HINDUSTAN COLLEGE

(Affiliated to University of Mysore)

No.27/f, 3rd Stage, Rajarajeshwari Temple Road,
J.P.Nagar, Mysuru – 570008

TECHZONE

An IT Magazine - Department of Computer Science

TECHZONE

Odd Semester 21 - 22

VOLUME - 04
ISSUE - 05

TECHZONE RELESE AND NATIONAL SCIENCE DAY

Release of TechZone by Dr. Minavathi, Professor and Dean (Research), Department of Computer Science & Engineering, P.E.S College, Mandya.

To commemorate the invention of "The Raman Effect" by the veteran Indian Physicist, Sir Chandrasekhara Venkata Raman, **NationalScience Day** was celebrated at Hindustan College on **March 1st 2021**. The programme commenced with a welcome address by Ms. Sukshma RD, Assistant Professor, Department of Computer Science followed by an inaugural address by **Dr. Minavathi, Professor and Dean (Research), Department of Computer Science & Engineering, P.E.S College, Mandya.**

On the occasion of National Science day, **Release of TechZone & an Inter Collegiate Poster Making Competition** was organized for the students of Pre University College and Degree College. The students were asked to make the posters on the theme **"Robotics"**. The aim behind conducting this competition was to check the creative and artistic skills of the students. The students from various colleges had participated in the competition with immense zeal and enthusiasm and made colorful posters which gave the message of future of robotics.

The following students were awarded cash prize and certificate for their creative work in poster presentation.

I prize - Ms. Sahana G, Maharani First Grade College, Mysuru.

II prize - Mr. Damodar, II year BCA, Hindustan College, Mysuru.

The **4th issue of IT magazine "Techzone" was released by the chief guest Dr. Minavathi, Professor and Dean (Research), Department of Computer Science &Engineering, P.E.S College, Mandya**, Dr. Priya, Principal and Mr. Abel Mathew Prasad, Special Officer. The program concluded with a thanking by Mr. Sandeep N.K., Assistant Professor, Department of Computer Science, HC.

WEBINAR ON "RECENT TRENDS IN COMPUTER VISION AND ITS INDUSTRIAL APPLICATIONS"

A Webinar on **"Recent Trends in Computer Vision & its Industrial Applications"** was organized by the Department of Computer Science, Hindustan College on 21ˢᵗ **May 2021**.

Dr. Dinesh, Head AI Lab & Principal Engineer, Samsung Electro-Mechanics, Bangalore was invited as the resource person for the webinar.

The resource person explained how technology trends in imaging like Assistance in decision making process, advancement in display features, distributed parallel image processing, multi sensor image fusion, advancementin image processing. Last 10 minutes of the session was reserved for discussion which was followed with a thanking note by Ms. Savitha K V, Assistant Professor & Head, Department of Computer Science, Hindustan College.

WEBINAR ON "FUNDAMENTALS OF BUSINESS INTELLIGENCE AND DATA ANALYTICS"

The Department of Computer Science, Hindustan College had organized a webinar titled **"Fundamentals of Business Intelligence and Data Analytics"** on **28ᵗʰ May 2021.**

Dr. P.Ranjana, Professor Department of CSE, Hindustan Institute of Technology & Science, Chennai covered the contents based on highlighting the difference between Data and Information also elaborating on the types on data and explained how Business Intelligence technology is gathered, stored and analyzed.

The webinar was informative to the students who got inputs of getting started with data mining and analytics projects. The Program Convenor Ms.Sukshma RD, Assistant Professor, Department of Computer Science, HFGC concluded the session with a thanking note.

WEBINAR ON "EXPLORING THE POTENTIAL OF BLOCK CHAIN"

The Department of ComputerScience, HC organized a webinar titled **"Exploring the potential of BlockChain"** on **4th June 2021**. **Dr. Sathya Priya S,Associate Professor, School of Computing Science, Hindustan Institute of Technology & Science, Chennai** was invited as the resource person for the

webinar. He elaborated on the bit coin Mining and explained how block chain works in different sectors like public, private, consortium block chain, consequence mechanism were analyzed. She also explained how Block chain works and how it help for the career like Block chain core developer, Application engineer, Project Manager & Quality Manager. The webinar was quite exploratory and informative and it was a beginner's guide towards Block chain Technology in Real time cases. Through this webinar many students got inputs of getting started with Block chain Technology projects. The session ended with a thanking note by the Program Convenor Ms. Sukshma RD, Assistant Professor, Department of Computer Science, Hindustan College.
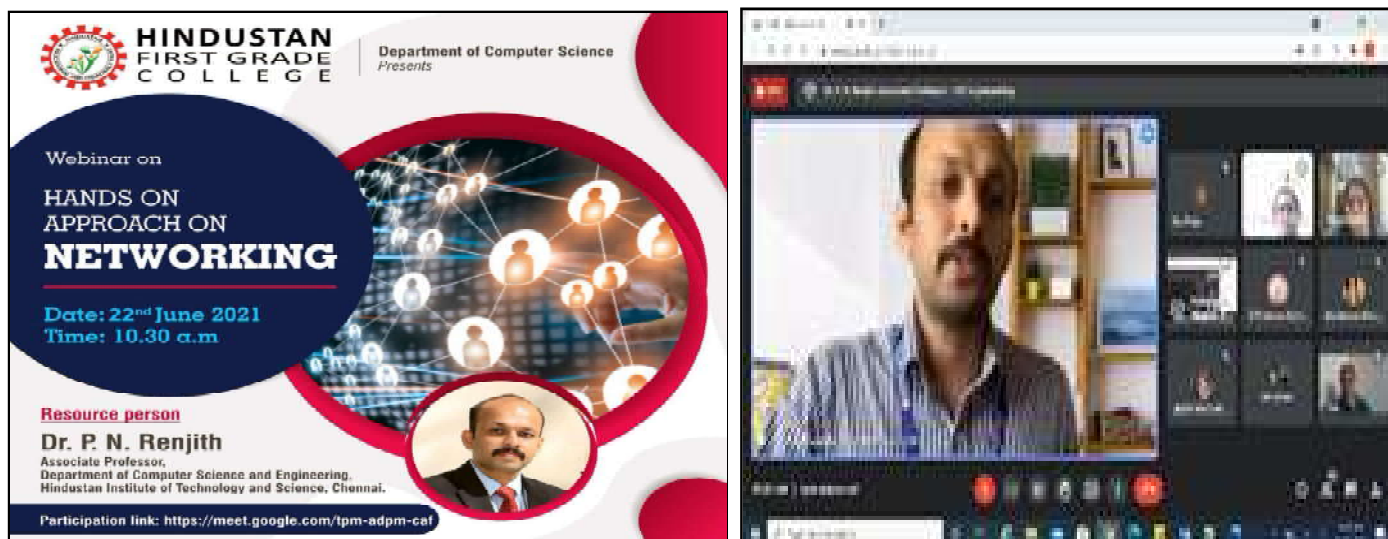
WEBINAR ON
"INTERNET OF THINGS: AN APPLICATION POINT OFVIEW"

A webinar titled **"Internet of Things: An application point of view"** was organized by the Department of Computer Science on **11ᵗʰ June 2021**. **Dr. K Ramesh, Professor, Department of Computer Science & Engineering, Hindustan Institute of Technology & Science, Chennai** was invited as the resource person for the webinar. He explained how the Sensors and Actuators can be accessed and controlled, discussed about the importance of IOT and the various components of IOT, connectivity protocols, edgedevices, cloud storage and also explained how IOT works and how it help for the career like IOT developer, Application engineer, Project Manager & Quality Manager. The webinar concluded with the common discussion followed by a thanking note by the Program Convenor Ms. Sukshma RD, Assistant Professor, Dept of Computer Science, Hindustan College.

WEBINAR ON
"HANDS ON APPROACH ON NETWORKING"

The Department of Computer Science organized a webinar titled **"Hands on approach on Networking"** on 22**ⁿᵈ June 2021**. **Dr.P. N. Renjith, Associate Professor, Department of Computer Science and**

Engineering, Hindustan Institute of Technology and Science, Chennai was invited as the resource person for the webinar who explained the evolution of network, explained how OSI layer works with an example, types of IP address and highlighted the importance of types of network. He also described and showed how packets are sent from one node to another node, explained how to establish a LAN connection, the importance of router and switches. The Program Convenor Ms. Savitha KV, Assistant Professor, Dept. of Computer Science, Hindustan College concluded the session with a thanking note.

WEBINAR ON "ARTIFICIAL INTELLIGENCE VS MACHINE LEARNING VS DEEP LEARNING"

A Webinar on **"Artificial Intelligence Vs Machine Learning Vs Deep Learning"** was organized by the Department of Computer Science, Hindustan College on **02ⁿᵈ July 2021**. **Dr. Krishnamurthy, Professor & HOD, Department of Artificial Intelligence and Data Science, KCG College of Technology, Chennai** was invited as a resource person for the webinar. The resource person covered the contents based on how Artificial Intelligence is interrelated with Machine Learning and Deep Learning and the differences between Artificial Intelligence/Machine Learning/Deep Learning, Protocols' used, application areas and how they differ from each other. The presentation was very interactive, insightful with inspiring for the students.

WEBINAR ON "MOBILE ADHOC NETWORKS"

A webinar titled **"Mobile Adhoc Networks"** was organized by the Department of Computer Science, Hindustan College on **20ᵗʰ July 2021**. **Dr . Thangakumar J, Associate Professor, Dept. of CSE, Hindustan Institute of Technology and Science, Chennai** was invited as a resource person who explained the various components of Mobile Adhoc networks, Host movement frequent, topology movement frequent and highlighted on how data should be routed via intermediate nodes, routing protocols and how it helps for the career like network developer, Application engineer, Project Manager & Quality Manager. Last 10 minutes of the session was reserved for discussion which was followed with a concluding note by the Program Convenor Ms. Sukshma RD concluded the session by a thanking note.

IT QUIZ COMPETITION

An **IT Quiz Competition** was organized by the Department of Computer Science, Hindustan College on **21ˢᵗ December 2021.**

The competition was initiated by Ms. Savitha KV, HoD & Assistant Professor, Department of Computer Science. 24 teams participated in IT Quiz which was conducted in 3 rounds.

The following are the details of the winners in the competition.

I prize bagged by Abhishek Nayak, III BCA & Druthu, II BCA.

II prize bagged by Nisha, II BCA & Yashaswini, II BCA.

III prize bagged by Sukanya, I BCA & Shreevalsala, I BCA.

ALUMNI TALK ON "ROAD MAP TO SUCCESS"
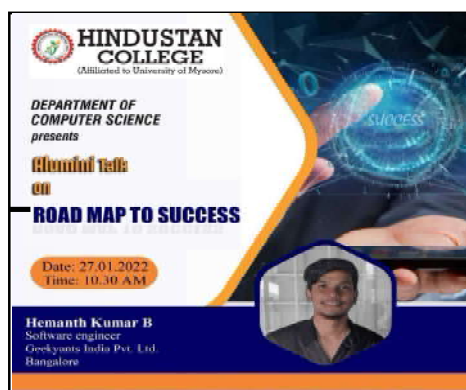
The Alumni talk on **"Road map to success"** was organized by the Department of Computer Science for the BCA students on **27ᵗʰ January 2022.** Hindustan College's alumni, Hemanth Kumar (2017-2020), Software Engineer, Geekyants India Pvt. Ltd, Bangalore addressed the students of BCA department. Ms Savitha K V HoD & Assistant Professor, Department of Computer Science welcomed the gathering and she also introduced the alumni to the students.

Following are the key take away from the talk:

1. Importance of finding what is one's area of interest and knowing how the BCA course is going to help to achieve a career in IT industry.

2. The importance of skills in the current industry.

3. Frontend, backend and full stack development in software engineering.

4. Different technologies used in Front end development such as HTML, CSS, PHP, Javascript.

5. Different technologies used in Back end development such as MongoDB, PostgreS, MySql.

6. Different development platforms such as Django, Flutter.

7. UI and UX frameworks such as angular.js, node.js and react.js

        The talk concluded with question and answer session. Ms.Sukshma RD, Assistant Professor, Department of Computer Science rendered the vote of thanks.

VISIT TO BEML EXPO

II year BCA students participated in an exhibition on "BEML Journey since 1964" organized by BEML as a part of 75 years of India's Independence celebrating "Azadi Ka Amrit Mahotsav". The Exhibition highlighted BEML's growth over the years and its contribution in making "Atmanirbhar Bharat". Apart from this, equipment manufactured by BEML such as dozers, dumpers, heavy duty trucks were displayed.

This is a unique and one-of-a-kind opportunity for the public to have a first-hand glimpse of the various iconic and marquee products manufactured by BEML for use by the country's defense forces and other allied sectors. Ms. Savitha KV, HoD & Assistant Professor, Department of Computer Science, Hindustan College, Mysore accompanied the students.

CYBER ATTACK

IN 1988, Robert Tappan Morris, son of the famous cryptographer Robert Morris Sr, he was graduated in Cornell University. He wanted to know how big the internet was and how many devices was connected to it. So he wrote a program that would travel from computer to computer and ask each machine to send a signal back to control server, which keep count. The program was worked too well in which large numbers of internet connected devices, including computers, webcams, and other smart gadgets, are told to send lots of traffic to one particular address, overloading it with so much activity that either the system shuts down or its network connections are completely blocked.

His program became the first of a particular type of cyber attack called "distributed denial of service".

Cyber-attack is any type of offensive action that targets computer information systems, infrastructures, computer networks or personal computer devices, using various methods to steal, alter or destroy data or information systems.

Types of Cyber Attack:

1) Denial-of-Service (DoS) and Distributed Denial-of-Service (DDoS) attacks:
A Denial-of-Service attack overwhelms a system's resources so that it can't respond to service requests. A DDoS attack is also an attack on system's resources, but it is launched from a large number of other host machines that are infected by malicious software controlled by the attacker. There are different types of DoS and DDoS attacks; And they are TCP SYN flood attack, Teardrop attack, Smurf attack, Ping-of-Death attack and Botnets.

2) Man-in-the-Middle (MitM) attack:
A MitM attack occurs when a hacker inserts itself between

the communications of a client and a server.

3) Phishing and Spear phishing attacks:

Phishing attack is the practice of sending emails that appear to be from trusted sources with the goal of gaining personal information or influencing users to do something.

Spear phishing is a very targeted type of phishing activity. Attackers take the time to conduct research into targets and create messages that are personal and relevant. Because of this, spear phishing can be very hard to identify and even harder to defend against.

To reduce the risk of being phished, we can use these techniques:

Critical thinking - Do not accept that an email is the real deal just because of busy or stressed or can have 150 other unread messages in your inbox. Stop for a minute and analyze the email.

Hovering over the links - Move the mouse over the link, but do not click it! Just let the mouse cursor over the link and see where would actually take you. Apply critical thinking to decipher the URL.

4. Drive-by attack

Drive-by download attacks are a common method of spreading malware. Hackers look for insecure websites and plant a malicious script into HTTP or PHP code on one of the pages. This script might install malware directly onto the computer of someone who visits the site, or it might re-direct the victim to a site controlled by the hackers.

To protect yourself from drive-by attacks, you need to keep your browsers and operating systems up to date and avoid websites that might contain malicious code.

5. Password attack.

Passwords are the most commonly used mechanism to authenticate users to an information system, obtaining passwords is a common and effective attack approach.

6. SQL Injection attack.

SQL injection has become a common issue with database-driven websites. It occurs when a malefactor executes a SQL query to the database via the input data

from the client to server.

For example, a web form on a website might request a user's account name and then send it to the database in order to pull up the associated account information using dynamic SQL like this.

While this works for users who are properly entering their account number, it leaves a hole for attackers. For example, if someone decided to provide an account number of '1' = '1', that would result in a query string of.

Because '1' = '1' always evaluates to TRUE, the database will return the data for all users instead of just a single user.

In order to protect yourself from a SQL injection attacks, apply least '0' privilege model of permissions in the databases. Stick to stored procedures (make sure that these procedures don't include any dynamic SQL) and prepared statements (parameterized queries).

7 . Malware attack

Malicious software can be described as unwanted software that is installed in your system without your consent. It can attach itself to legitimate code and propagate, it can lurk in useful applications or replicate itself across the Internet.

Like:-Macro viruses, File infectors, Worms etc.

CONCLUSION: Measures to mitigate these threats vary, but security basics stay the same: We need the systems and anti-virus databases up to date, train your employees, configure your firewall to whitelist only the specific ports and hosts you need, keep the passwords strong, use a least-privilege model in your IT environment, make regular backups, and continuously audit your IT systems for suspicious activity.

Jeevitha
III sem BCA

APPLE UNVEILS THEIR NEW M1 CHIP

For the first time in nearly 15 years, Apple's newest MacBooks and Mac mini don't come with Intel processors. Instead, they use the brand-new Apple M1 chip, unveiled on Tuesday as a powerful replacement for the many generations of Intel CPUs that have powered Apple computers since 2006.


Apple has made some pretty bold statements about how fast and long-lasting its new SoCis, and on face value it seems incredibly scalable. It can go fanless on the MacBook Air, and scales all the way up to desktop-level performance on the Mac mini. However, Apple only offered very vague comparisons to existing hardware, stating that its new SoC was simply faster than the latest PC laptop chips, without going into any detail about which PC laptop chip it's faster than – there's more than one.

What we do know is that because this is an ARM chip.(Advanced RISC Machine.The Apple M1 is a whole system on a chip, or SoC. What this means is that Apple was able to shove a whole bunch of components into one package, which cuts down on motherboard real estate, and boosts performance by lowering latency and reducing power requirements.

Specifically, the Apple M1 contains the CPU, Cache, Fabric – which we have virtually no information on – a GPU, a Neural Engine and DRAM. Bundling all of these together in one package theoretically means Apple could start producing much thinner MacBooks.

As for the CPU, the Apple M1 has eight cores in a BIG.little configuration – this means there are four high-performance cores and four high-efficiency cores. The high-performance cores are for short bursty workloads that need a lot of single-core and high-frequency *oomph*, while the high-efficiency cores will take care of a lot of background tasks, leaving the more powerful cores open to take care of more demanding tasks as they arise.
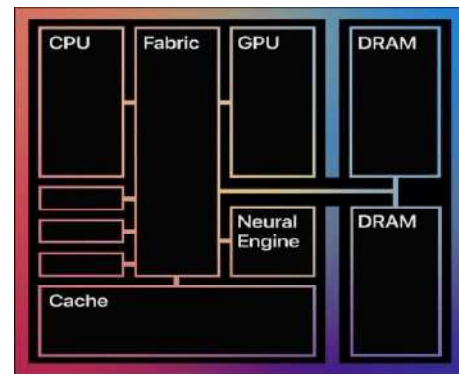
From the way the chip is laid out, it's safe to assume that the CPU and GPU share cache, which is not ideal, given how little of the stuff is available on the Apple M1. Each block of CPU cores has access to a separate block of 4MB of L2 Cache, with no mention of L3. For comparison's sake, the Intel Tiger Lake flagship, the Core i7-1160G7, has three times that amount, at 12MB, that each core can access.
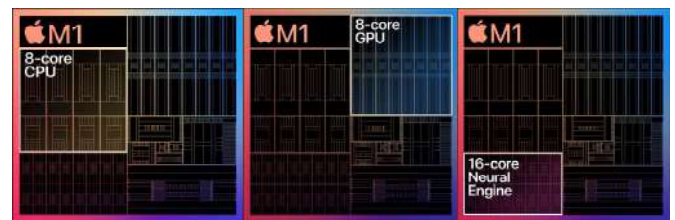
Keep in mind that it's very possible that this first generation of Apple-built ARM processors for MacBooks will be just like any other first-generation product, with low performance and plenty of bugs to work through. Until we know what these new computers can do, we'd advise not jumping onto Apple's new lineup of processors.

Poorvik M
V sem BCA

ROBOTIC PROCESS AUTOMATION (RPA)

Like AI and Machine Learning, Robotic Process Automation, or RPA, is another technology that is automating jobs. RPA is the use of software to automate business processes such as interpreting applications, processing transactions, dealing with data, and even replying to emails. RPA automates repetitive tasks that people used to do.

Although Forrester Research estimates RPA automation will threaten the livelihood of 230 million or more knowledge workers or approximately 9 percent of the global workforce, RPA is also creating new jobs while altering existing jobs. McKinsey finds that less than 5 percent of occupations can be totally automated, but about 60 percent can be partially automated.

Robotic process automation from IBM

Going from simple, back-office task automation to scaled automation to handle time-consuming business processes can be a challenge.

The IBM® Robotic Process Automation offering helps you automate more business and IT processes at scale with the ease and speed of traditional RPA. Software robots, or bots, can act on AI insights to complete tasks with no lag time and enable you to achieve digital transformation

Robotic Process Automation for your business to handle high volume tasks that earlier required manpower. Perform various tasks such as queries, calculations, maintenance of records and transactions and more with the help of robotic process automation. Use ready-made robotic process automation PowerPoint presentation templates for better customer service, business operations, improved digitization, cost savings, enabling employees to be more productive. This deck comprises of templates such as robotic process automation steps, robotic process automation spectrum, robotic process automation challenges & solutions, drivers for robotic process automation, etc. These templates are completely customizable.

What is robotic process automation?

Robotic process automation (RPA) is a technology that mimics the way humans interact with software to perform high-volume, repeatable tasks. RPA technology creates software programs or bots that can log into applications, enter data, calculate and complete tasks, and copy data between applications or workflow as required.

When combined with AI and machine learning, RPA can capture more context from the content it is working with by reading text or handwriting with optical character recognition (OCR), extracting entities like names, invoice terms or addresses using natural language processing (NLP), and capturing more context from images, such as automatically estimating accident damage in an insurance claim picture.

Robotic process automation technology can help organizations on their digital transformation journeys by doing the following.

1. Enabling better customer service.
2. Ensuring business operations and processes comply with regulations and compliance standards.
3. Dramatically speeding up processing time.
4. Improving efficiency by digitizing and auditing process data.
5. Reducing costs by reducing manual and repetitive tasks.
6. Enabling employees to be more productive.

Applications of RPA

Some of the top applications of RPA include the following:

Customer service: RPA helps companies provide better customer service by automating contact center tasks, including verifying e-signatures, uploading scanned documents and verifying information for automatic approvals or rejections.

Accounting: Organizations use RPA for general accounting, operational accounting, transactional reporting and budgeting.

Financial services: Companies in the financial services industry use RPA for foreign exchange payments, automating account openings and closings, managing audit requests and processing insurance claims.

Healthcare: Medical organizations use RPA for handling patient records, claims, customer support, account management, billing, reporting and analytics.

Human resources: RPA can automate HR tasks, including onboarding and offboarding, updating employee information and time sheet submission processes.

Supply chain management: RPA can be used in supply chain management for procurement, automating order processing and payments, monitoring inventory levels and tracking shipments
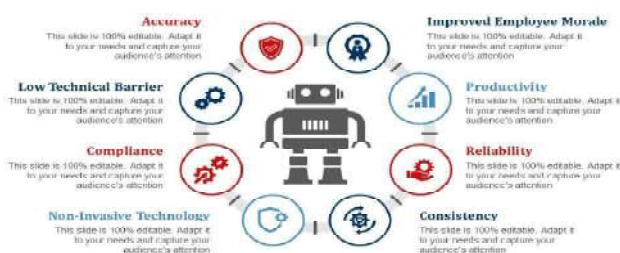
Anusha S
I sem BCA

WORD SEARCH PUZZLE

How to play word search?

Words run horizontally, vertically, diagonally & even backwards.

List of Internet Phenomena - Search any 10 words.

```
H  E  T  A  E  R  C  I  M  G  Q  A
I  Y  A  S  H  Y  F  C  B  R  J  N
V  A  Q  G  N  C  A  I  K  G  E  G
W  B  O  O  O  W  R  R  Q  J  X  R
G  Y  B  L  Z  D  Q  A  W  H  K  Y
U  A  B  B  S  E  Z  B  E  L  Y  K
I  C  M  C  K  P  G  I  X  S  C  I
Y  G  E  E  E  Y  F  N  R  A  Z  B
Q  X  O  G  S  T  I  Q  L  H  B  M
Z  M  L  I  A  M  E  B  B  L  F  D
F  A  C  E  B  O  O  K  D  R  O  W
J  F  A  X  D  Q  H  B  T  N  M  P
```

Powerpoint Key Terms - Search any 10 words.

```
B  U  H  O  W  S  L  I  D  E  L  T
S  L  I  D  E  S  H  O  W  A  D  T
T  K  E  M  Y  H  C  H  Y  R  U  Y
B  R  R  V  P  T  R  O  C  Q  S  M
T  I  A  A  V  N  U  J  K  V  L  Q
H  W  R  H  D  T  R  A  H  C  C  M
E  G  C  E  S  T  U  O  D  N  A  H
M  J  H  S  V  S  K  J  Z  N  P  U
E  T  Y  C  E  O  U  T  L  I  N  E
P  Y  V  W  N  T  V  E  W  T  Q  Q
U  C  Y  Y  T  Y  O  E  H  T  F  T
X  L  A  G  L  M  K  N  C  H  R  Y
```

CONGRATULATION TO THE STUDENTS WHO HAVE EXCELLED IN UG EXAMINATION SEPTEMBER 2021

VI SEMESTER BCA

PREETHI V M
9.45 GPA

MEGHA S
9.40 GPA

AMRUTHA S
9.18 GPA

ASHWINI P N
9.04 GPA

VANDANA B
9.04 GPA

HEMASHREE K
8.90 GPA

SPOORTHI S
8.72 GPA

AKHILA K J
8.63 GPA

SOWJANYA G
8.63 GPA

NAGARJUN D
8.27 GPA

VARUN S
8.27 GPA

ABHISHEK P
8.22 GPA

CHANDAN KAKADE M
8.18 GPA

MADHU PRAKASH
8.13 GPA