

ACE

TECHIE TALK

VOL.13 NO. 2, 2023



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

MEENAKSHI SUNDARARAJAN ENGINEERING

COLLEGE, CHENNAI - 24

FROM THE HOD'S DESK

- Dr. B. MONICA JENEFER, HOD, DEPT. OF CSE

Greetings!

It gives me immense pleasure in releasing the May edition (Vol. 13 No. 2) of "Techie Talk" - a newsletter from our department through the ACE - Association of Computer Engineering.

Techie Talk aims to keep students informed of the latest technologies through a plethora of articles contributed by the students and faculty members of our department. My heartfelt congratulations to those who have contributed articles and strived to make this newsletter a big success. I would also like to appreciate the Editorial Board for their sincere efforts.

My best wishes to all the students for their academic pursuits. I specially wish the final year student for a wonderful career and bright future.

FROM THE EDITOR'S DESK

- Dr. M.K. SANDHYA, PROFESSOR, DEPT. OF CSE

Dear Readers,

Greetings!

I'm extremely happy to release the May edition (Vol. 13 No. 2) of Techie Talk. This newsletter presents a wide range of articles on the latest technologies along with snippets of information. This issue highlights the interest, skill and creativity of the students.

It is really heart-warming to see all the contributions from students amidst their busy schedules. The Editorial Board appreciates the time and effort that has been devoted by the different contributors. Suggestions to improve the newsletter format and content are always welcome.

CONTENTS

THE INEVITABLE RISE OF BITCOIN: WHY IT WILL REPLACE TRADITIONAL BANKING?	07
NEURAL MACHINE TRANSLATION	09
BLOCKCHAIN	11
DATA VISUALIZATION: AN INTROSPECTION	13
FUN CORNER	16
PLACEMENT DETAILS	18

VISION AND MISSION OF THE INSTITUTE

Vision: To impart state-of-the art technical education, including sterling values and shining character, producing engineers who contribute to nation building thereby achieving our ultimate objective of sustained development of an unparalleled society, nation and world at large.

Mission: Meenakshi Sundararajan Engineering College, Chennai constantly strives to be a Centre of Excellence with the singular aim of producing students of outstanding academic excellence and sterling character to benefit the society, our nation and the world at large.

To achieve this, the college ensures

- Continuous upgradation of its teaching faculty to ensure a high standard of quality education and to meet the ever-changing needs of the society.
- Constant interaction with its stakeholders.
- Linkage with other educational institutions and industries at the national and international level for mutual benefit.
- Provision of research facilities and infrastructure in line with global trends.
- Adequate opportunities and exposure to the students through suitable programs, to mould their character and to develop their personality with an emphasis on professional ethics and moral values.

VISION OF DEPARTMENT :

To achieve academic excellence in Computer Science and Engineering by imparting quality training, encouraging research activities and innovation, inculcating ethical values and preparing the students to face industrial demands, societal needs and technical challenges.

MISSION OF DEPARTMENT :

- To provide quality education in theory and application of Computer Science and Engineering.
- To inculcate analytical thinking and innovation within students to become technically competent professionals.
- To prepare students to excel in competitive and challenging careers.
- To generate socially responsible citizens with ethical values for facing industrial and societal challenges.
- To promote research in the emerging areas of technology convergence.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

- Prepare the graduates for a successful career in industry and motivate them for higher education and research.
- Provide graduates with a firm foundation in the principles and practices of computer science and engineering including mathematics, physical sciences, and basic engineering.
- Impart application skills to cover broad range of industrial demands.
- Prepare graduates with ethical values, leadership qualities and entrepreneur skills to contribute to their profession and society.
- Train graduates to be able to use new techniques and skills for professional excellence

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 information to provide valid conclusions.
- 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern

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.

PROGRAM SPECIFIC OUTCOMES (PSOs)

- Ability to identify, analyse, design and implement computer based system of varying complexities.
- To apply hardware/software methods, open ended programming environments and available tools in emerging technologies for solving real-life and R&D problems
- Employing engineering solution for ground-breaking career paths, to become leading entrepreneur and develop interest for further studies

BLOCKCHAIN

-RAMYA RAJENDRAN (III YEAR CSE)

Blockchain is a distributed ledger that allows users to store and share data in a secure and transparent way. Unlike traditional databases, where data is stored in a central location, blockchain data is spread across a network of computers, or nodes. This network is decentralised, meaning there is no central authority or single point of failure.

It is a revolutionary technology and has gained widespread attention over the past few years. It was originally developed as a platform for digital currencies; it has since been adopted across industries for its potential to revolutionise data storage and transfer.

The three main features of blockchain are its decentralisation, immutability and consensus. Decentralisation in blockchain refers to transferring control and decision making from a centralised entity to a distributed network. Immutability defines the inability to alter or change the current state. No participant can tamper with a transaction once someone has recorded it to the shared ledger. Consensus refers to the act of seeking consent from the majority of participants in the network when a new transaction is to be recorded.



One of the key advantages of Bitcoin is its global reach. It can be used for transactions between parties in different countries without the need for currency conversions. Traditional banking systems often involve converting one currency to another, which can incur fees and exchange rate losses. With Bitcoin, international transactions can be conducted directly between parties using the same digital currency, eliminating the need for conversion and associated costs.

Bitcoin transactions can be processed quickly and easily. Traditional international transactions, especially those involving different currencies, often require lengthy processing times due to the involvement of multiple intermediaries, such as banks and clearinghouses. These processes can be time-consuming and result in delays. In contrast, Bitcoin transactions are typically processed within minutes, regardless of the distance between the sender and the recipient. This speed and efficiency make Bitcoin an attractive option for individuals who need to make international transactions regularly and want to avoid delays and bureaucracy.

In conclusion, the rise of Bitcoin as a potential replacement for traditional banking is becoming increasingly clear. Its decentralized nature, security, accessibility, lower transaction fees, and global reach all make it an attractive alternative to the traditional banking system. While it may take some time for Bitcoin to fully replace traditional banking, its rise is inevitable, and traditional banking institutions will need to adapt to remain relevant in the future.



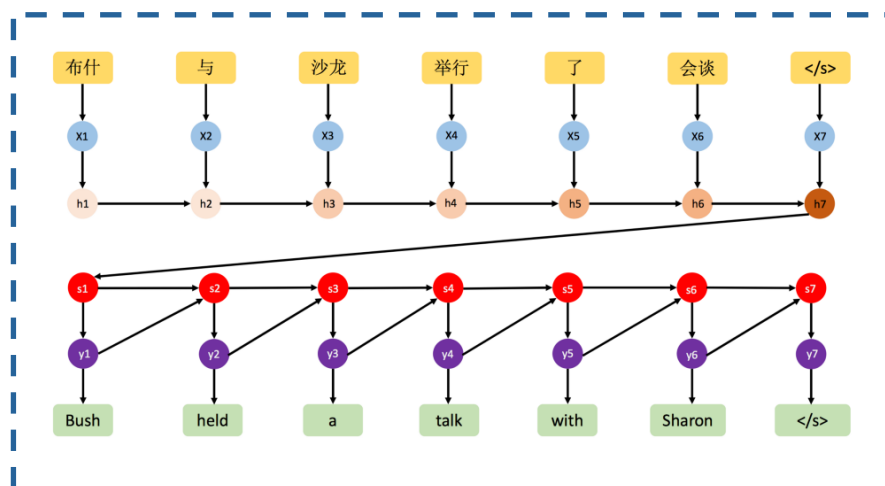
NEURAL MACHINE TRANSLATION

- S.NIKHILESHWARI (IV YEAR CSE)

Neural machine translation is an approach to machine translation that uses an artificial neural network to predict the likelihood of a sequence of words, typically modeling entire sentences in a single integrated model. Machine translation is the task of automatically converting source text in one language to text in another language. Statistical machine translation, or SMT for short, is the use of statistical models that learn to translate text from a source language to a target language gives a large corpus of examples.

Neural machine translation, or NMT for short, is the use of neural network models to learn a statistical model for machine translation. The key benefit to the approach is that a single system can be trained directly on source and target text, no longer requiring the pipeline of specialized systems used in statistical machine learning. The strength of NMT lies in its ability to learn directly, in an end-to-end fashion, the mapping from input text to associated output text.

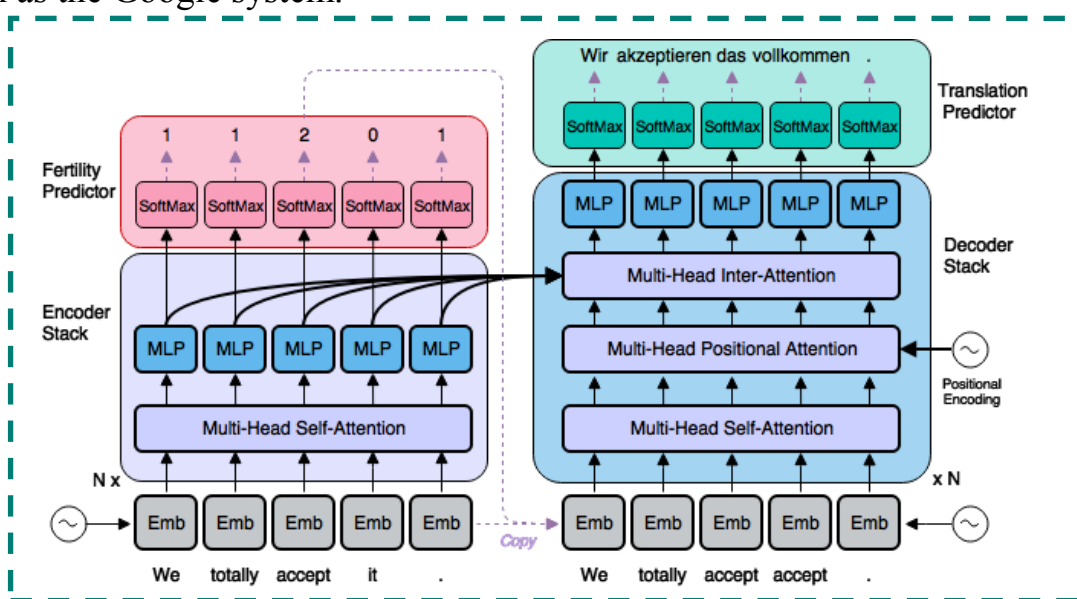
Multilayer Perceptron neural network models can be used for machine translation, although the models are limited by a fixed-length input sequence where the output must be the same length.



These early models have been greatly improved upon recently through the use of recurrent neural networks organized into an encoder-decoder architecture that allow for variable length input and output sequences. Although effective, the Encoder-Decoder architecture has problems with long sequences of text to be translated. The problem stems from the fixed-length internal representation that must be used to decode each word in the output sequence.

The solution is the use of an attention mechanism that allows the model to learn where to place attention on the input sequence as each word of the output sequence is decoded. The encoder-decoder recurrent neural network architecture with attention is currently the state-of-the-art on some benchmark problems for machine translation.

And this architecture is used in the heart of the Google Neural Machine Translation system, or GNMT, used in their Google Translate service. Although effective, the neural machine translation systems still suffer some issues, such as scaling to larger vocabularies of words and the slow speed of training the models. There are the current areas of focus for large production neural translation systems, such as the Google system.



THE INEVITABLE RISE OF BITCOIN: WHY IT WILL REPLACE TRADITIONAL BANKING?

- ABHISHEK B (IV YEAR CSE)

Bitcoin, the world's first and most popular cryptocurrency, has been gaining significant attention and momentum in recent years. This is due to several reasons, including its decentralized nature, innovative blockchain technology, and potential to replace traditional banking. One of the key advantages of Bitcoin is its decentralized nature. It is not controlled by any government or financial institution, giving users greater control over their money and eliminating the need for intermediaries such as banks.

This decentralization also makes Bitcoin more secure, as transactions are verified by a network of users rather than a centralized authority. Another advantage of Bitcoin is its lower transaction fees. Traditional banking institutions charge significant fees for transactions, especially for international transfers. In contrast, Bitcoin has minimal transaction fees, making it more affordable for users. Bitcoin is also more accessible than traditional banking. With traditional banking, access to financial services can be limited by geography, income, and creditworthiness.

Bitcoin is a decentralized digital currency that operates on a peer-to-peer network known as the blockchain. Unlike traditional currencies, which are controlled and regulated by central banks, Bitcoin is accessible to anyone with an internet connection. This accessibility has made Bitcoin a popular choice for individuals around the world.

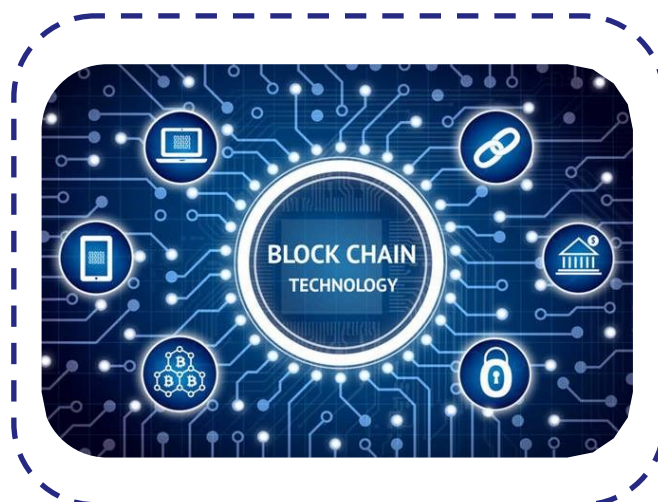


Every chain consists of multiple blocks and each block has three basic elements - data, nonce and the hash. Nonce is a “number used only once.” A nonce in blockchain is a whole number that’s randomly generated when a block is created, which then generates a block header hash. A hash in blockchain is a number permanently attached to the nonce.

When the first block of a chain is created, a nonce generates the cryptographic hash. The data in the block is considered signed and forever tied to the nonce and hash unless it is mined. Each block in the blockchain contains a set of data, such as a transaction or a record of ownership. When a new block is added to the blockchain, it is validated by other nodes in the network, and a cryptographic hash is added to the block. This hash acts like a fingerprint, making it virtually impossible to alter or tamper with the data in the block.

Some of the key advantages of blockchain over traditional databases are its security and transparency, decentralisation, and its efficiency.

In conclusion, blockchain technology has the potential to revolutionise the way data is handled in various industries. Its secure, transparent, and decentralised nature makes it an ideal platform for applications such as digital currencies, supply chain management, and healthcare.



DATA VISUALIZATION: AN INTROSPECTION

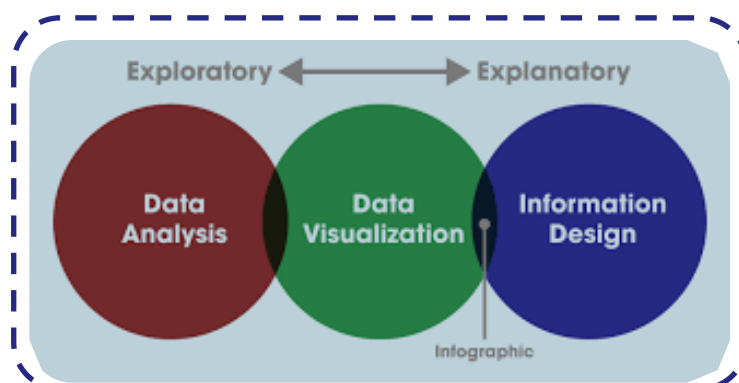
- Dr.M.K.SANDHYA (Professor, CSE)

Data visualization is the graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data.

Additionally, it provides an excellent way for employees or business owners to present data to non-technical audiences without confusion. In the world of Big Data, data visualization tools and technologies are essential to analyze massive amounts of information and make data-driven decisions.

The importance of data visualization is simple: it helps people see, interact with, and better understand data. Whether simple or complex, the right visualization can bring everyone on the same page, regardless of their level of expertise. It is hard to think of a professional industry that doesn't benefit from making data more understandable.

Every STEM field benefits from understanding data—and so do fields in government, finance, marketing, history, consumer goods, service industries, education, sports, and so on. Since visualization is so prolific, it is also one of the most useful professional skills to develop. The better you can convey your points visually, whether in a dashboard or a slide deck, the better you can leverage that information.



The concept of the citizen data scientist is on the rise. Skill sets are changing to accommodate a data-driven world. It is increasingly valuable for professionals to be able to use data to make decisions and use visuals to tell stories about the data.

While traditional education typically draws a distinct line between creative storytelling and technical analysis, the modern professional world also values those who can cross between the two: data visualization sits right in the middle of analysis and visual storytelling.

The increased popularity of big data and data analysis projects have made visualization more important than ever. Companies are increasingly using machine learning to gather massive amounts of data that can be difficult and slow to sort through, comprehend and explain.

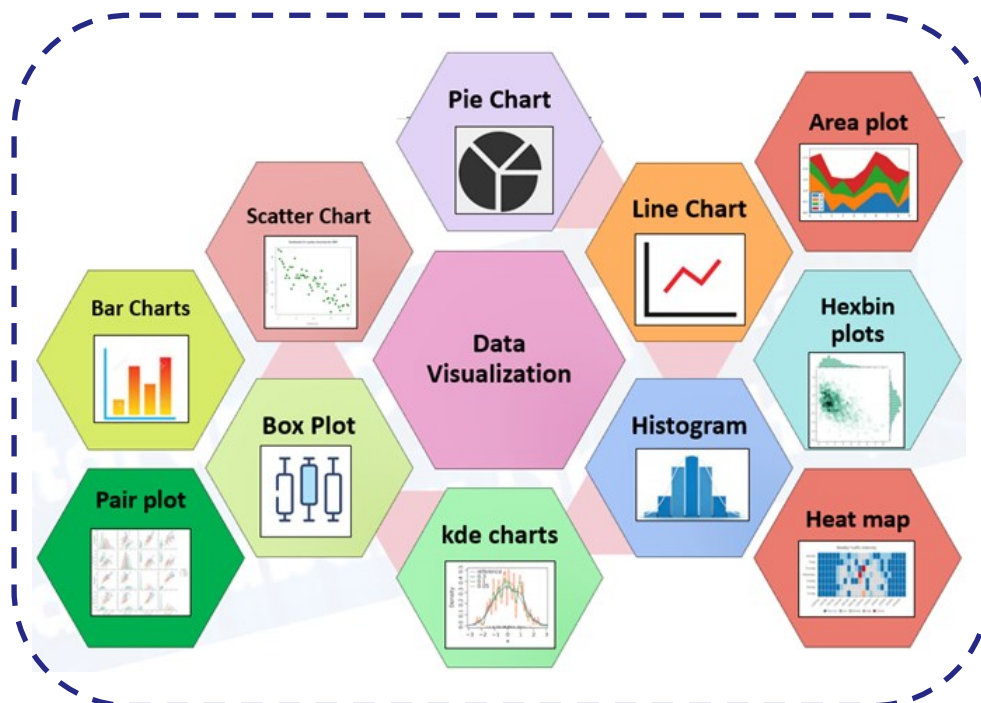
Visualization offers a means to speed this up and present information to business owners and stakeholders in ways they can understand. Big data visualization often goes beyond the typical techniques used in normal visualization, such as pie charts, histograms and corporate graphs. It instead uses more complex representations, such as heat maps and fever charts.

Big data visualization requires powerful computer systems to collect raw data, process it and turn it into graphical representations that humans can use to quickly draw insights.

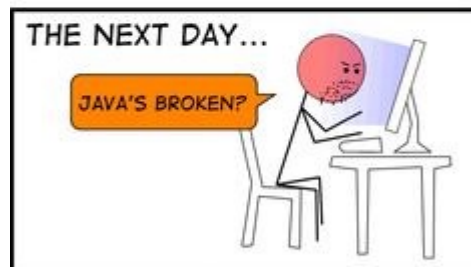
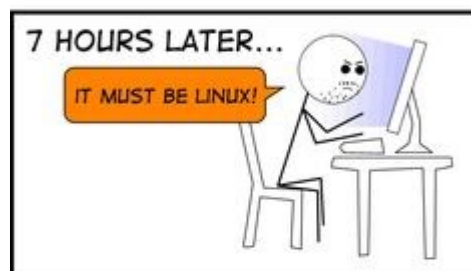
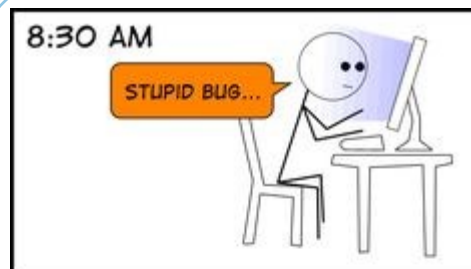
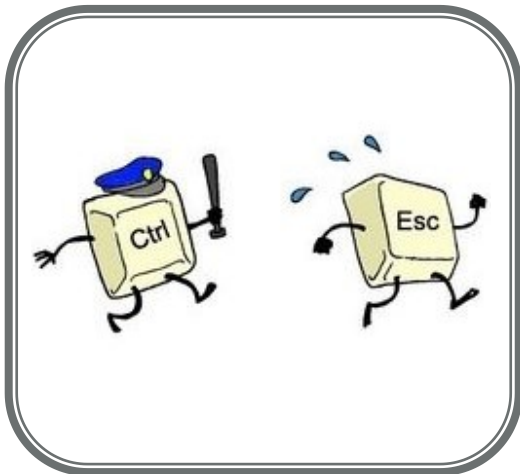


While big data visualization can be beneficial, it can pose several disadvantages to organizations:

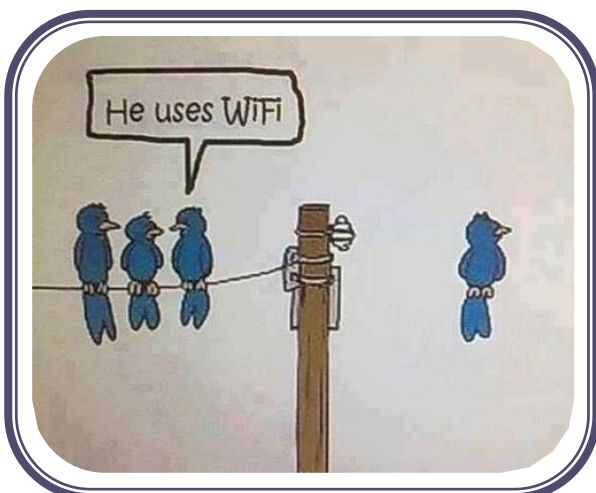
- To identify the best data sets and visualization styles to guarantee organizations are optimizing the use of their data.
- Big data visualization projects often require involvement from IT, as well as management, since the visualization of big data requires powerful computer hardware, efficient storage systems and even a move to the cloud.
- The insights provided by big data visualization will only be as accurate as the information being visualized.
- Therefore, it is essential to have people and processes in place to govern and control the quality of corporate data, metadata and data sources.

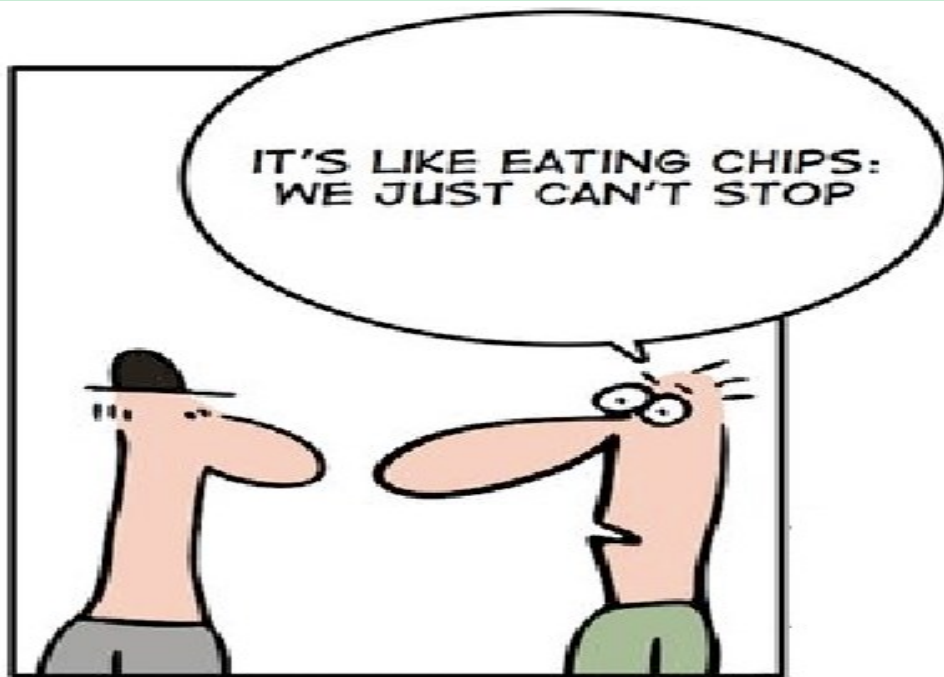


FUN CORNER

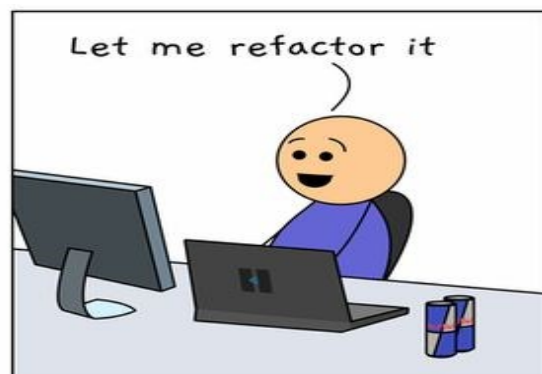
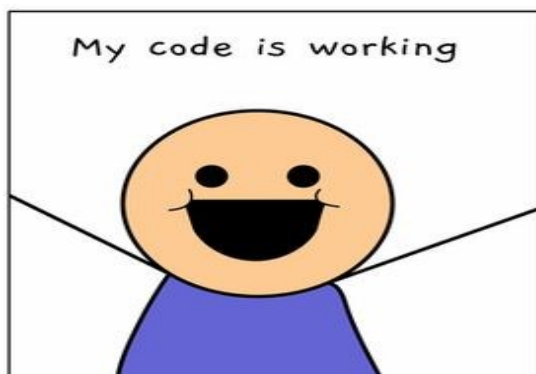


STUFFTHATHAPPENS.COM BY ERIC BURKE





ONE YEAR IN A IT PROJECT - DAY 15:
REQUIREMENTS INFLATION



PLACEMENT DETAILS



BATCH 2019-2023 (till May 2023)

COMPANY	STUDENT COUNT
Kaar Technologies	4
Avasoft	3
Walmart	1
Zoho	3
Virtusa	13
Elait IT solutions	1
Indium	6
Ganit	1
Cognizant	8

Propel	1
Hexaware	3
Byjus	1
BigThinkCode	1
Sutherland	1
Tryam	2
NCompass	1
TCS	1
QSpider	1

BATCH 2020-2024 (till May 2023)

COMPANY	STUDENT COUNT
Kaar Technologies	6
Embed UR	1

PLACEMENT BULLETIN

Total number of students	65
Total number of students placed	52
Placement Percentage till May 2023 (Batch : 2019 - 2023)	80 %

EDITORIAL BOARD

CHIEF EDITOR: Dr. B. MONICA JENERFER

EDITOR: Dr. M.K. SANDHYA

COORDINATORS:

FACULTY: Mrs. M. SUMITHRA

IV YEAR: ABHISHEK B, DHARSHINI K, SHRAVANI G,
DIKSHA KRISHNAN, NIKHILESHWARI S.

III YEAR: RAKAVI P, RAMYA RAJENDRAN, SRUTHIKA G,
SANJAY KUMAR S, FLAVIAN DIOL D.

II YEAR: MEGHANA G, PRIYASHREE H, SEVA KUMAR P,
VENKATESH K

Your feedback is appreciated !

Mail us at: newsletters.ace.msec@gmail.com