



NEHRU INSTITUTE OF TECHNOLOGY



Approved by AICTE , New Delhi & Affiliated to Anna University , Chennai,
kaliapuram , Thirumalayampalayam , Coimbatore - 641 105 , Tamilnadu

DEPARTMENT OF **CSE**



2020-2021



ABOUT THE DEPARTMENT

Our department is very keen in Academic exposure of the students to the latest domain trends by conducting a series of Seminars, Conferences, Guest Lectures, Faculty Development Programmes, Industrial Tours and Visits, etc. The Department of Computer Science and Engineering was started in the year 2008 with an intake of 60 students. The Department had started Post Graduate (ME.CSE) programme in the year 2012.

Department's Vision

To provide Curriculum driven industry oriented Quality Education in the field of Computing and moulds the students as Experts both in Education and research through effective Teaching and Learning process.

Department's Mission

- To impart fundamental studies in mathematics, science, general engineering and modernized Computer education and provide knowledge with effective teaching methodologies focusing on Nation building.
- To groom students to become specialized Computer Hardware and Software Engineers.
- To achieve global standards in education and Value based living through a social and Scientific Approach.
- To offer professional services to meet the requirements of industry, business and society

HOD'S MESSAGE

"Predicting the Happenings of Future Miracles"

Hearty Welcome to the Department of CSE, Every Day of NIT-CSE Department starts with a dose of wisdom to blend and inculcate the professional skills in young minds for shaping their career. The Department offers both UG and PG Programme which primarily focus upon producing entrepreneurs and engineers to become globally competitive in delivering innovative solutions to diverse industrial domains.



EDITORIAL BOARD'S MESSAGE

Dear Readers,

It gives us great pleasure to bring you the Computer science and Engineering Magazine —**Nexus** which will be released every year. The name and fame of an institute depends on the caliber and achievements of the students and teachers. The role of a teacher is to be a facilitator in nurturing the skills and talents of students. This magazine is a platform to exhibit the literary skills and innovative ideas of teachers and students. We would like to place on record our gratitude and heartfelt thanks to all those who have contributed to make this effort in a successful manner. We profusely thank our honorable CEO & Secretary Dr.P.Krishnakumar MBA, PhD and Principal Dr. M.Sivaraja for giving support and encouragement and a free hand in this endeavor. Last but not the least we are thankful to all the authors who have sent their articles. We truly hope that the pages that follow will make an interesting read.

EDITORIAL STUDENT'S DESK:

Ms. Sivajothi A - IV CSE

Mr.Praveen .G.V - III CSE

Mr.Rokkith.S.K - II CSE

Mr. Kirubakaran. V- II CSE

Mr. Abishek.S - II CSE

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

PEO1: To enable graduates to pursue higher education and research, or have a successful career in industries associated with Computer Science and Engineering, or as entrepreneurs.

PEO2: To ensure that graduates will have the ability and attitude to adapt to emerging technological changes.

PROGRAM OUTCOMES POs:

Engineering Graduates will be able to:

PO1.;Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusion

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OBJECTIVES (PSOs)

PSO1:To analyze, design and develop computing solutions by applying foundational concepts of Computer Science and Engineering.

PSO2: To apply software engineering principles and practices for developing quality software for scientific and business applications.

PSO3:To adapt to emerging Information and Communication Technologies (ICT) to innovate ideas and solutions to existing/novel problems.

INTERACTION ABOUT NEW TECHNOLOGY

Edge Computing:

In 2021, there was a growing interest in edge computing as a way to reduce latency and improve the performance of applications

Edge computing is a distributed computing architecture that brings data processing closer to the source of data. In traditional cloud computing, data is sent to a centralized data center for processing and analysis. With edge computing, data processing and storage is moved closer to the edge of the network, such as sensors, devices, and gateways, reducing the latency and bandwidth requirements for data transmission to the cloud.

It enables real-time data processing and analysis, making it ideal for applications that require fast response times, low latency, and high bandwidth. It can also reduce the cost and complexity of data transmission and storage by minimizing the amount of data that needs to be sent to the cloud for processing.

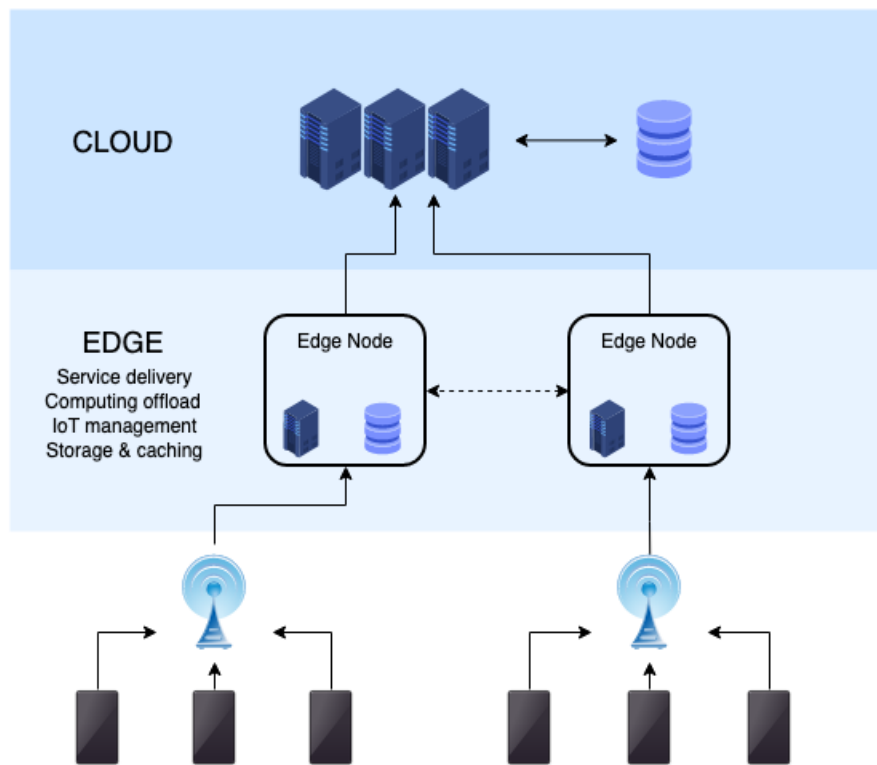
Edge computing has many use cases, including industrial IoT, smart cities, healthcare, and autonomous vehicles. In industrial IoT, edge computing can be used to monitor and optimize production processes in real-time, reducing downtime and increasing efficiency. In smart cities, edge computing can be used to collect and analyze data from sensors and devices to improve traffic flow, reduce energy consumption, and enhance public safety. In healthcare, edge computing can be used to monitor patients in real-time, enabling faster diagnosis and treatment. And in autonomous vehicles, edge computing can be used to process sensor data and make real-time decisions, improving safety and reliability.

Overall, edge computing is a powerful technology that is transforming the way data is processed and analyzed, enabling new applications and use cases that were not possible before. Edge

computing is all a matter of location. In traditional enterprise computing, data is produced at a client endpoint, such as a user's computer. That data is moved across a WAN such as the internet, through the corporate LAN, where the data is stored and worked upon by an enterprise application. Results of that work are then conveyed back to the client endpoint. This remains a proven and time-tested approach to client-server computing for most typical business applications.

But the number of devices connected to the internet, and the volume of data being produced by those devices and used by businesses, is growing far too quickly for traditional data center infrastructures to accommodate. Gartner predicted that by 2025, 75% of enterprise-generated data will be created outside of centralized data centers. The prospect of moving so much data in situations that can often be time- or disruption-sensitive puts incredible strain on the global internet, which itself is often subject to congestion and disruption.

So IT architects have shifted focus from the central data center to the logical edge of the infrastructure -- taking storage and computing resources from the data center and moving those resources to the point where the data is generated. The principle is straightforward: If you can't get the data closer to the data center, get the data center closer to the data. The concept of edge computing isn't new, and it is rooted in decades-old ideas of remote computing -- such as remote offices and branch offices -- where it was more reliable and efficient to place computing resources at the desired location rather than rely on a single central location.



Virtual reality and Augmented Reality:

Virtual and augmented reality: With the pandemic driving people to spend more time indoors, virtual and augmented reality technologies became more popular in 2021, with many companies investing in VR/AR applications for gaming, education, and healthcare.

Virtual reality (VR) and augmented reality (AR) are technologies that create immersive, computer-generated environments or overlay digital content onto the real world. While VR completely immerses the user in a simulated environment, AR adds digital content to the user's view of the real world, enhancing their perception of reality.

Virtual reality is created using a head-mounted display (HMD) and input devices, such as hand controllers, to simulate a realistic 3D environment. Users can interact with the virtual environment using their movements and gestures, allowing for a highly immersive experience. VR technology is used in gaming, education, healthcare, and many other industries.

Augmented reality, on the other hand, adds digital information to the user's view of the real world. This can be done using a smartphone or tablet camera or through specialized AR glasses. AR technology is used in advertising, education, gaming, and many other industries.

Both VR and AR technologies have advanced significantly in recent years, with improved hardware and software capabilities enabling more realistic and immersive experiences.

In addition to gaming and entertainment, VR and AR are being used in fields such as architecture, medicine, and engineering to visualize and manipulate complex 3D models.

Overall, VR and AR are powerful technologies that are transforming the way we interact with digital content and the real world, enabling new applications and use cases that were not possible before. What is the difference between AR and VR?

While both technologies involve simulated reality, AR and VR rely on different underlying components and generally serve different audiences.

In virtual reality, the user almost always wears an eye-covering headset and headphones to completely replace the real world with the virtual one. The idea of VR is to eliminate the real world as much as possible and insulate the user from it. Once inside, the VR universe can be



QUIZ

1. The _____ program initializes all aspects of the system, from CPU registers to device controllers and the contents of main memory, and then starts the operating system.

- a) bootstrap
- b) main
- c) bootloader
- d) rom

Ans: Bootstrap

2. The attacker using a network of compromised devices is known as _____

- a) Internet
- b) Botnet
- c) Telnet
- d) D-net

Ans: Botnet

3. An attempt to make a computer resource unavailable to its intended users is called _____

- a) Denial-of-service attack
- b) Virus attack
- c) Worms attack
- d) Botnet process

Ans: Denial-of-service attack

4. Is Python code compiled or interpreted?

- a) Python code is both compiled and interpreted

- b) Python code is neither compiled nor interpreted
- c) Python code is only compiled
- d) Python code is only interpreted

Ans: Python code is both compiled and interpreted

5. Which of the following error can a compiler check?

- a) Syntax Error
- b) Logical Error
- c) Both Logical and Syntax Error
- d) Compiler cannot check errors

Ans: Syntax Error

6. A device that connects networks with different protocols –

- a) Switch
- b) Hub
- c) Gateway
- d) Proxy Server

Ans: Gateway

7. Which of the following is the hacking approach where cyber-criminals design fake websites or pages for tricking or gaining additional traffic?

- a) Pharming
- b) Website-Duplication
- c) Mimicking
- d) Spamming

Ans: Pharming

8. Which of the following is an example of a SaaS cloud service?

- a) Google Workspace
- b) Dropbox
- c) Salesforce
- d) All of the above

Ans: All of the Above

9. What is information about data called?

- a) Hyper data
- b) Tera data
- c) Meta data
- d) Relations

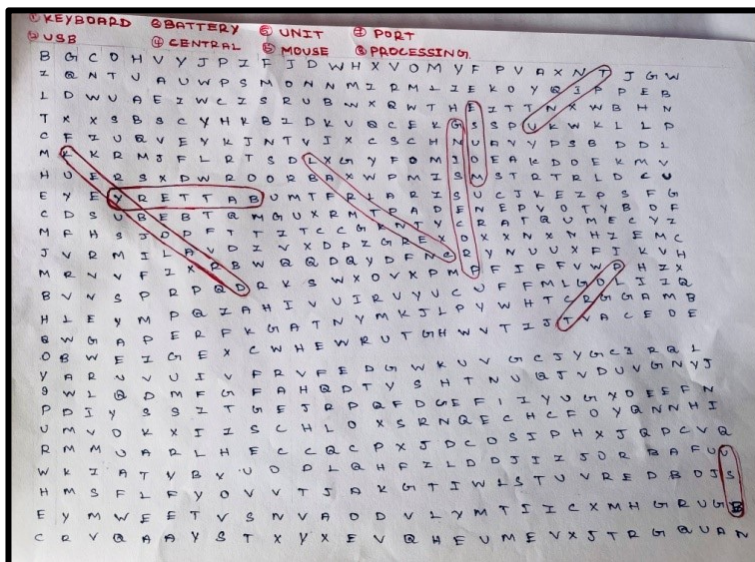
Ans: Meta data

10. _____ is not possible in distributed file system.

- a) File replication
- b) Migration
- c) Client interface
- d) Remote access

Ans: Migration

CROSS WORDS



1. Central
2. Unit
3. Mouse
4. Battery
5. Processing
6. Keyboard
7. Port
8. USB



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