



**HINDUSTAN  
COLLEGE**  
— MYSURU —

Affiliated to University of Mysore

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J.P. Nagar, Mysuru - 570008



Founder Chairman  
Hindustan Group of Institutions  
20.06.1940 - 14.02.2006

# TECHZONE

An IT Magazine - Department of Computer Science

TECHZONE



**Odd Semester 20-21**

**VOLUME - 03**

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## TECHZONE RELEASE



The 3<sup>rd</sup> issue of “TechZone” was released on 8<sup>th</sup> March 2020 by Ms. PV Sneha Additional Superintendent of Police, Mysuru, Ms. Jayashree.S Moorthy, CEO DAV Public School, Mysuru and Ms. R J Rashmi of 93.5 Red FM, Mysuru along with the guest Dr. C.J. Priya, Principal, Mrs. Sukshma RD and Mrs. Savitha KV were present on the dias.

## WEBINAR ON “DEVOPS”

A National Level Webinar on “DevOps” was organized on 20/06/2020. 315 members had registered to participate in the webinar.

Mr. Manjunath HA, Manager, Philips, Bangalore was invited as a resource person. The programme convenor Mrs. Sukshma R D, Assistant professor, Department of Computer Science, welcomed the resource person. The resource person explained how DevOps is becoming an approach to software delivery where development and operations teams collaborate to build, test, deploy and monitor applications with speed, quality and control. The webinar helped the participants to build a network of DevOps practitioners and showed them how to implement specific DevOps practices in their own organization. Ms. Sukshma RD, Assistant Professor concluded the session by a thanking note.

## WEBINAR ON “BLOCKCHAIN TECHNOLOGY”

**HINDUSTAN FIRST GRADE COLLEGE**  
(Affiliated to University of Mysuru)  
A unit of Hindustan Group of Institutions, Chennai  
J.P. Nagar, Mysuru - 570008

NEWBIES APPROACH TO  
**Blockchain Technology**

July 06 11 AM

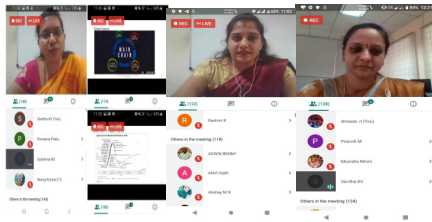
**Dr. Ferdin Joe John Joseph**  
Lecturer, Data Science and Analytics  
Faculty of Information Technology  
Thai-Nichi Institute of Technology, Bangkok  
Alumni 2009 batch, KCG College of Technology, Chennai

Department of Computer Science

Note: E-Certificate will be provided  
No registration fee

A National Level Webinar on “Blockchain Technology” was organized on **06 July 2020**. **Dr. Ferdin Joe John Joseph**, Lecturer in Data Science and Analytics & Faculty of Information Technology, Thai-Nichi Institute of Technology, Bangkok was invited as a resource person. **357** members had registered to participate in the webinar. The programme convenor **Mrs. Savitha KV**, Assistant professor, Department of Computer Science, welcomed and introduced the resource person. **Dr. C J Priya**, Principal addressed the participants.

**Dr. Ferdin Joe John Joseph** focused on the basic explanations related to Block chain terminologies, block chain beyond crypto currencies. He highlighted how block chain is becoming an approach to software and explained the working of block chain, what does a block look like, creation of blocks, hashing and types of block chain networks. He briefed how health care sector helps through block chain supply chain in block chain with IoT. **Ms. Sukshma RD** concluded the session by a thanking note.



## E-QUIZ ON “CLOUD COMPUTING”

**HINDUSTAN FIRST GRADE COLLEGE**  
MYSURU  
Affiliated to University of Mysuru

DEPARTMENT OF COMPUTER SCIENCE  
Presents  
**E-Quiz**  
ON  
**CLOUD COMPUTING**

Date: 20.08.2020  
Time: 10.00 AM

E-Certificate will be provided for those who score 60% and above

Link : <https://forms.gle/M5AE68ci9fzCBQ56>

A National Level e – Quiz on “Cloud Computing” was conducted on **20th August 2020**. The quiz was entirely on basics of cloud computing. E Certificates were given to participants who secured minimum 60% in the quiz. The quiz comprised of 20 questions. Each correct answer was awarded with 2marks. 208 participants from various parts of India, participated in the quiz on **20<sup>th</sup> August 2020** (from 10.00 AM). The participants have given a positive feedback. They have appreciated and congratulated for the initiative of this quiz and have requested to conduct more quiz based on technology. **Mrs. Sukshma RD** and **Mrs. Savitha KV**, Assistant Professor were the program coordinators.

## WEBINAR ON “PROSPECTS FOR ROBOTICS”

A webinar on “Prospects for Robotics” was organised on **29<sup>th</sup> October 2020**. **Mr. Rajath Kumar K.S**, Director, Countinfinite Technologies Pvt Ltd was invited as a resource person for the webinar. The webinar witnessed **80** participants from various colleges. The programme convenor **Dr. Kruthi R**, Assistant professor, Department of Computer Science, welcomed the resource person. **Dr. C J Priya**, Principal addressed the participants. **Mr. Rajath Kumar K.S** focussed on the basic explanations related to “Prospects for Robotics”. The presentation covered the contents based on Origin of the Word Robot, Definition of Robotics, Laws of Robotics. Also the resource person highlighted on aspects relating to Automation vs. Robotics, Robotics application programming using C, C++, Python Programming,

DEPARTMENT OF COMPUTER SCIENCE

HINDUSTAN FIRST GRADE COLLEGE

Webinar on  
**Prospects for Robotics**

**Mr. Rajath Kumar K S**  
Director  
Countinfinite Technologies Pvt Ltd

Join with Google Meet  
<https://meet.google.com/scc-kofy-zfy>

Date: 29th October 2020  
Time: 10.30 a.m.

Robotics operating system, Robotics hardware, Land revolving Robots, Simple line following robots and its working, Swarm Intelligence in Robotics, Human Computer interaction, human to human controlled, Brain Controlled Robot and Mind activity controlling the Robot.

Dr Kruthi R concluded the session by a thanking note.



## WEBINAR ON ‘MACHINE LEARNING & EMERGING APPLICATIONS’

A webinar on “Machine Learning & Emerging Applications” was organised on **28<sup>th</sup> December 2020**. **Mr. Ravikumar M.N**, Associate Professor of Computer Science, Field Marshal K M Cariappa College Madikeri was invited as a resource person. The webinar witnessed 80 participants from various colleges.

The resource person was welcomed by the programme convenor **Mrs. Sukshma R D**, Assistant professor, Department of Computer Science. **Mr. Ravikumar M.N** focussed on the basic explanations related to “Machine learning & Emerging Applications”. The presentation covered the contents based on Milestones of Machine Learning, why Machine Learning, Machine Learning Concept, Terminologies, Machine Learning Process and its types. It also contains Machine Learning Algorithms like simple linear Regressions ,K-nearest algorithm and Applications ,it also includes social networking & medical diagnosis healthcare. The presentation was very interactive and very informative too. Mrs. Sukshma RD concluded the session by a thanking note.

## AMAZON WEB SERVICES

Amazon Web Services is a subsidiary of Amazon providing on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered pay-as-you-go basis. In 2006, Amazon Web Services (AWS) began offering IT infrastructure services to businesses in the form of web services — now commonly known as cloud computing. AWS was first to market with a modern cloud infrastructure service when it launched Amazon Elastic Compute Cloud in August, 2006. There are lots of stories about the formation of AWS, but this much we know: 10 years ago, Amazon Web Services, the cloud Infrastructure as a Service arm of Amazon.com, was launched with little fanfare as a side business for Amazon.com. Today, it’s a highly successful company in its own right, riding a remarkable \$10 billion run rate. In fact, according to data from Synergy Research, in the decade since its launch, AWS has grown into



**Amrutha S**  
**V sem BCA**

the most successful cloud infrastructure company on the planet, garnering more than 30 percent of the market. That’s more than its three closest rivals — Microsoft, IBM and Google — combined (and by a fair margin). What you may not know is that the roots for the idea of AWS go back to the 2000 timeframe when Amazon was a far different company than it is today — simply an e-commerce company struggling with scale problems. Those issues

forced the company to build some solid internal systems to deal with the hyper growth it was experiencing — and that laid the foundation for what would become AWS. Speaking recently at an event in Washington, DC, AWS CEO Andy Jassy, who has been there from the beginning, explained how these core systems developed out of need over a three-year period beginning in 2000, and, before they knew it, without any real planning, they had the makings of a business that would become AWS.

### **AWS: Benefits & Applications in Real World**

Amazon Web Services or AWS is the cloud infrastructure and web services division of Amazon.com, the biggest retail player in the world. It is designed to bring immense benefits to organizations. Some organizations, in their excitement to benefit from Amazon, move their applications to AWS without even considering or adopting the lift and shift approach. Despite the miss, these organizations are accorded the advantages that come with using a cost-efficient and secure infrastructure. But it is very easy for these organizations to forget that it is not that easy to enjoy the twin benefits of agility and flexibility without adopting the recommended changes. Yes, it is true. Most IT engineers, developers, and programmers do not realize the need to evolve their organization's architectures to experience the advantages that come with AWS. New applications, scalability, and efficiency are achievable by using cloud-related IT architecture patterns. The evolved architectures, modified to work with AWS, are capable of supporting applications, that experience irregular traffic from hundreds or thousands of mobile devices or IoT devices connected to each other as well as real-time Internet-based data analytics. While creating modified architectures for existing applications that currently use on-premise hardware or building cloud-native applications from scratch, awareness of the differences that exist between cloud computing and traditional environments is important.

The points of difference include automation, scalability, databases, resource types, and flexible components, amongst others. It goes without saying that developing a thorough understanding of the concept before deciding in favor of migrating to AWS is critical to enjoying the short-term and long-term benefits.

### **AWS use cases:**

1. Storage and Backup. Amazon's cloud storage is a very useful service for businesses and is quite easily accessible as well.

2. Enterprise IT. Enterprise IT, on occasions, could operate at a very slow pace.
3. Mobile, Web, and Social Applications.
4. Big Data.
5. Websites.
6. Gaming.

### **Most Used AWS Services**

1. Amazon EC2. You don't have to invest in costly physical services.
2. Amazon RDS. The Amazon Relational Database Service (RDS) was designed to make your infrastructure more user friendly.
3. Amazon Simple Storage Service (S3) We are living in the age of big data.
4. Amazon CloudFront.
5. Amazon VPC.
6. Amazon SNS.
7. AWS Beanstalk.
8. AWS Lambda.

### **AWS Limitations**

AWS is the fastest growing Cloud provider, and it offers more than 70 different services. For just about any service that you could think of, there is probably already a specialized service on AWS where you can deploy your setup. And, the entire AWS infrastructure is at your disposal. However, this doesn't mean that you can literally do whatever you want. Some of the **AWS limitations are obvious**, but others are hidden and should be carefully considered before you get started. Let's take a look at some of these limitations and how you can overcome them and keep your business safe in the AWS world.

1. AWS service limits
2. Technology limitations
3. Lack of relevant knowledge by your team
4. Technical support fee
5. General Cloud Computing issues

As I said at the beginning, it is critical to know the difference between our expectations and reality. When it comes to AWS, you should not expect a perfect system with a simple setup where everything and everyone is waiting just for you. AWS is a complex infrastructure with its own rules and laws that you should respect and know. Once you are aware of them, your Cloud adventure will be much more comfortable than you ever imagined.

## DIGITAL FORENSICS

Digital Forensics (also widely known as computer forensics) is the process of investigating crimes committed using any type of computing device (such as computers, servers, laptops, cell phones, tablets, digital camera, networking devices, Internet of Things (IoT) device or any type of data storage device). Digital forensics is also responsible for examining attacks originated from cyberspace like ransom ware, phishing, SQL injection attacks, distributed denial-of-service (DDoS) attacks, data breach and any sort of cyber-attacks that cause financial or reputation losses. The ultimate goal of a digital forensics investigation is to preserve, identify, acquire and document digital evidence to be used in the court of law. Having a digital forensics capability becomes very important for modern organizations to investigate internal policy violations and external attacks against their computerized systems. "Digital forensics is the process of uncovering and interpreting electronic data. The goal of the process is to preserve any evidence in its most original form while performing a structured investigation by collecting, identifying, and validating the digital information to reconstruct past events".



### Digital evidence:

Digital evidence (also known as electronic evidence) is any information stored or transmitted in digital format, this includes data found on computers, laptops, cell phones, and tablet, PDA hard drives, and all data stored using various storage device media such as USB thumb drive, SD cards, external hard drive, CD/DVD. Data transmitted via computer networks is also considered a part of digital evidence in addition to operating systems and database logs. Digital evidence should be acquired in a Forensically Sound manner. "Forensically Sound" is a term used by digital forensics examiners to describe the process of acquiring digital evidence while preserving its integrity to be admissible in a court of law.

#### It consists of 5 steps at high level:

##### 1. Identification of evidence:

It includes of identifying evidences related to the digital



**Soukhya**  
I sem BCA

crime in storage media, hardware, operating system, network and/or applications. It is the most important and basic step.

##### 1. Collection:

It includes preserving the digital evidences identified in the first step so that they don't degrade to vanish with time. Preserving the digital evidences is very important and crucial.

##### 2. Analysis:

It includes analysing the collected digital evidences of the committed computer crime in order to trace the criminal and possible path used to breach into the system.

##### 3. Documentation:

It includes the proper documentation of the whole digital investigation, digital evidences, loop holes of the attacked system etc. so that the case can be studied and analysed in future also and can be presented in the court in a proper format.

##### 4. Presentation:

It includes the presentation of all the digital evidences and documentation in the court in order to prove the digital crime committed and identify the criminal.

#### Branches of Digital Forensics:

1. **Media forensics:** It is the branch of digital forensics which includes identification, collection, analysis and presentation of audio, video and image evidences during the investigation process.

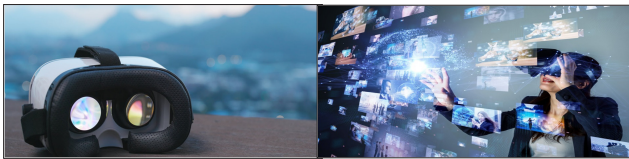
2. **Cyber forensics:** It is the branch of digital forensics which includes identification, collection, analysis and presentation of digital evidences during the investigation of a cyber-crime.

3. **Mobile forensics:** It is the branch of digital forensics which includes identification, collection, analysis and presentation of digital evidences during the investigation of a crime committed through a mobile device like mobile phones, GPS device, tablet, laptop.

4. **Software forensics:** It is the branch of digital forensics which includes identification, collection, analysis and presentation of digital evidences during the investigation of a crime related to software's only.

## VIRTUAL REALITY

Virtual Reality (VR) is the use of computer technology to create a simulated environment. Unlike traditional user interfaces, VR places the user inside an experience. Instead of viewing a screen in front of them, users are immersed and able to interact with 3D worlds. By simulating as many senses as possible, such as vision, hearing, touch, even smell, the computer is transformed into a gatekeeper to this artificial world. The only limits to near-real VR experiences are the availability of content and cheap computing power.



Virtual Reality's most immediately-recognizable component is the head-mounted display (HMD). Human beings are visual creatures, and display technology is often the single biggest difference between immersive Virtual Reality systems and traditional user interfaces. For instance, CAVE automatic virtual environments actively display virtual content onto room-sized screens. While they are fun for people in universities and big labs, consumer and industrial wearables are the wild west. With a multiplicity of emerging hardware and software options, the future of wearables is unfolding but yet unknown. Concepts such as the HTC Vive Pro Eye, Oculus Quest and Playstation VR are leading the way, but there are also players like Google, Apple, Samsung, Lenovo and others who may surprise the industry with new levels of immersion and usability. Whomever comes out ahead, the simplicity of buying a helmet-sized device that can work in a living-room, office, or factory floor has made HMDs center stage when it comes to Virtual Reality Technologies.

**Major players in Virtual Reality: Oculus, HTC, Sony** As of the end of 2018, the three best selling Virtual technologies comes to Virtual Reality technologies. Reality headsets were Sony's PlayStation VR (PSVR), Facebook's Oculus Rift and the HTC Vive. This was not a surprise, seeing as the same three HMDs had also been best sellers in 2017. 2019 sees the VR landscape broadening with Google, HP, Lenovo, and others looking to grab a piece of the still-burgeoning market. **Oculus Rift, Oculus Rift S, Oculus Go, Oculus Quest** -Originally funded as a Kickstarter project in 2012, and engineered with the help of John Carmack



**Tanya**  
III sem BCA

Oculus became the early leader in Virtual Reality hardware for video games. Facebook bought Oculus in 2014, and brought the company's high-end VR HMD to market for consumers. More recently, Oculus has seen success with the lower-price, lower-powered Oculus Go, and 2019 will see the release of multiple new iterations on the hardware, including the tethered Rift S and the stand-alone Oculus Quest.

### **Virtual Reality and data visualization**

Scientific and engineering data visualization has benefited for years from Virtual Reality, although recent innovation in display technology has generated interest in everything from molecular visualization to architecture to weather models.

### **VR for aviation, medicine, and the military**

In aviation, medicine, and the military, Virtual Reality training is an attractive alternative to live training with expensive equipment, dangerous situations, or sensitive technology. Commercial pilots can use realistic cockpits with VR technology in holistic training programs that incorporate virtual flight and live instruction. Surgeons can train with virtual tools and patients, and transfer their virtual skills into the operating room, and studies have already begun to show that such training leads to faster doctors who make fewer mistakes. Police and soldiers are able to conduct virtual raids that avoid putting lives at risk.

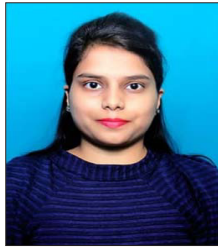
### **Virtual Reality and the treatment of mental illness**

Speaking of medicine, the treatment of mental illness, including post-traumatic stress disorder, stands to benefit from the application of Virtual Reality technology to ongoing therapy programs. Whether it's allowing veterans to confront challenges in a controlled environment, or overcoming phobias in combination with behavioral therapy, VR has a potential beyond gaming, industrial and marketing applications to help people heal from, reconcile and understand real-world experiences.

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Hemanth Kumar B  
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Harshitha M  
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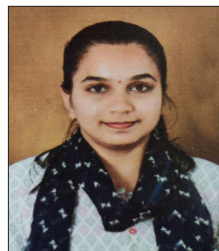
Harshith V  
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Akshay Jain SP  
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Pavan Kumar E  
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**GRADUATION DAY - 2020**

