ST. XAVIER'S COLLEGE

Mapusa - Goa

Department of Computer Application

XI - BYTE

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Administrator's Message

Xi-Byte is the bi-annual newsletter of the Department of Computer Application of St Xavier's College that tracks the academic journey of the students in pursuance of their dream through the various programmes, visits, talks by different personalities from the field of Information Technology and the curricular activities, that they have been engaged in throughout the academic year. The aim of all these activities has been, not only to impart knowledge and skills required in the software industry, but also to make the students aware of the latest technical developments in these fields.

The aim of the BCA course is to impart software development skills and also getting our students to be ready and up to date with the current trends and requirements of the IT industry.

I extend my hearty congratulations to the Course Coordinator and the students for all their achievements during the academic year, 2022-23 and I wish them all the very best in their life.

May God bless everyone.

Fr. Antonio F. Salema
Administrator
St Xavier's College, Mapusa.

Field Trip

Environmental Studies field trip was conducted to Biodiversity Park, Mollem by Department of B.C.A for First Year students on 6ᵗʰ October 2022. Altogether 39 students had participated. Ms. Saili Parab (Assistant Professor in Environmental Studies) and Mr. Vipul Parsekar accompanied the students on the field trip. The bus left from the campus at 8:30 am in the morning. The park had varieties of places to explore such as Sacred Groves, Butterfly Garden, Spice Garden, Aushadi Van, (Medicinal Plants), Rashi Van, Jambha Land, Check Dam etc.

There are several species of trees which are planted and conserved one of which includes the state tree of Goa locally known as Matti tree. There were also certain activities like zip liners, tree houses & huts made up of locally available materials, which makes the park an eco-tourist spot. The trip was fruitful experience as along with nature trail and students too got to learn about the rich natural heritage of Goa.

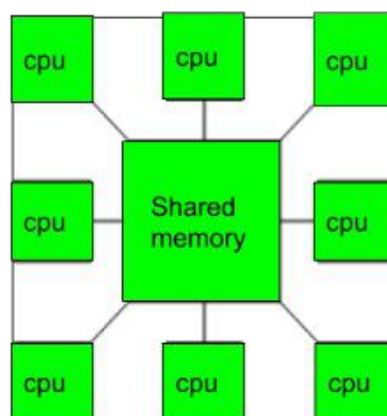# Bus v/s Multiprocessor

Leander Chris D'Souza
SYBCA

"Multiprocessor systems are one of those systems that have two or more processors in communication. When I compare this scene with the people who use buses, the advantage is that just as the multiprocessor systems are cost-less than an equivalent single processor system, so also travelling by buses are cost-less as they help in reducing the traffic caused by more use of private vehicles. Multiprocessors are cheaper to store data on one disk and to have all processors share them.

Just as one processor fails, the system doesn't halt but only slows down, so also the number of buses slows down when there are less passengers in demand.
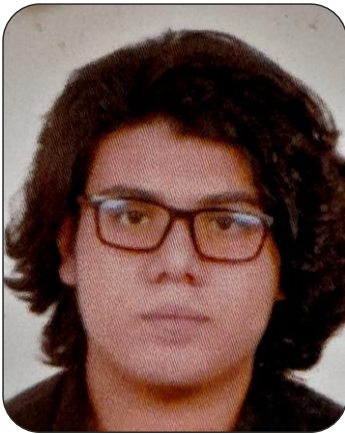
Multiprocessors are preferred when it comes to having a very good computer system architecture as it has lots of advantages.

Multiprocessors can have more processors in communication as in sharing of peripheral devices or even the memory, clock, computer bus etc... It also has an increased reliability and throughput, i.e. expecting more work in less time."

Multiprocessors help in bringing an enhanced performance, multitasking in an application, highest responsiveness and sharing hardware among CPUs. Buses bring an enhanced performance on the road when there is no underinvestment in public transportation. As a reminder of the nightmarish experiences, there are instances of hours-long traffic congestion. To reduce traffic and traffic bottlenecks, few private automobiles need to be on the road. It is crucial that a government of a country or a state invests its funds in practical solutions, such as strategies for encouraging the use of public transportation and discouraging the use of private vehicles.

ChatGPT

Shaiyam Neupane
FYBCA

ChatGPT is a pre-trained language model developed by OpenAI. It is based on the GPT (Generative Pre-training Transformer) architecture, which was introduced in a 2017 paper by researchers at OpenAI. The model is trained on a massive dataset of conversational data, allowing it to generate human-like text when given a prompt. The original GPT model was trained on a dataset of over 40 GB of text, which included a wide variety of text genres, such as books, articles, and web pages.

In contrast, ChatGPT is specifically trained on conversational data, such as dialogues and transcripts of conversations. This allows it to generate text that is more natural and human-like in a conversational context.

ChatGPT has a wide range of potential use cases, such as:
-Chatbots: ChatGPT can be used to generate responses for a chatbot, making it more natural and human-like in its conversations with users.
-Language Translation: The model could be fine-tuned to translate text from one language to another.
-Question Answering: ChatGPT can be fine-tuned on a question-answering task, in which it would generate a response to a given question.
-Content Generation: ChatGPT can generate a wide range of text, such as news articles, stories, and product descriptions.
-Summarization: The model can be fine-tuned to generate a summary of the given text.

At the moment, ChatGPT is considered as state-of-the-art in conversational language generation. OpenAI's API provides developers with a simple way to use the model for a wide range of natural language processing tasks, such as language translation, question answering, and text generation. And the code for fine-tuning the model is also available on GitHub which makes it easy for researchers and developers to customize the model for their own specific use cases.
Overall, ChatGPT is a powerful language model that has the potential to revolutionize the way we interact with computers in a natural and human-like way, and it's now widely use on many conversational based application such as chatting with virtual assistants, text-based games, and so on.

A TOUCH OF LITERATURE...

The Human Predicament: Engaging with *The Devil and Miss Prym*

by Paulo Coelho

"Perhaps the fight between Good and Evil is raging all the time in every individual's heart..."

-Paulo Coelho, The Devil and Miss Prym

Giann Maria Fernandes
Assistant Professor
in English

This novel encapsulates the human predicament of making a choice, one that doesn't mar the conscience of humanity. Let us journey into the intriguing events of the novel. The novel is set in the verdant village of Viscos. A stranger enters the village and strikes a rapport with a barmaid in a hotel, Chantal Prym. He reveals to Miss Prym that he has buried gold bars in the village itself and that this gold will guarantee them prosperity and development.

However, in order to attain that gold, the villagers would have to sacrifice one of their members. The stranger confesses to Miss Prym that his sole aim is to assess whether human beings would give in to evil if their circumstances force them to or whether they are capable of being constantly good. Thus, Miss Prym puts forth the proposition to the villagers that if they sacrifice one member, they will immediately come into possession of gold. Just as the stranger envisages, the villagers decide to sacrifice the oldest woman of the place, Berta. However, at the eleventh hour, Miss Prym foresees the loophole of such a risk.

The story is adorned with various legends and allusions that keep up to the universal premise that all humans being are capable of making a choice and that choice ultimately impacts their lives as well as those of the individuals around them.

One such legend surrounds the life of former criminal and convert, Ahab, who experiences a positive transformation under the influence of Saint Savin. Both, the lawbreaker and the saint grapple with the same issues of good and evil, but the choice each of them makes ultimately determines the life they create for themselves.

The author's note also alludes to the most significant event in the Genesis, Adam and Eve's temptation and the choice they eventually make under the manipulation of the serpent. Similarly, the residents of Viscos agree to sacrifice Berta believing that they will be able to uplift the village. And yet when they are interrupted by Miss Prym at the end moment, they welcome this interruption because they were beginning to be overcome by fear, shame and guilt and they were waiting for "an excuse to change their minds".

Coelho, through this narration showcases that the notions of 'good' and 'evil' are subjective. The mayor and the priest see no issue with the sacrifice of Bertha. On the contrary the priest takes to religion and composedly reminds that Christ's sacrifice saved humanity! During a discussion, the landowner expresses a desire to purchase the cemetery land because of its scenic view. The blacksmith views the selling of this church property as 'immoral' and 'unacceptable'.But the landowner is concerned only with tourism and profit.

Thus, what is moral and acceptable to one isn't so with others. The story holds a mirror to society and reminds readers that the life we have created for ourselves, the environment we live in, are all a reflection of choices made in the past. Were those decisions good or were they evil? Do the erroneous decisions of one impact the lives of others? When people are torn between good and evil, do they resist the temptation? Or are they willing to stoop to any extent if the bait is alluring?

The stranger's trap, Miss Prym's sagacity, the villagers' dilemma, all make this novel a compelling read. The novel skilfully addresses this balance between making a choice that will keep us happy and at the same time not menace our life or society.

This human predicament can be best summed up in the words of the author, "it was all a matter of control. And choice. Nothing more and nothing less."

AI in Social Media

The concept of AI first arose in the 1950s. Coined by John Mccarthy, the term was used to describe human thinking as a symbolic system. When you think of AI you might imagine power hungry robots trying to achieve world domination, but the fact of the matter is far more subtle but perhaps as dangerous. In this day and age, most people are exposed to AI on a daily basis without realising it, in the products that are advertised to us, the news we receive and even the media we enjoy.

Tamarra D'Souza
FYBCA

Every move we make online is monitored by our social networking sites and sold to companies and brands in the form of user data. To advertisers, this data is money.

AI enables companies to use this data in a way that is most efficient. The AI analyses consumer behaviour patterns and thusly recommends products as well as services to unsuspecting customers. Every Amazon ad and Instagram post on your explore page is curated based on the plethora of information we unknowingly impart by simply being present online. Although AI provides only positives to any business model, it does suffer some pitfalls in the socio-economic sphere. For example, AI studies trends and user activity around the clock and can use this data to create content perfectly suited to its audience.

This is the concept that drives the success of AI "influencers" such as @lilmiquela on Instagram who enjoys more than 3 million followers. An alternative so simple deems social media managers and customer service employees obsolete. Further developments have also been made in the field of Artificial Intelligence that have potential to replace real life human companionship. Programs like "Replika", an AI chatbot that adapts to the speaking patterns of its user, cause a threat to person-to-person interaction.

AI cannot simply be labelled as either good or bad. Take an example like personalised advertisements, though some may look at it as consumer manipulation and unlawful usage of personal information, it does make online shopping easier and more convenient.
All we can do is hope that AI technology lands in capable hands because, with great power, comes great responsibility.

From our Poet's Desk

Macbeth Fernandes
TYBCA

A drop of blood can save a life,
Which can be given without any strife.

Colours of skin may differ on the above
But drops of blood like these
Are in the form of a heavenly dove.

Innocent and honest are the people
who we judge for good or better,
But tiny drops of blood from humans
Are all that matter.

It is no such big act of cosetting,
Only about giving and forgetting
While donation of blood gives you a sense of pleasure.
On the other hand people in need
Take it as a treasure.

For today you may be a loner,
But once you become a donor
You are treated with honour.
Donation of blood should not only be done
when required for one's near or dear.
But rather be done on a regular basis,
as it can also reduce a tear.

Influence of Technology in Music

Over the years, the music industry has been through a lot of advancements and changes with the help of technology. Consider the progression from the phonograph and analog tape machines to digital recording software and internet-based streaming services. Technology has changed how people create music. Composers can produce film scores from their home studios. Musicians can play for fans around the world through livestreamed performances. Songwriters can record albums and release them on digital distribution and streaming platforms without having to sign a record deal like they use to in the previous years.

Stalin D'sa
Assistant Professor
Dept. of BCA

While the digital music revolution hurt music industry giants in terms of sales, it also opened doors for smaller ones like indie record labels. Advancements in home recording software allow musicians to record at low cost. Digital distribution platforms also let artists and small labels sidestep larger industry-controlled distribution channels.Social media and video streaming services enable artists to connect with fans directly, reducing the need for expensive PR campaigns. The live music industry has always been an important source of income for performers, audio engineers, venues, promoters and other professionals.

Before COVID-19 hit, live music saw steady growth over the last two decades. During the pandemic, musicians have been monetizing livestreamed performances over social media platforms using donation links or paid access services. Professionals who are savvy with music technologies like digital recording platforms, MIDI composition and audiovisual programming software are exploring new lines of work in booming industries.Video-streaming is one such industry, with services like Netflix constantly creating and releasing new content. Composers, sound designers, audio engineers, and audio programmers are essential in these audiovisual industries, which creates important income opportunities.

The digital era has been tough on the music industry, but it has also opened the door for emerging artists who might otherwise never have gotten the exposure they deserve. Advancements in music technology have spurred growth and innovation in music creation, which is, after all, the point of art.

Art Gallery

Rangoli Art done by Ms. Akshata Shetye (Assistant Professor in Mathematics)

Art work done by TYBCA Students as part of Digital Art in Computer Animation Course