NEHRU INSTITUTE OF TECHNOLOGY

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

DEPARTMENT OF

CSE

Academic year
2019- 2020
CSE

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, 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. K.P.Arulshri 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:

Mr. Krishnamoorthy. B - IV CSE
Ms. Sivajothi .A - III CSE
Mr. Praveen .G.V - II CSE
Mr. Jithin .A- II CSE
Mr. Mohamamed irfan.A – I 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 conclusions.

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

Rover Mission Using JAVA Technology

Man who is a good explorer by nature is trying to invade his next planet, the Mars, with the help of JAVA enabled rovers. Both JAVA and rovers are wonders created by man. control systems like the software on the Rover. The Golden Gate project seeks to use RTSJ (Real Time Specification for JAVA) to develop a system of control software that can be used on a Rover.

The places where NASA scientists have used Java for this mission is all on the groundside right now. They have created this collaborative command and control system called Maestro, which does this combination of data visualization, collaboration, command and control.

Java RTS enables developers of real-time applications to take full advantage of the Java language ecosystem while maintaining the predictability of current real-time development platforms. Java RTS also brings the world of real-time programming to developers currently using Java technology to create applications that reach into the physical world.

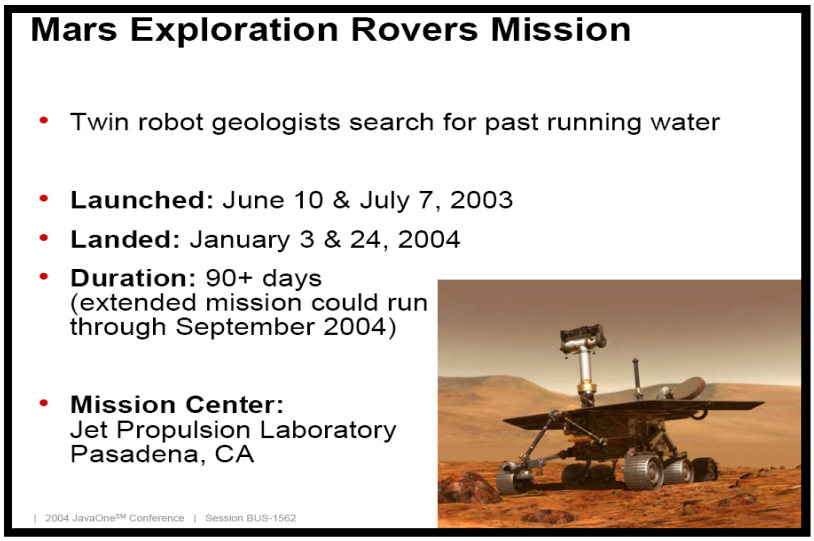
Golden Gate project is being worked on which will create code that would replace the proprietary APIs and real-time operating system code (Wind River) in future missions. Java 3D and Java Advanced Imaging technology are also key to the software JPL (Jet Propulsion Laboratory) is using to render and interpret real time images captured by the Rover.

JAVA, due to its unique features like, platform independency, rich set of API libraries such as 3-D modeling APIs, Advanced Imaging APIs and its Mission Data System to control physical systems fuelled the Mars exploring rover mission.

NASA's twin Mars rovers, Spirit and Opportunity, are exploring opposite sides of the Red Planet to search for evidence of past or present water and to map its geological and climate history. On Jan. 3, 2004, the Spirit rover landed in Gusev Crater on Mars, kicking off a mission planned to last 90-days. Two

years later, Spirit and fellow robotic explorer Opportunity, which landed Jan. 24, 2004, are still going strong. Each Martian morning, the rovers receive a full day of instructions. They operate autonomously all day, and transmit the resulting images and data back to earth at the end of the day. The operations staff lives on "Mars time", each day is approximately 24 hours, 40 minutes. Planning is done during the Martian night, and there are strict deadlines for the uplink of new rover instructions.

The places where NASA scientists have used Java for this mission is all on the groundside right now. They have created this collaborative command and control system called Maestro, which does this combination of data visualization, collaboration, command and control. In the current mission, the software used on the ground to create commands to send to the Rover, and the control software that actually sits on the Rover, are two very different systems with nothing in common whatsoever. What's being used up on the Rover is a well-known real-time operating system from Wind River Systems. Golden Gate is being worked upon which will create code that would replace the proprietary APIs and real-time operating system code (Wind River) in future missions. Sun Labs, Carnegie Mellon-West, a campus of Carnegie Mellon located near Sun Labs in Silicon Valley, and the Jet Propulsion Labs (JPL) are working together on this project. Work is being done on implementation of a software architecture developed at JPL called MDS, or Mission Data System. Greater commonality is being created between the flight system on the Rover and the ground system -- all essentially using Real-Time Specification for Java (RTSJ), and a more seamless development environment for the entire system. Java language pioneer



Java technology today is good for general purpose computing and GUIs, but it was not ready for use with control systems like the software on the Rover. The Golden Gate project seeks to use RTSJ (Real Time Specification for JAVA) to develop a system of control software that can be used on a Rover.

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Mars Exploration Rovers Mission

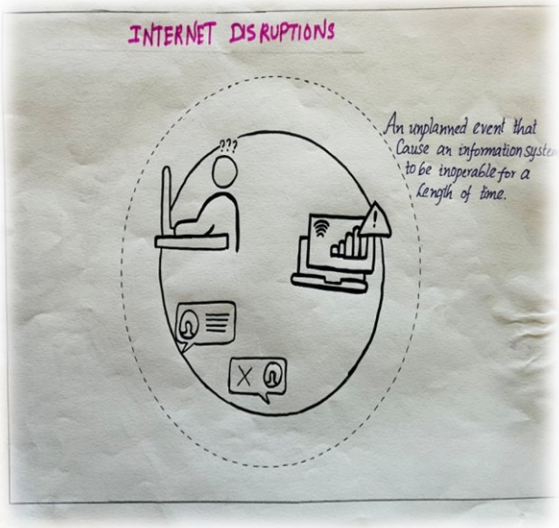
QUANTUM COMPUTING:

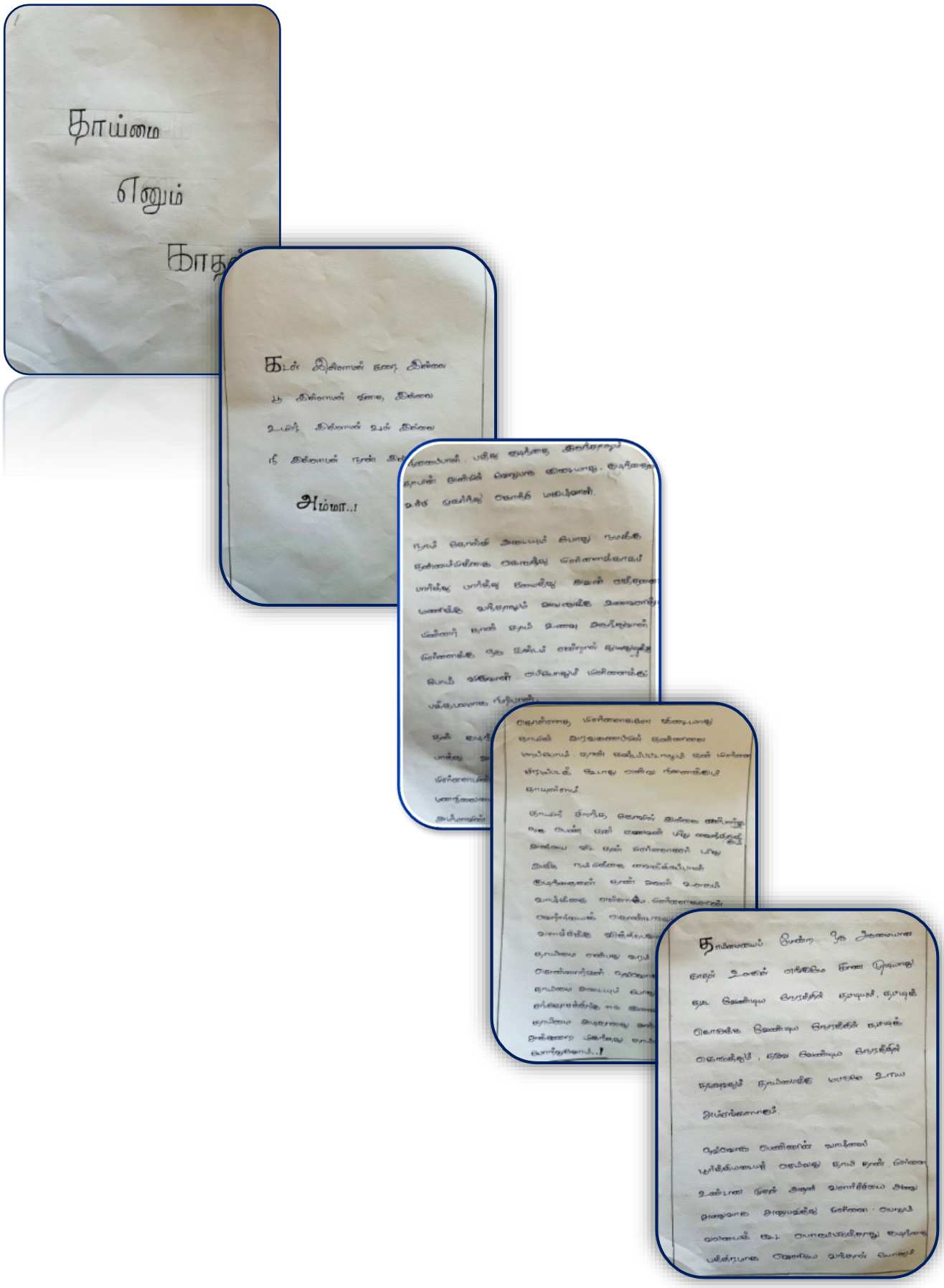
In 2019, Google claimed to have achieved "quantum supremacy" by completing a calculation that would take a traditional computer thousands of years to solve in just a few minutes using a quantum computer.
Quantum computing is a field of computing that uses quantum-mechanical phenomena, such as superposition and entanglement, to perform operations on data. Unlike classical computers, which use bits to represent data as either 0 or 1, quantum computers use quantum bits, or qubits, which can be in a superposition of both 0 and 1 simultaneously. This allows quantum computers to perform certain operations much faster than classical computers.

Quantum computing has the potential to revolutionize fields such as cryptography, machine learning, and optimization problems. For example, quantum computers can efficiently factor large numbers, which is a fundamental problem in cryptography that underlies many encryption methods. Quantum computers can also perform certain machine learning tasks more quickly than classical computers, which could lead to advances in areas such as drug discovery and autonomous vehicles.

However, building a large-scale quantum computer is a significant technological challenge, and many technical and engineering obstacles must be overcome before quantum computers can become practical. Currently, quantum computers are still in the early stages of development and are mostly limited to small-scale experiments in research labs. Nevertheless, quantum computing is an exciting and rapidly evolving field with the potential to transform many aspects of computing and technology.

Student Spot




தாய்மை
எனும்
அம்மா..!

QUIZ

1.What is the full form of DBMS?
a) Data of Binary Management System
b) Database Management System
c) Database Management Service
d) Data Backup Management System

Ans: Database Management System

2.Which of the following is not an example of DBMS?
a) MySQL
b) Microsoft Acess
c) IBM DB2
d) Google

Ans: Google

3.The microprocessor of a computer can operate on any information if it is present in _____ only.
a) Program Counter
b) Flag
c) Main Memory
d) Secondary Memory

Ans: Main Memory

4.What is the word length of the Pentium-II microprocessor?
a) 8-bit
b) 32-bit
c) 64-bit
d) 16-bit

Ans: 64-bit

5.Who is the father of computer security?
a) August Kerckhoffs
b) Bob Thomas
c) Robert
d) Charles

Ans: August Kerckhoffs

6.Which of the following is a component of cyber security?
a) Internet Of Things
b) AI
c) Database
d) Attacks

Ans: Internet Of Things

7.Which of the following is a type of cloud computing service?
a) Service-as-a-Software (SaaS)
b) Software-and-a-Server (SaaS)
c) Software-as-a-Service (SaaS)
d) Software-as-a-Server (SaaS)

Ans: Software-as-a-Service

8.Which of the following is the Cloud Platform provided by Amazon?
a) AWS
b) Cloudera
c) Azure
d) All of the mentioned

Ans: AWS

9. In a graphical system, an array of pixels in the picture are stored in which of the following locations?
a) Frame buffer
b) Processor
c) Memory
d) All of the mentioned

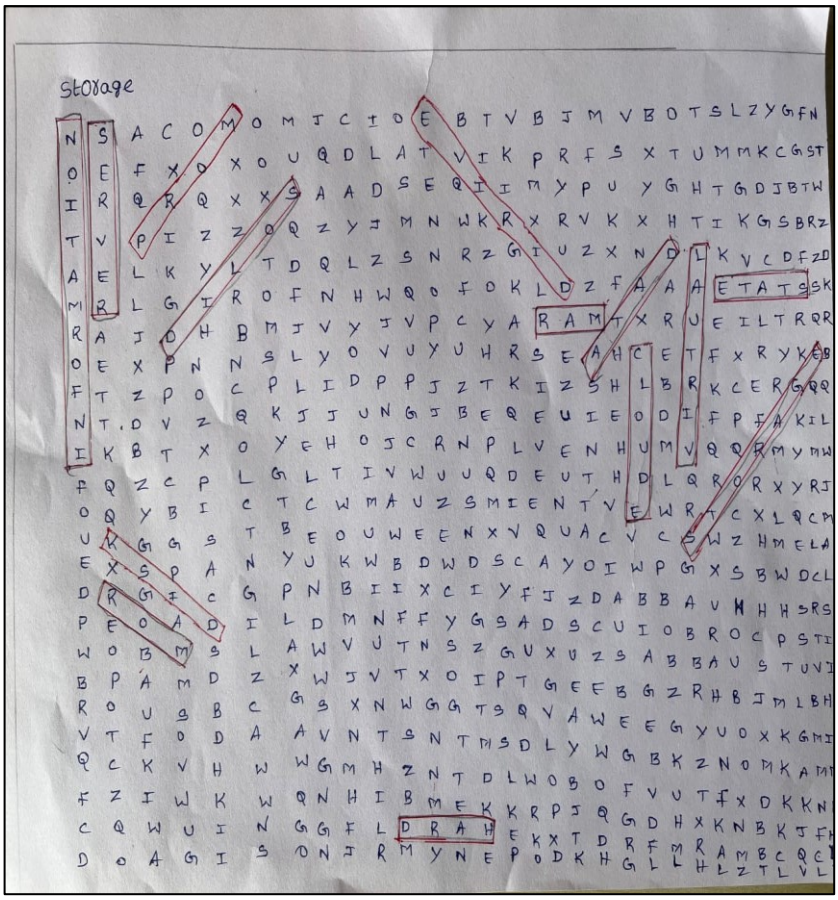
Ans: Frame Buffer

10.does SDLC stands for?
a) System Design Life Cycle
b) Software Design Life Cycle
c) Software Development Life Cycle
d) System Development Life cycle

Ans: Software Development Life Cycle

CROSSWORD

1. Server
2. Information
3. Disk
4. Rom
5. Solid
6. Prom
7. Dirive
8. Ram
9. Data
10. Cloud
11. Virtual
12. State
13. Storage
14. Hard

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