

LOGICIEL Chronicle 2024



PANIMALAR ENGINEERING COLLEGE

(AN AUTONOMOUS INSTITUTION)

JAISAKTHI EDUCATIONAL TRUST

ACCREDITED BY NATIONAL BOARD OF ACCREDITATION (NBA)

BANGALORE TRUNKROAD, VARADHARAJAPURAM,
POONAMALEE, CHENNAI - 600 123



PANIMALAR AMMAL



**Dr. JEPPIAAR, M.A., B.L., Ph.D.,
Founder & Chairman**



PANIMALAR ENGINEERING COLLEGE

(An Autonomous Institution)

(A CHRISTIAN MINORITY INSTITUTION)

JAISAKTHI EDUCATIONAL TRUST

Accredited by National Board of Accreditation (NBA)

AN ISO 9001 : 2000 CERTIFIED INSTITUTION

Bangalore Trunk Road, Varadharajapuram,

Nasarathpettai, Poonamallee, Chennai – 600 123.

Phone: 26490404 / 26490505 / 26490717 Fax : 26490101

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DIRECTOR



**Dr.P.CHINNADURAI, M.A., Ph.D.,
Secretary & Correspondent**

Logiciel Chronicle 2024 unfolds as a profound manifestation of the dreams and aspirations of young minds, presenting a harmonious blend of enchanting aesthetics and practical utility. Within the pages of this magazine, it serves as a conduit, empowering both students and faculty to express their innovative ideas in a spectacular manner, leaving an indelible mark on every reader.

With a touch of grandiosity and a profound sense of pride, I extend my acknowledgment to the Department of Master of Computer Applications for gracefully disseminating its academic excellence and educational legacy for the greater societal good. The essence of dedicated service permeates, enriching the community of eager learners.

Without a doubt, my sincere wishes extend to both the magazine and the department, envisioning their continual ascent to even greater heights in the unfolding years.



**Mr. C. SAKTHIKUMAR, M.E., Ph.D.,
Director**

The solitary aspirations from the past in the expansive realm of the Computer World have seamlessly transformed into a spectacular panorama of reality in the present.

The evolution of the Computer World is relentless, unveiling magical realms that seem to open like the mythical "open sesame," leading into wonderlands of discovery.

Logiciel Chronicle 2024, adorned with its extensive repository of information, extends its welcoming hands to address current needs, inviting individuals to emerge enriched, satisfied, and attaining the pinnacle of perfection.

In their journey, I extend my heartfelt wishes for them to surpass boundaries, achieving limitless heights in the ever-expanding knowledge of the computer world.



Dr.L.JABA SHEELA, M.E., Ph.D.,

Greetings on behalf of the Computer Science and Engineering Department at Panimalar Engineering College. It is with great pride that we announce the release of the newest edition of our magazine, "Logiciel Chronicle 2024". This publication is the result of a collaborative effort aimed at advancing our comprehension of technical concepts.

In the realm of Computer Science and Engineering, our mission is to perpetuate the momentum of the ever-evolving technological landscape and mold the intellect of our students. Through "Logiciel Chronicle 2024" our objective is to cultivate the spirit of innovation and creativity in our students, equipping them to enter the industry with a profound understanding of the rapidly changing technological terrain.

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III CSE-B

C.B.Rupa Sri

III CSE-B

N.P.Sharvesh Ram

III CSE-C

VISION

To provide an academically conducive environment for individuals to develop as technologically superior, socially conscious and nationally responsible citizens.

MISSION

M1: To develop our department as a center of excellence, imparting quality education, generating competent and skilled manpower.

M2: To prepare our students with high degree of credibility, integrity, ethical standards and social concern.

M3: To train our students to devise and implement novel systems, based on Education and Research.

Programme Educational Objectives (PEO)

PEO 1: Employment/Higher studies: To impart and disseminate sound knowledge to the students on the fundamentals of mathematics and advanced fields of computer science and interrelated disciplines to solve simple and complex engineering problems and train them to achieve sustainable growth in their professional career.

PEO 2: Discipline Knowledge: To enhance the ability of students to evaluate the specific requirements of software industry and provide innovative engineering solutions and efficient product designs.

PEO 3: Individual Skills: To facilitate the students to make use of their technical competency to identify and develop appropriate product design, development, testing, maintenance, analysis of problems and provide corrective measures.

PEO 4:3P's -Professional, Personality and Presentation: To enable the students to develop strong leadership qualities with aggressive optimism, multidisciplinary skills, excellent communication skills and function as effective and reliable team members giving importance to professional and ethical principles.

PEO 5: Environment: To inculcate in the students to associate in social networking, pursue continued learning of the latest developments in Computer Science and involve in higher research and contribute to the development of software industry and related engineering fields.

Programme Specific Outcomes (PSO)

PSO 1 (Professional Skills): To inculcate technical skills to analyze, design and implement software's related to algorithms, networking, web services, multimedia, big data analytics and recent topics of varying complexity.

PSO 2 (Problem-Solving Skills): To develop the capability to comprehend and solve the interdisciplinary problems through appropriate technology with the understanding of contemporary business environment.

PSO 3 (Successful Career and Entrepreneurship): To develop an ability to utilize the latest technology and platforms to become a triumphant professional, successful entrepreneur and an urge for pursuing higher studies.

Department Events 2023-2024



Hands on training on IOT by Mr. M. Ranjith Kumar, Managing Director
(Crystal Clear Technology and Innovation) -26.06.2023 TO 30.06.2023



Entrepreneurship Development Cell Workshop on “Future of E-commerce”-20.07.2023

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

GAME-A-THON 4.0

CHIEF GUEST
MR.B.NANDHA KUMAR

24.7.2023
MONDAY

VENUE : CC 1
12:00 PM -3:00 PM

Dr.P.Chinnadurai
SECRETARY & CORRESPONDENT

Mrs.C.Vijayarajeswari
Dr. C. Sakthi Kumar
Dr.Saranya Sree Sakthi Kumar
DIRECTORS

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PRINCIPAL

Dr.L.Jabasheela
HOD - CSE

Dr.Kavitha Subramani
PROFESSOR, CSE

Dr.V.Subedha
PROFESSOR, CSE

Dr.T.Tamilvizhi
Mrs.Sophana Jennifer
Mrs.Jaya Lakshmi
COORDINATORS

Convenors

GAME-A-THON 4.0 by Mr.B.Nandha Kumar-24.07.2023

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 Bangalore Trunk Road,Varadharajapuram,Ponnamalle,chennai-600123

Department of CSE

GUEST LECTURE ON DEEP LEARNING MODELS & APPLICATIONS IN COMPUTER VISION

Date: 25/07/23
Time:9:30AM
Online mode

Dr P. Vidyullatha
 Associate professor
 Department of CSE
 Koneru lakshmaiah
 education foundation
 Guntur, AP, India

Dr.P.Chinnadurai
SECRETARARY & CORRESPONDENT

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Dr.C.Sakthi Kumar
Dr.Saranya sree sakthi kumar
DIRECTORS

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PRINCIPAL

Dr.L.Jabasheela
HOD-CSE

Dr.V.Subedha
PROFESSOR-CSE

Dr.Kavitha Subramani
PROFESSOR-CSE

Dr.R.Josphineleela
PROFESSOR-CSE

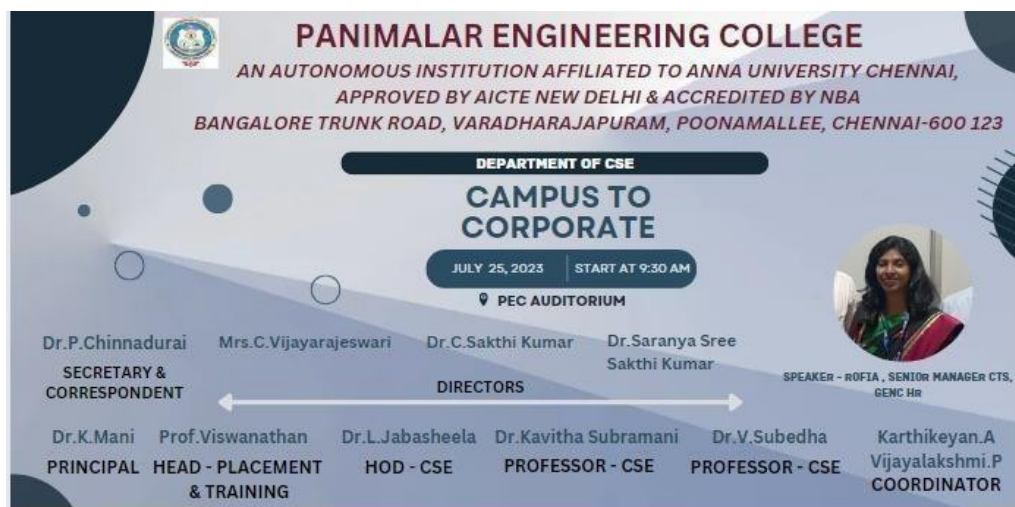
Guest Lecture On Deep Learning Models And Applications In Computer Vision

by Dr P.Vidyullatha-25.07.2023



Inauguration of CODERS FORUM (Department Of CSE)

by Archana G -25.07.2023

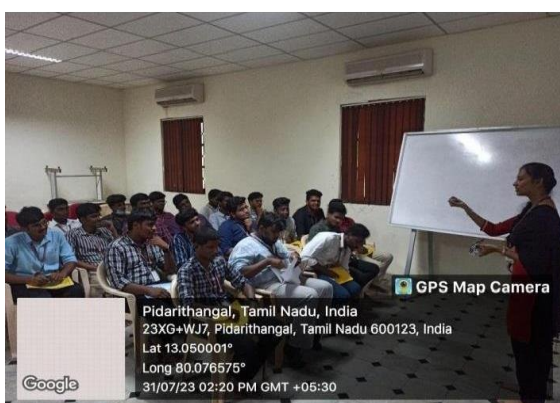


Department of CSE organized “**CAMPUS TO CORPORATE**” by

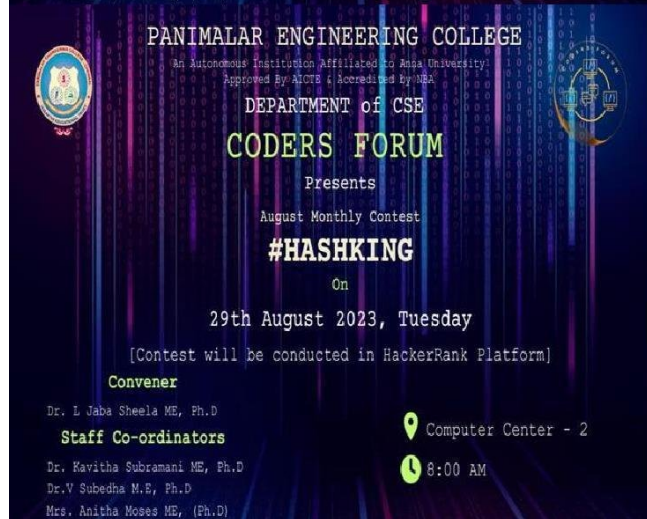
Ms. Rofia Rose, Senior Manager-CTS, GenC HR-25.07.2023



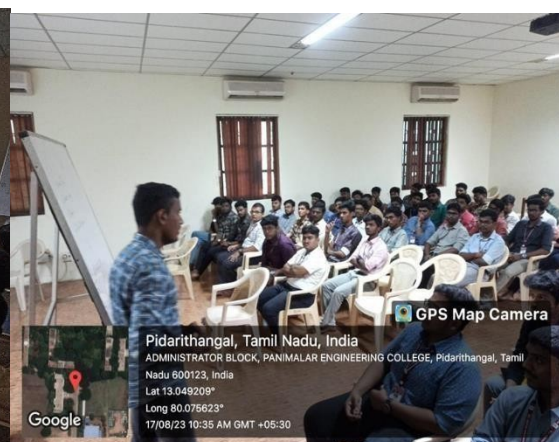
Department of Computer Science and Engineering at Panimalar Engineering College has conducted “**GUEST LECTURE ON INNOVATION IN ENGINEERING** “-29.07.2023



Department of CSE along with UiPath Student Community, organized a session on “**INTRODUCTION TO ROBOTIC PROCESS AUTOMATION**” on 31-07-2023.



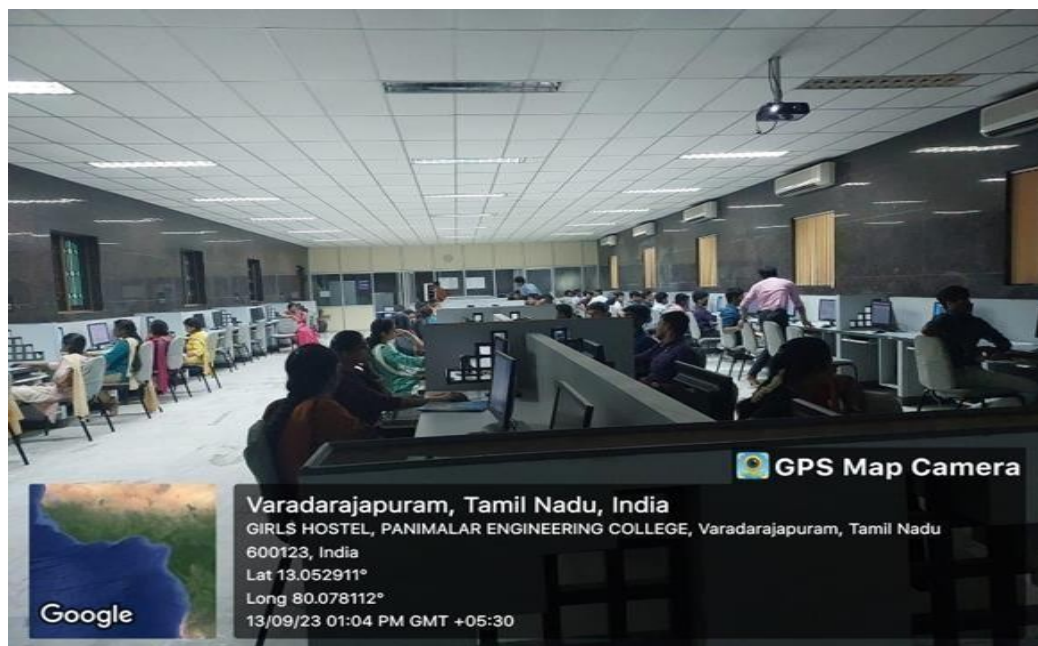
Department Of CSE , Coders Forum Club organised captivating coding competitions, **#HASHKING AND #INCLUDE<CRAZE.C>** on 29.08.2023



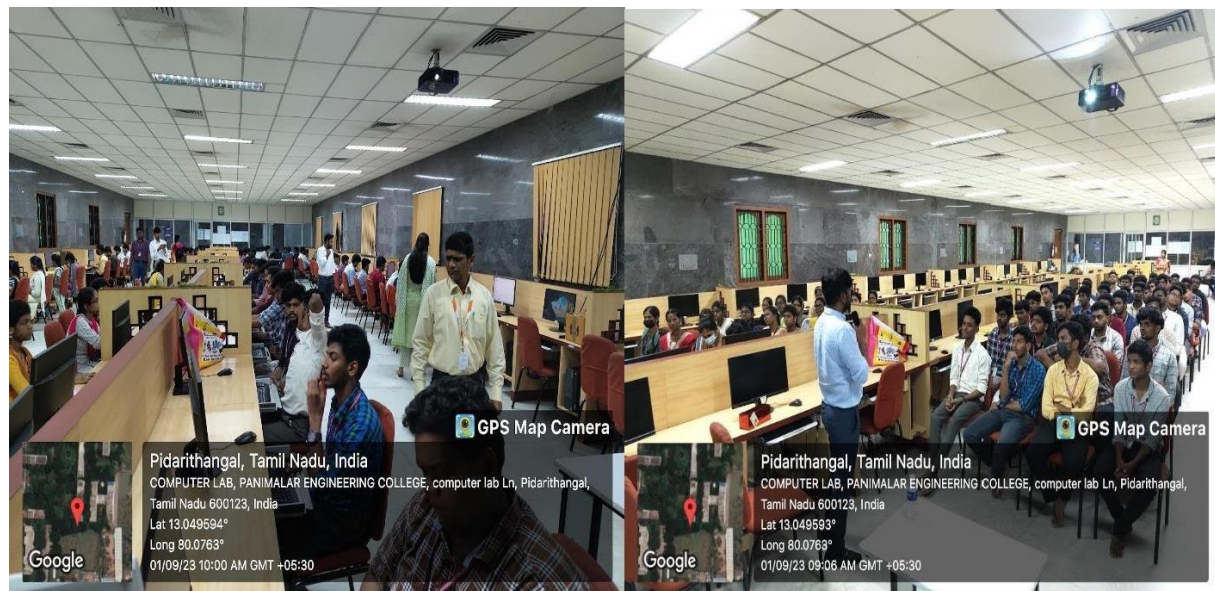
Panimalar Engineering College, Department of CSE organized
“Guest Lecture on Algorithmic Approach to Problem Solving using DSA” by Mr.
 Pavan Ranjith Babu Software Engineer - (R&D) Manhattan Associates-17.08.2023



Department of Computer Science and Engineering at Panimalar Engineering College has conducted Poster maker competition on 25.08.23



“WEB APPLICATION PENETRATION TESTING”-30.08.2023



Workshop on Unlocking E-Commerce Success:
"A Hands-On Guide to Creating Your Ecommerce Store"-01.09.2023



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THE WHITESEC CLUB
Organizes
COMPETITION
CYBERSAFE QUEST 2023

Date : 23.09.2023
Timings-7:00pm onwards
Mode: online

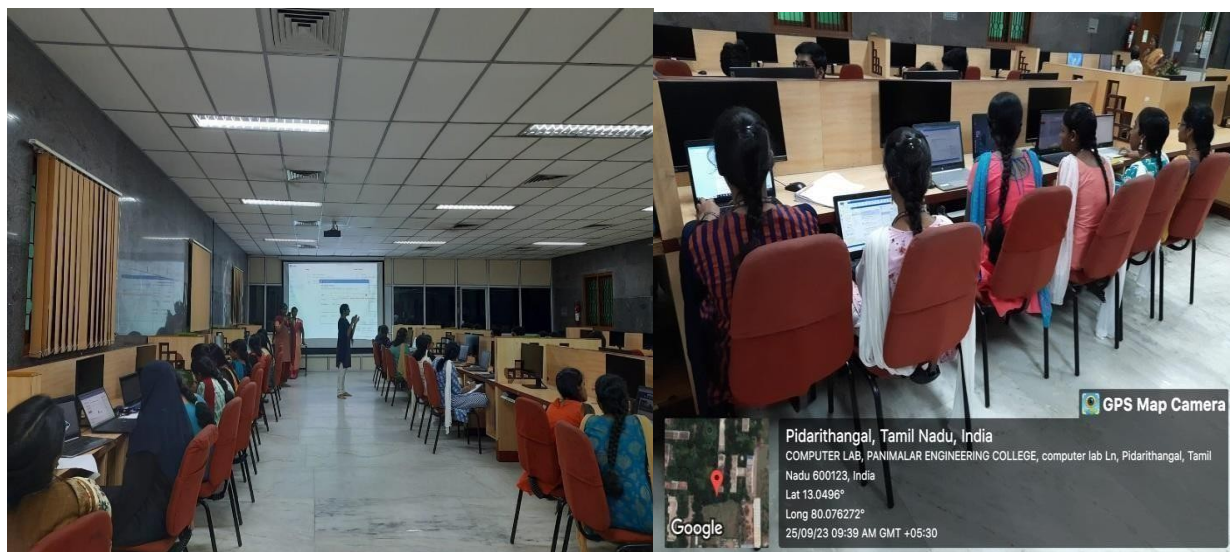
CONVENORS:
 Dr.L.Jaba sheela , HOD, CSE
 Dr. Kavitha Subramani, PROFESSOR,CSE

CLUB COORDINATOR:
 Dr.T.Jackulin, M.E, ph.D

STUDENT COORDINATORS:
 Naveen Kumar.S
 Varsha.R




The **"CYBERWEB HACKATHON"** a dynamic and immersive event was scheduled on
 23.09.2023



“Hands-on session on Robotic Process Automation”-25.09.2023



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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING











Hands on UNITY 3D, BLENDER

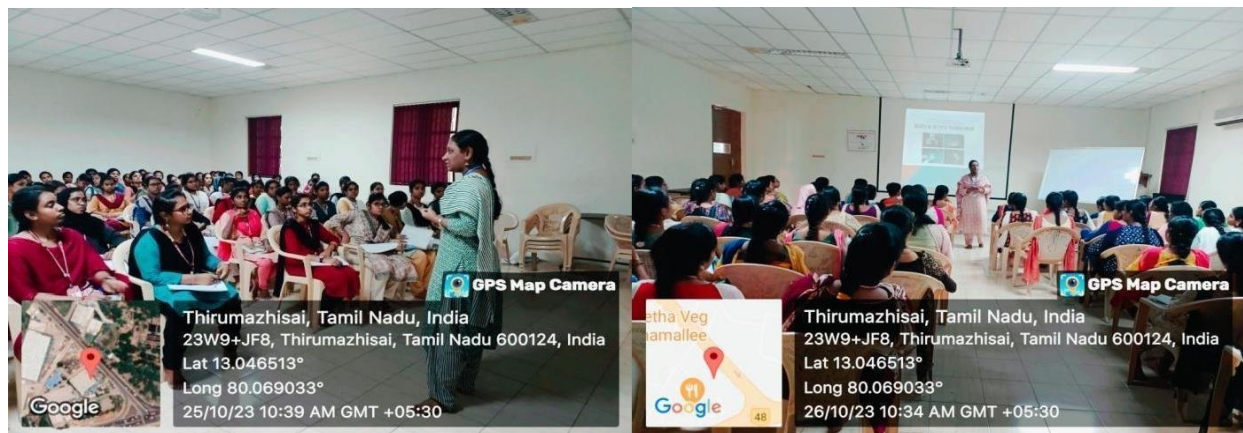
VENUE : CC 3 & CC4

**11.10.2023
&
12.10.2023**

9:00 AM -3:00 PM

Dr.P.Chinnadurai SECRETARY & CORRESPONDENT		Mrs.C.Vijayarajeswari		Dr. C. Sakthi Kumar DIRECTORS		Dr.Saranya Sree Sakthi Kumar	
Dr. K.Mani PRINCIPAL	Dr.L.Jabasheela HOD - CSE	Dr.Kavitha Subramani PROFESSOR, CSE	Dr.V.Subedha PROFESSOR, CSE	Dr.T.Tamilvizhi Mrs.Sophana Jennifer Mrs.Jaya Lakshmi COORDINATORS			
Convenors							

”HANDS-ON On Unity 3D&Blender” -11.10.2023 to 12.10.2023



”Workshop on Tools and Techniques for developing Data Science Projects “-11.10.2023



COLLABORATION WITH CDAC Organizes 5 Days- Faculty Development Program on Futuristic Cloud Technologies & Security Tools on 6-11-2023 to 10-11-2023

STAFF ACHIEVEMENTS



Dr. Tamilvizhi. T, Professor, Department of CSE has received
“Best Faculty Award”
from International Kalam Convension 2023 awards.



Dr. Tamilvizhi. T has received “Best Paper Award & Best Presentation Award” from Noroff University College as Author & Presenter of The Ninth International Conference on Mining Intelligence and Knowledge Exploration (MIKE 2023).



**GLOBAL
ICONIC
AWARDS**

HONOURING EXCELLENCE

26th - 27th August, 2023,
Hotel Turyaa, Chennai.

AWARD CONFIRMATION LETTER

Date: 22.07.2023

RefNo: 7/20/2023 7:56:18

Dear **Dr. V. Subedha,**

Congratulations!

On behalf of TN Global Research, We are honoured to notify you that you have been selected to receive The Most Prestigious Award - "**Best Researcher**" as a tribute to your outstanding accomplishment in your field. Global Iconic Award 2023 aims to actively reach out to all corners of the world and identifying and recognizing exceptional persons who have made an outstanding contribution in their field.

Global Iconic Award 2023 is an exciting platform that offers the participants an unparalleled opportunity to showcase the quality that their achievement and services stand for and it is an indicator of the trust of many more. The honouring ceremony will be held at Hotel Turyaa, Chennai on August 27th, 2023.

Congratulations on this well-deserved recognition. I hope that you will definitely make your presence and we are looking forward for your kind arrival. We request you to provide confirmation of your acceptance at the earliest.

Please confirm your Registration on or before August 1st 2023.

R N A

Regards,
TN Global Research.

Dr. V. Subedha Professor, Department of CSE has received
"**Best Researcher Award**" from Global Iconic Award 2023.

STUDENT'S ACHIEVEMENT (2023-2024)



Our student won 2nd Prize in CTS- TECHATHON 1.9 –organised by Panimalar Engineering College in association with Cognizant on 26th September 2023.



Our student won 2nd Prize in CTS- TECHATHON 1.9 –organised by Panimalar Engineering College in association with Cognizant on 26th September 2023.



Our student won BEST PRESENTATION award in CTS- TECHATHON 1.9 – organised by Panimalar Engineering College in association with Cognizant on 26th September 2023



Our student won BEST INNOVATIVE SOLUTION award in CTS- TECHATHON 1.9 – organized by Panimalar Engineering College in association with Cognizant on 26th September 2023.



“KAVACH-2023”-Cyber Security Hackathon



“SMART INDIA HACKATHON 2023”



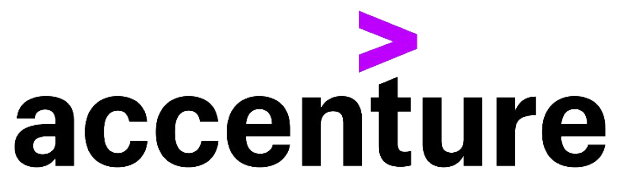
Our 2nd Year Student have won \$ 7500 USD in Microsoft Bounty Program 2023



Our 1st Year Student have won Rs10000 in Tamil Oratorical Completion 2023

PLACEMENT ACHIEVEMENTS





AAKASH R
ABIRAMI R ABISHEK
AKSHIDHA U
ANANDHA DINESH J
ANNIE S
ANUDHARSHNI M P
ARCHANA G
ARUNKUMAR J
ARUN VENKATESH R
ASHWIN SANJAY J
BHARATHI S
BHARATHWAJ M
BRINDHA C S
DANIEL GEORGE S
DEEPAK N
DEEPTHI L S
DERANGULA AJAY
DHINAKARAN R
DIVIYADARSHINI V
ELAVARASAR P ESHWANTH A G
HARESH KUMAR P
HARIHARAN S
HEMAVARTHINI S
INDHUMATHI V
JAGA DEESH K
JAGAN G
JAYA ANANDA BALAJI K
JAYAKANT P
JAYALANI SHIRIN I
JENISH VICMON A
KADHER NAINA MOHAMED M
KAUSHIK S
KESAVARAMAN M R
KISHOREKUMAR V
KRISHNAKUMAR M
KRITHIKA M J
LEKHA R
LEKHA S
LOGASUBRAMANI S M
LOKESHWARAN M S
MARIA ROBIN ANDREW
MELAPATTU TEJLATTASRE
MERLIN AKSHAYA R

MOHANA PRIYA S R
MONNIESH B
MOULISWARI R
MRUTHUNJEYAN A
MUTHU USHA RANI M
NALLAPANENI
PENCHALABALATEJA
NANDHINI B
OVIYA V
PARSAM CHAITANYA
PAVITHRA M
PRANAVA KUMAAR N E
PRIYADHARSHAN S
PRIYADHARSHINI R
RAJAPRIYAH J
RAMANAN K B
RANJITH S
RENGARAJ K
RITHIKAA C G
SAKTHIKARTHICK N
SANJEEV V
SANTHOSHINI P
SHIVASUNDARAM C
SHRI HARI T
SRI JANANI A
SRIMATHI S
SRI VARSHAA N
SRI VARSSHINI S
SRUTHI R
SURAJ R
SWETHA M
TAMILSELVAN N
THARUNESHWARAN G
THELMA PRINCY M
VARSHA R
VISHWA R
VISWA C
YOHAMALAR R

ARTICLES

DATA SCIENCE

Data science is the study of data to extract meaningful insights for business. It is a multidisciplinary approach that combines principles and practices from the fields of mathematics, statistics, artificial intelligence, and computer engineering to analyze large amounts of data. This analysis helps data scientists to ask and answer questions like what happened, why it happened, what will happen, and what can be done with the results.

Future of data science

Artificial intelligence and machine learning innovations have made data processing faster and more efficient. Industry demand has created an ecosystem of courses, degrees, and job positions within the field of data science. Because of the cross-functional skillset and expertise required, data science shows strong projected growth over the coming decades.

Benefits of Data Science

Data science is revolutionizing the way companies operate. Many businesses, regardless of size, need a robust data science strategy to drive growth and maintain a competitive edge. Some key benefits include:

Discover unknown transformative patterns

Data science allows businesses to uncover new patterns and relationships that have the potential to transform the organization. It can reveal low-cost changes to resource management for maximum impact on profit margins. For example, an e-commerce company uses data science to discover that too many customer queries are being generated after business hours. Investigations reveal that customers are more likely to purchase if they receive a prompt response instead of an answer the next business day. By implementing 24/7 customer service, the business grows its revenue by 30%.

Innovate new products and solutions

Data science can reveal gaps and problems that would otherwise go unnoticed. Greater insight about purchase decisions, customer feedback, and business processes can drive innovation in internal operations and external solutions. For example, an online payment solution uses data science to collate and analyze customer comments about the company on social media. Analysis reveals that customers forget passwords during peak purchase periods and are unhappy with the current password retrieval system. The company can innovate a better solution and see a significant increase in customer satisfaction.

Real-time optimization

It's very challenging for businesses, especially large-scale enterprises, to respond to changing conditions in real-time. This can cause significant losses or disruptions in business activity. Data science can help companies predict change and react optimally to different circumstances. For example, a truck-based shipping company uses data science to reduce downtime when trucks break down. They identify the routes and shift patterns that lead to faster breakdowns and tweak truck schedules. They also set up an inventory of common spare parts that need frequent replacement so trucks can be repaired faster.

Pros of Data Science:

1. **High Demand:** Data science is one of the fastest-growing fields, with a high demand for professionals in various industries such as healthcare, finance, and technology.
2. **Lucrative Salaries:** Data scientists are among the highest-paid professionals, with a median salary of over \$100,000 per year in the United States.
3. **Interesting Work:** Data science involves working with large datasets and developing algorithms, which can be intellectually stimulating and engaging.
4. **Career Growth:** Data science offers ample opportunities for career growth, with a variety of roles such as data engineer, data analyst, and data scientist.

Cons of Data Science:

1. **Technical Complexity:** Data science involves complex technical skills such as coding, statistics, and machine learning, which can be challenging to master.
2. **Data Quality:** Data scientists need high-quality data to perform accurate analyses, but data quality can be an issue in some cases.
3. **Time-Consuming:** Data science projects can be time-consuming, requiring several months or even years to complete.
4. **Limited Resources:** In some cases, data scientists may face limited resources such as hardware, software, or funding.

R.SINDUJA

III CSE-B

CLOUD COMPUTING

Cloud security and data

Most cloud service providers implement relevant security standards and industry certifications to ensure that their cloud environment remains safe. However, storing data and business-critical files in virtual data centres can potentially open you up to risks.

Common risks are:

- data loss or theft
- data leakage
- account or service hijacking
- insecure interfaces and APIs
- denial of service attacks
- technology vulnerabilities, especially in shared environments

The levels of **data protection** and security achieved and maintained by different cloud providers can vary. Choose your provider carefully and make sure that the provider is stable, reliable, reputable and offers reasonable terms and conditions of service.

Cloud downtime

The cloud, like any other IT set-up, can experience technical problems such as reboots, network outages and downtime. These events can incapacitate business operations and processes, and can be damaging to business.

You should plan for **cloud downtime and business continuity**. Try to minimise the impact and the number of outages and ensure the maximum level of service availability for your customers and staff.

Limited control

The cloud service provider owns, manages and monitors the cloud infrastructure. You, as the customer, will have minimal control over it. You will be able to manage the applications, data and services operated on the cloud, but you won't normally have access to key administrative tasks, such as updating and managing firmware or accessing server shell.

Cloud deployment models

When adopting cloud architecture, there are three different types of cloud deployment models that help deliver cloud computing services: public cloud, private cloud, and hybrid cloud.

Public cloud

Public clouds deliver resources, such as compute, storage, network, develop-and-deploy environments, and applications over the internet. They are owned and run by third-party cloud service providers like Google Cloud.

Private cloud

Private clouds are built, run, and used by a single organization, typically located on-premises. They provide greater control, customization, and data security but come with similar costs and resource limitations associated with traditional IT environments.

Hybrid cloud

Environments that mix at least one private computing environment (traditional IT infrastructure or private cloud, including edge) with one or more public clouds are called hybrid clouds. They allow you to leverage the resources and services from different computing environments and choose which is the most optimal for the workloads.

When talking about types of cloud deployment, you may also hear the term multicloud environment. In fact, industry research shows that nearly 90% of companies are now considered multicloud, meaning they combine cloud services from at least two different cloud service providers, whether public or private. Adopting a multicloud approach gives you greater flexibility to choose the solutions that best suit your specific business needs and also reduces the risk of vendor lock-in.

While multicloud and hybrid cloud are sometimes used interchangeably, a hybrid cloud approach can be considered multicloud, but only if it makes use of services from multiple public cloud providers.

Types of cloud services: IaaS vs. PaaS vs. SaaS vs. serverless models

Within the cloud deployment models, there are several types of cloud services, including infrastructure, platforms, and software applications. Cloud service models are not mutually exclusive, and you can choose to use more than one in combination or even all of them at once.

P.PRIYADHARSHINI

III CSE-B

QUANTUM COMPUTING

What is Quantum computing?

Quantum computing is a multidisciplinary field comprising aspects of computer science, physics, and mathematics that utilizes quantum mechanics to solve complex problems faster than on classical computers. The field of quantum computing includes hardware research and application development. Quantum computers are able to solve certain types of problems faster than classical computers by taking advantage of quantum mechanical effects, such as superposition and quantum interference. Some applications where quantum computers can provide such a speed boost include machine learning (ML), optimization, and simulation of physical systems. Eventual use cases could be portfolio optimization in finance or the simulation of chemical systems, solving problems that are currently impossible for even the most powerful supercomputers on the market.

Principles of quantum computing

A quantum computer works using quantum principles. Quantum principles require a new dictionary of terms to be fully understood, terms that include superposition, entanglement, and decoherence. Let's understand these principles below.

Superposition

Superposition states that, much like waves in classical physics, you can add two or more quantum states and the result will be another valid quantum state. Conversely, you can also represent every quantum state as a sum of two or more other distinct states. This superposition of qubits gives quantum computers their inherent parallelism, allowing them to process millions of operations simultaneously.

Entanglement

Quantum entanglement occurs when two systems link so closely that knowledge about one gives you immediate knowledge about the other, no matter how far apart they are. Quantum processors can draw conclusions about one particle by measuring another one. For example, they can determine that if one qubit spins upward, the other will always spin downward, and vice versa. Quantum entanglement allows quantum computers to solve complex problems faster.

When a quantum state is measured, the wavefunction collapses and you measure the state as either a zero or a one. In this known or deterministic state, the qubit acts as a classical bit. Entanglement is the ability of qubits to correlate their state with other qubits.

Decoherence

Decoherence is the loss of the quantum state in a qubit. Environmental factors, like radiation, can cause the quantum state of the qubits to collapse. A large engineering challenge in constructing a quantum computer is designing the various features that attempt to delay decoherence of the state, such as building specialty structures that shield the qubits from external fields.

Quantum software

Quantum software implements unique quantum algorithms using quantum circuits. A quantum circuit is a computing routine that defines a series of logical quantum operations on the underlying qubits.

Developers can use various software development tools and libraries to code quantum algorithms.

Advantages of quantum computers

Faster computations: -

These types of computers can perform computation at a much faster rate than normal computers. Quantum computers have computation power higher than supercomputers also. They can process data at 1000 times faster than normal computers and supercomputers. Some calculations if performed by a normal computer can take 1000 years is done by quantum computers in a few seconds.

Best for simulation: -

Quantum computers are best for doing data simulation computing. There are many algorithms created that can simulate various things like weather forecasting, chemical simulation etc.

Medicine creation: -

These types of computers can work better in the medical field. They can detect diseases and can create a formula for medicines. Different type of diseases can be diagnosed and tested in scientific laboratories using these computers.

Google search: -

Quantum computers are used by Google to refine searches. Now every search on Google can speed up by using these computers. Most relevant results can be populated using quantum computing.

High privacy: -

These computers can make high encryption and is good at cryptography. It is impossible to break the security of quantum computers. Recently China has launched a satellite that uses quantum computing and China claimed that this satellite cannot be hacked.

Disadvantages of quantum computers

Algorithm creation: -

For every type of computation, it needs to write a new algorithm. Quantum computers cannot work as classical computers, they need special algorithms to perform tasks in their environment.

The low temperature needed: -

As the processing in these computers is done very deeply so it needs a temperature of negative 460 degrees F. This is the lowest temperature of the universe, and it is very difficult to maintain that temperature.

Not open for public: -

Due to the high range price, they are not available for public use. Also, the errors in these types of computers are high because they are still in the development phase. Quantum computers work fine

in 10 qubits but after increasing qubits like 70 qubits, the accuracy is not right. There are experiments already going on to make the results of these computers precise.

Internet Security: -

It is assumed by the scientists that if a quantum computer is implemented in the best way then whole internet security breaks. This is due to the facts that these computers can decrypt all the codes on the internet.

M.POOJITHA

III CSE-B

ROBOTIC PROCESS AUTOMATION(RPA)

In today's rapidly evolving digital landscape, organizations are constantly seeking innovative solutions to enhance operational efficiency and streamline business processes. One such revolutionary technology making waves is Robotic Process Automation (RPA). RPA is a gamechanger, offering a transformative approach to automate repetitive and rule-based tasks, liberating human resources for more strategic and creative endeavors.

Understanding RPA:

At its core, RPA utilizes software robots or "bots" to emulate human interactions with digital applications, just like a user. Unlike traditional automation, RPA doesn't require complex integration or significant changes to existing IT infrastructure. Instead, it operates at the user interface level, interacting with applications in the same way a human employee would.

Key Benefits of RPA:

- Enhanced Efficiency:** RPA excels at handling high-volume, repetitive tasks with precision. It is not only reduces errors but also significantly accelerates processing time, leading to enhanced overall efficiency.
- Cost Savings:** By automating routine tasks, organizations can achieve substantial cost savings. RPA minimizes the need for manual intervention, allowing businesses to focus on more strategic activities that require human ingenuity.
- Improved Accuracy:** Bots tirelessly follow predefined rules, eliminating the risk of human errors. This results in a higher degree of accuracy, particularly in industries where precision is paramount.
- Scalability:** RPA can be easily scaled up or down based on business needs. Whether handling a peak load or streamlining leaner processes, RPA provides the flexibility to adapt to changing business dynamics.

Use Cases of RPA:

- Data Entry and Migration:** RPA is adept at automating data entry tasks, ensuring data accuracy and facilitating smooth data migration between systems.
- Invoice Processing:** Organizations can leverage RPA to automate the extraction and processing of invoice data, reducing processing time and minimizing errors.
- Customer Service:** RPA can be employed to handle routine customer queries, freeing up human agents to manage more complex and personalized customer interactions.
- HR Processes:** From employee onboarding to payroll processing, RPA streamlines HR tasks, allowing HR professionals to concentrate on strategic workforce management.

Challenges and Future Outlook:

While RPA offers numerous benefits, successful implementation requires careful planning and consideration. Identifying the right processes, ensuring data security, and addressing change management are critical factors for a successful RPA deployment.

management are crucial aspects. Looking ahead, the integration of RPA with other emerging technologies like Artificial Intelligence (AI) and Machine Learning (ML) holds the promise of even more sophisticated and intelligent automation.

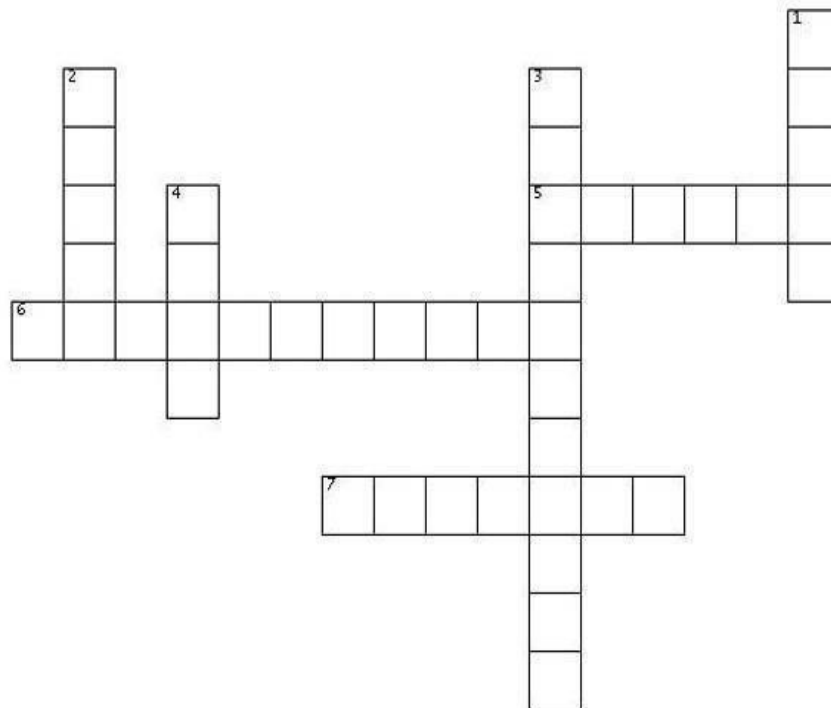
In conclusion, RPA is a transformative force reshaping how businesses operate. By automating routine tasks, organizations can unleash the full potential of their workforce, driving innovation and staying competitive in an increasingly digital world.

T.SARAVANAPRIYA

III CSE-B

PUZZLE

python and c



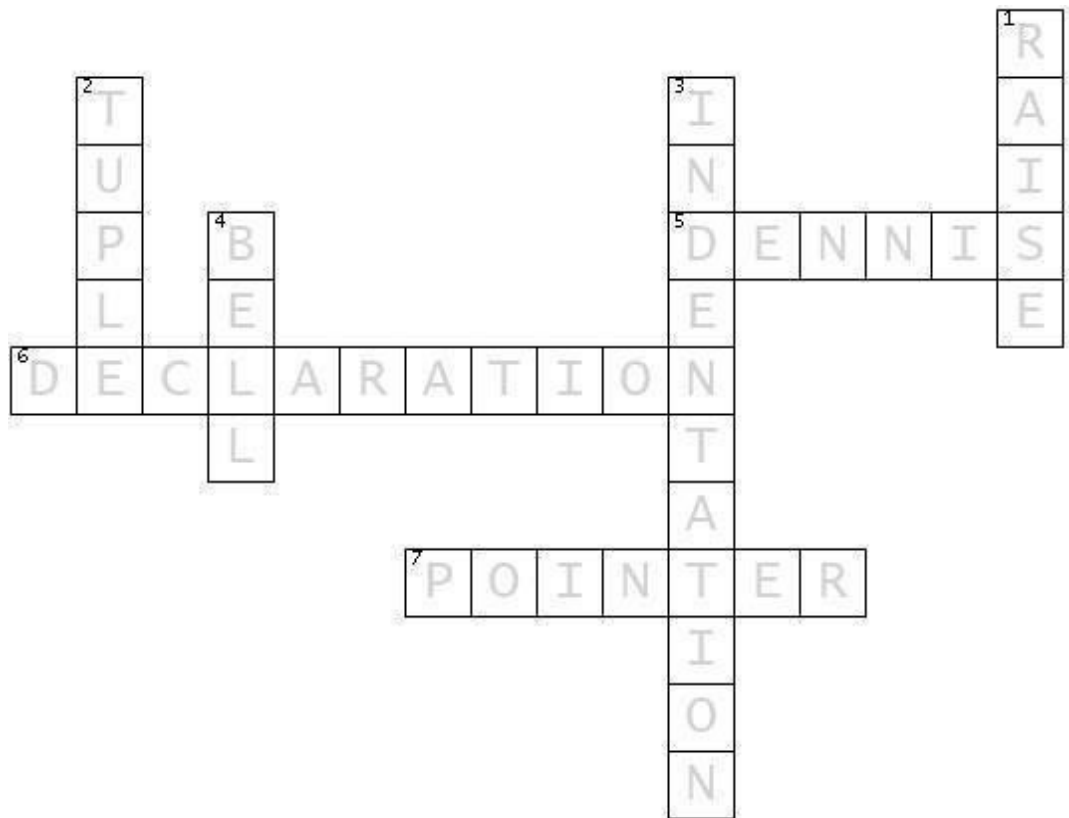
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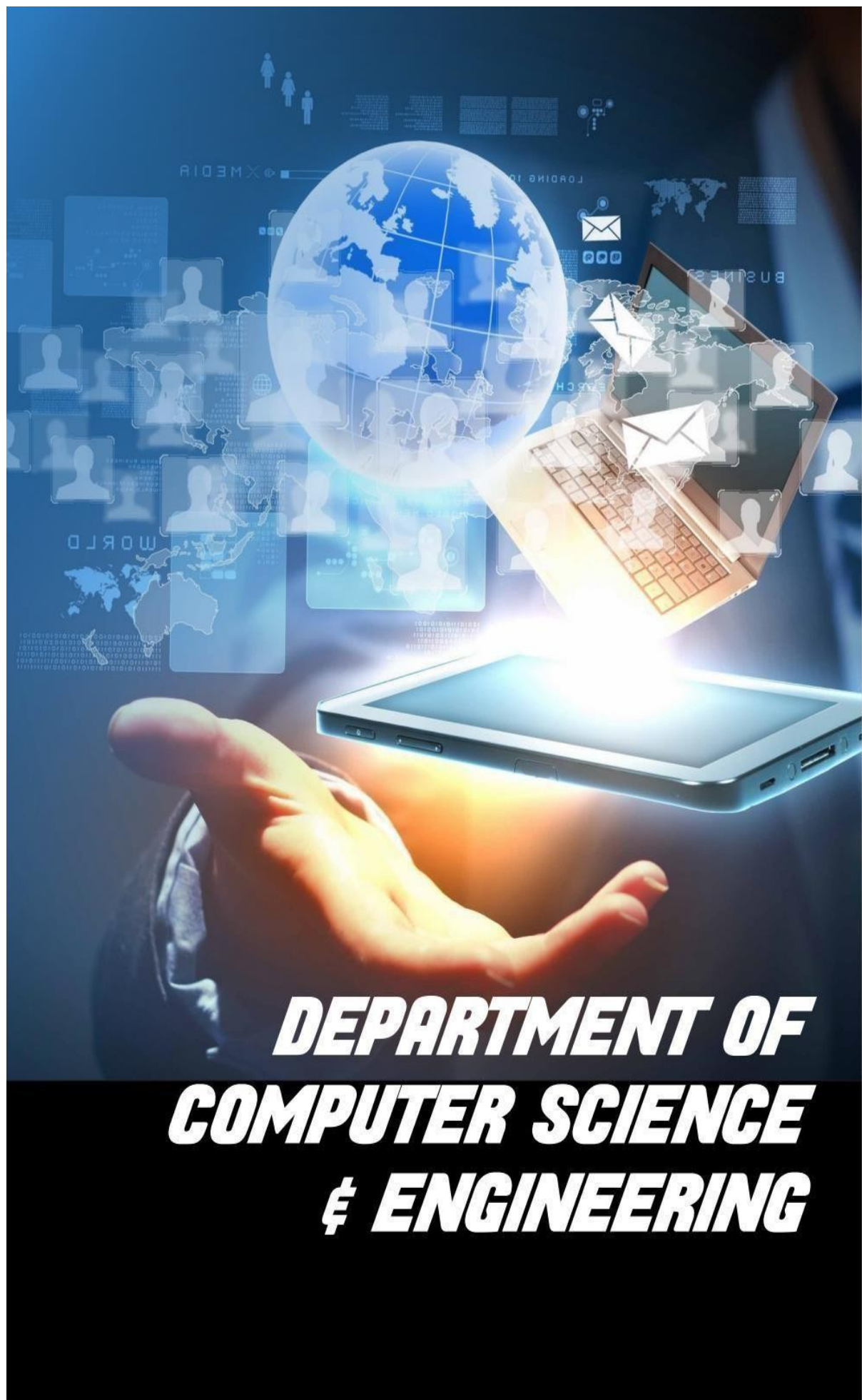
5. Ritchie who developed C programming language
6. a reference variable must be initialized at the time of-----
7. to a file object What is the return type of the fopen() function in C?

DOWN

1. What keyword is used in Python to raise exceptions?
2. As what datatype are the *args stored, when passed into a function?
3. How is a code block indicated in Python?
4. C language was implemented at the ----- laboratories.

ANSWERS





***DEPARTMENT OF
COMPUTER SCIENCE
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