2019-20

ISSUE #2

PANIMALAR ENGINEERING COLLEGE

(A Christian Minority Institution)
Jaisakthi Educational Trust
ACCREDITED BY NATIONAL BOARD OF ACCREDITATION
Bangalore Trunk Road, Nasarathpet , Poonamallee, Chennai - 600 123

TECH NEWS

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

DEPARTMENT VISION

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

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

1. To impart and disseminate sound knowledge to the students on the fundamentals of mathematics and advanced fields of computer science and inter related disciplines to solve simple and complex engineering problems and train them to achieve sustainable growth in their professional career.
2. To enhance the ability of students to evaluate the specific requirements of software industry and provide innovative engineering solutions and efficient product designs.
3. 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.
4. 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.
5. 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.

PROGRAM SPECIFIC OBJECTIVES (PSOS)

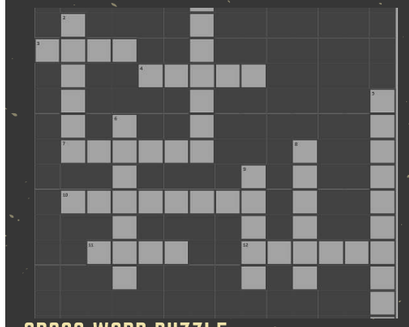
1. **PSO 1:** To inculcate technical skills to analyze, design and implement software's related to algorithms, networking, web services, multimedia, big data analytics and recent topics of varying complexity.
2. **PSO 2:** To develop the capability to comprehend and solve the interdisciplinary problems through appropriate technology with the understanding of contemporary business environment.
3. **PSO 3:** 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 MISSION

To develop our department as a center of excellence, imparting quality education, generating competent and skilled manpower. We prepare our students with high degree of credibility, integrity, ethical standards and social concern. We train our student to develop to devise and implement novel systems, based on Education and Research.

PROGRAM OUTCOMES(POS)

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems
2. **Problem analysis:** Identify, formulate, research literature, and analyze complex engineering Problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **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
4. **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 to provide valid conclusions.
5. **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.
6. **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.
7. **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
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
10. **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.
11. **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.
12. **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.



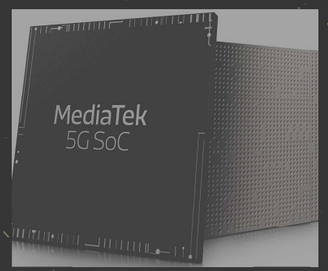
CROSS WORD PUZZLE

DOWN

1.Largest Social network prior to facebook
2.Programming Language used exclusively for Artificial Intelligence
5. Father of Internet
6. Programming language used for Scientific calculations
8.First Search Engine in Internet
9.First Web Browser Invented in 1990.

ACROSS

3.Command used to view the Sub Directory Structure of a drive
4.'WIT' is a NASDAW code of which Indian IT Company?
7. 'speak to tweet' is a service given by this giant
10. used to search and browse for information online
11.Programming language to create programs like applets
12.First Computer Made available for commercial use



MEDIATEK

By SHIRLY N. Final Year CSE

MediaTek officially confirmed that there will be a 3nm process. MediaTek's 3nm chipset should be the next-generation successor of the Dimensity 9000. The next generation may be the Dimensity 10000 processor, which will be released before the end of 2022.

According to TSMC's official data, TSMC's 3nm process has increased logic density by 1.7 times and performance by 11% compared to the previous generation's 5nm process. The power consumption can be reduced by 25-30% under the same performance.

A LOOK AT BLOCKCHAIN TECHNOLOGY

By SHAKTHI SRI S, Second Year CSE

Blockchain, sometimes referred to as Distributed Ledger Technology (DLT), makes the history of any digital asset unalterable and transparent through the use of decentralization and cryptographic hashing. A simple analogy for understanding blockchain technology is a Google Doc. When we create a document and share it with a group of people, the document is distributed instead of copied or transferred. This creates a decentralized distribution chain that gives everyone access to the document at the same time. No one is locked out awaiting changes from another party, while all modifications to the doc are being recorded in real-time, making changes completely transparent.

Also ,Blockchain changed how we look at transaction recording. This has led to an explosion in blockchain technology being utilized in other sectors such as logistics,publishing,healthcare,etc. Blockchain is an especially promising and revolutionary technology because it helps reduce risk, stamps out fraud and brings transparency in a scalable way for myriad uses.

IS CRYPTOCURRENCY THE NEXT BIG THING?

By SHALIN P SUNIL, Second Year CSE-C

Cryptocurrency can be defined as digital or virtual currency, used as a medium for monetary exchange. Every digital transaction of assets from one party to another is being recorded on a large spreadsheet which is referred to as a Ledger. It is secured using cryptography, hence the name.

Why Cryptocurrency?

One of the most significant advantages is Decentralization, instead of a single Ledger, multiple copies of it is stored locally on every node in the Blockchain network. So, it is tamper-proof and impossible to counterfeit. The transactions can be made by anyone to any part of the world as long as they are connected. They are instantaneous, no exchange rates, no interest rates, having minimal to nil transactions charges in the case some cryptocurrencies.

Some of the categories of cryptocurrency are à

- DeFi – Decentralised Finance
- NFT – Non-Fungible Tokens
- Utility Tokens
- Value Tokens like Bitcoin, Ether, Litecoin, etc.

Dark Side to Cryptocurrency

The value of cryptocurrency is unpredictable. Another downside is that it is not extensively used throughout the world, hence remote transactions may be impossible. It will take a considerable amount of time since they can used effectively.

Mining these cryptocurrencies can cause major environmental consequences as they consume a great deal of electricity and generates a lot of heat. However, in the future, these variables could be replaced with better options.

To summaries, because cryptocurrency is virtual and can be digitally monitored, it can be a suitable solution for future transactions.

NANOTECHNOLOGY - THE FUTURE MEDICINE

INTRODUCTION : Nano-medicine is the medical application of nanotechnology. Nanomedicine ranges from the medical applications of nanomaterials and biological devices, to nanoelectronic biosensors, and even possible future applications of molecular nanotechnology such as biological machines. Current problems for nanomedicine involve understanding the issues related to toxicity and environmental impact of nanoscale material (materials whose structure is on the scale of nanometers, i.e. billionths of a meter).

Functionalities can be added to nanomaterials by interfacing them with biological molecules or structures. The size of nanomaterials is similar to that of most biological molecules and structures; therefore, nanomaterials can be useful for both in vivo and in vitro biomedical research and applications. Thus far, the integration of nanomaterials with biology has led to the development of diagnostic devices, contrast agents, analytical tools, physical therapy applications, and drug delivery vehicles. Nanomedicine seeks to deliver a valuable set of research tools and clinically useful devices in the near future. The National Nanotechnology Initiative expects new commercial applications in the pharmacetutical Industry that may include advanced drug delivery systems, new therapies, and in vivo imaging. Nanomedicine research is receiving funding from the US National Institute of Health Common Fund program, supporting four nanomedicine development centers.

Nanomedicine sales reached $16 billion in 2015, with a minimum of $3.8 billion in nanotechnology R&D being invested every year. Global funding for emerging nanotechnology increased by 45% per year in recent years, with product sales exceeding $1 trillion in 2013. As the nanomedicine industry continues to grow, it is expected to have a significant impact on the economy.

POSSIBLE MECHANISMS OF NANOTECHNOLY IN RELATION TO MEDICINE

These materials and devices can be designed to interact with cells and tissues at a molecular (i.e., sub cellular) level, for applications in medicine and physiology, with a high degree of functional specificity, thus allowing a degree of integration between technology and biological systems not previously attainable. Nanotechnology is not in itself a single emerging scientific discipline, but rather, a meeting of different traditional sciences, such as, chemistry, physics, materials science and biology, to bring together the required collective expertise needed to develop these novel technologies.

The promise that nanotechnology brings is multifaceted, offering not only improvements to the current techniques, but also providing entirely new tools and capabilities.

By manipulating drugs and other materials at the nanometer scale, the fundamental properties and bio activity of the materials can be altered. These tools can permit a control over the different characteristics of drugs or agents such as:

- A. alteration in solubility and blood pool retention time
- Controlled release over short or long duration
- C.environmentally triggered controlled release or highly specific site-targeted delivery

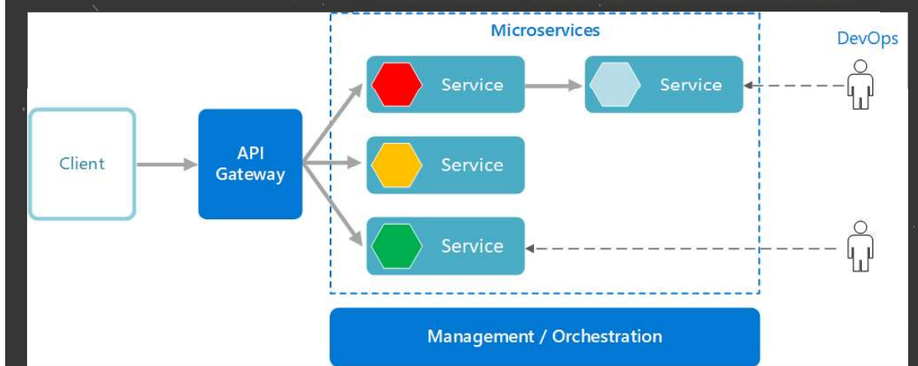
An article by Shanmugapriya, Second Year CSE

APPLICATIONS OF NANO MATERIALS IN MEDICINE:

- Fluorescent biological labels
- Drug and gene delivery
- Bio detection of pathogens
- Detection of proteins
- Probing of DNA structure
- Tissue engineering
- Tumour destruction via heating (hyperthermia)
- MRI contrast enhancement
- Phagokinetic studies
- Separation & purification of biological molecules and cells

Conclusion : Thus, it is concluded that, nanotechnology or systems / device manufacture at the molecular level, is a multidisciplinary scientific field undergoing explosive development. The genesis of nanotechnology can be traced to the promise of revolutionary advances across medicine, communications, genomics and robotics.

OVERVIEW OF MICRO SERVICE ARCHITECTURE



Microservices - also known as the microservice architecture - is an architectural style that structures an application as a collection of services that are.

- Highly maintainable and testable
- Loosely coupled
- Independently deployable
- Organized around business capabilities
- Owned by a small team

More on Page 4

WHY IS FLUTTER A REVOLUTIONARY TECHNOLOGY IN APP DEVELOPMENT ?

BY SARWER HUSSAIN, SECOND YEAR CSE

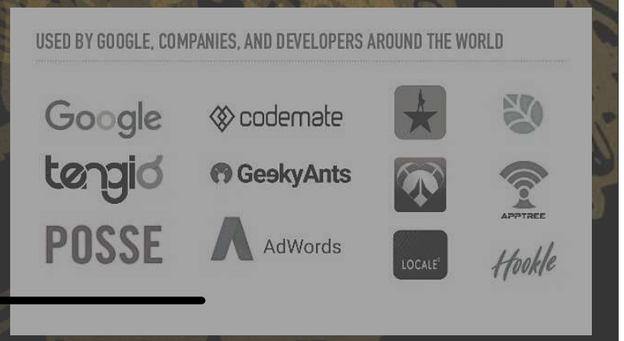
Flutter is a free and open source framework created by Google in 2017 that allows developers to create hybrid apps that operate like native apps. As a result, we can create apps for both Android and iOS using the same code base. In most companies, there will be two teams working on an app. One team will create android applications, while the other will create iOS apps, with each team consisting of at least two to three persons. However, using Flutter, a single individual can create apps for both iOS and Android.

It's not the only one! Flutter also allows developers to use the same code base to create websites, mobile apps, desktop apps, linux applications, and IoT.
We use a programming language called DART to generate Flutter apps, which was also established by Google in 2011.

Companies are quickly adapting to Flutter as it gives them affordable and better solutions. It not only reduces the cost of the project but also reduce the team size and helps in faster completion of projects. Flutter also has a huge open source community where people contribute most of the code which Flutter developers can use without rebuilding it.

Features of Flutter that developers love

- During development, Flutter apps run in a VM that offers stateful hot reload of changes without needing a full recompile. Which means the changes we make while developing are quickly reflected on the emulator. This is called Hot Reload / Hot Restart.
- This is the most loved feature as, in native development it takes some time to update the changes which makes it slow for development.
- Flutter apps are compiled directly to machine code, whether Intel x64 orARM instructions, or to JavaScript if targeting the web.
- This is the reason why Flutter apps have native performance.
- Supporting a native application takes more work in most circumstances. To begin with, maintaining two codebases necessitates considerable work. Second, developers must build unique updates for each platform while also identifying issues. Third, as the number of OS-supported devices increases, so does the maintenance effort.
- It is much easier to maintain Flutter apps.
- Flutter aims to provide 60 frames per second (fps) performance, or 120 fps performance on devices capable of 120Hz updates. For 60fps, frames need to render approximately every 16ms.



Everything is a Widget in Flutter

Flutter is made in such a way that everything that you see is a widget. A image, a line, even empty space in Flutter is a widget.

Conclusion

More organisations will perceive Flutter as a great approach to create software, according to experts. Because the possibilities are unlimited, we in the tech industry should all explore Flutter.

STUDENT ACHEIVEMENTS AND AWARDS

- Ms. **P SHANMUGAPRIYA,** Final Year CSE, Won cash prize of Rs.7500/- from the Tamilnadu State council for Science and Technology (TNSCST) under Student Project Scheme (SPS) in Engineering Stream.
- Ms. S SINDHU, Final Year CSE, Won cash prize of Rs.7500/- from the Tamilnadu State council for Science and Technology (TNSCST) under Student Project Scheme (SPS) in Engineering Stream.
- Ms. R ANUSHA, & Ms.K KSHAYA Final Year CSE, Won First Prize in National level Project Expo conducted by St.Josephs College of Engineering (IEEE Robotics and Automation Society) .
- Ms. SHAINI A RAVI & RUTH MARIYA S Final Year CSE, Won First Prize in National Stackathon Virtual Hackathon experience on 15th May 2020 to 17th May 2020 organized by Studymonk.

ANSWER TO CROSSWORD PUZZLE

ACROSS	DOWN
3. TREE	1. MYSPACE
4. WIPRO	2. PROLOG
7. GOOGLE	5. VINTON CERF
10. NETSCAPE	6. FORTRAN
11. JAVA	8. ARCHIE
12. UNIVAC	9. NEXUS

Contd from Page3, Microservice The microservice architecture enables the rapid, frequent and reliable delivery of large, complex applications. It also enables an organization to evolve its technology stack.

Microservices has all the associated complexities of the distributed system. There is a higher chance of failure during communication between different services. Difficult to manage a large number of services. The developer needs to solve the problem, such as network latency and load balancing.