was held on 21<sup>st</sup> and 22<sup>nd</sup> of September, 2018. The event was nothing short of a SSN coding carnival. A melange of events were organised by the IT department spread across the two days. Techno-wizards and cyberpunks from numerous institutions came forward to code their way to glory and win exciting prizes! Loga Sanjay, Priyadharshini S, Ravi Kiran and Damodrapatruni Varshita were the overall events coordinators.

**Event:** Paper Presentation

**Organisers:** Jayaram Hariharakrishnan

Proofback Paperback! Students from various colleges presented their papers on Machine Learning, Artificial Intelligence and various topics. Many new and innovative ideas were presented with vivid vigour to the judges.

**Event:** Mock ReGrootment

**Organisers:** Swarnalatha S, Swedha A, Harini Priya K, K A Dheepthaa

Candidatures were put to acid test for getting selected into the dream company! The candidates had to pass the mock online test, crack the Group Discussion and coding interview and breeze through the HR round. The ones who aced through this landed with an internship in TournamentOS!

**Event:** Artificial Intelligence

**Organisers:** Gautham Krishna, Adithya R Ganesh, Abhishek Pal, R P Narasimha Yadav

This was a venture opened up for the coders amazed by AI and mesmerized by machine learning! The MCQs round and Quiz round were to be tackled in advance and those who qualified those rounds were to perform ML coding based on given data in the finals.

**Event:** Data Avenger

**Organisers:** Sruthi C, Swaminathan G, Lalithalakshmi R

And the epic Heroes of Data Analytics made a mighty come back to protect the Digital world with the weapon that is designed for them! An MCQ round was followed by the “Hulk Smash of Data” – the information explosion Challenge which involved testing their practical skills to win the fierce battle!

**Event:** AppLokition

**Organisers:** Kesavarthini I, Jona Sherly M, Vignesh M

“I solemnly swear that I’m an absolute App addict!” Then App up the business! A pre-assessment test was followed by an interactive round where they designed and coded the given theme based, attractive and interactive App using the Android toolkit provided.

**Event:** Webaholic

**Organisers:** J Chandramowli, Rino Vedha Moses J, Keerthana K N, Jeya Aiswarya V

Ahoy! Welcome to the world of Webaholics – the whiz of Web apps! Tackling the pen paper prelims and proceed to coding, developing and giving life to creative, useful and user friendly Web Apps helped quench their thirst and claim their rightful place in the winning pedestal!



**Event:** Py-Thanoz  
**Organisers:** S Jagannathan, Akshaya M, Infant Jero Akash J

Thanoz, in hot pursuit of the 6 infinity stones struggled to find his way through! The participants are required to tackle the prelims and expect the unexpected in the finale with lines and lines of Python code helping them tshape their own destiny!

**Event:** Codolympics  
**Organisers:** Nitheesh Prabhu, Murugappan S

“So, you think you’re a Pro?” Geared up and back on the saddle to finish the MCQs round 1 and reach the competitive coding finals in a Hacker rank-like environment of core competitive coding to bring out the champion stuff in contestants!

**Event:** Captain Algo  
**Organisers:** Prashanthi B, Vignesh M S, Raghul D

A clever pun on the famous Captain America, dealt with coding in depth! Get the Algorithm base strong! Apart from the preliminary written MCQ round, a debugging round was held to nearly brain tease the contesting pros!









# INTERNALLY FUNDED PROJECTS UG & PG

**We thank the SSN Management for providing an unprecedented financial aid amounting to Rs. 3.55L for UG students and Rs. 0.89L for PG students to realize their ideas.**

# UG - IFP

## FOG computing

A raspberry PI based decentralized network

Budget: Rs.13000

E. Shanmuga Skandh Vinayak, III Year

Dr. N. Bhalaji

## Analysis of emotion in stuttered speech

An aid to speech pathologies

Budget: Rs.18000

V. Aishwarya

Akshara Kannan

S. Nikita

III Year

Dr. N. Sripriya

Dr. S. Poornima

## Drowsiness and fatigue detection for bikers using helmet

Budget: Rs.16000

P. Renvitha

M. Oviyaa

III Year

Ms. R. Swathika

Dr. S. Sasirekha

Dr. I. Joe Louis Paul

## iPARK - Innovation in parking

Budget: Rs.18000

K. Sai Kaushik

B. Sanjana

Sanjana

II Year

Dr. I. Joe Louis Paul

Dr. S. Sasirekha

# UG - IFP

Design of lombard speech corpus to build a robust speaker recognition system using deep neural networks

Budget: Rs.20000

V. Supriya

R. Manaswini

II Year

Ms. S. Uma Maheswari

Applying AI to commercial documents for summarization and recommendations

Budget: Rs.25000

Anam Saatvik Reddy

Keshav Balachandar

II Year

Dr. A. Shahina

DOC - Yourself  
Budget: Rs.24000

S. Aravind

S. Harini

R. Ishwarya

U. Balaji

III Year

Dr. S. Sasirekha

Dr. I. Joe Louis Paul

Acknowledgement on bio-metric based attendance system for SSN faculty

Budget: Rs.9600

Sri Hari Karthick

Sushmita Rajtilak

III Year

Mr. V. Sivamurugan

Ms. E. M. Malathy



# UG - IFP

The SSN Institution Research Archive  
(A dynamic web application to maintain  
institutional research data)

Budget: Rs.15000

S. Rithik Prasad

A. Shaistha

R. Soumya

II Year

Ms. S. Uma Maheswari

Intelligent accident detection and alert  
system for emergency medical assistance

Budget: Rs.10000

Chaluvadi Jwala Sowmika

Yallala Pranusha

III Year

Ms. J. K. Josephine Julina

Smart Crop  
Budget: Rs.10000

K. Sowmya

S. Srinidhi

S. Rupaa Shri

D.P. Sharavane

II Year

Ms. R. Swathika

SSN bus tracker

Budget: Rs.8000

Shubhangkar G Jain

Sanjana Sukumar

Priyanka Atul Srivastava

II Year

Dr. S. Sasirekha

Dr. I. Joe Louis Paul

Ms. R. Swathika

# UG - IFP

Smart action monitoring and alerting  
system for elder people

Budget: Rs.15000

B.A. Akash

M. Harini

P. Mageshwaran

III Year

Dr. S. Sasirekha

Dr. I. Joe Louis Paul

AWMS - Air water quality monitoring for  
SSN campus

Budget: Rs.15000

S. Preethi

L. Ramya

III Year

Dr. N. Bhalaji

Smart wearable for child tracking  
and monitoring

Budget: Rs.12000

S. Aishwarya

R. Mythreyi

V. Niranjana Devi

III Year

Dr. S. Chithra

Pen scanner

Budget: Rs.16000

K. Sujith

Pagadala Sreenivas

II Year

Dr. I. Joe Louis Paul

Dr. S. Sasirekha

# UG - IFP

Design of compact chargeable  
and storage device

Budget: Rs.3500

P.G. Abinaya

S. Avinash

S. Naveen

II Year

Ms. J.K. Josephine Julina

Drowsiness detection and alert system  
for car accident prevention

Budget: Rs.7500

R.B. Jananie

A. Anto Silviya

III Year

Mr. A. Sandana Karuppan

Ms. N. Radha

Automatic gate opening system with  
rational authorization technique

Budget: Rs.15000

J.S.N. Spandana

G. Subasri

III Year

Dr. P. Vasuki

Silent speech recognition using  
alterative sensors

Budget: Rs.13000

P. Vijayalakshmi

M. Priyadharshini

R. Mageswari

III Year

Ms. N. Radha

# UG - IFP

Smart safety device for women  
Budget: Rs.4000  
S.G. Sowmya  
S. Sowmithri  
N. Shalumeena  
B. Raksha Yavanika  
Ms. T. Shanmughapriya

Monitoring and obstacle detection  
for road safety  
Budget: Rs.25000  
D.L. Meghna Iyer  
M. Nivedha  
B. Mrudula  
III Year  
Dr. S. Poornima  
Dr. N. Sripriya

SnapzAtt  
Budget: Rs. 30000  
Aadhithya B. Kailash  
SAJ Akarvin Raja Prajan  
J Harrison Vijay  
S Keertivaas  
I Year  
Dr. I Joe Louis Paul

Thermal and PIR sensors for  
electricity conservation  
Budget: Rs. 13000  
P Koushika  
Madhuri Shakya (EEE)  
J Neythra (EEE)  
I Year  
Dr. P. Vasuki  
Dr. K. Usha (EEE)

# PG - IFP

SMART Attendance and OD generation  
using - SloT  
Budget: Rs. 20000  
R. Rajkumaran  
Dr. S. Karthika  
Dr. N. Bhalaji

Automatic diagnosis of Alzheimer's disease  
from MRI scans using  
Machine Learning Algorithms  
Budget: Rs. 23000  
R. Sai Arthi  
Dr. A. Shahina

Generating visual patterns on smoke using  
Faraday's Standing wave Principle  
and its analysis  
Budget: Rs. 25000  
R. K. Rema Devi  
Dr. R. Srinivasan

Blockchain based E-voting recording system  
Budget: Rs. 21000  
G. P. Kamalakannan  
Dr. N. Bhalaji

**INTRA & INTER  
DEPARTMENT ACTIVITIES**

# ProCoDe

## IT Intra-Dept Coding Workshop & Contest

On the 28<sup>th</sup> and 29<sup>th</sup> of August, the ProCoDe Club conducted a coding workshop and contest in the department. The objective of this event was to build a healthy relationship between students of all years, and to promote a healthy coding culture amongst students of the department.

The event commenced with a Workshop held in the IT-Dept Seminar Hall, on the morning of August 28<sup>th</sup>. The purpose of the Club, and subsequently the event itself, were briefed to the audience by Dr. T. Nagarajan, the Head of Department, IT, Dr. T. Sree Sharmila and Dr. S. Karthika.

The coding prowess of any student is heavily based on his knowledge of algorithms and strategies employed to crack problems. With this premise, the 2<sup>nd</sup> and 3<sup>rd</sup> year students in the audience were introduced to basic problem-solving strategies. Various algorithms and data structures were discussed at length. Not surprisingly, the students were hooked onto every word of the speakers, M S Vignesh and Murugappan, 4<sup>th</sup> year B. Tech. The session lasted for 3 hours. Post lunch, myriad topics were chosen from online coding platforms such as Codeforces and CodeChef, and were discussed. Participants were asked to come up with solutions on their own. All possible solving methodologies were discussed at the end of the session.

Towards the end of the workshop, experienced coders in the dept stressed on the fact that the various coding platforms not only help coders solve logical problems, but also extend the scope of competition between coders, all over the world, in a healthy and friendly manner. They also encouraged students to take up featured competitions held periodically on a global scale.

The following day, the 29<sup>th</sup> of Aug, a typical coding contest was hosted on HackerRank, which boasted of more than 120 signups throughout the department. Contestants were seated in the department laboratories to complete the task of solving five problems within a stipulated duration of 3 hours. These questions were set by the senior coders including J. Chandramowli, to test the extent of understanding of concepts in the participants, and their ability to write good code.



A small discussion was held after the contest, and the students were enlightened with the solutions. Subsequently, the best 4 coding solutions from each year were identified, and the contestants were awarded with prizes. Prizes were presented to these students by the Head of Department, Dr. T. Nagarajan, amidst applause and appreciation.

### 3<sup>rd</sup> Year

Name	Problems Solved	Time Penalty
Hemnath D	5	205
Uma Maheshwaran	3	194
Varum Kumar	2	112
Narayanan	1	153

### 2<sup>nd</sup> Year

Name	Problems Solved	Time Penalty
NG Deva	4	366
Srinath	3	106
Meghna	3	240
Janani	3	320





# CSWG

## Cyber Security Working Group

The Cyber Security Working Group (CSWG) is an active forum of the Department of IT, comprising faculty members and students. For the past three years, this forum has been conducting a series of activities like seminars, workshops and conclaves in association with various academic and industry partners. The group has been successful in creating awareness among its members, and strives to impart knowledge to the students and the faculty fraternity, through lectures and practical sessions.

This semester, the CSWG conducted workshops on Open Source Intelligence (OSINT) framework and Privacy in Online Social Network (OSN), under the guidance of faculty members - Dr. S. Chithra, Dr. N. Bhalaji and Dr. S. Karthika.

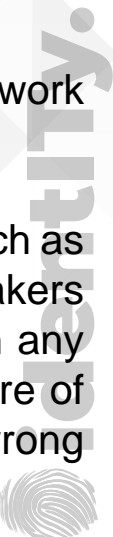
The workshop had an active participation from more than 15 enthusiastic students from the department. The event was organized to ensure it was a hands-on experience for its participants. It was assisted by N. Sri Hari Karthick and Debadyuti Bhattacharya (3<sup>rd</sup> year B.Tech), and research scholars - Ms. R. Geetha and Ms. P. Suthanthira Devi.

The session started with an introduction to the concept of Cyber Security and Open Source Intelligence, along with its use in our everyday lives.

Open Source Intelligence (OSINT) basically refers to a collection of data from public sources, to be used in an intelligence context; this type of information is often missed by link crawling search engines such as Google.

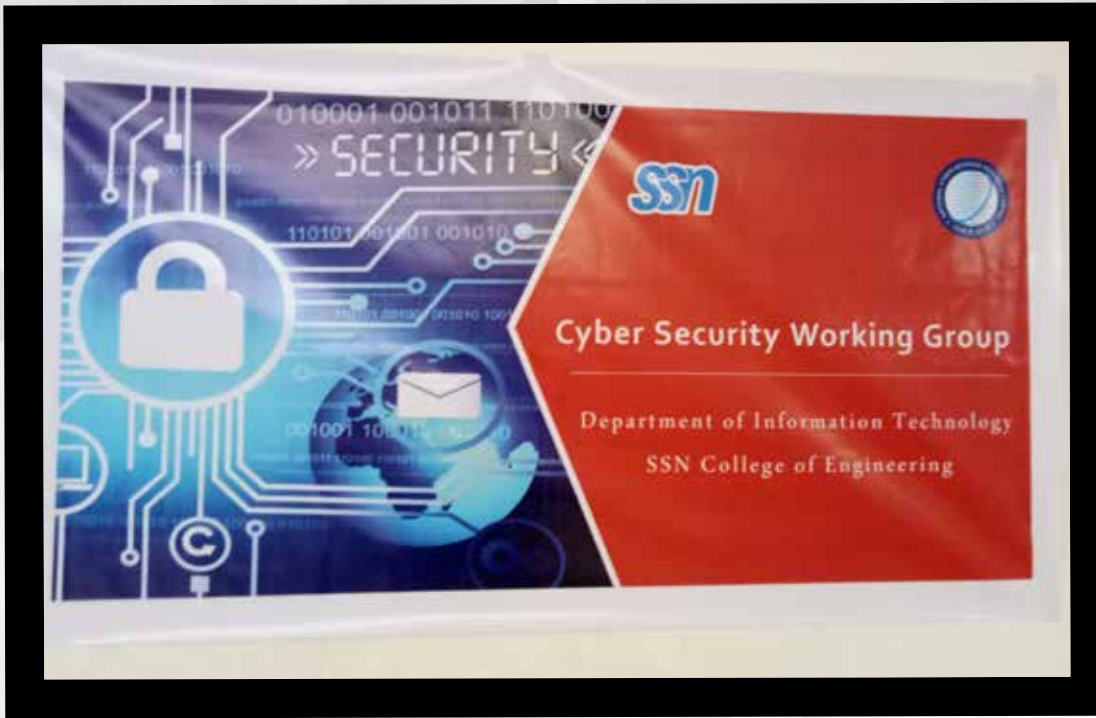
The participants were taught, not just how to use the OSINT framework responsibly, but also to protect themselves from the misuse of it.

Then, the participants were introduced to various frameworks for OSINT, such as Midasearch and Shodan, which are among the most popular ones. The speakers demonstrated how a professional would use these tools to collect information on any person or device on the internet. Following this, the participants were made aware of the major risks involved when this publicly available information lands in the wrong hands.



Basics of topics such as SQL injections, and the theory behind brute-force password cracking were briefed too.

Finally, the participants were informed about the concept of Capture The Flags (CTF), and how they help security professionals hone their skills following which, they were involved in a hands-on session solving beginner-to-intermediate level capture the flags.





# SAARAL 100TH BOOK REVIEW

ABHISHEK G  
IT A, THIRD YEAR

\*தமிழ்நா இருந்தா லேர் பண்ணுங்க பா!!!\*

"தமிழ் என் உயிர் மூச்சு; தமிழன்டா" - இப்படி எல்லாம் வெறும் வாய்ப்பேச்சா இல்லாம தமிழின் சுவையை இன்றைய மாணவர்களுக்குக் கொண்டு சேர்க்கிற ஒரு சிறிய முயற்சி தான் - "புத்தகத் திறனறிதல்!" பொறியியல் கல்வியோட நம் தமிழ் கலாச்சாரத்தையும் பறைசாற்றி வரும் நம் கல்லூரியின் அங்கம் "சாரல் தமிழ் மன்றம்."

கைப்பேசித் திரையிலிருந்து அகலா விழிகளுடனும், கல்லூரிப் புத்தகத்தைத் தவிர வேறு புத்தகங்களைத் தேடா இன்றைய தலைமுறைக்குத் தமிழில் பரவிக்கிடக்கும் அமுதத்தை அறிமுகப்படுத்தும் நிகழ்வு தான் "புத்தகத் திறனறிதல்." நாம எவ்வளவு படிச்சாலும் வேறொருவர் சொல்லுவதைக் கேட்கும் போது நம்ம மனசுல ஆழமாகப் பதிந்துவிடும். இந்த அவசர உலகத்துல ஒரு புத்தகத்தை முழுமையாகப் படிப்பதென்பது கொஞ்சம் சவால் தான்! இப்படி அறிவுக்காக யாசிக்கிற பலருக்கும் நாங்க வாசிச்ச புத்தகங்களை அறிமுகப்படுத்தி அவர்களையும் வாசிக்க தூண்டறது தாங்க எங்க வேலை.

நல்ல கேள்விகள் தான் நல்ல புரிதலுக்கான அடையாளம். புத்தகம் நம் மனதின் எண்ணங்களைப் பிரதிபலிக்கும் கருவி; ஒரே புத்தகம் படிக்கும் ஒவ்வொருவருக்கும் வெவ்வேறு விதமான தாக்கத்தை ஏற்படுத்தும். அதனால் தான் புத்தகத்தைத் திறனாய்வு செய்வதோடு அதைப் பற்றிய கலந்துரையாடலும் நடத்தப்படுகிறது; இது எல்லோருடைய கருத்துகளையும் வெளிப்படுத்தும் களமாய் விளங்குகிறது.

வாரந்தோறும் புதன்கிழமை நடக்கின்ற இந்நிகழ்வில் புத்தகத்துடன் ஒரு திருக்குறள், சில தமிழர் அறிவியல் தகவல்கள் மற்றும் அந்த வாரத்தின் நிகழ்ந்த முக்கிய நிகழ்வுகள் ஆகியனவும் வழங்கப்படுகின்றன. நமது மிகப்பெரிய உரிமையே பேச்சுரிமை தாங்க! அர்த்தமுள்ள பேச்சுக்கள் பல மாற்றங்களுக்கு அடித்தளமாய் அமையும். அதிலும் மாணவர்கள் ஒன்றிணைந்தால் உருவாகும் மாற்றத்தை யாராலும் கணிக்க முடியாது.

# SAARAL 100TH BOOK REVIEW

இப்படி மாணவர்களிடம் சமூகம் சார்ந்த விவாதங்களை முன்னெடுப்பது தான் "வாங்க பேசலாம்!"

தினமும் கணக்கிட முடியாத பொன்னான நேரத்தை கைப்பேசிக்கும் கணினித்திரைக்கும் செலவிடும் போது, வாரம் ஒரு நாள், ஒரு இரண்டு மணி நேரம், நம்ம வாழ்க்கைக்குப் புது அர்த்தம் கொடுக்கிற புத்தகங்களுக்காக செலவிட முடியாதா? - இது தான் எங்க புத்தகத் திறனறிதலோட அடித்தளமே!

இந்த சாதனை 1,2,... புத்தகங்களில் தொடங்கி இப்போது நூறாவது புத்தகத்தையும் தொட்டுவிட்டது!!! காலங்கள் மாறினாலும் அதற்கேற்ப தன்னை மெருகேற்றி இன்றளவும் தனக்கான தனியிடத்தைத் தக்க வைத்துக்கொண்டிருக்கும் புத்தகத் திறனறிதல் எங்கள் சாரலின் அடையாளம்!



ABHISHEK G  
IT A, THIRD YEAR

# STUDENT ACHIEVEMENTS

# STUDENT ACHIEVEMENTS



**PRIYADHARSHINI R**  
IT B, SECOND YEAR

1. 1st at the Interzone Badminton Tournament - Nov 18'
2. Represented Anna University at the South Zone Nationals - Dec 18'

**HARISSH. N**  
IT A, SECOND YEAR

Represented the College at the following Cricket tournaments :

1. SRM Trophy
2. Loyola Trophy
3. SVCE Trophy
4. Anna University Zonals

And his personal achievements include :

1. Participation in the Tamil Nadu Inter district Tournament
2. Participation in the Districts League
3. Participation in the TNCA Round Robin



# STUDENT ACHIEVEMENTS



**ASHWIN C**  
IT A, SECOND YEAR

Represented the College at the following  
Cricket tournaments :

1. SRM Trophy
2. Loyola Trophy
3. SVCE Trophy
4. Anna University Zonals

And his personal achievements include :

1. Runners Up at the Reddy's U-19  
Cricket Tournament

**M. MONISH RAJ**  
IT A, SECOND YEAR

Represented the College at the following  
Cricket tournaments :

1. SRM Trophy
2. Loyola Trophy
3. SVCE Trophy
4. Anna University Zonals

And his personal achievements include :

1. Winners of the VAP Memorial Trophy
2. Participation in the TNCA Round Robin





# STUDENT ACHIEVEMENTS



**MATHESWARAN B**  
IT A, SECOND YEAR

Represented the College at the following Basketball tournaments :

1. Winners at SASTRA Inter College Tournament(Colosseum)
2. Runners Up at the SVCE Basket ball Tournament.
3. Runners Up at the GJEC Fest in Andhra Pradesh.
4. 4th Place at the VNR VJIT in Andhra Pradesh.
5. Participation at the BITS Pilani, Goa Tournament.
6. Runners Up at the IIT-M Basket Ball Tournament .
7. 4th place at the SRM Inter College Tournament.
8. Participation at the Betram, Loyola Tournament.

# STUDENT ACHIEVEMENTS



**ASHWIN DHANASAMY**  
IT A, THIRD YEAR



**SANJAY V.R.**  
IT B, THIRD YEAR

Represented the College at the following Tennis tournaments :

1. Winners at MIT Pune Inter College Tournament
2. Secured third place at SRM Inter College Tournament
3. 4th place at the Betram, Loyola Tournament
4. Runners Up at the Anna University Zonal Tournament



**MURUGAPPAN**  
IT A, FOURTH YEAR

Winner at CodersBit Pan India Annual Coding  
Challenge.

# STUDENT ACHIEVEMENTS



**VIGNESH MS**  
**IT B, FOURTH YEAR**

1. Represented our college at “The Asia Gwalior Regionals Onsite Contest” along with Prof. Dr. I. Joe Louis Paul of our Department.
2. Runners Up at the event of Code Obfuscation at Samhita ‘18 conducted by Madras Institute of Technology.



SSN IEEE Student Branch received  
IEEE India Council Outstanding Student  
Branch Award 2018 at Amrita University.

# FACULTY CORNER

# PUBLICATIONS

- ❖ The following paper has been accepted for publication in IEEE Transactions on Neural Systems & Rehabilitation Engineering:  
T A, Mariya; Gladston, Anushiya; T, Nagarajan; Vijayalakshmi, P, “A weighted speaker-specific confusion transducer-based augmentative and alternative speech communication aid for dysarthric speakers”.
- ❖ Aswin Ramnath, Dhanush and Dr. N. Bhalaji, ASP, IT, presented a paper titled “Smart Rooms automation system by Thermal Sensing” in IEEE-International Conference on Inventive Research in Computing Applications (ICIRCA 2018), RVS College of Technology, Coimbatore (Scopus Indexed) on July 11.
- ❖ Dr. N. Bhalaji, ASP, IT, Dr. S. Chithra, ASP, IT and Mr. K. Kabilan, AP, IT published article titled “Performance Analysis of RPL Protocol for Water Quality Assessment” in IEEE International Conference on I-SMAC 2018 (IoT in Social, Mobile, Analytics and Cloud), Coimbatore, on August 31.
- ❖ Ms. Prithvi (PG Scholar), Dr. S. Karthika, ASP, IT and Dr. N. Bhalaji, ASP, IT published article titled “SMART COLLEGE – Study of Social Network and IoT Convergence” IEEE International Conference on I-SMAC 2018 (IoT in Social, Mobile, Analytics and Cloud), Coimbatore on August 31
- ❖ Dr. S. Kathika presented the following papers in the Third International Conference on ICT, from August 30-31 for Sustainable development (ICT4SD), Proceedings by Springer AISC and indexed by Scopus held at Goa:
  - P. Suthanthira Devi, Dr. S. Karthika, Dr. P. Venugopal, R. Geetha – “Veracity Analysis and Prediction in Social Bid Data”.
  - R. Geetha, P. Sunthanthira Devi and Dr. S. Karthika ‘#BiggBoss – Long Run Event Detection & Sentiment Mining in Twitter”.
- ❖ Ms. R. Priyadharsini, Ms. A. Beulah and Dr. T. Sree Sharmila, ASP, IT published a paper titled “Optic disc and cup segmentation in fundus retinal images using feature detection and morphological techniques” in the journal Current Science, Vol. 115, No. 4, [IF: 0.883], on August 25.
- ❖ Dr. P. Vasuki, ASP, IT and UG students A. Sesupriya and Soundarya Janani have published a paper titled “A Smart Watchdog – Intruder Detection System” in International Journal of Engineering & Technology” Volume 7, No.3, 34 in September.

# PUBLICATIONS

- ❖ Dr. A. Shahina, Prof, IT and UG students Abhishek Pal and Manav Rajiv Moorthy presented a paper titled “G-EYENET: A Convolutional Autoencoding Classifier Framework for the Detection of Glaucoma from Retinal Fundus Images” at the 25<sup>th</sup> IEEE International Conference on Image Processing (ICIP) at Greece, from October 7 to 10.
- ❖ Dr. S. Mohanavalli, ASP, IT, presented the paper titled “Predicting Learning Behaviour of Online Course Learners’ using Hybrid Deep Learning Model”, in the IEEE 6<sup>th</sup> International Conference on MOOCs, Technology and Innovation in Education, MITE 2018 at MLE Institute of Technology, Hyderabad, from Nov 29 – 30.

## Ph.Ds AWARDED

- ❖ Ms. V. Sherlin Solomi, Ph.D. Scholar of Dr. T. Nagarajan, Professor and Head, IT, successfully defended her thesis titled “Development of HMM based Bilingual Synthesizer for Tamil and Indian English by Merging Acoustically Similar Phonemes” on September 20.
- ❖ Ms. Priscilla Scarlet, scholar of Dr. R. Srinivasan, Prof, IT, successfully defended her thesis titled “Performance Analysis of Junctionless Devices on Planar and Nonplanar Structures” on July 27.
- ❖ Ms. R. Ambika, Ph.D. scholar of Dr. R. Srinivasan, Prof, IT, successfully defended her thesis titled “Investigation of Difference Silicon Nanotube Field Effect Transistors” on September 27.
- ❖ Ms. G. Durga, Ph.D. scholar of Dr. R. Srinivasan, Prof, IT, successfully defended her thesis titled “Soft Error Performance of Junction and Junctionless Silicon Nanotube FET-based SRAM and Inverter Chain” on October 16.

# BEST TEACHER AWARD



- ❖ Two faculty members Dr. T. Sree Sharmila, ASP, IT & Dr. N. Bhalaji, ASP, IT were awarded the prestigious **Best Teacher Award** on the Teachers' Day Program.



# GUEST LECTURES DELIVERED

- ❖ Dr. N. Bhalaji, ASP, IT inaugurated Association of Department of Information Technology, Sri Sairam Engineering College, Chennai and delivered a talk on “Internet of Things – Hardware and Software” to the students on July 5<sup>th</sup>.
- ❖ Dr. N. Bhalaji, ASP, IT, delivered a keynote talk on “Blockchain Technologies” during International Workshop on Graph Theory and Internet of Things in Engineering (IWGIE’18), held at VIT Chennai on July 13<sup>th</sup>.
- ❖ Dr. N. Bhalaji, ASP, IT, delivered a talk on “Introduction to Blockchain” in department of CSE, School of Engineering, Vels University, Chennai on August 16<sup>th</sup>.
- ❖ Dr. N. Bhalaji, ASP, IT, delivered a keynote talk on “Demystifying Blockchain” at IEEE International conference on I-SMAC 2018 (IoT in Social, Mobile Analytics and Cloud), Coimbatore on August 30<sup>th</sup>.
- ❖ Dr. N. Bhalaji, ASP, IT, delivered a keynote talk on “Block Chain” at International Conference (ICMCE ’18) held at VIT, Chennai on November 24<sup>th</sup>.
- ❖ Dr. N. Bhalaji, ASP, IT and Mr. K. Kabilan, AP, IT, acted as the resource person in the 2-day workshop on Blockchain and IoT held at Sri Venkateswara College of Engineering, Chennai from October 15<sup>th</sup> – 16<sup>th</sup>.
- ❖ Dr. S. Chithra, ASP, IT gave an inaugural and introductory talk on Blockchain technology in the “National Workshop on Blockchain and its Application in Global Market” organized by SRM Institute of Science and Technology, Chennai on July 27<sup>th</sup>.
- ❖ Dr. S. Sasirekha, ASP, IT, delivered a talk on “REST based design for Web of Things in Smart Environments” in Department of IT, Mahendra Engineering College, Salem on September 18<sup>th</sup>.
- ❖ Dr. N. Sripriya, ASP, IT, gave an invited talk on “Introduction to Speech Processing” in Short Term Training Programme on “Transition from Machine Learning to Deep Learning : Text, Image and Speech Processing” (MLDLTISP ’18) from November 12-17, 2018 organised by the department of Computer Science and Engineering of Sri Venkateswara College of Engineering, Sriperumbudur.
- ❖ Dr. S. Karthika, ASP, IT, handled a session on “Social Media Security” in the 21 days Refresher Course in “Computer Application & Information Technologies Batch VIII” in ASC-HRDC organized by University of Madras, Guindy campus, Chennai on November 27<sup>th</sup>.



# GUEST LECTURES ORGANISED

- ❖ Ms. R. Swathika, AP, IT & Mr. A. Sandana Karuppan, AP, IT organized the following guest lectures:
  - “Role of Trust in Internet of Things” by Dr. Hamid Al-Hamadi, Assistant Professor, Kuwait university on July 12<sup>th</sup>.
  - “Career Guidance & Entrepreneurship Cell” by Ms. Maitri, Senior Business Development Executive, BYJU’S, Chennai on July 24<sup>th</sup>.
  - “Privacy and Security in Online Social Networks (OSN) by Dr. Ponnurangam Kumaraguru, Associate Professor, IIIT-Hyderabad on July 25<sup>th</sup>..
- ❖ Dr. T. Sree Sharmila, ASP, IT and Dr. S. Karthika, ASP, IT organized a guest lecture on “Automotive Application Innovation” by Mr. Murugan Achanaicker, Engineering Manager, Magna Closures, USA under the banner of SSN IEEE Student Branch and WIE Affinity Group on July 19<sup>th</sup>.
- ❖ Dr. P. Vasuki, ASP, IT and Dr. N. Bhalaji, ASP, IT, Alumni Coordinators of IT Department arranged a talk on “How to crack UPSC Exam. The speaker was A. Sowmya, IRS of 2012-2016 batch Alumni, department of Information Technology on August 21<sup>st</sup>.

## REVIEWED ARTICLES

- ❖ Dr. N. Bhalaji, ASP, IT reviewed an article titled “READ: Reliability Aware Data Centres” for Digital Communications and Network Journal, Elsevier in July.
- ❖ Dr. N. Bhalaji, ASP, IT reviewed articles for IEEE Journal on Internet of Things and International Journal of Automation and Computing on October 5<sup>th</sup>.
- ❖ Dr. S. Mohanavalli, ASP, IT, reviewed the paper titled “A new approach for screening of anxiety and depression among the seafarers using machine learning technology” for the journal Informatics in Medicine Unlocked, Elsevier on October 31<sup>st</sup>.
- ❖ Dr. S. Karthika, ASP, IT and Ms. T. Shanmugapriya, AP, IT, reviewed manuscripts for ACM CHI Conference on Human Factors in Computing Systems on October 31<sup>st</sup>.

# FACULTY ACHIEVEMENTS

- ❖ Dr. N. Bhalaji, ASP, IT, was the resource person in the 1-day FDP program on Blockchain sponsored by ACM-W Chennai Chapter at School of CSE, SRM University, Chennai' on October 29.
- ❖ Dr. N. Bhalaji, ASP, IT, completed the following online certification courses.
  - IBM Certified block chain essentials.
  - SWAYAM – MBA for Engineering College on November 25.



- ❖ Dr. N. Bhalaji, ASP, IT and Jayaram Hariharakrishnan (Final year IT) represented SSNCE in Anchors meet held by EY GDS, Bengaluru on July 20.
- ❖ Dr. S. Karthika, ASP, IT, organized Vehicle Awareness Program for Women under IEEE WIE Affinity group on September 7.
- ❖ Dr. E. M. Malathy, AP, IT has successfully defended her PhD Viva Voce Examination on thesis titled “Optimized QoS Vertical Handover Decision Techniques in Next Generation Wireless Network” at College of Engineering, Guindy, Anna University.



- ❖ Dr. S. Sasirekha, ASP, IT and Mr. R. Vinob Chander, AP, IT attended a 2-day ERPNext Conference in Mumbai from October 26 to 27.
- ❖ Dr. N. Bhalaji, Dr. S. Chithra and Dr. S. Karthika, ASPs, IT, visited “Rapidqube Digital Solutions” and discussed about Research collaboration on November 21.

# FDP on Data Analytics

## A Bootcamp with Hands-on Using Python

- ❖ Dr. P. Vasuki, ASP, IT, Mr. V. Sivamurugan. ASP, IT, Dr. S. Poornima, ASP, IT, Dr. N. Sripriya, ASP, IT and Ms. T. Shanmughapriya, AP, IT, organized a 5-day FDP from November 26-30 on “Data Analytics – A Bootcamp with Hands-on using Python” with 41 participants from various industry and academic institutions. Industrial experts from Ernst & Young, LatentView Analytics, ThoughtWorks, Saama Technologies, Thingks Informatics and academic experts from SSN and VIT.



# RESEARCH SCHOLARS' COLLOQUIUM ON SMART TECHNOLOGIES

❖ Dr. S. Mohanavalli, Dr. S. Chithra, Dr. N. Bhalaji & Dr. S. Karthika, ASP, IT, organized a 2-day Research Scholars' Colloquium on Smart Technologies on August 20 and August 21. The speakers delivered talks on smart agriculture, smart healthcare, role of ML and big data in smart environment. The following external speakers delivered expert talks:

- Dr. M. Saravanan & Dr. P. Satheesh Kumar, Ericsson & Co.
- Dr. S. Chithrakala, Associate Professor, CEG, Anna University.
- Mr. R. Selvakumaresan, Head-Industrial Analytics, IoT, TCS.
- Dr. M.D. Selvaraj, Dean Research & Associate Professor, IIITDM.

The internal speakers were Dr. R. Srinivasan, Prof, IT, Dr. N. Sripriya, ASP, IT & Mr. K. Kabilan, AP, IT along with the organizers. The research scholars Mr. K. B. Sundharakumar and Ms. R. Geetha also shared their research contributions in the event. There were many active participants (research scholars and faculty members) from Sri Sairam Institute of Technology, Kalasalingam Academy of Research and Education, Prince Dr. K. Vasudevan College of Engineering and Technology, Sathyabama University, Tagore Engineering College, Valliammai Engineering College, VISTAS and SRM University.



# ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

- ❖ Dr. N. Srinivasan, Prof, IT, Dr. A. Shahina, Prof, IT, and Dr. T. Sree Sharmila, ASP, IT, organized a 2-day workshop on “Artificial Intelligence and Machine Learning” on September 6 and 7. Engaging sessions by the following speakers focused on the theme and the participants were excited throughout the workshop. Dr. Kaushik Mitra, Assistant Professor, Department EE, IIT Madras, Mr. Senthil Kumar, Co-founder, Geomeo Infomatics, Dr. A. Shahina, Professor, department of IT, SSNCE, Dr. T. Nagarajan, Professor & head, department of IT, SSNCE, Dr. R. Srinivasan, Professor, department of IT, SSNCE, Mr. S. Sundaranathan, Associate Director, GTO, Cognizant Technology Solutions, Dr. T. Sree Sharmila, Associate Professor, department of IT, SSNCE, Dr. Sutanu Chakraborti, Associate Professor, department



# ALUMNI CORNER

# ALUMNI TALK SERIES

SEPTEMBER 2018

A series of talks by three esteemed alumni of Department of Information Technology, were conducted for the students at the IT Seminar Hall, on 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> of September 2018.

The Alumni- Talk Series was kickstarted on 3<sup>rd</sup> September, by an engaging talk by two film- directors, Mr. Pradeep and Mr. Kamal, who belong to the 2015 and 2014 batches respectively. They were both extremely passionate about this field even during their college life, and managed to maintain a good balance between passion and studies.

Upon graduating, they worked for two years. Even then, they made it a point to pursue their passion, and worked extremely hard at making a name for themselves. Now, their hard work had borne fruit, as they are both set to direct films with big actors as leads.

They shared all their experiences and how they dealt with different situations that they faced. They explained a lot about projecting ourselves and different tactics that will be useful in any walk of life. These were valuable takeaways from this session. The session came to an end with questions posed about entrepreneurship and the film industry. Overall, the session was an encouragement to pursuing different opportunities and ways to "make time" for things we love doing.



# ALUMNI TALK SERIES

SEPTEMBER 2018

The second day was a talk by Mr. Sri Vishnu Kumar, a 2017 graduate. The session dealt with better utilization of time while studying at SSN. He gave various tips and tricks on how to study various subjects by relating them to one another, and how to make time for pursuing areas that are of interest.

He also spoke about how he landed various internship opportunities, and how he managed to make a decision regarding higher studies and work. He touched upon the various factors that students need to work on for applying to colleges for higher studies in the US and UK. Pointers regarding the different key things that contribute to us utilising our time better were also spoken about.



Overall, the session was extremely informative and was really helpful in realising what, where and how to work upon in improving ourselves as individuals ready to take on the world.



# ALUMNI TALK SERIES

SEPTEMBER 2018

The Alumni -Talk Series came to an end, with a talk by Mrs. Jothy Ganesan, Batch of 2004 from IT, on 5<sup>th</sup> September. Her engaging talk centred around the shift from traditional Data Warehousing, to Big Data.

Mrs. Jothy, currently a senior architect at Wipro Technologies, started by introducing various jargons used in the world of Big data and the industry. She focussed on the Five V's of Big data, and the various stages of processing undertaken in practical situations. Students were also exposed to the working of Cloud platforms and IoT (Internet of Things).

Throughout the talk, Mrs. Jothy stressed on the skillset that the industry expects its professionals to possess. She was concise and articulate in her presentation, and brought out the essence of a dynamic Industry with exponentially developing scope.

The third and concluding day of the Alumni Series Talk, established itself to be an eye-opener for students aspiring to work in reputed organisations. Nonetheless, it painted a true picture of the industry, while presenting its wholesome facets to the young minds of the department.



LALITHALAKSHMI  
IT B, FOURTH YEAR

# BRAINCUFFS

A SOWMYA, IAS

Batch of 2016



# BRAINCUFFS

A SOWMYA, IAS

Batch of 2016

A million questions "Where is the country going ?", "What happened to all the tax money that we paid last year?", "If this is how it is going to be, why should I even pay taxes this time ?", "Where is the prime minister going all the time?", "Why aren't the streets clean yet? "And Most Famously **"THE NATION WANTS TO KNOW..."** Well, don't we all want to know ?! Of course, we do. We all do. But, Are we ready to seek answers and ready to listen to the people who have solutions? Sadly, The answer and the truth greets us is a big NO...

What do we do really do about these rants then? Common sense would dictate us to ask those questions from the people who are actually involved in the issue, and people from both the sides. But we don't do that. We only prefer to see and believe in what is there in our facebook feed or whatsapp forwards which are full of nit-pickings and fault findings, today. There's a scientific reasoning behind this. Most of the articles have a pessimistic tone in them and Many research papers say that, it is easy for human beings to be pessimistic rather than being optimistic.

Being pessimistic had an evolutionary advantage in the past, where homosapiens had to be alert all the time and be prepared for any kind of attack. But in today's world dominated by

intellectual prowess and social contracts, trust is the most important construct. Usage of social media and personal media to gather news, rather than just connecting with friends leads to loss of this trust. The trust that humans generally have in their fellow human beings, trust that citizens have on their own elected governments, trust that people have on the established system of standards etc...

The point here is not to say that the government and the system are perfect, because they are not. It is to say that a change is necessary and inevitable, but you got to give appropriate time for things to happen. Everything we desire, from reduction of inequality, limiting poverty, empowerment of women, abolition of caste, upliftment of rural population, replenishment of lost environment etc... will certainly happen - sooner or later. Rome or Sydney (or Madurai for that matter) was not built in a day. Good things take time to happen. We have to do our small part to make that change happen.

Meanwhile, we have to learn to appreciate all the awareness and existing system already around us. Here again, I am not asking you to stop criticising the negatives. In fact, as Churchill once said, "Criticism may not be agreeable, but it is necessary.

# BRANDS IN CONCUSSION

It fulfils the same function as pain in the human body. It calls attention to an unhealthy state of things. "All I am asking you is to do constructive criticism. To believe there is a way out of the problem, to do your research, to search for practical solutions and then criticise. Otherwise it is just like cancer, pain without any cure. Chronic which makes the world a living hell for everyone.

Consciously creating optimism in our minds helps us overcome this pain. We'll be able to find solutions, only if we believe that there is one. Even if we are not able to find one, at-least we would have been happy during that period, believing that there is. Ultimately happiness is what matters. Social media just creates an illusion that, everything around us is a swirling netherworld. Well, Truth be said, it is not. This negativity that I am talking about, is not even from fake news and paid news. That is a different pandora box altogether. This is pure denigration of everything between the ground and the sky, without giving any thought to the other side of the narrative.

These negative posts and the thoughts inspired from them, are just like cuffs in our brain. They prevent us from seeing the beauty of the reality. These cuffs break open, only when we open our eyes & ears, and seek for those answers ourselves. Let's shatter the cuffs. Optimism is the hammer that you are searching for.

A SOWMYA, IAS  
Batch of 2016

**STUDENT TECHNICAL  
ARTICLES**

## இணையபோர்கள் (IoBT) – அமெரிக்க இராணுவம் மற்றும் ஆராய்ச்சியாளர்களின் அடுத்த அதிர்வு

போர்க்களம் என்றால் நம் நினைவிற்கு வருவது மஹாபாரதம். கர்ணன் தன் நெஞ்சில் அம்பினைத் தாங்கியபடி தேரின் சக்கரத்தில் சாய்ந்து உயிருக்கு போராடிக் கொண்டு இருக்கும் போது, கண்ணன், "உள்ளத்தில் நல்ல உள்ளம் உறங்காதென்பது..." என்று பாடியபடி நடப்பார். போர்க்களம் என்று நமக்கு தெரிந்த இந்த காட்சியை சற்றே பிரம்மாண்டமாக, ஆக்கபூர்வமாக பாடுபலியில் பார்த்து வியந்தோம். "இதெல்லாம் சினிமால்தான் பா நடக்கும். மிஞ்சி போனா செயற்கைகோள்களின் உதவியை நாடலாம்." என்ற எல்லாருக்கும் ஒரு ஆச்சர்யமூட்டும் செய்தி. இனி காணொளி விளையாட்டுகளில் விளையாடுவது போல் நம் படைவீரர்கள், படைதளபதிகள் போரை எதிர் கொள்வார்கள்.

தகவல் தொழில் நுட்பத்தின் அதீத வளர்ச்சியின் ஒரு முன்னுதாரணம் இன்று நாம் பயன்படுத்தும் இணையம். இதனால் நமக்குக் கிடைத்த இரண்டு மறுக்க முடியாத பயன்பாட்டு முறைகள் - இயந்திரநுண்ணறிவு (Machine Learning) மற்றும் இணைக்கப்பட்ட கருவிகள் (Networked devices). எந்த ஒரு கருவியும் புத்திசாலித்தனதுடன் இருந்தால் அவைகள் நம்மை விட்டு நுங்குவதில்லை. மேலும், நம்முடன் அவை தொடர்பு கொண்டு நம் தேவைகளைப் புரிந்து அல்லது கட்டளைகளை ஏற்று செயல்படுமாயின், அவைகள் தான் இன்றைய மனிதனின் உற்றதுணையாக இருக்கும் என்பதில் துளி அளவும் ஐயம் இல்லை.

இனி, இந்த தத்துவம் இராணுவத்திற்கும் போர்க்களத்திற்கும் பொருந்தும். தகவல் தொழில்நுட்பக் கருவிகளைக் கொண்டு இராணுவவீரர்கள் போரிடும் நாள் வெகு தொலைவில் இல்லை. இன்னும் 20 முதல் 30 ஆண்டுகளுக்குள் இவை எல்லாம் சாத்தியம் என்று ஆராய்ச்சியாளர்களும் தொழில்நுட்ப வல்லுனர்களும் நம்புகின்றனர்.

அமெரிக்க இராணுவ ஆராய்ச்சி ஆய்வகத்தின் தலைவர், அலெக்ஸாண்டர் கோட் இதைப் பற்றிக் கூறுகையில், "செயற்கை நுண்ணறிவுத் திறன் மற்றும் இயந்திர கற்றலின் (Internet of Intelligent Things) வளர்ச்சியை முன் நிறுத்தி இந்த ரோபோக்களை உருவாக்கலாம். செயற்கை நுண்ணறிவு கொண்டு உருவாக்கப்படும் இந்த வகை மனிததானியங்கிகள் (Robots) போர்க்களத்தில் பறந்து தாக்க, நடந்து செல்ல, ஊர்ந்து செல்ல அல்லது மற்ற ஆயுதங்களை இயக்க உதவும் திறனோடு உருவாக்கப்படும்.

ரோபோக்களைத் தயாரிக்கும் போது பல விஷயங்கள் கருத்தில் கொள்ளப்படும். அதில் சில சிறியதாகவும் சில பெரியதாகவும் உருவாக்கப்படும். சிறிய பூச்சி போல இருக்கும் தானியங்கிக் கருவிகள் உணர்வீ (Sensor) போல பயன்படுத்தலாம். உருவ அளவில் பெரியதாகத் தயாரிக்கப்படும் தானியங்கிகளை பயணவாகனங்களாக, பொருள்களை ஏற்றிச் செல்லும் வாகனங்களாகப் பயன்படுத்திக்கொள்ளலாம். இதனுடன் 'இணையதானியங்கி'-கள் (Cyber-Robots) தயாரிக்கவும் திட்டமிட்டுள்ளோம். இவை, கணினிகள் மற்றும் அதன் வலையமைப்புகள் இருக்கும் இடங்களைத் தொடர்பு கொண்டு தனக்குக் கிடைக்கும் தகவல்கள் உண்மையானவையா என்று சரிபார்க்கும். இதனால் எதிரிகளின் தீம்பொருள் (Malware) மூலம் வரும் தாக்குதல்களைத் தடுக்க முடியும்," என்று கூறுகிறார்.

போர்க்களத்தில் இராணுவவீரர்கள் சிறப்பாகச் செயல்பட உதவும் வகையில் உருவாக்கப்படும் கருவிகள் தான் இணையபோர்க்களம் (Internet of Battlefield/Battle things - IoBT). இந்தப் புதிய முயற்சியில் எளிமையாக பயன்படுத்தக்கூடிய உயிரியளவு (Biometric Devices) உபகரணங்கள் முக்கியத்துவம் வாய்ந்ததாக கருதப்படுகின்றன. உயிரியளவு தொழில்நுட்பம் மூலம் இராணுவவீரர்கள் தங்களின் எதிரிகளை அடையாளம் காணமுடியும், தங்கள் கட்டளைகளை மற்றவீரர்களுக்குத் தெரிவிக்க முடியும், தங்களுடன் இணைப்பில் இருக்கும் போர்க்கருவிகளைத் தொலைவில் இருந்தே இயக்க முடியும்.

இராணுவத்தை ரோபோக்கள் கொண்டு செயல்படுத்துவது எளிதான காரியம் இல்லை. நாட்டின் போர்விதிகளைப் பின்பற்றியாக வேண்டிய கட்டாயத்தில் இராணுவத்தினர் இருக்கிறார்கள். அதனால், மனிதர்கள் தான் இந்த தானியங்கிகளை இயக்கவும், அவற்றிற்குக் கட்டளையிடவும், அவை எடுக்கும் முடிவுகளைச் சரிபார்த்து அங்கீகரிப்பார்கள் என்ற அனுமானதுடன் இவற்றை செயற்கை நுண்ணறிவு முன்னேற்றத்திற்கான சங்கத்தில் (Association for the Advancement of Artificial Intelligence (AAAI) ) முன்மொழிகிறார் கோட்.

"உண்மையிலேயே இராணுவத்திற்கு இது சவாலானது. ஆனாலும், இதை நாங்கள் ஏற்றுக் கொண்டு சிறப்பாக செய்வது விரும்புகிறோம். இது எங்களுக்கு சிறந்த ஆய்வாளர்களுடன் பயணிப்பதுடன் பலதொழில்நுட்பங்களைக் கற்றுக்கொள்ள உதவும். அனைத்திற்கும் மேலாக, தேசப்பற்றுடன் இராணுவத்தில் இணைந்து இந்த சமூகத்திற்கு உதவியாக இருக்கும் சில சிறந்த துணைகளைத் தருவதால் நாங்கள் மிகவும் மனதிருப்தியுடன் பணியாற்றி வருகிறோம். எங்களுடன் இணைந்து பணியாற்றும் மாணவர்கள், முதலாட்டாளர்கள், தொழிலதிபர்கள், மற்றும் சில வளரும் நாடுகளும் எங்களை ஊக்குவித்துக் கொண்டே இருக்கிறார்கள்," என்று கூறினார் கோட்.

சவாலான இந்த வகை தானியங்கி இயந்திரங்களை உருவாக்க செயற்கை நுண்ணறிவின் சமூககால ஜாம்பவானாக விளங்கும் நியூரல் நெட்லாக்கள் (Neural Networks) உதவும் என்று ஆய்வாளர்கள் கண்டறிந்துள்ளனர். ஆனால், இதனை சிறப்பாக உயர்தரத்திலுள்ள இயக்க எண்ணிலடங்கா பயிற்சியளிக்கும் உதாரணங்கள் (Training instances) தேவைப்படுகின்றன. இதன்மூலம், தானியங்கி இயந்திரங்களால், சேகரிக்கும் படங்களில் (images), ஒலிஅமைவு (audio) மற்றும் இலக்கமுறை (digital) வாக்கியங்களில் இருக்கும் தகவல்கள் சேகரிக்கப்படும். பொதுவாக, போர்க்களத்தில் கொந்தளிப்பான மற்றும் திடீரென்று மாற்றங்கள் நிகழும் சூழ்நிலை காணப்படும். அதனால், தானியங்கி இயந்திரங்கள் மிகவும் புத்திசாலித்தனமாகச் செயல்பட வேண்டும். அவ்வாறு செயல்பட உதவும் பயிற்சித் தகவல்கள், காணொளியாக, புகைப்படங்களாக கொடுக்கப்படும். அதை வைத்து இயந்திரகற்றல்வழிமுறைகள் மூலம் முக்கிய தகவல்கள் சேகரிக்கப்பட வேண்டும்.

ஐ.ஓ.பி.டி-யில் இருக்கும் வன்பொருள் (hardware), சிறியதாக, எளிதில் மற்ற இயந்திரங்களுடன் பொருந்தக்கூடிய, குறைவான மின்ஆற்றலை பயன்படுத்தும் வகையில் தயாரிக்கப்படும். இந்த கருவிகளின் செயலாற்றலை அதிகரிக்க, அதனுள் இருக்கும் கணக்கீடு விஷயங்களைத் தனியாக வேறொரு இடத்தில் அமைக்கப்பட்ட மையத்திற்கு (wireless, distributed environment) பரிமாற்றம் செய்யலாம் என்று ஆய்வாளர்களால் பரிந்துரைக்கப்பட்டது. இதனைச் செயல்படுத்த, பகிர்நதளிக்கப்பட்ட மற்றும் ஒருங்கிணைந்த அறிவார்ந்த அமைப்புகள் மற்றும் ஒத்துழைப்பு ஆராய்ச்சிகூட்டணியில் (Distributed and Collaborative Intelligent Systems (DCIST) and Collaborative Research Alliance (CRA)) அமெரிக்க இராணுவம் முதலாட்டு செய்துள்ளது. ஐ.ஓ.பி.டி ஆராய்ச்சியை சிறப்பாகக் கையாளும் நோக்கங்கொண்ட திட்டங்களை அமெரிக்க பல்கலைக் கழகங்களுடனான ஒரு கூட்டு முயற்சியில் அமெரிக்க இராணுவம் இறங்கியுள்ளது.

இன்று திரையில் நாம் காணும் பக்ஷிராஜன், வசூகரன், மற்றும் சிட்டியின் அனைத்து செயல்களுமே மிக விரைவில் மெய்யாகும். மனிதனுக்கும் இயற்கைக்கும் இடையேயான மற்றொரு பரிணாமம் ஐ.ஓ.பி.டி-யால் உருவாகிக் கொண்டு இருக்கிறது. அதனை, சரியான முறையில், அனைத்து தேசங்களும், அரசியல் கட்சிகளும் பயன்படுத்திக் கொண்டால் போர்க்களத்தில் ஏற்படும் உயிர்இழப்புகள் அதிக அளவில் குறையும். மனித உயிர் மற்றும் இயற்கையின் முக்கியத்துவத்தை உணர்ந்து தொழில்நுட்பங்களை பயன்படுத்துவோம். இனி வரும் காலங்களில் அழகிய மாலைப் பொழுதில், ஆதவன் மறைய மனமின்றி தன் கதிர்களை நமக்கு விட்டுச் செல்லும் போது மட்டும் செக்கக் சிவந்த வானத்தை நாம் கண்டுகளிக்கலாம்.



GEETHA R  
RESEARCH SCHOLAR

# FOODCHAIN IN BLOCKCHAIN

AKSHARA KANNAN  
IT A, THIRD YEAR





Cooking has always been an integral part of our life. It has proven to be a healthy and essential pastime for people to take up, amidst their busy lifestyles. Unsurprisingly, a lot of the technological jargon that we hear each day, have made their mark even in the food industry.

Let's say I'm cooking a bowl of pasta for dinner. I would essentially need to cook the pasta, sauté the vegetables, and mix them together with a flavourful sauce.

My packet of pasta says it's been made with organically grown wheat. With increasing awareness among people, there is a need for assurance that the fruits, vegetables and food products that we eat, are actually delivered to us as guaranteed and promised.

Ambrosus, a Swiss startup, is introducing the use of Blockchain Technology to improve traceability of food products, security from food fraudulence, and trust within the global food market.

Simply put, Blockchain technology is a way of storing and sharing information across a network of users in an open virtual space. Blockchain technology allows for users to look at any/all transaction(s) simultaneously and in real-time. Additionally, since transactions are not stored in any single location, it is almost impossible to hack the information.

Ambrosus uses a customized combination of robust sensors, biosensors and food tracers to assess and monitor in real-time the physical attributes and location of the food items, on its journey from farm to store. Physical attributes could include farm origin / factory details, batch numbers, expiration dates, storage temperatures and shipping details.

Blockchain technology could bring advantages to every player within the supply chain.

- Consumers - The transparency and openness of the blockchain reassures consumers that the food they are buying and eating is exactly what the label says it is.
- Producers - Any attempts to tamper with a food item as it moves through the supply chain can be immediately identified and prevented before the food reaches the retailer.
- Retailers - Should a potentially hazardous food product make it onto the shelves, stores can identify and remove only them. This eliminates the need for costly batch recalls.

My next step in the recipe would be to prepare the sauce, which is in fact available in processed form in plenty. A walk down the aisle of any supermarket would show us the myriad types of processed products available. To reign in a systemized method of providing the best product among the lot, the novel technologically advanced system of automation is employed.

Any food processing plant requires its raw materials to be assessed based on their size, shape, colour and its quality, and sorted for future processing. A fact relatively unique to food processing is that the feedstock is often not uniform.

For a long time, only humans were capable of making these complex decisions at a reasonable speed. But now, a significant amount of sorting has been automated, using Artificial Intelligence. Pioneers in food sorting like TOMRA, use smart cameras, Near Infra-Red (NIR) spectroscopy, X-rays, and lasers to measure and quickly analyse every aspect of the item as it moves along. While older automatic sorting systems were just focused on sorting the bad from the good, Machine Learning creates the capability to sort foods for their optimized use.

Smart processing techniques improve utilisation of the raw materials and significantly reduce the waste produced. This automation also leads to reduction in bottlenecks in the production process, improving yields.

If my innovative side were flourishing, I would probably even try out different recipes for cooking the same bowl of pasta. Recipe-generating apps are being developed, to not only help people cook healthy meals without much wastage, but also to bring in an element of creativity in the meals cooked. They create custom recipes using ingredients present in the kitchen, sequentially providing steps for the same.

One of these apps, Plant-Jammer, using AI Technology, works by mapping out ingredients' elements based on their aromas, creating a sort of flavour fingerprint. They use the aromatic profiles to draw links between seemingly disparate ingredients, suggesting to the user which foods would go well together.

Most recent technologies such as plasmonic materials (cue Harry Potter's invisibility cloak), personalised medicine, augmented reality, blockchain, algorithms for quantum computing and AI, have the capability to be applied to any field, to provide ground-breaking solutions to the challenges we face. It all boils down to us broadening our scope, and thinking outside the proverbial box.

Look no further than Silicon Valley (American comedy television series) for inspiration; who would have thought that, at the end of the day, it would be smart refrigerators that would come to the rescue of a particular Pied Piper team!

# QUANTUM COMPUTING

MRUDULA BOSS  
IT A, THIRD YEAR



In this age, we live in the generation of computers, we always look for new and pathbreaking ways to make our lives easier. This depends much upon the advancement of technology. Computer design, or more importantly COMPUTING, has used the concept of bits as its most basic piece of information. Quantum computing, deviates from this perspective (called classical mechanics), and uses the concepts provided by quantum mechanics.

## **What is Quantum mechanics?**

Classical mechanics fail when we move further into the scale of atoms and its subatomic particles. In general, quantum mechanics deals with the behaviour of matter and its interactions with energy on the scale of atoms and subatomic particles.

The advances of quantum mechanics dates back to the work of Max Planck and Albert Einstein. But an important theory is the Bohr model of the atom, where he proposed that electrons transition between discrete energy states where there is no in-between. This lays the foundation for quantum computing concepts.

Now, over to the basics of computing using quantum principles. There are two features we need to know about, both of which can be explained by what is known as a Schrodinger's cat. This is an experiment which goes like this:

*Imagine a cat is put inside a sealed box with an explosive. The explosive may or may not kill it. So, the cat is either alive or dead to us, until the box is opened. In other words, we can say that the cat is both alive and dead.*

So, unless we make an observation (open the box), the system (the cat) can exist as a mixture of all possibilities. This is called quantum superposition. Also, the state of the cat and the explosive is intertwined. The cat is dead if there is an explosion, and otherwise. This is something called quantum entanglement, which is when two or more particles interact with one another closely, the state of each particle cannot be described independent of the state of the other.

## **How does quantum computing work?**

Instead of bits, quantum computing uses a computation unit called Qubit, which can represent information. It has, like bits, two states: the zero state and one state. But it can exist in both the states at the same time, exhibiting superposition and entanglement properties. This leads to an idea more powerful than parallel computing. Huge amount of information can be stored in superposition, producing a radical change in the way we perceive data and computing.

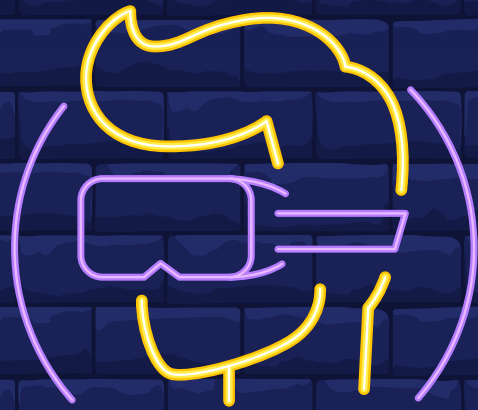
But much lies in the formulation of quantum computing algorithms which utilise the full benefits of quantum concepts. Development in this field can lead to large scale repercussions, in every imaginable way possible. It's a long road ahead, but an exciting one, definitely!

# ARE YOU REALLY E-SAFE?

RIYAZ AHMED  
IT A, THIRD YEAR



With the advent of social media, it has become relatively easier to stay in touch with our friends and our loved ones. But not many realize that everything comes with a cost. Social media is a double edged sword. And a sharp one at that too. Selfies at Barbeque nation, all the possible views of that chocolate cake and cute pictures of your children. While these do help you win those much needed likes and comments, as said earlier, the price is heavy. Sunday afternoon when you checked into barbeque nation and widely broadcasted it on your Facebook profile, bob knew you weren't at home then. Who is bob? That one friend request you simply accepted to have a higher friend count. The events to come are fairly certain, another post; but this time, it's a robbery. And let's get a little serious here. Your online identity holds much more data than what you can possibly comprehend of. If your WhatsApp profile picture is with your child near his school, that itself is a threat to your and your child's privacy. Bob now knows which school your child studies in and what he looks like. The events to come are once again, fairly certain. Safeguarding one's privacy with respect to his online identity will play a major role in the days to come as everything in this world is on the road to being digitalized. It's simple. Before you do anything online, think twice as to whether you should really be doing that or not. Is sacrificing your privacy worth that meagre 100 likes?



# AUGMENTED REALITY [AR]

JANANI BHARATHI  
IT A, THIRD YEAR



Is your Reality Real? Maybe or maybe not! I don't know about you, but I have always pondered over the authenticity of my existence. I often end up asking myself, where am I? What are we? Are we a high-tech science project of some super intelligent species? Maybe these questions in my head drew me to this new and exciting technology – AR, Augmented reality.

AR is something which operates in the gray area along a thin line that separates reality and virtual reality. To put it in technical terms, Augmented reality (AR) is the real-time use of information in the form of 3D models, text, graphics, audio and other virtual enhancements, integrated with real-world objects.

Though AR appears to be a term associated with high tech and high-speed computers, intuition for this idea was born as early as 1962. Morton Heilig, a film maker first created sensorama, virtual simulator of sound, visuals, vibration and smell.

Currently Metaio, a leading company in providing AR solutions, had come up with a mobile based app Junaio. Junaio is a live browser. Ever heard of the term live browsing? Live browsing allows you to retrieve information about real time objects by pointing your mobile camera at it. Pretty awesome right?

AR is also expected to be a revolutionary pioneer in advertisement industries. Every ardent cricket fan might have noticed digital score cards and advertisements overlaid on the cricket fields but most would have failed to realise that it was AR. BMW has been the pioneer in introducing AR induced heads up display. It displays speed, navigation onto the windscreen.

AR also finds applications in medicine industry. It allows to overlay digital bone structure onto the patient thus making the surgeons job a less tedious.

IKEA is also using AR for real time instructions and manuals. Another primary application of AR is gaming. Pokemon Go which had people run crazy on the streets in search of virtual little creatures is the best example of much visual impact AR can create.

AR applications are developed in UNITY platform using Vuforia or C#. Pokemon Go was written using Unity 3D.

The day when grey area blends into the reality and the AR becoming the new reality is not far away. Kind of scary but exciting too! I am excited for the new 'Augmented' Reality.

# THINK OUT OF THE BOX

HARINI M  
IT A, THIRD YEAR



On May 2018, my friends and I, got an opportunity to attend a 6-day “Out ofBox” Camp, that was held in Google Developers Lab, Bangalore. It was conducted by GeeksUp, with the aim to identify and empower the ambitious individuals from Tier-2 and Tier-3 cities across the nation and provide the platform to leverage their skills. It was a golden chance to get inside most of the dream-companies like Qualcomm, Microsoft, etc.

On the very first day, we were given a warm welcome. Each group had to come out with an innovative solution for a project, that was assigned to it. Projects that were given imitated real - world issues that we would face in a corporate setting.

There were participants from various places in Tamil Nadu and Bangalore. The organisers split us all up in such a way that, each team was formed at random from participants belonging to different institutions. The interaction, and subsequent teamwork that was established in this new group of friends, gave us a huge amount of exposure.

Over the course of 6 days, we felt like we covered an extra mile in our career by developing a digital resume. We were given a chance to interact with CEOs of several Start-up companies. We gained a lot of knowledge about the different products that were being developed there, along with the technology that was currently used by the industry to finish their product.

We also realized that, as an engineer, we must be aware of laws that bind us with the company we work in. The amount of exposure we got in just a few days was enormous. As second year college students, it was the first time we were given this sort of exposure to meet and interact with many companies and also learn what we actually require and what we have to focus on, enroute a successful career.





**BOOK & MOVIE  
REVIEW**

THE RICHARD & JUDY NUMBER ONE BESTSELLER

By the author of

*The Kite Runner*

# A Thousand Splendid Suns



HARINI S  
IT A, THIRD YEAR

## A THOUSAND SPLENDID SUNS

# A THOUSAND SPLENDID SUNS

Novel - A Thousand Splendid Suns  
Author - Khaled Hosseini

A Thousand Splendid Suns is the second book by best-selling author, Khaled Hosseini. This novel revolves around two Afghani women who are tossed around by life until they find each other, as the story unravels with them, amidst a warring country.

## **About the Author:**

Khaled Hosseini is an Afghan-born American novelist and physician. In March 2001, while practicing medicine, Hosseini began writing his first novel, *The Kite Runner*. This debut went on to launch one of the biggest literary careers of our time. Today, Khaled Hosseini is one of the most recognized and bestselling authors in the world. His books, *The Kite Runner*, *A Thousand Splendid Suns*, and *And the Mountains Echoed*, have been published in over seventy countries and sold more than 40 million copies worldwide.

## **Plot:**

This novel revolves around two Afghani women who are tossed around by life until they find each other, as the story unravels with them, amidst a warring country. Mariam, an illegitimate child of a Zamindar, gets carried away by the love of her father only to find herself unwelcome at her own father's house, and has to face the death of her mother. Like she hasn't already faced enough she is married off to an abusive and furious Rasheed, far away in Kabul. At the same time, a little girl named Laila, has her way with life until she suffers from the pain of separation of her best friend, Tariq, whom she eventually falls in love with. She loses her parents in the war and is forced to marry Rasheed.

Mariam and Laila have a sour start and the birth of Laila's first child, Aziza, changes things between them and doesn't fail to leave a beautiful mark in our hearts. Mariam sheds her inhibitions and lets herself love Laila and her children like they were her own. The story ends with how they part ways, which is bound to take you through a jolt of emotions - sadness, fright, torment - so deep that the characters stick to your mind and it takes you a month or two to get yourself out of the story, until it becomes a faraway-yet-beautifully etched part in a corner of your head.

# A THOUSAND SPLENDID SUNS

## **Why I recommend this novel:**

The story is all about how love is found, even in tragic and capricious circumstances. It revolves around holding onto our loved ones even when everything seems to fall apart. The protagonist is portrayed as a strong woman, standing to face the harshness of her life, with the last bit of strength that she can emanate. It made me understand life is about finding a thousand splendid suns even when the world is warring around you. It's all about the little things that actually do matter! This story is of intense beauty and a must read for those who seek to get engulfed by it.

HARINI S  
IT A, THIRD YEAR



BUK

'96

BUVANASRI ANANTHU  
IT A, SECOND YEAR



I happened to recently watch the much hyped romantic saga '96 starring Vijay Sethupathi and Trisha. Like everyone, I was buzzed to watch it considering the hype around the movie. The movie turned out to be quite worth the hype surrounding it; an amazing love story tilted with reality. Amidst many movies which portray love as just another normal feeling, this one gave a different touch and dimension to it.

Strangely though, I did not emote much, while watching the movie. Seeing people around me teary-eyed, I was wondering and felt bad for having turned numb towards such an emotional portrayal. But, on my way back home, it hit me hard. It finally did. It would sound cinematic, but tears started rolling down as I started recollecting the scenes. I wished and thanked that my earlier presumptions of the movie hadn't made it to the screen. It's highly ironical for a person who didn't even shed a tear-drop during the course of the movie, to be sniffing tears all day long in retrospection.



It's movies like these which makes me feel satisfied for investing my hopes on the young writers of today. '96 has struck chords with people of all ages, with younger audiences going haywire over its songs. The music director has indeed managed to compose the album, like an art form of love. '96 was choreographed in a graceful and poignant manner, gathering sweet 'oohs' and 'awws', to loud, uninhibited laughter from the audience.

According to me, no word other than 'beautiful' can probably do justice to explain the canvas this film is. With all its diminutive flaws, like in every other work of art, '96 proved to be a honest, rather melancholic portrayal of unrequited love.

BUVANASRI ANANTHU  
IT A, SECOND YEAR

**NON-TECHNICAL  
ARTICLES**



# FINAL YEAR PROJECT

Dr. R. SRINIVASAN  
PROFESSOR, IT

(Afternoon - Professor R Srinivasan is in his room; Looking at his laptop for time and noted down on a note pad; Opened the calculator in windows and subtracted the noted value from 3.40)

R Srinivasan (RS): (Thinking to himself) Oh... 24 minutes to go...

(After a while)

RS: What's the time? Oh...23 minutes to go...

RS: (talking to himself) Is the calculator correct? Shall I do the calculation manually?

RS: (writing on the notepad) mmm... Shall I take the log of this number? That'll definitely reduce the time.

(At this point some body is knocking at his door. RS hears it)

RS: (to himself) Who...? Students...

RS: Whoever it is ...It should look like I am working on something.

(RS writes down  $\log(3.05PM) = \log(3.05)+\log(P)+\log(M)$  on the notepad)

RS: Is it good enough? Let me make some more changes...

(RS writes down  $= \log(3)+\log(.)+\log(0)+\log(5)+\log(P)+\log(M)$  on the notepad)

RS: Now it is looking nice.

(He keeps the notepad on the table so that it is clearly visible)

(Again knocking sound at the door)

RS: (with a big smile and little uninterested voice)... Yes. Please come in.

(A student enters his room)

Student: Excuse me Sir!

RS: Yes...

Student: I am from final year section A.

RS: mmm...

Student: My name is P. Paranthaman.

RS: OK...

Student: I'd like to do my final year project under your guidance.

Student: (Student thinks to himself...) I also do not know anything. He also does not know anything. The only way I can complete the final year project is to have him as my guide.

RS: (to himself) I am sure that he has not interacted with others/seniors. Otherwise why is he going to come to me...

RS: Yes! Paranthaman. Are you going to do the project alone?

PP: No Sir...I have a batch mate from section B.

RS: Ohh..

PP: Is it allowed to choose my batch mate from the other section?

RS: That's not a problem at all.

PP: (to himself) I should flatter him.

PP: (pointing to the note pad) Sir! You were doing some calculations. I am sorry I disturbed you.

RS: (to himself) Wow... the trick worked. He thinks I am working on some thing serious.

RS: Yeahh...That's fine.

PP: (to himself)Wow...the trick worked. He is flattered.

RS: OK. Do you have any idea?

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PP: (to himself) Idea...Only Airtel. I should not forget this Kadi. (girls kitta ida marakkaama solli Mokka nu per vaanganum).

PP: Yes Sir! I have a plan like this. It's some thing like...

RS: (blinks)...

PP: Sir! When I meet you next time I'll be clear in my idea.

RS: (to himself)if idea is not clear then change to Airtel. What a great joke! Shall I communicate this to Identity magazine?

RS: No problem...You come prepared next time.

PP: Sure Sir!

PP: (to himself)Next time means next sem.

RS: Next time you should come with your batch mate.

PP: Sure Sir!

PP: (to himself)What for?

RS: Bye Sir! (PP leaves)

(After some days RS is in his room, and calculating the number of leaves he has and writing it on note pad)

RS: (to himself) Ooh... I have only  $2\frac{1}{2}$  days leaves left. How to increase? Shall I make it as  $e^{2\frac{1}{2}}$ ..

(Some body knocking at his door. RS hears it)

RS: If it is my project student then I have to maintain my level.

(RS writes down  $2\frac{1}{2} = \log(e^{2\frac{1}{2}}) = 2\frac{1}{2} \cdot \log(e)$ )

RS: (to himself) Is it enough for show off?

RS: Come in...

(PP enters with his batch mate)

PP: Sir! Good morning. She is my batch mate.

RS: What is your name?

(She tells her name in the Western style. Naaan – deeta)

(RS could not make out)

RS: Pardon...

(She repeats in the same style: Naaan – deeta)

RS: (to himself) I am hearing Tan  $\theta$ !!! How could that be!! What are the probable words closer to Tan  $\theta$ ? I can ask them to work on this project "Convolutional neural network-based Natural Language Processing For Ambiguous Words Related To proper Nouns"; provided they are not going to seek my help.

RS: (to himself) How to know the name? Shall I ask again? No! No! I should extract it through some other way.

RS: OK. I have to fill in your details in the Google sheet. Can you help me?

PP: Oh... Sure Sir.

RS: Enter your details.

(RS gives the lap top to PP).

(After PP enters the details into Google sheet RS looks into it)

RS: (to himself) Oh...It's Nanditha. Why is this girl pronouncing it as Tan  $\theta$ ?!?

PP: (with a loud voice) Sir! It is like... Yeah... You know...It is something related to ....OK! I'll explain it like this.

RS: Tell me without hesitating.

PS: Yes Sir! I'll ...

(He simply stands)

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RS: Yes! Tan  $\theta$ ! What are you going to do?  
ND: (blinks for a while) Sir! Just today I have come from intern. Next week I'll tell you Sir.

PP: Yes Sir! We'll update you next week.

RS: You have not even started any thing. What to update! Ha...Haa...

PP: (to himself) Some how today escaped.

RS: Come prepare.

(Next meeting)

PP and ND: Good afternoon Sir.

RS: Good afternoon.

PP: Sir! Now we are clear with our project.

RS: Yes. Go ahead.

PP: Sir! Every where we have energy crisis.

ND: Sir! On an average a US citizen spends 20,000 joules every day. In England it is almost double. Sir! In Germany...

RS: What about India?

ND: (blinks)...Sir.

PP: (to himself)Why does he need that detail?

RS: You should know this.

ND: Yes Sir!

RS: (to himself) Why do I need that detail?

RS: So, what are you proposing?

PP: Sir! All are talking about energy conservation.

RS: Yes.

ND: Why not we increase the energy generation.

RS: ...

PP: Sir! We came to this idea while we were chatting about the socio-economic analysis of a middle class US citizen in 21st century.

RS: (to himself) Shall I ask about India?

ND: (to himself)Is he going to ask about India?

PP: (continues) Sir! The report from World Health Organization says ...

ND: (interrupts) Sir! When our earning is not enough we go for more earning. We do not reduce our needs.

RS: (to himself) Who is going to marry this girl? I pity for him.

PP: Sir! Needs are like our legs, and earning is like our shoes. We cannot cut down our legs according to shoes.

RS: (sarcastically) Great...

RS: (to himself) She should become the energy minister of the world and he should become the energy minister of the India. All the energy problems are solved. Do we have a post called energy minister?

PP: We are planning for more energy generation.

ND: More energy generation implies no energy crisis.

RS: (in a weak voice) What about global heating...

ND: (to herself) He does not even know to say global warming...

ND: We have a solution for that.

PP: We are not going to generate the energy in the earth.

ND: We are going to generate the energy in the space.

PP and ND: We generate solar electricity.

RS: (baffled) In the space...

PP: (to himself) This is the point. He is under our control.

(Gives eye signal to ND)

ND: There will be many solar panels in the space. They generate electricity. We lay cables from there to earth.

RS: (after regaining) What it has got with IT department?

RS: (to himself) Shall I guide this batch or not?

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PP: Sir! We'll fix IOT devices on the solar panels. We plan to collect the IOT data and analyze using deep learning techniques.

RS (without knowing what to tell): What is IOT?

PP and ND: Sir!

RS: I mean what is deep learning?

PP and ND: ....

RS: (to himself) What can I ask? (Ippovae kanna katudhae). Shall I ask them to look for another guide?

RS: I mean ...you said about deep learning techniques?

ND: Yes Sir!

RS: What kind of deep learning techniques...

PP and ND: Sir! We'll let you know in the next meeting.

RS: (in a hurried way) OK. OK. We'll meet next week.

PP and ND: OK Sir.

(next week RS gets an email from PP)

*Hi Sir*

*We have placement in this week.*

*We'll meet you next week.*

RS: (to himself) Ohh.. I forgot completely about these people. It is good that they have placement.

(two more weeks went off)

RS: (to himself) Will these people come this week? How to escape? When student can write an email a professor can also write an email.

*Hi*

*I have some urgent meetings this week and next week.*

*We'll meet after two weeks.*

*Regards*

*R Srinivasan*

(Mean while 1st project review date has come)

RS: (to himself) I should discuss with my project students.

(Door knocking sound)

RS: yes...

(ND enters)

ND: Good morning Sir!

RS: Good morning. Yes...

ND: I won't be able to attend the review due to my GRE exams.

RS: What about your batch mate?

ND: He'll be here.

RS: Ask him to contact me.

ND: Yes Sir!

(Project review got over. RS gets email from the project coordinator)

*Dear Sir*

*FYI - Your batch students PP and ND have not attended review.*

*What shall we do?*

*Regards*

*Project coordinator*

RS writes an email to PP and ND:

*Please come and meet me immediately.*

*Regards*

*R Srinivasan*

(After a week one day PP peeps into RS's room @ 3.39 PM)

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PP: Good afternoon Sir!  
RS: Yes. What happened man?  
PP: I was ....I mean ...  
PP: (to himself) What to say?  
PP: (suddenly) Sir! I came to meet you yesterday around 1.30 PM. But you were not there Sir.  
PP: (to himself) Will it work out?  
RS: Yeah.. I was not there.  
RS: (to himself) It is good that he has not seen me sleeping.  
RS: Now it is 3.40. We'll meet tomorrow.  
PP: Yes Sir.

(After a week ND comes in)

ND: Sir! Good morning. I am applying to US universities. Can you give me reco Sir?  
RS: (to himself) On what basis? At least two students are working under me. Let me not ruin that.  
RS: Oh.. Sure.  
ND: Shall I prepare the reco Sir?  
RS: Anything is fine

(That day evening RS receives an email from ND)

*Sir,  
Here with I am attaching the reco. Pls check and tell me.*

*I know Ms. ND for the last 4 years. She is doing her final year project with me. The project demands various domain knowledge. She is excelling in that. ...She is very sincere and punctual. ....  
I strongly recommend her for.....*

(After a week PP shows up)

PP: Sir!  
RS: You have not attended 1st review.  
PP: ...  
RS: What is the reason?  
PP: I was giving my GRE. I'll give the 2nd review without fail.

(2nd project review date has come)

RS gets email from the project coordinator.

*Dear Sir  
Your batch students did not attend the review.  
What to do?  
Regards  
Project coordinator*

RS writes an email to ND and PP

*Please come and meet me.*

(To his surprise both of them came next day)

RS: You have not attended the 1st review and 2nd review.

PP and ND: Sorry Sir!

RS: (to ND) Why have not you attended?

ND: I was giving my GRE.

RS: I am asking about the 2nd review.

ND: That's what Sir. I gave GRE day before yesterday.

RS: For the 1st review also you told the same.

ND: Sir! I was preparing for GRE during that time.

RS: (to PP) What about you?

PP: Sir. I was preparing for my GRE during 2nd review.

RS: Then why you did not attend 1st review?

PP: Sir! My GRE exam date fell on the 1st review date.

RS: You said you are preparing...

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PP: My score was not good; so I am preparing...again.

RS: (to both PP and ND) Will you attend the 3rd review?

PP: Yes Sir.

ND: When is the 3rd review date Sir?

RS: Why?

ND: My brother is coming from US.

RS: (in raised tone) You can change your guide.

PP and ND: Sorry Sir...

RS: You have to come on all working days till you show progress.

PP and ND: Yes Sir

RS: How are planning to put IOT devices in space? That project is not a feasible project. Work on some other project. Meet me tomorrow.

(Next day)

PP: We asked the permission to use the solar cells erected in our department terrace. In the office, they said OK. We are putting an IOT devices on the solar panel. We need two Rasberry Pi s. One at the solar panel and another at the receiving end. My friend has promised to give them.

RS: What about IOT sensors?

ND: Sir! My brother is bringing from US.

RS: (to himself) Are these students good or bad?

RS: When are we meeting again?

PP: Sir! Tomorrow is Friday. We'll meet you on Monday.

(Monday – no body turns up)

(Tuesday)

RS: Where is ND?

PP: I think his brother has come.

RS: She got the IOT sensors?

PP: I do not know Sir. I'll call her.

PP: (to himself) How to escape today?

*(PP remembers something)*

PP: Sir! I was going through one of the references. They use some thing called moving average. Can you explain?

RS: (to himself) How to escape?

RS: It is a special average useful in certain circumstances.

PP: Sir! How it is defined?

RS: (to himself) How to divert?

RS: (takes a paper) How I'll explain. OK.

First let us define what is average?

RS: (to himself) Let me ask about their 3rd review date to escape.

RS: Your 3rd review date has come. Have you prepared slides?

*PP: (to himself) Appadi va vazhiku*

PP: Yes Sir! Tomorrow I'll prepare and send

RS: Do it quickly, and I have a meeting now.

PP: Bye Sir.

*(On the day of 3rd review PP and ND come)*

RS: Where is your setup?

ND: My brother could not get the IOT devices. Can we manage with a thermometer?

RS: Thermometer! What for

PP: To measure the temperature of the solar panel.

RS: What about the Rasberry Pi s.

PP: My friend is using it for his project. Even if we have them what is the use of Rasberry with a thermometer!

RS: ....

ND: Here are the data we have collected from a solar panel.

RS: What about the deep learning?

ND: Yes Sir! That's what! The data is fed to our deep learning algorithm.



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PP: (interrupts) It uses moving average.  
RS: (becomes careful) Oh..what is the output?  
ND: We get weather the temperature is above 100°.  
RS: But from the thermometer readings we can say that.  
PP: Sir! This is artificial intelligence based neural network deep learning.  
RS: ....  
ND: We have prepared our reports based on this. Do we have to add anything?  
RS: I think you should have compared your results with the nature inspired bio-genetic algorithms.  
PP and ND: Sure Sir! If time permits we'll.  
PP: (to himself) escape  
ND: (to himself) escape  
RS: (to himself) escape  
PP and ND: Thank you Sir  
RS: OK. Best of luck.



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## தொல்காப்பியச் சுவையும் கண்ணம்மாவும்.

தமிழ் மொழியும் அதன் இலக்கண இலக்கியமும் நம்மைவிட்டு வெகு தொலைவில் சென்றுவிட்டதாய் உணர்கிறோம். உண்மையில் அவை எல்லாம் நாம்மொடு தான் பயணிக்கிறது, வளர்கிறது, வெவ்வேறு பரிணாமங்கள் பெறுகிறது. தொல்காப்பியர் 'மெய்ப்பாடு' என்று குறிக்கும் ஒன்பது சுவைகளை சுமக்கும் தமிழ் நூல்கள் தான் கற்போருக்கு மிகச்சிறந்த அனுபவத்தை தரக்கூடும் என்று வரையறுக்கிறார்.

அதனை தொல்காப்பியத்தில்,

"நகையே யழுகை யிளிவரால் மருட்கை  
யச்சம் பெருமிதம் வெகுளி யுவகையென்  
றப்பா லெட்டே மெய்ப்பா டென்ப"

என்று பதிவிட்டிருக்கிறார் தொல்காப்பியர்.

இதில் குறிப்பிடப்பட்டுள்ள ஒன்பது சுவைகள் நகைச்சுவை, அழுகை, இளிவரல், மருட்கை, அச்சம், பெருமிதம், வெகுளி, உவகை, சமநிலை. இந்த ஒன்பது சுவைகளை தொல்காப்பியர் பின்வருமாறு வரையறுக்கிறார். நகை என்பது இகழ்ச்சியில் பிறக்கும். அழுகை அவலத்தில், துயரத்தில் பிறக்கும். இளிவரல் சுவையானது இழிவுறுதலில் வெளிப்படுவது. மருட்கையானது வியப்பிலும், ஆச்சரியத்திலும் தோன்றும் சுவை. அச்சம் நமக்கு உண்டாகும் பயத்தால், மனம் மெலிதலால் ஏற்படும் உணர்ச்சியாகும். பெருமிதம் வீரத்திலும், அதீத அறிவும் ஆற்றலாலும் பிறப்பது. வெகுளி சினத்தால், வெறுப்பால் உண்டாகும் உணர்வு. உவகை என்பது இனிமையான மனங்களிப்புகள், மகிழ்ச்சிகளால் வெளிப்படும் சுவை. சமநிலை என்பது சாந்தம், நடுவு நிலைமை போன்ற நிலைப்பாட்டை குறிக்கிறது.

இத்தனை சுவைகளையும் ஒரே நூலில் அடக்குவது மிகவும் சவாலான காரியம். இன்றைய நவீன உலகின் இலக்கிய இரசனைகள் ஒவ்வொரு வாசகருக்கும் ஒவ்வொரு விதமாக இருந்துவருகிறது. அப்படிப்பட்ட நிலையில் தன் வாசகரை தன்வசம் இழுத்து பிடிக்க ஒவ்வொரு எழுத்தாளரும் பலவிதமான யுத்திகளை கையாளுகிறார்கள். ஒரு நூலாசிரியருக்கும், கவிஞனுக்கும் தன் கருத்தில் இத்தனை சுவைகளை அடக்குவதில் நிறைய வேறுபாடுகள் இருக்கிறது. ஒரு கவிஞனுக்கு கிடைக்கும் சுதந்திரமானது இரு நூலாசிரியருக்கு எப்போதும் கிடைத்துவிடாது. கவிஞன் கூறும் பொய்களை ஆராதிக்கும் அதே வாசகர் கூட்டம், நூலாசிரியார் கூறும் சில உண்மைகளையும் விமர்சிக்கும் என்பது தான் இன்றைய நிதர்சனமான நிலை. உதாரணமாக மகாகவி பாரதியார் இந்த ஒன்பது சுவைகளையும் தன ஒரே கவிதையில் சிறப்பாக புனைந்துவிட்டார்.

பாரதியார் எழுதிய "சின்னஞ்சிறுகிளியே, கண்ணம்மா" பாடல் தான் நாம் பேசும் ஒன்பது சுவைகளை சுமந்து அன்றும் இன்றும் வலம் வந்து கொண்டிருக்கிறது.

சின்னஞ்சிறுகிளியே, கண்ணம்மா  
செல்வக் களஞ்சியமே! (சின்னஞ்சிறு)



என்னைக் கலிதீர்த்தே உலகில்  
ஏற்றம் புரிய வந்தாய்! (சின்னஞ்சிறு)

பிள்ளைக்கனியமுதே, -கண்ணம்மா!  
பேசும் பொற்சித்திரமே!  
அள்ளியணைத்திடவே-என்முன்னே  
ஆடிவருந் தேனே (சின்னஞ்சிறு)

ஓடி வருகையிலே- கண்ணம்மா!  
உள்ளம் குளிருதடி;  
ஆடித்திரிதல் கண்டால் உன்னைப்போய்  
ஆவி தவிழுதடி

உச்சிதனை முகந்தால்- கருவம்  
ஓங்கி வளருதடி  
மெச்சி யுனை யூரார்- புகழ்ந்தால்  
மேனி சிலிர்க்குதடி.

கன்னத்தில் முத்தமிட்டால்- உள்ளந்தான்  
கள்வெறி கொள்ளுதடி  
உன்னை தழுவிடிலோ- கண்ணம்மா  
உன்மத்த மாகுதடி.

உன் கண்ணில் நீர்வழிந்தால்- என்நெஞ்சில்  
உத்திரங் கொட்டுதடி;  
என் கண்ணில் பாவையன்றோ? கண்ணம்மா  
என்னுயிர் நின்னதன்றோ!  
என் உயிர் நின்னதன்றோ!  
என் உயிர் நின்னதன்றோ!

இந்த பாடலை யாராலும் அவ்வளவு எளிதாக கடந்துவிட முடியாது. இதனை படிக்கும் போதும், கேட்கும் போதும் மனதிற்கு நெருக்கமான நெருடல் ஒன்று உருவாகும். அப்படிப்பட்ட பாடலில் இருக்கும் சுவைகளை உணர்ந்தவாறு ஒரு முறை கடந்து செல்வோம். வாருங்கள்.

**நகை, இளிவரல்**

என்னைக் கலிதீர்த்தே உலகில்  
ஏற்றம் புரிய வந்தாய்!

**அழகை, அச்சம், வெகுளி**

உன் கண்ணில் நீர்வழிந்தால்- என்நெஞ்சில்  
உத்திரங் கொட்டுதடி;

**மருட்கை**

உச்சிதனை முகந்தால்- கருவம்  
ஓங்கி வளருதடி

## பெருமிதம்

கன்னத்தில் முத்தமிட்டால்-உள்ளந்தான்  
கள்வெறி கொள்ளுதட

## உவகை

மெச்சி யுனை யூரார்- புகழ்ந்தால்  
மேனி சிலிர்க்குதட.

**சமநிலை:** பாரதியின் கண்ணம்மா.

இதுவே பாரதியின் மாயம், தமிழின் அற்புதம். உள்ளம் உவந்து, உணர்ச்சிகளுக்கு உயிர்கொடுத்து அதை பறைசாற்றும் தன்மை கொண்ட எளிமையான மொழி நம் தமிழ் மொழி. வேறு எந்த மொழியிலும் இல்லாத இலக்கிய நயங்கள் இங்கு குவிந்துக்கிடக்கின்றன. ஒரு மொழியின் வளம் அதை சார்ந்த மக்களையும், இலக்கியங்களையும் வைத்தே நிர்ணயம் செய்யப்படுகிறது. 2000 ஆண்டுகளுக்கு முன் தோன்றிய தமிழ் மொழி கடந்து வந்த பாதையில் என்றோ வரையறை செய்யப்பட்ட இலக்கணங்கள் இன்று வரை நிலைமாறாமல் இருப்பது நம்மை வியப்பில் ஆழ்த்திக்கொண்டே இருக்கிறது.

இளங்கனியால் செய்யப்பட்ட அமுதும் அலுத்துப்போகும் - இளந்தளிராக  
திரியும் எம் தமிழமுதம் என்றும் அலுப்பதில்லை.



GEETHA R  
RESEARCH SCHOLAR

A person with a backpack is jumping joyfully in a forest. The person is wearing a dark jacket, blue jeans, and a backpack. They are in mid-air with their arms and legs spread out. The background is a lush green forest with trees and foliage. The text is overlaid on the image.

# PERKS OF BEING A GIRL

PRASHANTHI B  
IT B, FOURTH YEAR

I have been wanting to write about this topic for so long, maybe ever since the time I heard one of my friends say 'It's easy being a girl', 'There are special reservations for girls to make sure they get jobs', 'No one questions a girl if she doesn't work after marriage', 'Girls have special laws to protect them'.. And on and on. Well, my friend, we did not ask for it and we wouldn't even need them if every individual, like you, learnt to treat us like a fellow human being and not an inferior gender.

I live in a country where women aren't looked upon with hungry eyes. It's a place that treats us equally! It's a land that respects us! Well, at least 60 years back, it was.

India had always been known for its values, principles and culture. The women of the country were always given the importance and respect a human deserves. But, what I like to call a "Societal Revolution", has changed the way the Indians treat women. This revolution took place at such a rate that women started feeling like a burden to their families. From being strong participants in the freedom movement to being neglected and treated worse than an invalid, the status of women in Indian families have constantly been changing.

It is a general opinion that the position of women, is much better than before. I might agree to it partially. Women have started coming out of shells to be active participants in improving the economy of the country. They have started following their passions rather than being locked up in the kitchens. They are allowed to voice their opinions. But are they really respected for who they are? Maybe the idea of equality among the genders have crept into the minds of most of us. But it is still a lingering thought to make subtle and sometimes not so subtle gender inequality jokes.



PRASHANTHI B  
IT B, FOURTH YEAR

We have definitely gotten into a better position than we were twenty years ago. But, everywhere, in homes, in offices, in bus stops, women are pitilessly looked upon as prey and assaulted. When I say this, I want to clear it out, I do not mean everyone. But at least the majority of people are that way. A small fraction of the crowd might put this behavior to action but thoughts still do remain and thoughts are equally powerful.

So why is it this way? Why are some men awfully male chauvinistic? Why do some women put down their own kind? Is it because of their upbringing? Should we actually teach our children how to treat other people? Or is it simply because of who we are? Every child picks up his / her traits from the society they grow up in, from friends, family and from what they watch. Needless to say, media has largely influenced our thinking. With every hero-based movie objectifying women and roles that do not go beyond pleasing men, it is predictable of the general impression of women in the minds of young children.

For all this to change, we will probably need another revolution. But sometimes, a small thought is enough to make a change and that was the intention of my article. And I hope I accomplished it!

Before you think that life is easy for someone else, I request you to please pause. Just because she is a woman, things do not come easy for her, she works too, she tires all day and who knows, probably more than you. Also, just because he is a man, it does not mean he is respected well and can roam around freely after ten, he might have his #MeToo stories too. Let's just put away these thoughts and treat each other well and we as Indians need to and can do better!

PRASHANTHI B  
IT B, FOURTH YEAR

# 6 COLOURS

## UNLIMITED POSSIBILITIES



SRINATH V  
IT B, SECOND YEAR

The Rubik's Cube wasn't famous back in 2014. Cubing was a sport that was just getting off the rails. There were competitions that took place in the city, which I wasn't aware of back then. I never expected this to be a gateway into an entirely different world, for me.

I was taken aback when I saw Feliks Zemdegs solving the 3x3 in 5.66 seconds. I still am. It was a huge inspiration for me to pick up the puzzle. I wasn't interested in it throughout my childhood. It has been kind of an on and off thing. I used to average around 40 seconds.

The first competition I went to in 2015 was a very weird experience. I didn't know what I was doing there. I was very shy to talk to people, and I felt out of place. All I got was a 25 second average. It felt like a waste of time because I didn't make any friends, nor did I break any of my personal records. Eventually, I stopped cubing for two and a half years. I just didn't see the point in it. I picked it up again in college, because there was a competition that the Math Department had organized. This was where I first socialized with other "cubers". I had no idea that there would be so many people all over the city who were willing to travel about 40 kilometres just for a competition.

I met people who could solve it in less than 10 seconds. It was an exhilarating experience. For the first time in my 5 years of playing with the Rubik's cube, I felt the pressure weighing down on me, like an elephant sitting on a rat. This altered my perspective about cubing.



It was no longer a waste of time. I had so much fun racing with people at the competition. This helped me find the flaws in my method of solving, and at the same time, helped me become a better person. The community also taught me to strive for better efficiency. Breaking records you set for yourself is always a great feeling, not just in cubing.

Looking back at 2015, I can say without a doubt that the Cubing community has really come a long way. From the world record being 5.66 seconds in 2015 to becoming 3.47 seconds in 2018, it really does feel like humans have evolved.

Everyone is looking for much faster and efficient ways to solve the puzzle. The ability to understand and retain so much information and execute every single algorithm without breaking a sweat, proves that the only obstacles preventing us from doing something ground-breaking, are our own minds, and obviously, procrastination.



**SRINATH V**  
**IT B, SECOND YEAR**



# BALANCING

## PROFESSION & PASSION

SUSHMITA RAJTILAK  
IT B, THIRD YEAR

“Beauty perishes in life, but is immortal in art.”  
- Leonardo da Vinci

As our lives revolve around College - Eat - Sleep - Repeat which is tiring already, for a few artistes who pursue engineering it's not quite the same, i.e., College - Eat - Rehearsal - Repeat and, sleep? Well, grateful for the long bus rides to and from college. Fitting college work, observations, records, unit tests, hackathons, workshops, online courses, internships, semester exams, etc., amidst this already jam-packed schedule, teaches you the best time management skills you can ever learn.

I am a Bharatanaatyam dancer and have been one, for the past 15 years, learning under the tutelage of the popular dancing legends and Padma Bhushan awardees 'The Dhananjayans' and yes, I am one of these artistes.

The most common question put forth to me is 'How do you manage both academics and art? How exactly do you balance it?' Well, the sleep deprived face of mine would answer the question. My gurus and Dr. Kamal Haasan have been my biggest inspiration. But apart from that, I am doing what I love. And doing what you love might drain you physically but never mentally and emotionally. Yes, it does require a lot of running around and crude decision making. You may not have much time for your friends and family and other occasions. But above all, it keeps you content and satisfied, that you have been super productive, as it doesn't let you spend much time on unnecessary social media scrolling.



# BALANCING

## PROFESSION & PASSION

In fact, I started spending a lot of time and energy in my passion only after I joined a professional course. Trust me, this keeps me sane. And this doesn't mean you're between the devil and the deep blue sea. I have had extremely long rehearsals for hours, even during exams, and have performed for more than a hundred shows, I watch all my favourite movies, series and make sure I don't compromise on my social life. At the same time, I wouldn't let my exams take a toll on me as well. My passion has given me the Yuva Shri Kala Bharathi Award, the Swami Vivekananda Award and the Naatya Poorna Award and my academics has made me stand among the top 10 in my department. I would strongly encourage all those who left their passion mid-way for their studies to buckle up, get it back up and running. Finding your balance is the key, then, your sorted.

Apart from keeping you happy and content, it also has additional benefits (for those who look for benefits in whatever you do). This is not just for dancers or vocalists or instrumentalists. It's for anyone who does something extra, something beyond college, for yourself. It is a parallel profession and yes, that means someday it could also be your potential sources of income. You get to learn and spread great ideologies of spirituality, philosophy, mythology and various priceless literary works from all over the world. Everyday you can learn something new, something you never imagined. It enhances your creativity and also serves to be the best stress-buster one could ever find. It is a great way to stay mentally and physically fit and healthy. Saves up the time and money spent on gyms. Slowly, it starts to become a way of life.

Well, art and academics are not different. And I would say, it is not supposed to be 'extra' – curriculums. Our civilization started off with a rich syllabi of integrated learning approach (to put it in modern terms) which later got brutally differentiated in time.


Typing this amidst my rehearsal, which is in turn amidst my semester exam preparation, I would like to end this note by saying, never ever give up on your passion, however hard and time consuming your profession is. You always have time for something that you love. All you have to do is plan up properly. Giving equal importance to passion and profession is mandatory. And who knows? Your passion might someday turn out to be your profession too!



# THE ALLURE OF ANTOGONISM

SANJANA SUKUMAR

IT B, SECOND YEAR



What do Harry Potter, Katniss and Frodo all have in common with the ancient mythical heroes? What if I told you, they're the same person with different faces! Don't believe me? Well Joseph Campbell certainly did. In his book "The Hero with a Thousand Faces", he retells dozens of stories and explains how each represents the mono-myth.

He says that all the stories we read, follow a pattern, A cycle of events in the hero's life. It all starts with the status quo. Followed by the call for adventure, the hero receives a mysterious message; A challenge. Third, An assistance. They are offered assistance generally from a much wiser and experienced mentor. Followed by the departure. The hero crosses the threshold from the ordinary world into the mystic land of the quest! Next comes the trial. They work hard! Slay a monster! Solve a puzzle! Followed by confrontation. The hero has to face his worst fear! Then comes the crisis. The hero faces death! Almost dies and then miraculously escapes. Which leads to them claiming a treasure, a power. Next is the most awaited part, the result. The hero faces the antagonist! Fights back and flees to his original world!

It's time for the hero's new life. The hero is a changed person now... They understand the world better and are more mature! And now again, status quo!

# THE ALLURE

## OF ANTOGONISM

SANJANA SUKUMAR  
IT B, SECOND YEAR



The life of a hero is monotonous and after a point it gets boring. Let's face it: Superman's too much of a goody-goody, hulk has anger issues, and Wonder Woman has parental issues. Plus, they're always so predictable. They'll strive to do the right thing and save the day and help people. You know who isn't predictable? The Joker. Who knows what that guy will do. One minute he's standing right next to you laughing at what you're writing and the next he could be stabbing you.

What's a hero without a villain? A lost soul. What's a villain without a hero? An unstoppable force! So, in reality, we see that heroes need villains but villains, quite frankly, live by their own rules. They don't require a "hero" in their lives.

Books or movies almost always portray the "bad guys" as terrible people. They expect the readers to acknowledge the villain and fawn over the protagonist.

Since birth, we are all naturally flawed. That's what makes us human. We are firm and stubborn and most of us believe that our choices are right and that we've made the correct decision, even when we've not. In our eyes, we are the good guys; and that we are making the right choices. Those villains believe the same thing.

The main reason the villains are so formidable, is because we see parts of ourselves in them. They represent the necessary evils in life- anger, ambition, envy, lust, wrath, and so on. These are the parts of us that we try to suppress, and are in denial about.

Look back at all the anti-heroes that you've come across. They all have a tragic backstory. In most cases, it is something the hero was able to overcome but the villain wasn't. The hero might have been wronged, but he's so pure that he was able to overcome it, and he manages to take something away from the situation that makes him stronger. That's the person who we all wish we were. But it doesn't resonate with us. We would much rather see someone seek vengeance on those who wronged them. Villains relate to deep personal experiences we often try to hide from the outside world. Our connection to a villain runs deeper as we see reflections of ourselves that we aren't exactly proud of. A villain's story arc often intersects our own in ways a hero's arc can not.

# THE ALLURE OF ANTOGONISM

SANJANA SUKUMAR  
IT B, SECOND YEAR



Empathy, is one of the strongest human emotions. And that comes into huge play here, as, only when you start understanding the villain and empathizing with them, you understand that we're not so different after all. You realize that they're more like us, but are strong enough to fight back against those who wronged them. That's when you start liking and respecting the antagonist. One such villain is the New Goblin from the Spiderman series. His own father is killed by spiderman, who further steals his love from him. He finally cracks and moves over to the dark side.

The Joker is probably one of the most iconic villains there is. He wasn't written to be a good guy, but there are admirable characteristics in him. He's psychotic, absolutely, but he's realistic. In his insane ways, he just wants to show Batman that they are in fact the same. Two faces of the same coin. He wants to show him that people can be corrupted and manipulated based on the situation they are in. And even the "hero" can become the "villain".

From the classics to mythology, our heroes are heavily dependent on the villains. The stories have little to no purpose without the villains. The Harry Potter novels would have been a simple high school drama if we take out Voldemort and his shenanigans. What about the almighty god who wields lightning, if not for the devious stratagems by the mischievous lord of death? Good always needs its evil counterpart.

The heroes originate from the villains. The same way order arises out of chaos. It isn't the other way around. A hero's purpose becomes redundant if there are no antagonists. But on the other hand, the villains do not require the hero to proceed with their life. To them, the heroes are just a few obstacles in their long race.

In the end all that matters is the perspective with which you view the situation. If I look at a hurdle race from the point of view of the hurdle; after knowing the hurdle's tragic past, the guy running towards it is "evil". Wouldn't we feel happy when the guy trips and cracks his head open. We would, because that's how the storyline has programmed us to react.

# 52 in 52

K. SRIVIDHYASARADHA  
IT B, THIRD YEAR



"I do believe something very magical can happen when you read a good book."  
-J.K. Rowling

Having experienced this magic, I can say no truer words were ever spoken. Obsessed with fairy tales ever since I can recall, I remember my childhood days were spent searching for the wishing chair, magic doors and Arabian dunes.

Growing up, huddled in this fast-paced world, I realised I had not been really faithful to my reading roots. A lot of us millennials have now become habituated to these long periods with a dearth of reading, and I, personally, struggled more to get back into the habit of picking up another book. I went through that dearth for years. It was during this period that I chanced upon this 52/52 reading challenge .

52 books in 52 weeks. The challenge is to read 52 books in 52 weeks. To quote it in simple terms, I had to make sure I read a new book every week for a year. The challenge did throw me off at the start; I felt I was in over my head to even consider it. I was really worried if I could keep up the consistency of the challenge even if it coincided with my routine.

But I badly wanted to get back to my reading slack and this challenge seemed an amazing way to start it. Initially, I struggled to keep up the challenge, owing to jam-packed schedules or when I could choose my genres right. But it was only in the aftermath of some utterly mind-blowing books, did I find myself curious and passionate to read more. And once the passion had crept in, there was no more looking back.

In the past one year, this challenge has given me an epiphanic experience that changed my life. I have travelled across a million alternate universes with Kafka, experienced the horrors of Taliban, and transcended the sea of poppies and seen family ties severed and healed. I have connected with a lot of races, their hearts, their minds and the way they think.

Ironically, books have given me the wings Red Bull promises to. Most importantly I have witnessed a lot of changes in me. I have developed a positive and spiritual perspective to life and my mundane life seems more exciting and happening. In short, instead of scrolling through the same posts on Instagram and Facebook and laughing at memes, I find my mind more at leisure, and at peace.

There's a takeaway from every book you read. That's a guaranteed gain from this challenge. In case you are struggling to get back to books, start with the re-reading your list of classics, and once your mind opens up, you can quickly explore the other genres too. To all the bibliophiles out there, and to anyone curious, I highly recommend this challenge for you to experience the new horizons that I did.

WHO HAS IT HARDER  
IN TODAY'S WORLD

# INTROVERTS OR EXTROVERTS



PRIYANKA SRIVASTAVA  
IT B, SECOND YEAR

It is generally said that extroverts, introverts and ambiverts form a complete spectrum. Introverts love being with themselves and most often find themselves the best company to be with. Extroverts on the other hand love people and prefer company over solitude. As opposed to the notion that extroverts and introverts are analogous to black and white meaning they never merge, it all comes down to the right company and situations. With loved ones even introverts become an extrovert and in certain situations extroverts prefer being alone. So it is safe to say that most of the people are ambiverts that is having qualities of both.

Talking about today's world, life in general is hard. While it is true that extroverts have better leadership qualities as they are more interactive and put their ideas out as they speak, introverts analyse every situation and only then put across their ideas. In terms of productivity, introverts have a higher productivity rate in an environment that allows them to concentrate without any disturbance and extroverts prefer environments that favour collaboration and discussion. As the world comprises of numerous things, ideas and issues, both have their own share of advantages and pitfalls. Although it is correct to say that extroverts get a greater exposure, but just exposure does not necessarily have to be the right one. In today's stress-prone time, introverts find it easier to deal with it as external factors don't affect them much and are generally detached from the surroundings.

To sum it up, both introverts and extroverts find it easy and hard in various situations. It ultimately depends on how one responds to a situation and not their behaviour. It is the situation that brings out their behaviour and not vice-versa.



# THE PHOTO-ENGINEER

SAMYUKTHA SUDHAKAR

IT B, SECOND YEAR

I never knew I'd be writing this article, well, until I actually did. Maybe, that's how things are programmed to be, and that's how we figure our way out. Wondering what this is about, having read the title and the first line having zero connect? Yes, so that's how photography and I were related, before I stepped into college.

I always knew I had something to do with pictures and photos, when I caught myself way too many times analysing them, more than any person would normally do. But technically, I had no idea about it. Believe me when I say, I didn't even know how to hold a camera, leave alone focusing the picture and the like. Just to clear the air, even now I don't call myself a professional, but I manage to click decent pictures and handle cameras the way they are supposed to be.

The fact that I'd be able to freeze a moment and turn it into a memory for a person who'd manage to travel with it for a very long time, gives purpose to what I do. Exaggerated as it might sound, but that, is what keeps me moving. If not a lot, there's a myriad things that I've eagerly tried to learn from practicing photography.

Focusing the same way for all scenarios wouldn't help - few require full frames, few zoomed up, few focused and even few blurred out. It's all about what you focus on, and the spontaneity involved in arriving at a decision. For every shutter click I've clicked, most of the time I ended up being disappointed than satisfied; I would have failed at making the perfect shot planned, as something or the other would have gone wrong.

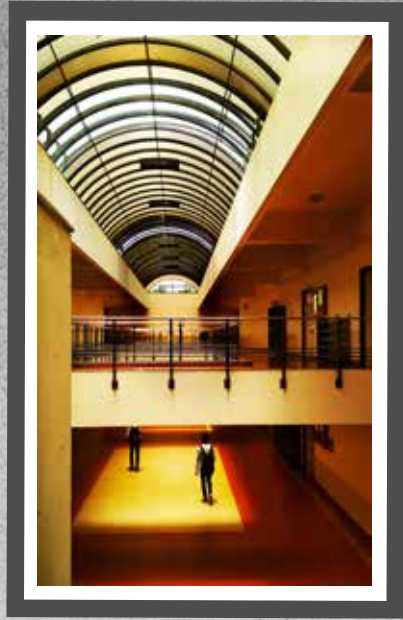
Later was it that I realised, that the more I kept going back to try making the perfect shots, the better I was becoming than before. Over the time when I get to look at my pictures, I realise that my technique was improving.

Like I've said already, and probably would again, photography happened to be pretty much an accident to me. It was something I went out of my way, to give it a try, and I'm more than happy about it, as today, it stands as my "identity". It has given me more than what I could have ever imagined. It has become the medium through which I communicate.

The takeaway from this article I'd love you guys to have is that make sure you go out of the way to try something you've never done, 'cause you never know how much it means unless you actually give it a chance.

I'd definitely say I am happy I did because I couldn't help but have a wide smile the entire time writing this down. You never know until you try, even if you fall on your face you're still moving forward.

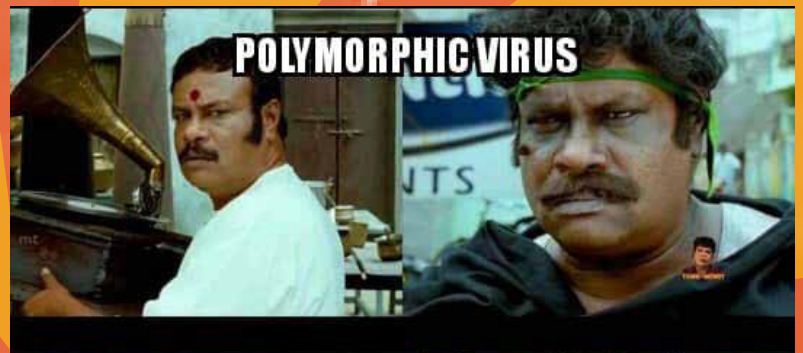






# MEME CORNER

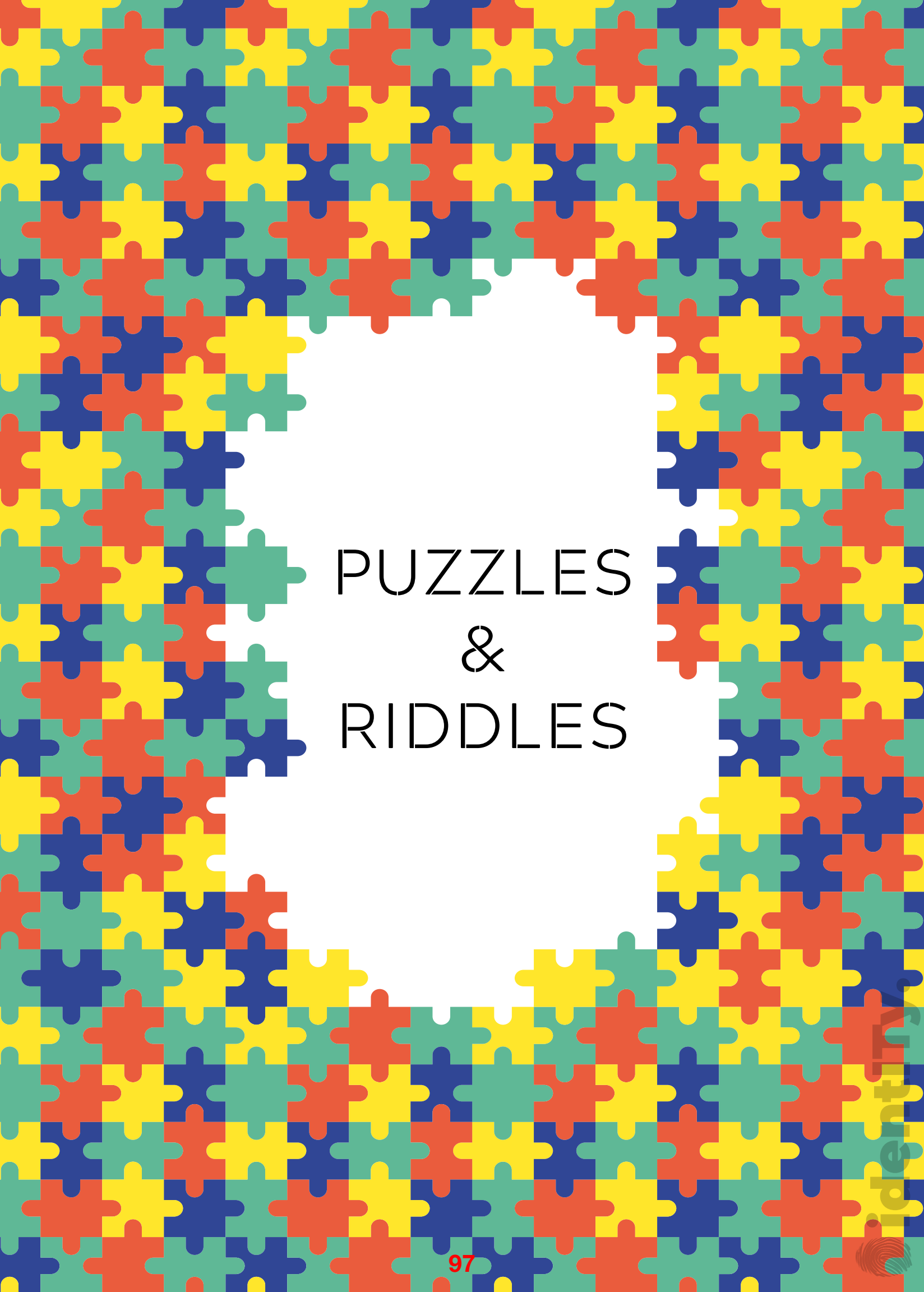
SWAMINATHAN GANESH  
IT B, FOURTH YEAR



# MEME CORNER

SWAMINATHAN GANESH  
IT B, FOURTH YEAR





PUZZLES  
&  
RIDDLES

# 1. Einstein Riddle Twiddle

## FACTS :-

1. There are 5 houses in five different colors.
2. In each house lives a person with a different nationality.
3. These five owners drink a certain type of beverage, smoke a certain brand of cigar and keep a certain pet.
4. No owners have the same pet, smoke the same brand of cigar or drink the same beverage.

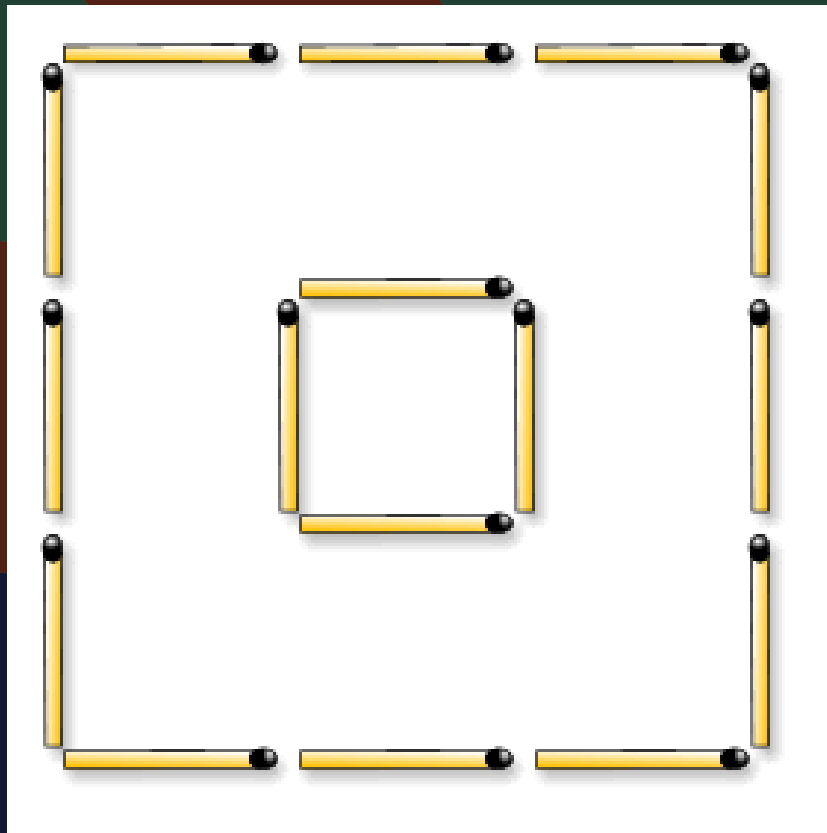
## HINTS :-

- \* The Brit lives in the red house
- \* The Swede keeps dogs as pets
- \* The Dane drinks tea
- \* The green house is on the left of the white house
- \* The green house's owner drinks coffee
- \* The person who smokes Pall Mall rears birds
- \* The owner of the yellow house smokes Dunhill
- \* The man living in the center house drinks milk
- \* The Norwegian lives in the first house
- \* The man who smokes blends lives next to the one who keeps cats
- \* The man who keeps horses lives next to the man who smokes Dunhill
- \* The owner who smokes BlueMaster drinks beer
- \* The German smokes Prince
- \* The Norwegian lives next to the blue house
- \* The man who smokes blend has a neighbor who drinks water

The question is: ***Who owns the fish?***

## 2. SQUARE IT UP

Move 4 matches to make 3 squares



## 3. JUGGLE IT

You are given a 3-gallon jug and a 5-gallon jug. How do you use them to get 4 gallons of liquid?

## 4. BULB IT

You're in a room with three light switches, each of which controls one of three light bulbs in the next room. Your task is to determine which switch controls which bulb. All lights are initially off, and you can't see into one room from the other. You may inspect the room only once. How can you determine which switch is connected to which light bulb?

# 5. SUDOKU

			2 6		7		1
6 8			7			9	
1 9				4 5			
8 2		1				4	
		4 6		2 9			
	5			3		2 8	
		9 3				7 4	
	4			5		3 6	
7		3		1 8			

1			4 8 9				6
7 3						4	
					1 2 9 5		
		7	1 2		6		
5			7		3		8
		6		9 5 7			
9 1 4 6							
	2					3 7	
8			5 1 2				4

# 6. SEQUENTIAL SEQUEL

$$1 + 2 + 3 = 9$$

$$2 + 3 + 4 = 2$$

$$3 + 4 + 5 = 8$$

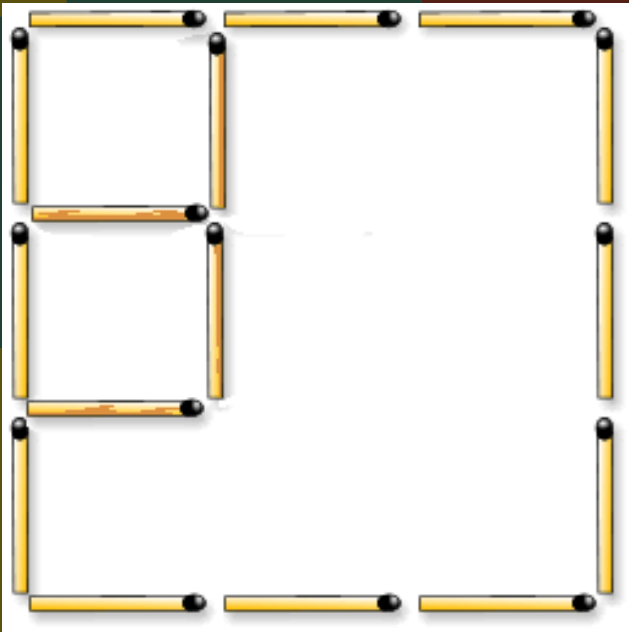
$$4 + 5 + 6 = 9$$

Then,  
 $5 + 6 + 7 = ?$

# PUZZLES & RIDDLES ANSWERS

1. The German

2.



5.

4	3	5	2	6	9	7	8	1
6	8	2	5	7	1	4	9	3
1	9	7	8	3	4	5	6	2
8	2	6	1	9	5	3	4	7
3	7	4	6	8	2	9	1	5
9	5	1	7	4	3	6	2	8
5	1	9	3	2	6	8	7	4
2	4	8	9	5	7	1	3	6
7	6	3	4	1	8	2	5	9

1	5	2	4	8	9	3	7	6
7	3	9	2	5	6	8	4	1
4	6	8	3	7	1	2	9	5
3	8	7	1	2	4	6	5	9
5	9	1	7	6	3	4	2	8
2	4	6	8	9	5	7	1	3
9	1	4	6	3	7	5	8	2
6	2	5	9	4	8	1	3	7
8	7	3	5	1	2	9	6	4

# PUZZLES & RIDDLES ANSWERS

3. Fill the 5-gallon jug completely. Pour the contents of the 5 gallon jug into the 3-gallon jug, leaving 2 gallons of liquid in the 5-gallon jug. Next, dump out the contents of the 3-gallon jug and pour the contents of the 5-gallon jug into the 3-gallon jug. At this point, there are 2 gallons in the 3-gallon jug. Fill up the 5-gallon jug and then pour the contents of the 5-gallon jug into the 3-gallon jug until the 3-gallon jug is full. You will have poured 1 gallon, leaving 4 gallons in the 5-gallon jug.
4. Call the switches 1, 2 and 3. Leave Switch 1 off. Turn Switch 2 on for five minutes and then turn it off. Turn Switch 3 on and leave it on. Enter the room. The bulb that is on is controlled by Switch 3 (the one you left on). Feel the light bulbs that are off for heat. The bulb that is off and warm is controlled by Switch 2 (the one you turned on, then off). The bulb that is off and cold is controlled by Switch 1 (the one that you didn't turn on).
6. For explanation sake we consider the following equation;  
 $a + b + c$ .  
Now looking at the equations in the sequence, the first step is;  
 $a + b + c = (ca,cb)$   
The second step is to keep adding the digits of the resultant number till it reduces to a single digit number.  
Let's try the first equation  $(1 + 2 + 3)$  with this logic for better understanding  
So applying first step we get;  
 $1 + 2 + 3 = [(3 \times 1), (3 \times 2)] = 3,6 = 36$   
Applying 2nd step we get  
 $3 + 6 = 9$ ;  
Similarly the same logic is true for all other equations  
 $2 + 3 + 4 = (4 \times 2), (4 \times 3) = 812 = 11 = 2$   
 $3 + 4 + 5 = (5 \times 3), (5 \times 4) = 1520 = 8$   
 $4 + 5 + 6 = (6 \times 4), (6 \times 5) = 2430 = 9$   
So we can solve the last one to get the answer as;  
 $5 + 6 + 7 = (7 \times 5), (7 \times 6) = 3542 = 14 = 5$   
Hence Answer = 5



# POEMS



# YELLOW

WITH AN EMINENCE

JANANIE R BALAJI  
IT A, THIRD YEAR

# YELLOW

## WITH AN EMINENCE

"O, Mother White!  
The roses red and the bluebells bright,  
They fetch many a candid smile,  
Daylight does embrace Yellow, yet I,  
A Primary color, am still docile!"

"Those millions of your Minions on every little bed,  
Smearing all vibrant colors in every sweet little dream!  
The banana shaped lips of delight that result  
Baby, they're much sweeter than what you think they seem!"

"My darling daughter, color of daffodils,"  
Queen White embraced her baby Blonde,  
"As tender as chicks, as irresistible as honey,  
You're the lioness ruling forests, far and beyond!"

"Royal red and blue, they channel the Blood,  
The elixir of existence, which forms this world!  
And you, the color of the mighty Golden Sun,  
Are the dawn of new days, new beginnings unfurled!"

"As nascent as yolk, seldom praised, yet present,  
You color the deepest corals of the Great Barrier Reef!  
Sour, but as inevitable as the brackish lemons,  
You blend in the warmest shades of the falling autumn leaf!"

As my Golden crown, you're adorned, right atop my head,  
Cradling the red Orb and guarding our Royalty!  
Perhaps, you were forgotten, child, but never obsolete!  
A princess in my heart, you've been,  
And forever you shall be!"

# CHILD LABOUR

The most heinous form of crime,  
One that still persists,  
Despite any attempt on relinquishing it.  
Those among us blessed with a heart ,  
Are a scarcity.  
For, among us there are devils  
Who would see those little chubby feet  
Walk miles barefoot, than skip in the rain,  
Who would see those wrinkle less palms  
Lift the dirt,  
Than play with the snow.  
What cursed world are we in ?  
Tiny teeny eyes, magical,  
full of anticipation and anxiety  
Are made to see annihilation ,  
The gleam of happiness  
Replaced with profound sorrow.  
Curvy wrists , to hold books and pens ,  
Made to lift pans from the kiln,  
Hearts to be filled with memories and love,  
Now a mélange of hatred and horror  
Poverty, the slayer of life, is  
When needs overpowers necessity,  
When nostalgia is nothing but  
fray for a scrap of the leftovers,  
When The blessing of Him,  
Faces the worst curse of mankind.



GAUTHAM KRISHNA  
IT A, THIRD YEAR



# THE GIRL

I ONCE KNEW

SAUJANYA S  
IT B, SECOND YEAR

# THE GIRL I ONCE KNEW

This is the story of a girl I once knew,  
She was young, wild and free  
Strong like the mountains and gushing like the streams  
And eyes gleaming in all colors of the rainbow.

This is the story of a girl I once knew,  
She didn't want to be put in a box,  
Or be given options to choose.  
She wanted to have hair as short as a boy's,  
And still be called a pretty lady too.

This is the story of a girl I once knew,  
She admired the lads and fellow girls alike.  
She didn't understand why she was called a sinner,  
For the way she was born and not what she chose.

This is the story of a girl I once knew,  
She had a voice that was shut out by the people around.  
She was made to feel ashamed for the beautiful soul that she was,  
For being the nature's own daughter and not what people called her.

This is the story of a girl I once knew,  
She cared not a single ounce for the men who told her,  
"A woman does not behave this way".  
She did not conform to the stigma in people's mind.  
She played by the rules of her own game.

This is the story of a girl once knew,  
She took pride in the rainbow gleaming in her eyes,  
She was happy and shining, like the sun.  
Just like the rest of us, she was human too.



SAUJANYA S  
IT B, SECOND YEAR

# TOGETHER

WE ARE



Long ago, during the old time,  
I used to cry sometime.  
To leave my sweet home alone,  
And to meet the unknown.

Days passed very soon,  
As per my wish to the moon.  
The unknown became the known,  
And I found my exact clone.

All the itty-bitty sorrows, delight  
And wishes were found alike.  
Habitually yours became mine,  
And mine became yours.

We held our hands together,  
Life went smooth as feather.  
And now my elusive thoughts getting fade,  
About our first meet in our first grade.



SAMEERA HOLY S  
IT B, SECOND YEAR

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SWARNALATHA  
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# ARTISTIC DISPLAY



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SHIVA  
IT B, SECOND YEAR



VASI  
IT B, SECOND YEAR

# EDITOR'S NOTE

**“A book is a gift you can open again and again.” – Garrison Keillor**

At this juncture, we would like to express our sincere, heartfelt gratitude to the management, students and faculty for their valuable contributions, constant encouragement and support.

Wishing an engaging reading!

Regards,  
Editorial team

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