Technology for the society

2022

Presented By:

B. Sc computers

STUDENT MAGAZINE

Computer Science

TECHNOLOGY FOR THE SOCIETY

STUDENT MAGAZINE 2022-2023

DEPARTMENT OF COMPUTER SCIENCE

PREFACE:-

The magazine speaks, about great thoughts of the future youngsters and also describes Presenttrend Technology. The magazine was dividing into 11 Topics, (1) Graphics and Animation & video games (2) Social Media (3) Agriculture-Industrial Technology (4) Artificial Intelligence (5) Recent & 5G Technology (6) Online Shoping/Education/Transaction (7) Fun Facts (8) Business Views (9) Environment Education (10) scientists and Inventions (11) Cyber Security.

We are very proud of my computer science students.I would like to congratulate all writers of respective Articles,Topics Incharges and chief editor for theirtremendous effort. Heartly congratulations for the man behinds this successful projecst Dr. A. Siva Prasad for guiding them in a right way. I pray for more endeavors to come for computer science department.

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TECHNOLOGY FOR THE SOCIETY

1.SOCIAL MEDIA

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3.Artificial Intelligence

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4.Agriculturel/Industrial-Technology

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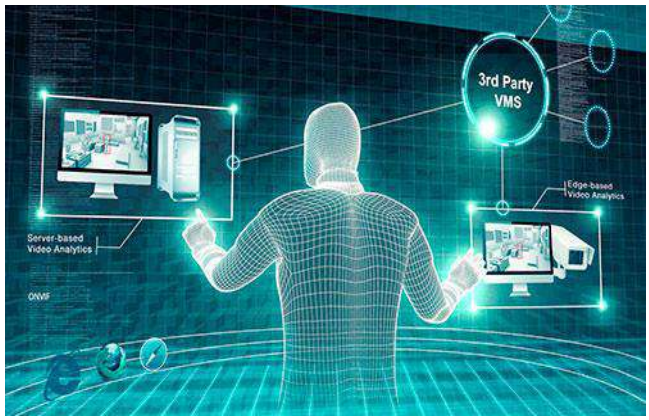
V. Hemani

GRAPHICS

Computer Engineer **Ivan Sutherland** is considered as the ' **Father of Computer Graphics** '. In the late 1960s, when hardly anyone had heard of computer, Sutherland made two revolutionary contributions that set the foundation for modern age computing.



Graphics is a method of communication that we use to portray our ideas to our audience, and the better we can communicate the more information that they can retain.

Computer graphics deals with generating images with the aid of computers. Today, computer graphics is a core technology in digital photography, film, video games, cell phone and computer displays, and many specialized applications. A great deal of specialized hardware and software has been developed, with the displays of most devices being driven by computer graphics hardware. It is a vast and recently developed area of computer science. The phrase was coined in 1960 by computer graphics researchers Verne Hudson and William Fetter of Boeing. It is often abbreviated as CG, or typically in the context of film as computer generated imagery (CGI).

In general terms, the word “graphic”refers to any visual representation of data and includes a variety of forms including **drawings, photographs,lineart,graphs,diagrams,numbers,symbols,geometricdesigns, maps, and engineering drawings**. **Computer graphics** deals with generating images with the aid of computers. Today, computer graphics is a core technology in digital photography, film, video games, cell phone and computer displays, and many specialized applications. A great deal of specialized hardware and software has been developed, with the displays of most devices being driven by computer graphics hardware. It is a vast and recently developed area of computer science.

Different types of graphics:-

- Product design. Product designers use their creative prowess to research, design and develop new products. ...
- Branding design. ...
- Website design. ...
- Print design. ...
- Publishing design. ...
- Environmental design. ...
- Animation design.

Uses of graphics

Computer graphics deals with creation paint packages manipulation and storage of different type of images and objects. Some of the applications of computer graphics are: Computer Art: Using computer graphics we can create fine and commercial art which include animation packages, paint packages.

Advantages:

Graphics are used for everything from enhancing the appearance of Web pages to serving as the presentation and user interaction layer for full-fledged Web Applications.

The advantage of Graphic is quick way for the audience to visualize what you are saying, some of people more interest in the graphic than talk. The disadvantage of Graphic is it takes a lot of time to make. The cost also expensive, depending on the medium used.

Disadvantage:

Use more energy than analog circuits to accomplish the same tasks, thus producing more heat as well.

Digital circuits are often fragile, in that if a single piece of digital data is lost or misinterpreted the meaning of large blocks of related data can completely change.

PROS	CONS
❖ 1. Can Make Decent Money	❖ 1. Most Designers don't get rich
❖ 2. Use of Creative and Analytical Brain Parts	❖ 2. Design is Subjective
❖ 3. Appreciation for your Work	❖ 3. Everyone Thinks it's a Easy Job
❖ 4. Highly Coveted Skills	❖ 4. Competitive Job

CONCLUSION:-

Graphics (from Ancient Greek γραφικός (graphikós) 'pertaining to drawing, painting, writing, etc. ') are **visual images or designs on some surface, such as a wall, canvas, screen, paper, or stone, to inform, illustrate, or entertain**.

The purpose of graphics is **to provide relevant visual output from a digital system**. Graphics can be seen on a monitor when a computer is switched on. Any visual output from a digital display is a form of graphics, whether this is a photograph, a cursor or a video game.

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VIDEO GAMES

Video games, also known as **computer games,** are electronic games that involve interaction with a user interface or input device – such as a joystick, controller, keyboard, or motion sensing device – to generate visual feedback. This feedback mostly commonly is shown on a video display device, such as a TV set, monitor, touchscreen, or virtual reality headset. Some computer games do not always depend on a graphics display, for example text adventure games and computer chess can be played through teletype printers. Video games are often augmented with audio feedback delivered through speakers or headphones, and sometimes with other types of feedback, including haptic technology.

Video games are defined based on their platform, which include arcade video games, console games, and personal computer (PC) games. More recently, the industry has expanded onto mobile gaming through smartphones and tablet computers, virtual and augmented reality systems, and remote cloud gaming. Video games are classified into a wide range of genres based on their type of gameplay and purpose.

The Origin of Video Games

The first video games were created as far back as the 1950s, as computer scientists created simple electronic games in order to see what computers could do. Very simple games such as tic-tac-toe could be programmed into early computers, and these were used as demonstrations to show how powerful the computers were. One of the lesser-known facts about video games is that many early developers did not think that they would be popular, and only used them for testing the computer's capabilities.

The first video game to be distributed was developed during 1961-62, and was called '*Spacewar!*'. Using very simple graphics, two players could simulate a space battle. In the 1970s, computer programmers created programming languages, which made it easier for people to make programs, including video games. More and more computer programmers began to develop their own games, as people began to see the potential in video games.

The Rise of Video Games

The first successful arcade video game was Pong, which was released in 1972. This simple game allows two players to compete in a table tennis game, and scores are recorded at the top of the screen. Although it seems simple by today's standards, at the time this game was revolutionary.

As news and facts about video games spread, and the industry grew larger and larger, programmers in the UK, US, Russia, Japan and many other countries began to make their own video games. Some programmers took the basic ideas of one game and copied it, adding new elements. Others experimented with brand-new concepts, some of which became popular hits. The table-tennis format of Pong was replicated many times, but other types of games such as shooters and adventure games soon became even more popular.

This led to a huge boom in video game production and sales during the 1970s and early 1980s, which is referred to as the 'Golden Age' of arcade video games. Some of the most iconic and popular video games were created during this era, including Space Invaders, Pac-Man, Asteroids, Breakout, Galaga, and Donkey Kong.

The Video Game Crash

However, this all changed in 1983. The video game market experienced a crash, because there were too many video games being created that were poorly programmed. Lots of cheap copies of popular games were flooding the market, and this damaged the video game industry because there seemed to be a lack of innovation and quality control.

This led to video game creators and manufacturers to increase the standards for video games. Some video game developers created new ways to ensure quality, such as the cartridge-based video game system. This system allowed video game producers to check the quality of games being produced for their consoles, as programmers had to get approval to publish a game before it could be made.

This in turn led to the rise of third-party developers, which are companies that produce video games to be played on consoles that they did not create themselves. In modern times, the vast majority of video game production companies are third-party developers.

PC Gaming

A **personal computer game**, also known as a **PC game** or **computer game**, is a type of video game played on a personal computer (PC) rather than a video game console or arcade machine. Its defining characteristics include: more diverse and user-determined gaming hardware and software; and generally greater capacity in input, processing, video and audio output. The uncoordinated nature of the PC game market, and now its lack of physical media, make precisely assessing its size difficult. In 2018, the global PC games market was valued at about $27.7 billion.

THE BENEFITS OF PLAYING VIDEOGAMES

- They speed up response times. ...
- They encourage teamwork. ...
- They stimulate creativity, focus and visual memory. ...

- They improve strategy and leadership. ...
- They teach languages. ...
- Critical thinking.

Spending excessive time playing these games can lead to:

- Less time socializing with friends and family.
- Poor social skills.
- Time away from family time, school work, and other hobbies.
- Lower grades.
- Less reading.
- Less exercise and becoming overweight.
- Decreased sleep and poor quality sleep.
- Aggressive thoughts and behaviors.

Gaming has also been associated with **sleep deprivation, insomnia and circadian rhythm disorders, depression, aggression, and anxiety**, though more studies are needed to establish the validity and the strength of these connections.

CONCLUSION

Video games are a form of media that is often associated with negative health consequences. However, when games are played in moderation and with mindfulness, they are a viable source of stress relief as well as a catalyst for mental health improvement and development of social skills.

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ANIMATION

Definition of Animation:

Animation is a method of photographing successive drawings, models, or even puppets, to create an illusion of movement in a sequence. Because our eyes can only retain an image for approx. 1/10 of a second, when multiple images appear in fast succession, the brain blends them into a single moving image. In traditional animation, pictures are drawn or painted on transparent celluloid sheets to be photographed. Early cartoons are examples of this, but today, most animated movies are made with computer-generated imagery or CGI.

DIFFIRENT TYPES OF ANIMATIONS

- Traditional Animation/2DAnimation
- 3D Animation
- Rotoscope Animation
- Motion Graphics
- Cut-out Animation

1.TRADITIONAL ANIMATION/2DANIMATION

2D animation probably doesn't need much of an explanation. It's used to create flat, 2D characters and environments. including cartoons, promotional videos, explainer videos, and more.

2.3DAnimation 3D animation was quite revolutionary when it was introduced. Not only has 3D animation allowed animators to createmore immersive,realistic animated experiences, but 3D animatalso haspractical applications in industries like medicine and archit*ecture.*

3.Rotoscope Animation

Rotoscope animation involves taking live-action footage andtracing overit with a rotoscope tool—similar to traditional animationstyles that involve tracing photographs onto glass panels.Rotoscoping is often used in situations where it's necessary for the animated character to interact realistically with the environment. Rotoscope animation is typically cheaper than standard 3D animation and is great for commercials and films.

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4.Motion Graphics

Motion capture is a modern form of 3D animation
that allows creators to create ultra-realistic animations
based on live-action scenes. Motion capture is frequentlyused in the gaming industry to create realistic character animations and lifelike facial expressions.

5.Out-Out Animation

Another form of stop motion animation, cut-out animation
is probably most recognizable from the popular
animated show, South Park. To create a cut-out animation
production, creators utilize paper cutouts of characters
that are superimposed on animated environments
. While this animation style traditionally worked similar to shadow puppets, modern cut-out animation
involves using scanned paper cutouts to streamline the process. Cut-out animation is ideal for cartoons, storytelling videos, and explainer videos.

Use of Animation in Different Sectors

- 1) Advertisement and Marketing. One of the most creative and unique ways of advertising products and services is through animation. ...
- 2) Gaming. ...
- 3) Education. ...
- 4) Architecture and Engineering. ...
- 5) AR and VR (Augmented Reality and Virtual Reality) ...
- 6) Entertainment and Media.

❖ THE GOLDEN AGE OF CEL ANIMATION

Animation was considered the standard method of 2D animation for many years but has largely gone out of fashion in the digital age. Before we look at the role this type of animation holds in modern filmmaking, let's take a look back at its golden age.

Why was it so popular? And why is it considered obsolete these days?

Compared to modern animation methods, animating individual cels is extremely time-consuming and expensive. But, back during the golden age, this method of animation could save time, be more efficient, and produce better results. Especially when compared to the alternative of painstakingly drawing every single element of a frame, by hand, hundreds or thousands of times.

Disney played an important role in the advancement of cel animation techniques and technology. They spearheaded the search for alternatives to the original clear plastic material used, cellulose nitrate. There were many reasons why an alternative was sought. The material was highly flammable, would release hazardous fumes, and would severely degrade over time even in the best conditions.

Cellulose acetate took over as the primary material used in cel animation for a time but it too was imperfect and would degrade over time. Cellulose acetate was eventually replaced by clear polyester, which was much easier to preserve and to work with. These days, physical cels are more often relics than they are actual tools of the animation trad

The last Disney film to be entirely animated with cels was Oliver and Compny from 1988. A year later, The Little Mermaid was the last Disney film to utilize cel animation in any capacity but did not use the technique exclusively.

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ARTIFICIAL INTELLIGENCE

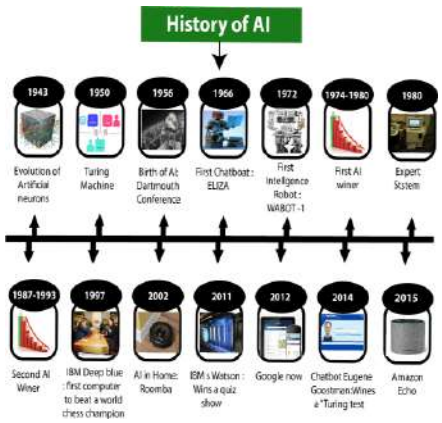
Brief History of Artificial Intelligence:-

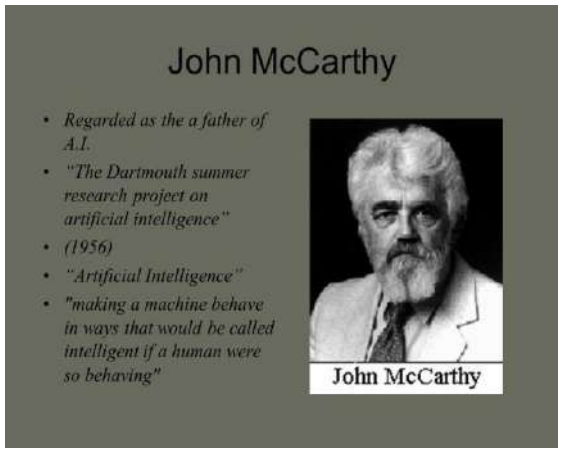
Here's a brief timeline of the past six decades of how AI evolved from its inception.From the 1950s forward, many scientists, programmers, logicians, and theorists aided in solidifying the modern understanding of artificial intelligence as a whole. With each new decade came innovations and findings that changed people's fundamental knowledge of the field of artificial intelligence and how historical advancements have catapulted AI from being an unattainable fantasy to a tangible reality for current and future generations.

1956 – John McCarthy coined the term 'artificial intelligence' and had the first AI conference.

1969 – Shakey was the first general-purpose mobile robot built. It is now able to do things with a purpose vs. just a list of instructions.

1997 – Supercomputer 'Deep Blue' was designed, and it defeated the world champion chess player in a match. It was a massive milestone by IBM to create this large computer.





2002 – The first commercially successful robotic vacuum cleaner was created.

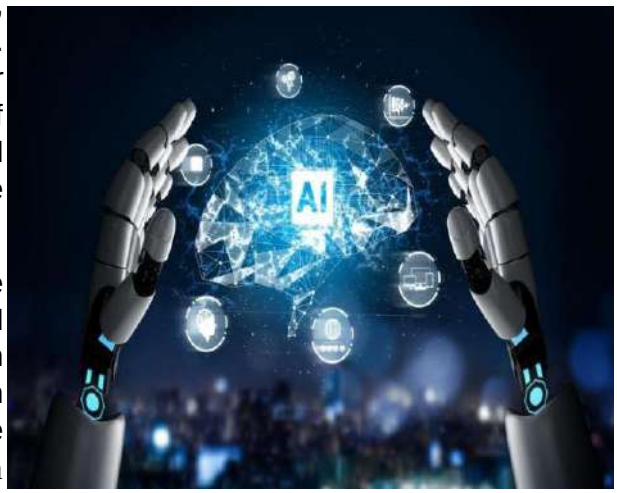
2005to2019 – Today, we have speech recognition, robotic process automation (RPA), a dancing robot, smart homes, and other innovations make their debut.

2020 – Baidu releases the LinearFold AI algorithm to medical and scientific and medical teams developing a vaccine during the early stages of the SARS-CoV-2 (COVID-19) pandemic. The algorithm can predict the RNA sequence of the virus in only 27 seconds, which is 120 times faster than other methods

Artificial intelligence:-

Artificial intelligence (AI) is intelligence—perceiving, synthesizing, and inferring information—demonstrated by machines, as opposed to intelligence displayed by animals and humans. Example tasks in which this is done include speech recognition, computer vision, translation between (natural) languages, as well as other mappings of inputs. The Oxford English Dictionary of Oxford University Press defines artificial intelligence.

AI becomes “smarter” and learns faster with more data, and every day, businesses are generating this fuel for running machine learning and deep learning solutions, whether collected and extracted from a data warehouse like Amazon Redshift, ground-truthed through the power of “the crowd” with Mechanical Turk, or dynamically mined through Kinesis Streams. Further, with the advent of IoT, sensor technology exponentially adds to the amount of data to be analyzed – data from sources and places and objects and events that have previously been nearly untouched.



Artificial intelligence is a field of science concerned with building computers and machines that can reason, learn, and act in such a way that would normally require human intelligence or that involves data whose scale exceeds what humans can analyze.AI is a broad field that encompasses many different disciplines, including computer science, dataanalytics and statistics, hardware and software engineering, linguistics, neuroscience, and even philosophy and psychology.

On an operational level for business use, AI is a set of technologies that are based primarily on machine learning and deep learning, used for data analytics, predictions and forecasting, object categorization, natural language processing, recommendations, intelligent data retrieval, and more

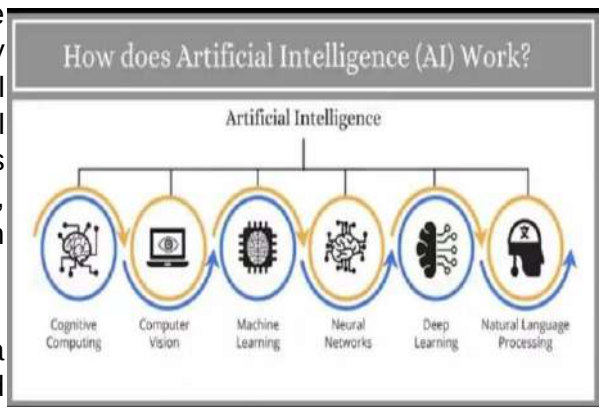
Working of Artificial intelligence:-

AI works by combining large amounts of data with fast, iterative processing and intelligent algorithms, allowing the software to learn automatically from patterns orfeatures in the data.

There are many different components to an AI system, which you can think of as sub-fields of theoverarching science of artificial intelligence.

Machine Learning – A specific application of AI that lets computer systems, programs, or applications learn automatically and develop better results based on experience, all without being programmed to do so. Machine Learning allows AI to find patterns in data, uncover insights, and improve the results ofwhatever task the system has been set out to achieve.

Deep Learning – A specific type of machine learning that allows AI to learn and improve by processing data. Deep Learning uses artificial neural networks which mimic biological neural networks in the human brain to process information, find connections between the data, and come up with inferences, or results based on positive and negative reinforcement.



Neural Networks – A process that analyzes data sets over and over again to find associations and interpret meaning from undefined data. Neural Networks operate like networks of neurons in the human brain, allowing AI systems to take

in large data sets, uncover patterns amongst the data, andanswer questions about it.

Cognitive Computing – Another important component of AI systems designed to imitate the interactions between humans and machines, allowing computer models to mimic the way that a human brain works when performing a complex task, like analyzing text, speech, or images.

Natural Language Processing – A critical piece of the AI process since it allows computers to recognize, analyze, interpret, and truly understand human language, either written or spoken. Natural Language Processing is critical for any AI-driven system that interacts with humans in some way, either via text orspoken inputs.

Computer Vision - One of the prolific uses of AI technologies is the ability to review and interpret the content of an image via pattern recognition and deep learning. Computer Vision lets AI systems identify components of visual data, like the captchas you'll find all over the we

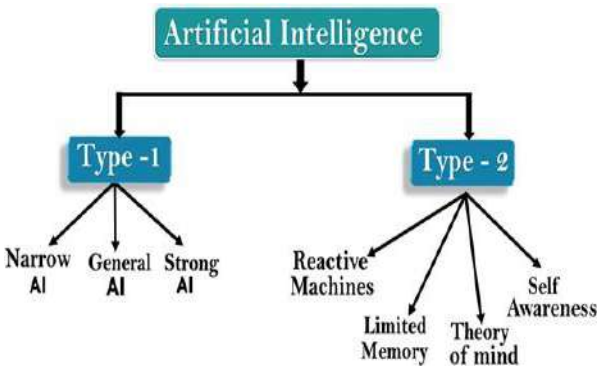
Types of Artificial Intelligence:-

Artificial Intelligence can be divided in various types, there are mainly two types of main categorization which are based on capabilities and based on functionally of AI. Following is flow diagram which explainthe types of AI.

AI type-1: Based on Capabilities

Weak AI or Narrow AI:

Narrow AI is a type of AI which is able to perform a dedicated task with intelligence.The most common and currently available AI is Narrow AI in the world of Artificial Intelligence.Narrow AI cannot perform beyond its field or limitations, as it is only trained for one specific task. Hence it is also termed as weak AI. Narrow AI can fail in unpredictable ways if it goes beyond its limits.Apple Siriis a good example of Narrow AI, but it operates with a limited pre-defined range of functions.IBM's Watson supercomputer also comes under Narrow AI, as it uses an Expert system approach combined with Machine learning and natural language processing.



Some Examples of Narrow AI are playing chess, purchasing suggestions on e-commerce site, self-driving cars, speech recognition, and image recognition.

General AI:

General AI is a type of intelligence which could perform any intellectual task with efficiency like a human.The idea behind the general AI to make such a system which could be smarter and think like a human by its own.Currently, there is no such system exist which could come under general AI and can perform any task as perfect as a human.The worldwide researchers are now focused on developing machines with General AI.As systems with general AI are still under research, and it will take lots of efforts and time to develop such systems.

Super AI:

Super AI is a level of Intelligence of Systems at which machines could surpass human intelligence, and can perform any task better than human with cognitive properties. It is an outcome of general AI.

Some key characteristics of strong AI include capability include the ability to think, to reason,solve the puzzle, make judgments, plan, learn, and communicate by its own.Super AI is still a hypothetical concept of Artificial Intelligence. Development of such systems in real is still world changing task.

AI type-2 :-Based on functionality

Reactive Machines

Purely reactive machines are the most basic types of Artificial Intelligence.Such AI systems do not store memories or past experiences for future actions.These machines only focus on current scenarios and react on it as per possible best action.IBM’s Deep Blue system is an example of reactive machines.Google's AlphaGo is also an example of reactive machines.

Limited Memory

Limited memory machines can store past experiences or some data for a short period of time.These machines can use stored data for a limited time period only.

Self-driving cars are one of the best examples of Limited Memory systems. These cars can store recent speed of nearby cars, the distance of other cars, speed limit, and other information to navigate the road.

Theory of Mind

Theory of Mind AI should understand the human emotions, people, beliefs, and be able to interact socially like humans.

This type of AI machines are still not developed, but researchers are making lots of efforts and improvement for developing such AI machines.

Self-Awareness

Self-awareness AI is the future of Artificial Intelligence. These machines will be super intelligent, and will have their own consciousness, sentiments, and self-awareness.These machines will be smarter than human mind.Self-Awareness AI does not exist in reality still and it is a hypothetical concept.

Importance of AI:-

AI technology is important because it enables human capabilities – understanding, reasoning, planning, communication and perception – to be undertaken by software increasingly effectively, efficiently and at low cost. In computer science and computers, the term artificial intelligence has played a very prominent role.

The term has become more popular due to recent advances in Artificial Intelligence and Machine Learning is the area of artificial intelligence where machines are responsible for completing daily tasks and are believed to be smarter than humans.

They are known to learn, adapt and perform much faster than humans and are programmed to do so. Robotics and integration with IoT devices have taken machines to think and work to a new level wherethey out-perform humans in their cognitive abilities and smarts.

Artificial Intelligence's importance and subsequent components have been known for a long time. Theyare being seen as tools and techniques to make this world better. And it's not like you have to go through to be able to use these fancy tech gadgets. You can look around, and I'm sure most of your work is smoothed out by artificial intelligence.

Its importance lies in making our life easier. These technologies are a great asset to humans and are programmed to minimize human effort as much as possible. They can operate in an automated fashion.

Therefore, manual intervention is the last thing that can be sought or seen during the operation of partsinvolving this technology.

These machines speed up your tasks and processes with guaranteed accuracy and precision, making them a useful and valuable tool. Apart from making the world an error-free place with their simple and everyday techniques, these technologies and applications are not only related to our ordinary and everyday life. It is affecting and holds importance for other domains as well.

Applications of AI:-

Artificial Intelligence has various applications in today's society. It is becoming essential for today's time because it can solve complex problems with an efficient way in multiple industries, such as Healthcare, entertainment, finance, education, etc. AI is making our daily life more comfortable and fast.

Following are some sectors which have the application of Artificial Intelligence:

AI in Astronomy

Artificial Intelligence can be very useful to solve complex universe problems.AI technology can behelpful for understanding the universe such as how it works, origin, etc.

AI in Healthcare

In the last, five to ten years, AI becoming more advantageous for the healthcare industry and going tohave a significant impact on this industry.

Healthcare Industries are applying AI to make a better and faster diagnosis than humans. AI can help doctors with diagnoses and can inform when patients are worsening so that medical help can reach tothe patient before hospitalization.

AI in Gaming

AI can be used for gaming purpose. The AI machines can play strategic games like chess, where themachine needs to think of a large number of possible places.

AI in Data Security

The security of data is crucial for every company and cyber-attacks are growing very rapidly in the digitalworld. AI can be used to make your data more safe and secure. Some examples such as AEG bot, AI2 Platform,are used to determine software bug and cyber-attacks in a better way.

AI in Travel & Transport

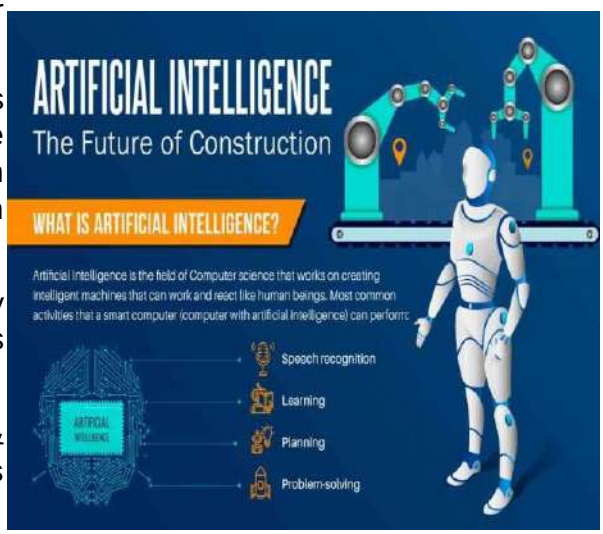
AI is becoming highly demanding for travel industries. AI is capable of doing various travel related works such as from making travel arrangement to suggesting the hotels, flights, and best routes to the customers. Travel industries are using AI-powered chatbots which can make human-like interaction withcustomers for better and fast response.

AI in Automotive Industry

Some Automotive industries are using AI to provide virtual assistant to their user for better performance. Such as Tesla has introduced TeslaBot, an intelligent virtual assistant.Various Industries are currently working for developing self-driven cars which can make your journey more safe and secure.

Artificial intelligence for future:-

Artificial intelligence is shaping the future of humanity across nearly every industry. It is already themain driver of emerging technologies like big data, robotics and IoT, and it will continue to act as a technological innovator for the foreseeable future.



We are using AI technology in our daily lives either unknowingly or knowingly, and somewhere it has become a part of our life. Ranging from Alexa/Siri to Chatbots, everyone is carrying AI in their daily routine.

The development and evolution of this technology are happening at a rapid pace. However, it was not as smooth and easy as it seemed to us.

It has taken several years and lots of hard work & contributions of various people to take AI at this stage.

Being so revolutionary technology, AI also deals

with many controversies about its future and impact on Human beings. It may be dangerous, but also a great opportunity. AI will be deployed to enhance both defensive and offensive cyber operations.
Additionally, new means of cyber-attack will be invented to take advantage of particular vulnerabilities of AI technology.

There has been no better time to be in the world of artificial intelligence than now. AI has achieved an inflection point and is poised to transform every industry. Much has already been written about specific applications of AI. In this article, I take a step back to consider how artificial intelligence is poised to fundamentally restructure broader swaths of our economy and society over the next decade with five bold predictions that are informed by my expertise and immersion in the field.

AI and ML will transform the scientific method

With AI and machine learning (ML), we can expect to see orders of magnitude of improvement in what can be accomplished. There's a certain set of ideas that humans can computationally explore. There's a broader set of ideas that humans with computers can address. And there's a much bigger set of ideas that humans with computers, plus AI, can successfully tackle. AI enables an unprecedented ability to analyze enormous data sets and computationally discover complex relationships and patterns. AI, augmenting human intelligence, is primed to transform the scientific research process, unleashing a new golden age of scientific discovery in the coming years.

AI will become a pillar of foreign policy.

We are likely to see serious government investment in AI. U.S. Secretary of Defense Lloyd J. Austin III has publicly embraced the importance of partnering with innovative AI technology companies to maintain and strengthen global U.S. competitiveness.

There's little doubt that AI will be imperative to the continuing economic resilience and geopolitical leadership of the United States.

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SNAPCHAT

Snapchat is an American multimedia instant messaging app and service developed by Snap Inc., originally Snapchat Inc. One of the principal features of Snapchat is that pictures and messages are usually only available for a short time before they become inaccessible to their recipients. The app has evolved from originally focusing on person-to-person photo sharing to presently featuring users' "Stories" of 24 hours of chronological content, along with "Discover", letting brands show ad-supported short-form content. It also allows users to store photos in a password-protected area called "my eyes only". It has also reportedly incorporated limited use of end-to-end encryption, with plans to broaden its use in the future.

Snapchat was created by **Evan Spiegel, Bobby Murphy, and Reggie Brown** former students at Stanford University. It is known for representing a mobile-first direction for social media, and places significant emphasis on users interacting with virtual stickers and augmented reality objects. In July 2021, Snapchat had 293 million daily active users, a 23% growth over a year. On average more than four billion Snaps are sent each day. Snapchat is popular among the younger generations, particularly those below the age of 16, leading to many privacy concerns for parents.

Development platform

Snapchat Spectacles Vending Machine at SXSW 2017, Austin, Texas

In June 2018, Snapchat announced a new third-party development platform known as Snap Kit: a suite of components that allows partners to provide third-party integrations with aspects of the service. "Login Kit" is a social login platform that utilizes Snapchat accounts. It was promoted as being more privacy-conscious than competing equivalents, as services are only able to receive the user's display name (and, optionally, a Bitmoji avatar) and are subject to a 90-day inactivity timeout, preventing them from being able to collect any further personal information or social graphs through their authorization. "Creative Kit" allows apps to generate their own stickers to overlay into Snapchat posts. "Story Kit" can be used to embed and aggregate publicly posted stories (with for example, Bandsintown using Story Kit to aggregate stories posted by musicians), while "Bitmoji Kit" allows Bitmoji stickers to be integrated into third-party apps

History

Prototype:-

According to documents and **deposition** statements, Reggie Brown brought the idea for a disappearing pictures application to **Evan Spiegel** because Spiegel had prior business experience. Brown and Spiegel then pulled in **Bobby Murphy**, who had experience **coding**. The three worked closely together for several months and launched Snapchat as "Picaboo" on the **iOS** operating system on July 8, 2011. Reggie Brown was ousted from the company months after it was launched.

The app was relaunched as Snapchat in September 2011, and the team focused on usability and technical aspects, rather than branding efforts. One exception was the decision to keep a mascot designed by Brown, "Ghostface Chillah", named after **Ghostface Killah** of the hip-hop group **Wu-Tang Clan**.

On May 8, 2012, Reggie Brown sent an email to Evan Spiegel during their senior year at Stanford, in which he offered to re-negotiate his equitable share regarding ownership of the company. Lawyers for Snapchat **claimed that Reggie Brown** had made no contributions of value to the company, and was therefore entitled to nothing. In September 2014, Brown settled with Spiegel and Murphy for $157.5 million**]** and was credited as one of the original authors of Snapchat.

In their first **blog** post, dated May 9, 2012, **CEO** Evan Spiegel described the company's mission: "Snapchat isn't about capturing the traditional **Kodak** moment. It's about communicating with the full range of human emotion—not just what appears to be pretty or perfect." He presented Snapchat as the solution to stresses caused by the longevity of personal information on social media, evidenced by "emergency detagging of **Facebook** photos before job interviews and **photoshopping** blemishes out of candid shots before they hit the internet.

Growth

World map indicating Snapchat's core users by country in 2014. Map based on data from a report from Business Insider Intelligence.

Features

Core functionality

Snapchat is primarily used for creating multimedia messages referred to as "snaps"; snaps can consist of a photo or a short video, and can be edited to include **filters** and effects, text captions, and drawings. Snaps can be directed privately to selected contacts, or to a semi-public "Story" or a public "Story" called "Our Story." The ability to send video snaps was added as a feature option in December 2012. By holding down on the photo button while inside the app, a video of up to ten seconds in length can be captured. Spiegel explained that this process allowed the video data to be compressed into the size of a photo.[54] A later update allowed the ability to record up to 60 seconds, but are still segmented into 10 second intervals. After a single viewing, the video disappears by default. On May 1, 2014, the ability to communicate via **video chat** was added. Direct messaging features were also included in the update, allowing users to send **ephemeral** text messages to friends and family while saving any needed information by clicking on it. According to CIO, Snapchat uses real-time marketing concepts and temporality to make the app appealing to users. According to Marketing Pro, Snapchat attracts interest and potential customers by combining the **AIDA (marketing)** model with modern digital technology.

In July 2016, Snapchat introduced a new, optional feature known as "Memories." Memories allow snaps and story posts to be saved into a private storage area, where they can be viewed alongside other photos stored on the device, as well as edited and published as snaps, story posts, or messages anytime. When shared with a user's current story, the memory would have a timestamp to indicate its age. Content in the Memories storage area can be searched by date or using a local **object recognition** system. Snaps accessible within Memories can additionally be placed into a "My Eyes Only" area that is locked with a **Personal identification number** (PIN). Snapchat has stated that the Memories feature was inspired by the practice of manually scrolling through photos on a phone to show them to others. In April 2017, the white border around old memories was removed. While originally intended to let viewers know the material was old, ***TechCrunch*** wrote that the indicator "ended up annoying users who didn't want their snaps altered, sometimes to the point where they would decide not to share the old content at all.

In May 2017, an update made it possible to send snaps with unlimited viewing time, dropping the previous ten-second maximum duration, with the content disappearing after being deliberately closed by the recipient. New creative tools, namely the ability to draw with an emoji, videos that play in a loop, and an eraser that lets users remove objects in a photo with the app filling in the space with the background, were also released.

In July 2017, Snapchat started allowing users to add links to snaps, enabling them to direct viewers to specific websites; the feature was only available for brands previously. Additionally, the update added more creative tools: A "Backdrop" feature lets users cut out a specific object from their photo and apply colorful patterns to it in order to bring greater emphasis to that object, and "Voice Filters" enable users to remix the sounds of their voices in the snap. Voice Filters was previously available as part of the feature enabling augmented reality lenses, with the new update adding a dedicated speaker icon to remix the audio in any snap.

Filters, lenses, and stickers

Snaps can be personalized with various forms of visual effects and stickers. Geofilters are graphical overlays available if the user is within a certain geographical location, such as a city, event, or destination. Users can design and create their own geofilters for personal events at a fee of $10–15 USD per hour. They can also subscribe to an annual plan which ranges from $1,000 to $10,000 depending on the location, for a permanent filter. A similar feature known as Geostickers was launched in 10 major cities in 2016. Bitmoji are stickers featuring personalized cartoon avatars, which can be used in snaps and messaging. Bitmoji characters can also be used as World Lenses.

The "Lens" feature, introduced in September 2015, allows users to add real-time effects into their snaps by using face detection technology. This is activated by long-pressing on a face within the viewfinder. In April 2017, Snapchat extended this feature into "World Lenses", which use augmented reality technology to integrate 3D rendered elements (such as objects and animated characters) into scenes; these elements are placed and anchored in 3D space.

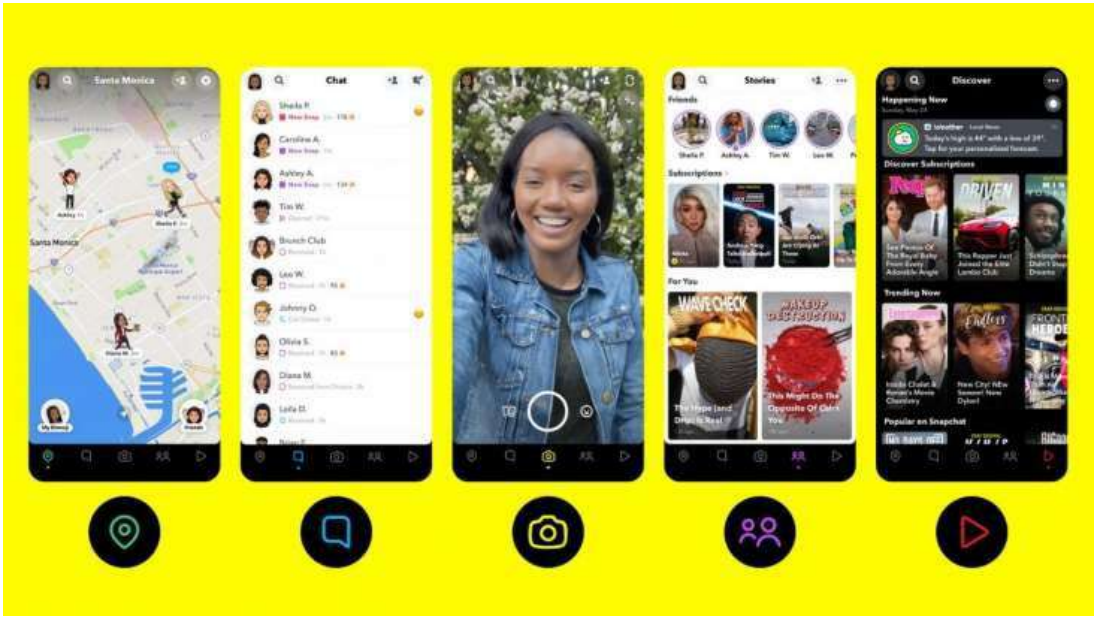
In March 2022, Snapchat launched the ability to share YouTube videos as stickers. The stickers function as clickable links that redirect users to a browser or the YouTube app.

Friend emojis

Friend emojis can be customized, however the default emojis are listed below. The snapscore, which states the amount of snaps one has sent and received is recorded and is visible to one's friends. If users tap their own score it shows the ratio of sent and received snaps, the amount of snaps they have sent is on the right and the amount of snaps they have received is on the left, these numbers combined are their Snapchat score. There are multiple synonyms for Snapchat score such as Snapchat points, Snapscore, Snap points and Snap Number. youtube has a similar rewards system called "Perks".

As incentive to send content regularly, emoji icons will appear next to the names of contacts that the user frequently interacts with.

Emoji	Name	Snapchat meaning
	Super BFF	Appears next to the user's number 1 Best Friend when they are also their number 1 Best Friend for two months in a row.
	BFF	(Best Friend Forever) Appears next to the user's number 1 Best Friend when they are also their number 1 Best Friend for two weeks in a row.
	Besties	Appears next to the user's number 1 Best Friend when they are also their number 1 Best Friend.
	BFs	Appears next to one of the user's Best Friends.
	Mutual Besties	Appears next to someone when the user's number 1 Best Friend is also their number 1 Best Friend.
	Mutual BFs	Appears next to someone whom the user shares a best friend with.
	Snapstreak	Appears next to the number of days that the user and a friend have Snapped each other. If the user and their friend do not both send a Snap within 24 hours, they will lose their Snapstreak.[96]
	Group Chat	Appears next to all of the user's group chats.
	Hourglass	Appears next to someone's name if the user's Snapstreak is going to end soon.
	Birthday Cake	Appears next to someone when it is their birthday.



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5G Technology

Abstract— 5G technologies will change the way most high- bandwidth users access their phones. With 5G pushed over a VOIP-enabled device, people will experience a level of call volume and data transmission never experienced before.5G technology is offering the services in Product Engineering, Documentation, supporting electronic transactions (e-Payments, e- transactions) etc. As the customer becomes more and more aware of the mobile phone technology, he or she will look for a decent package all together, including all the advanced featuresa cellular phone can have. Hence the search for new technology is always the main motive of the leading cell phone giants to out innovate their competitors. Recently apple has produced shivers all around the electronic world by launching its new handset, the I-phone. Features that are getting embedded in such a small piece of electronics are huge.

INTRODUCTION

Mobile and wireless networks have made tremendous growth in the last fifteen years. Nowadays many mobile phones have also a WLAN adapter. One may suppose that near soon manymobile phones will have WiMAX adapter too, besides their 3G, 2G, WLAN, Bluetooth etc. adapters. Using IP for both, 2.5G or 3G Public Land Mobile Networks (PLMN) on one side and WLAN on the other, raised research on their integration. Multimode user terminals are seen as must have for 4G, but different security mechanisms and different QoS support in different wireless technologies remain a challenge. However, integration among different wireless networks (e.g. PLMN and WLAN) is functioning in practice even today. But, different wireless networks from a single terminal are used exclusively, that is, there is no combining of differentwireless access technologies for a same session (e.g., FTP download). The proposed Open Wireless Architecture (OWA) in is targeted to provide open baseband processing modules withopen interface parameters to support different existing as wellas future wireless communicationstandards. The OWA is targeted to MAC/PHY layers of future (4G) mobile terminals. The referenced work above provides a ground for definition of a concept for beyond 4G mobile networks, referred in this paper as 5G mobile networks. . In the proposed concept the mobile user is on the top of all.

EVOLUTION FROM 1G TO 5G

Cell phones are used millions and billions of users worldwide. How many of us know the technology behind cellphones that is used for our communication? I have also intrigued about the type of technology used in my phone. What are 1G, 2G, and 3G and4Gtechnologies?

1G, 2G, 3G & 4G ("G" stands for "Generation") are the generations of wireless telecom connectivity. 1G (Time Division Multiple Access and Frequency Division Multiple Access) was the initial wireless telecom network system. It's out-dated now. The analog “brick phones” and“bag phones” are under 1G technology. Cell phones era began with 1G.

4G, which is also known as “beyond 3G” or “fourth-generation” cell phone technology, refers to the entirely new evolution. Developers are now going for 4G (OFDMA), which will provide internet up to the speed of 1 GBPS! It is said to be able to overcome the problems of weak network strength and should provide a much wider network, making sure that the users get high-speed connectivity anytime anywhere. No doubt, 4G will open new doors of revolutionary internet technologies, but for now, 3G and 3.5Gare the best. 4G will allow for speeds of up to 100Mbps. 4G promises voice, data and high-quality multimedia in real-timeform all the time andanywhere.

A. What is 5G technology?

5G Technology stands for 5th Generation Mobile technology. 5G technology has changed the means to use cell phones within very high bandwidth. User never experienced ever before such a high value technology. Nowadays mobile users have much awareness of the cell phone (mobile) technology. The 5G technologies include all type of advanced features which makes 5G technology most powerful and in huge demand in near future.

The gigantic array of innovative technology being built into new cell phones is stunning. 5G technologies which are on hand held phone offering more power and features than at least 1000 lunar modules. A user can also hook their 5G technology cell phone with their Laptop to get broadband internet access. 5G technology including camera, MP3 recording, video player, large phone memory, dialling speed, audio player and much more you never imagine. For children rocking fun Bluetooth technology and Pico nets has become in market.

B. What 5g Technology Offers?

5G technology going to be a new mobile revolution in mobile market. Through 5G technology now you can use worldwide cellular phones and this technology also strike the china mobile market and a user being proficient to get access to Germany phone as a local phone. With the coming out of cell phone alike to PDA now your whole office in your fingertips or in your phone. 5G technology has extraordinary data capabilities and has ability to tie together unrestricted callvolumes and infinite data broadcast within latest mobile operating system. 5G technology has a bright future because it can handle best technologies and offer priceless handset to their customers. May be in coming days 5G technology takes over the world market. 5G Technologies have an extraordinary capability to support Software and Consultancy. The Router and switch technology used in 5G network providing high connectivity. The 5G technology distributes internet access to nodes within the building and can be deployed with union of wired or wirelessnetwork connections. The current trend of 5G technology has a glowing future.

CONCEPTS FOR 5G MOBILE NETWORKS

The 5G terminals will have software defined radios and modulation schemes as well as new error-control schemes that can be downloaded from the Internet. The developmentis seen towards the user terminals as a

The 5G terminals will have software defined radios and modulation schemes as well as new error- control schemesthat can be downloaded from the Internet. The development isseen

towards the user terminals as a focus of the 5G mobile networks. The terminals will have access to different wireless technologies at the same time and the terminal should be able to combine different flows from different technologies. The vertical handovers should be avoided, because they are not feasible in a case when there are many technologies and manyoperators and service providers. In 5G, each network will be responsible for handling user-mobility, while the terminal willmake the final choice among different wireless/mobile accessnetwork providers for a given service. Such choice will be based on open intelligent middleware in the mobile phone. Now, we will go through all OSI layers in the 5G mobile terminal design .

Network layer

The network layer will be IP (Internet Protocol), because there is no competition today on this level. The IPv4 (version 4) is worldwide spread and it has several problems such as limited address space and has no real possibility for

QoS support per flow. These issues are solved in IPv6, buttraded with significantly bigger packet header. Then, mobilitystill remains a problem. There is Mobile IP standard on one side aswell as many micro-mobility solutions (e.g., Cellular IP, HAWAII etc.). All mobile networks will use Mobile IP in 5G, and each mobile terminal will be FA (Foreign Agent), keeping the CoA (Care of Address) mapping between its fixed IPv6 address and CoA address for the current wireless network. However, a mobile can be attached to several mobileor wireless networks at the same time. In such case, it will maintain different IP addresses for each of the radio interfaces,

The 5G mobile phone shall maintain virtual multi-wireless network environment. For this purpose there should be separation of network layer into two sub-layers in 5G mobiles i.e.: Lower network layer (for each interface) andUpper network layer (for the mobile terminal). This is dueto the initial design of the Internet, where all the routing is basedon IP addresses which should be different in each IP network world wide. The middleware between the Upper and Lower network layers (TABLE 1) shall maintain address translation from Upper network address (IPv6) to different Lower network IP addresses (IPv4 or IPv6), and vice versa.

Open Transport Protocol (OTA) layer

The mobile and wireless networks differ from wired networks regarding the transport layer. In all TCP versions theassumption is that lost segments are due to network congestion, while in wireless networks losses may occur due to higher bit error ratio in the radio interface. Therefore, TCP modifications and adaptation are proposed for the mobile and wireless networks, which retransmit the lost or damaged TCP segments over the wireless link only. For 5G mobile terminalswill be suitable to have transport layer that is possible to be downloaded and installed. Such mobiles shall have the possibility to download (e.g., TCP, RTP etc. or new transport protocol) version which is targeted to a specific wireless technology installed at the base stations. This is called here Open Transport Protocol - OTP.

Application layer

Regarding the applications, the ultimate request from the 5G mobile terminal is to provide intelligent QoS management over variety of networks. Today, in mobile phones the users manually select the wireless interface for particular Internet service without having the possibility to useQoS history to select the best wireless connection for a given service. The 5G phone shall provide possibility for service quality testing and storage of measurement information in information databases in the mobile terminal. The QoS parameters, such as delay, jitter, losses, bandwidth, reliability,will be stored in a database in the 5G mobile phone with aim to be used by intelligent algorithms running in the mobile terminal as system processes, which at the end shall provide the best wireless connection upon required QoS

and personal cost constraints. With 4G, a range of new services and modelswill be available. These services and models need to be furtherexamined for their interface with the design of 4G systems. The processof IPv4 address exhaustion is expected to be in itsfinal stages by the time that 4G is deployed Therefore, IPv6 support for 4G is essential in order to support a large no. of wireless- enabled devices. IPv6 removes the need for NAT (Network Address Translation) by increasing the no. of IP addresses. With the available address space and number of addressing bits in IPv6, many innovative coding schemes can be developed for 4g devices and applications that could help inthe deployment of 4G network and services. The fourth generation promises to fulfill the goal of PCC (personal computing and communication)—a vision that affordably provides high datarates everywhere over a wireless network. In the future wireless networks there must be a low complexity of implementation and an efficient means of negotiation between the end users and the wireless infrastructure. The Internet is the driving force for higher datarates and high speed access for mobile wireless users. This will be the motivation for an all mobile IP based core networkevolution.

5G MOBILE NETWORK ARCHITECTURE Below figure shows the system model that proposes design of network architecture for 5G mobile systems, which is all-IP based model for wireless and mobile networksinteroperability. The system consists of a user terminal (which has a crucial role in the new architecture) and anumber of independent autonomous radio accesstechnologies. Within each of the terminals, each of the radioaccess technologies is seen as the IP link to the outsideInternet world. However, there should be different radio interface for each Radio Access Technology (RAT) in the mobile terminal. For an example, if wewant to have access tofour different RATs, we need to have four different accesses -specific interfaces in the mobile terminal, and to have all of them active at the same time, with aim to

KEY CONCEPT OF 5G TECHNOLOGY

Real wireless world with no more limitation with access and zone issues.
Internet protocol version 6 (IPv6), where a visiting care-of mobile IP address is assigned according to location and connected network.
One unified global standard
Pervasive networks providing ubiquitous computing: The user can simultaneously be connected to several wireless access technologies and seamlessly move between them

These access technologies can be a 2.5G, 3G, 4G or 5G mobile networks, Wi-Fi, WPAN or any other future access technology. In 5G, the concept may be further developed into multiple concurrent data transfer paths.

Cognitive radio technology, also known as smart- radio: allowing Different radio technologies to share the samespectrum efficiently by Adaptively finding unused spectrum and adapting the transmission scheme to the requirements of the technologies currently sharing the spectrum . This dynamic radio resource management is achieved in adistributed fashion, and relies on software defined radio.

FEATURES OF 5G TECHNOLOGY

5G technology offer high resolution for crazy cell phoneuser and bi-directional large bandwidth shaping.
The advanced billing interfaces of 5G technology makesit more attractive and effective[3].
5G technology also providing subscriber supervisiontools for fast action.
The high quality services of 5G technology based onPolicy to avoid error.
5G technology is providing large broadcasting of data inGigabit which supporting almost 65,000 connections.
5G technology offer transporter class gateway withunparalleled consistency[4].
The traffic statistics by 5G technology makes it moreaccurate.
Through remote management offered by 5G technologya user can get better and fast solution.
The remote diagnostics also a great feature of 5Gtechnology.

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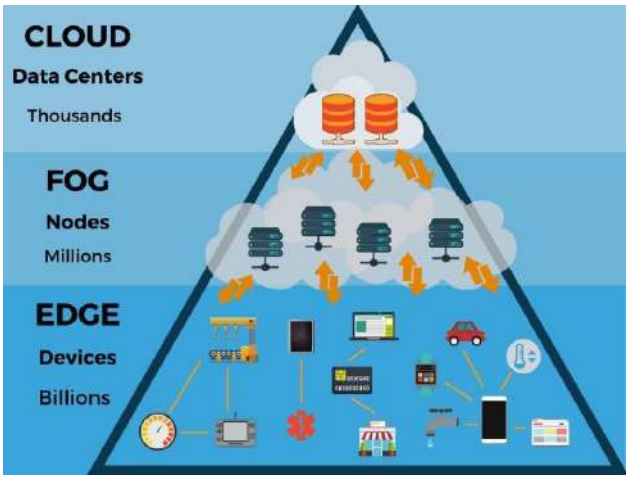
Recent Technology

New technology Any set of productive techniques which offers a significant improvement (whether measured in terms of increased output or savings in costs) overthe established technology for a given process in a specific historical context.

Top 5 Recent technologies:-

- Edge Computing
- Quantum Computing
- Block chain
- Cyber Security
- BIC(Master of science in Bio medical image computing)

Edge Computing:-



Connect your edgeIs your data disconnected and siloed? Is your world moving to the edge? Do you worry that your data is growing exponentially and the more you have the more out of control it feels?

When you can control and harness data across edge to cloud, so much becomes possible, allowing you to successfully innovate at the edge. That is where data becomes insights, in real time. That is a connected edge, wisely done.

Act on your data, wherever it livesUnify your data at the edge by securely and seamlessly integrating all your apps and infrastructure. Securely access your data wherever it lives, eliminating migration headaches. Go from edge to cloud with the flexibility to scale when you need.

Quantum Computing:-

WE'RE HIRING - SCIENTIFIC DIRECTOR OF QUANTUM COMPUTER ENGINEERING CENTRE
(QCEC) You will drive the strategic and scientific development of the Quantum Computer Engineering Centre (QCEC) established by Tyndall National Institute in accordance with the Institute's strategic plan, 'Tyndall 2025'.
The QCEC vision is to realise the revolutionary potential of quantum science, connecting theory to engineering. The Centre will focus on internationally successful and distinctive research aiming at becoming a global open innovation hub for deep-tech quantum computer engineering, spanning materials to devices to systems, and at growing globally competitive quantum engineering talent.

You will attract both national and international funding and recruit staff and students to create new research groups in QCEC focus areas with the aspiration to grow to 50+ researchers within 4 years, and to scale to a focal point for quantumtechnologies in Ireland and an internationally recognised centre.

Block chain:-

Blockchain defined: Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. An asset can be tangible (a house, car, cash, land) or intangible (intellectual property, patents, copyrights, branding)

Cyber Security:-

2023 Global Futureof Cyber SurveyFind out how leaders across industries are building long-term value by putting cyber at the heart of the business. Explore findings from Deloitte's latest survey based on input from cyber executives around the world.

Cyber realityCyber has become foundational to businessHow are organizations navigating the future and building trust in a world of doubt? The answer is cyber. The future of cyber is coming into sharper focus as organizations look beyond the tech-centric and threat focus toward positive outcomes that result from integrating cyber across the business.

Deloitte designed its 2023 Global Future of Cyber Survey based on the complexity of today's business and technology landscape, focusing on the needs of enterprise leaders who may recognize the importance of cyber yet struggle to harness its value. To accurately capturethe increased impact that cyber has on businesses today

I.RAJU

2nd B.Sc Computers

BUSINESS VIEWS

INTRODUCTION TO BUSINESS VIEWS

Introduction to Business covers the scope and sequence of most introductory business courses. The book provides detailed explanations in the context of core themes such as customer satisfaction, ethics, entrepreneurship, global business, and managing change. Introduction to Business includes hundreds of current business examples from a range of industries and geographic locations, which feature a variety of individuals. The outcome is a balanced approach to the theory and application of business concepts, with attention to the knowledge and skills necessary for student success in this course and beyond.

8 Ways Technology Is Changing Business

1.The Way We Communicate Share Information

Communication and the sharing of information are critical for every business. Today's environment offers more ways than ever, and the technology available makes it faster, easier, and more efficient. With applications like Slack, Zoom, Microsoft Teams, social media platforms, chatbots, and more being leveraged daily, there are pros and cons for all of us. Sales enablement provides the ability to track buyer-seller conversations and receive analytics based on user behaviors. Deeper intelligence makes it easy to obtain customer information and use it to enhance the customer experience.

Communication is effective when technology digs into customer information to help us create personalized messaging. Automated communications using a variety of channels help businesses boost marketing productivity and reach customers, as well. But we need to be mindful that, taken too far, we could lose the ability to build customer relationships—and lose the human touch in our brands.

2. Mobile-First Business Environments

Mobile-First is here to stay. Smart devices or tablets with the right software allow for remote management of every aspect of your business. Everything from your sales enablement, content marketing, and customer relations through back-end processes like shipping and invoicing are all at the click of a button. But mobile isn't just for you—it's also for your consumers. With the rise of Generation Y (Millennials), more people are using mobile devices to buy, sell, shop, find local businesses, and share their retail experiences with friends, acquaintances, prospects, and Instagram strangers every day.

This new paradigm has rewritten the book on marketing to prospects. Technology has also increased the ease with which we can all stay in touch. Whether it's having your co-workers and employees available via text/video chat at a moment's notice or being able to send targeted promotional email blasts to prequalified customers when they're shopping at nearby businesses, the rise of mobile technology has blended almost seamlessly with communication software to create a hyper-real web of real-time information.

3.Enablement of Remote Working

Although remote work has grown steadily over the past 15 years, Covid-19 forced companies not already promoting a remote work environment to make the transition more quickly than expected. And it's likely a good thing that is here to stay:

Companies of all types—private, public, nonprofit, or startup—continue to recognize the bottom-line benefits of integrating remote work into their business strategies," said Sara Sutton, founder and CEO of FlexJobs. "With improvements to technology and increasing demands from employees in a tight labor market, we fully expect to see the momentum around this important workplace continue to grow," Sutton concluded.

4. Use of AI

AI is reshaping the world in business and consumer markets and is a mainstream of daily living. This application of technology has changed business processes in nearly every industry and has become an imperative strategy for those wanting to maintain a competitive edge. There are many things AI can do, from machine learning (massive amounts of data are processed quickly and put into digestible context for people) to security, CRM, and even the financial and real estate sectors. In the sales enablement space, AI is used to track buyers and predict their intent to purchase by looking at their search patterns, what they view and open, and more. Some worry that AI could eventually force joblessness, but the general thinking is there will be a need for job creation and new roles emerging to facilitate the transition to this new environment. For example, as AI replaces long-standing workflows, people's need to integrate them will be a necessity. AI is coming along at lightning speed, and although the effect is unknown at this point, it will likely have a significant impact on the economy.

5. Decreasing Cost/Increasing Functionality

Two things have come together to create a "buyer's market" when it comes to software solutions for your business. First, the hardware and software necessary to develop these software solutions have become increasingly easy to use and afford. Secondly, the number of tech-savvy and entrepreneurial minds who can exploit such crumbling barriers has multiplied exponentially. A back-end inventory system that once took a multi-million-dollar company a year to create in the not-too-distant

past takes a couple of weeks for a few recent college graduates to put together. These solutions are offered at affordable rates and are often simple enough to use that businesses don't need to hire dedicated employees or sign long-term service contracts to make use of them.

6. Buyer Enablement

With buyers spending the first 60+% of their buying journey on their own with a magnitude of content and stakeholders and decision-makers multiplied in different business groups, buying in today's world has become complicated. The newer approach of buyer enablement, if done correctly, allows the buyer to be a champion of the product inside the organization. This requires the seller to partner alongside the buyer to help them determine the ultimate business problem that needs solving and to offer up the most relevant information at precisely the right time. If sellers keep their buyers' needs as their top priority throughout the buying journey and position themselves as a trusted advisor, they are nailing buyer enablement.

7. Increased Collaboration

The inability to chat in the break room, walk down the hall to a co-worker's office, or even gather together in a meeting room in front of a whiteboard has drastically increased the need for collaboration. A McKinsey Global Institutes Report found that over 60% of work time is spent collaborating, gathering information, or responding to emails. With this in mind, there is no shortage of collaboration tools that companies have glommed on to like Google Drive/Docs, Slack, Microsoft SharePoint, and OneDrive, Monday.com, and many, many more. These simplify how we can work together for team discussions, file sharing, project collaboration, tasks, and storage. Alignment of people and goals is the primary responsibility for these tools, and they are here to help provide real-time insight into projects and help us become more efficient.

8. Cloud Computing + Digital Transformation

The rate of change is accelerating faster than ever before. Digital Transformation "drives foundational change in how an organization operates, optimizes internal resources, and delivers value to customers. Cloud technologies provide the foundation for becoming more agile, collaborative and customer-focused". Cloud computing allows businesses to move some of their operations to third-party servers accessible via Internet connectivity. This allows for variable data packages and rapid (on-demand) expansion and mobility without the fear of downtime, crashes, or permanently lost data. Companies adopting the cloud can innovate quickly, scale efficiently and even bring new market capabilities more quickly. This has allowed small to medium-sized businesses access to resources that would have been cost-prohibitive for them in the past and evened the playing field when competing against corporations with far more funding.

G.PUJITHA

3rd B.Sc Computers

Scientists and their Inventions

Some famous scientists and their most remarkable inventions and discoveries Invention is something you create by experimentation, where as discovery is finding out that already exists.

Evangelista Torricelli (1608-1647) :

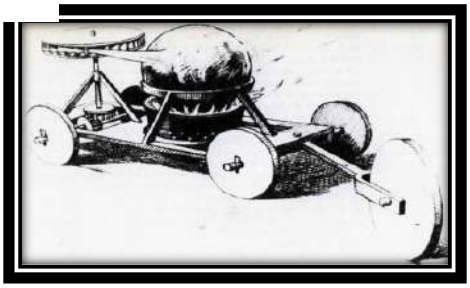
Evangelista Torricelli, Italian physicist and mathematician who invented the barometer and whose work in geometry aided in the eventual development of integral calculus. Inspired by Galileo's writings, he wrote a treatise on mechanics, *De Motu* ("Concerning Movement"), which impressed Galileo. In 1641 Torricelli was invited to Florence, where he served the elderly astronomer as secretary and assistant during the last three months of Galileo's life. Torricelli was then appointed to succeed him as professor of mathematics at the Florentine Academy.

Two years later, pursuing a suggestion by Galileo, he filled a glass tube 4 feet (1.2 m) long with mercury and inverted the tube into a dish. He observed that some of the mercury did not flow out and that the space above the mercury in the tube was a vacuum. Torricelli became the first man to create a sustained vacuum. After much observation, he concluded that the variation of the height of the mercury from day to day was caused by changes in atmospheric pressure. He never published his findings, however, because he was too deeply involved in the study of pure mathematics

Ferdinand Verbiest (1623 - 1688) :

Verbiest was an astronomer and a mathematician. He was the one to invent the world's first automobile. The inventor came up with the idea to create an automobile while visiting China as a missionary. His automobile was powered by steam, but could not carry humans.

Verbiest's 'car'



Beside his work in astronomy, Verbiest also experimented with steam. Around 1672 he designed as a toy for the Kangxi Emperor – a steam-propelled trolley which was, quite possibly, the first working steam-powered vehicle ('auto-mobile').Verbiest describes it in his manuscript *Astronomia Europea* that was finished in 1681. A friar brought it to Europe and it was then printed in 1687 in Germany. In this work, Verbiest first mentioned the term *motor* in its present meaning. With one filling of coal, he wrote that the vehicle was able to move more than one hour. As it was only 65 cm long, and therefore effectively a scale model, not

designed to carry human passengers, nor a driver or goods, it is not strictly accurate to call it a 'car'. Despite this, it was the first vehicle that was able to move by 'self-made' engine power.

Archimedes:

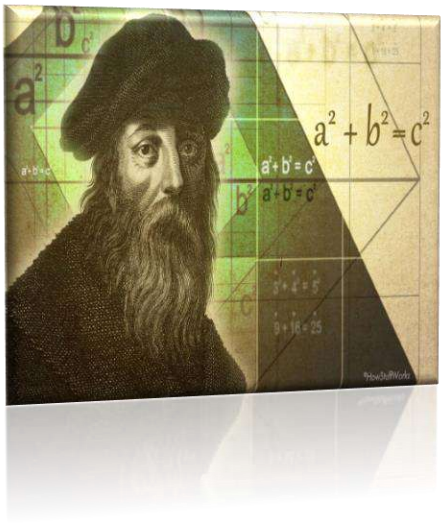
Archimedes is the best known mathematician and scientist from ancient times. In addition to brilliant discoveries in mathematics and physics, he was also an inventor.

The Archimedes' Screw

Still in use today, one of Archimedes' greatest inventions is the *Archimedean Screw*.

Archimedes probably invented this device when he visited Egypt, where it's still used for irrigation. The screw is also helpful for lifting finely divided solids such as ash, grain, and sand from a lower level to a higher level

Pythagoras: Math's Mystery Man:



Memories of middle or high school geometry invariably include an instructor drawing right triangles on a blackboard to explain the Pythagorean theorem. The lesson was that the square of the hypotenuse, or longest side, is equal to the sum of the squares of the other sides. Simply put: $a2 + b2 = c2$. A proof followed, adding a level of certainty rare in other high school classes, like social studies and English.

Pythagoras, a sixth-century B.C. Greek philosopher and mathematician, is credited with inventing his namesake theorem and various proofs. But forget about the certainty. Even today, the sea of numerical formulas typically on physicists' blackboards suggests the Pythagorean maxim "All is number," an implication that everything can be explained, organized and, in many cases, predicted through mathematics. The Pythagorean theorem proof doesn't just work sometimes, most of the time or when the stars align — it works all the time. Pythagoras' legacy includes the scientific hallmarks of pattern, order, replication and certainty. — ***M.B.***

Edwin Herbert Land (1909 - 1991):

The co-founder of the Polaroid Corporation was the first who came up with low-cost filters for polarizing light (useful system of in-camera instant photography). His most popular invention, Polaroid instant camera, was officially launched in

late 1948 and allowed users to take and develop a picture in just under 60 seconds.

Land began work on an instantaneous developing film after the war. In 1947 he demonstrated a camera (known as the Polaroid Land Camera) that produced a finished print in 60 seconds. The Land photographic process soon found numerous commercial, military, and scientific applications. Many innovations were made in the following years, including the development of a colour process. Land's Polaroid Land cameras, which were able to produce developed photographs within one minute after the exposure, became some of the most popular cameras in the world.

Marie Skłodowska-Curie (1867-1934):

Marie Skłodowska-Curie was a polish physicist and chemist working mainly in France, who is famous for her pioneering research on radioactivity. She was the inventor of radium. She was the first woman to win a Nobel Prize, the only woman to win in two fields and the only person to win in multiple sciences. She was also the first female professor at university of paris and in 1995 became the first woman to be entombed on her own merits in Paris.

Here are five fantastic facts about the amazing scientist.

- Curie was the first person to win two Nobel Prizes.
- She managed it all without a fancy lab.
- Nobel Prizes were a family affair.
- Curie was the first female professor at Sorbonne University.
- Curie is buried in the Panthéon in Paris.

List of world famous scientists and their inventions

Names of famous scientists	The invention
Humphrey Davy	**Arc lamp**

Apart from this, he also invented or discovered electrolysis, sodium, potassium, calcium, magnesium, barium, boron.

Willis Haviland Career	**Air conditioner**

Willis Haviland Carrier was an American engineer. He invented the first electric air conditioning unit during his lifetime in 1902. After this, in 1915, he founded a company called Heating, Ventilation, and Air Conditioning (HVAC). which is currently in operation.

Nikola Tesla	**A. C.motorcar**

Nikola Tesla was a Serbian-American scientist. He is known for his contributions to the design of modern AC - Alternating Current power supply systems.

Enrico Fermi	**Nuclear reactor**

Enrico Fermi was an Italian physicist and the builder of the world's first nuclear reactor, (Chicago Pile-1). He has been called "the architect of the atomic age" and "the architect of the atomic bomb".

A. volta **Electric battery**

Alessandro Volta was an Italian physicist, chemist. He is credited as the inventor of the electric battery and the discoverer of methane. Apart from this, he also invented Volt, Voltage and Voltmeter.

Evangelisto tauricelli **Barometer**

Ivan Gelista Tarricelli was an Italian scientist and a disciple of Galileo. He invented the barometer, but is also known for his advances in optics and for his work on the method of indivisibles.

C. biro **Ball point pan**

Biro was a Hungarian-Argentine inventor. Who patented the first commercially successful modern ballpoint pen. The first ballpoint pen was invented almost 50 years before this invention by John J. Loud (John J. Loud), but it was not a commercial success.

B. pascal **The calculator**

Blaise Pascal was a French mathematician, physicist, inventor. In 1642, as a teenager, he began some pioneering work on computing machines. And during which he also invented the calculation machine in his teens, which was formerly known as Pascal's calculators.

Nicolas Cuganot **Car (vapor)**

Nicolas-Joseph was a French inventor who built the world's first full-size and working self-propelled mechanical land-vehicle. Which is effectively considered the world's first car.

Thomas Alva Edison **Cinematagraph**

Thomas Alva Edison was an American inventor and businessman who has been described as America's greatest inventor. He developed many instruments in areas such as power generation, mass communication, sound recording and motion pictures. These inventions, including the phonograph, motion picture cameras, and early versions of the electric light bulb.

William Friese-Green **Cine camera**

William Friese-Greene was a prolific English inventor and professional photographer. He is primarily known as a pioneer in the field of motion pictures. Whose feat he first showed in London. And what was first patented by William as the "two-color filming process".

Christian Huygens **Clock (Pendulumized)**

Christian Huygens was a Dutch mathematician, physicist, astronomer and inventor, considered one of the greatest scientists of all time. Apart from the pendulum clock, Christian had also made many inventions.

Jagdish Chandra Basu **Crescograph**

Dr Jagdish Chandra Basu was a famous scientist of India. He was the first scientist to work on the optics of radio and microwaves. He was also the first scientific researcher of India. He was the first scientist in India to obtain an American patent. He is considered the father of radio science.

John Harrison **Crenometer**

John Harrison was a self-educated English carpenter and watchmaker. Who invented the marine chronometer to solve the problem of calculating the longitude at sea.

Ernest Orlando Lawrence **Cyclotron**

Ernest Orlando Lawrence was an American nuclear scientist. He invented the cyclotron, for which he was awarded the Nobel Prize in Physics in 1939. In addition, he is best known for his work on uranium-isotope separation for the Manhattan Project.

Gottlieb Daimler **Carburetor**

Gottlieb Daimler was a German engineer, industrial designer and industrialist. He invented the high-speed liquid petroleum-fueled engine. And had made a great contribution in the field of development of automobile.

Rudolf diesel **Diesel engine**

Rudolf Christian Karl Diesel was a German inventor and mechanical engineer. He is known as an inventor of the diesel engine.

Alfred Nobel **Dynamite**

Alfred Bernhard Nobel was a Swedish chemist, engineer, and inventor. He held 355 different patents, with dynamite being the most famous. Apart from this, he remained unmarried for life, due to which no one had any right over his property. And according to an article found after his death, his entire property was given to the Nobel Prize Institute.

Michael Faraday **Principle of dynamo**

Michael Faraday was an English scientist. who contributed to the study of electromagnetism and electrochemistry. His main discoveries include the underlying principles of electromagnetic induction, diamagnetism, and electrolysis.

Willem Johann Kolfi **Dialysis machine**

Willem Johann Kolfi was a great expert in the whole field of hemodialysis, artificial heart, as well as artificial organs. He made his major discoveries in the field of dialysis for kidney failure during World War II.

William Sturgeon **Electromagnet and electro motor**

William Sturgeon was an English physicist and inventor who created the first electromagnet and invented the first practical British electric motor.

Henry Seeley White **Electronic press**

Henry Seely White was an American mathematician. Who invented the electronic press (electric flatiron) and which he also patented on June 6, 1882.

Thomas Alva Edison **Electronic lamp**

Thomas Alva Edison was an American inventor and businessman who has been described as America's greatest inventor. He developed many instruments in areas such as power generation, mass communication, sound recording and motion pictures. These inventions, including the phonograph, motion picture cameras, and early versions of the electric light bulb.

Schuyler wheeler **Electronic fan**

Schuyler Wheeler was an American electrical engineer and manufacturer. Who invented the electric fan, the electric elevator design and the electric fire engine.

William Sturgeon **Electromagnet**

William Sturgeon was an English physicist and inventor who created the first electromagnet and invented the first practical British electric motor.

Richard Trevithick **locomotive**

Richard Trevithick was a British inventor and mining engineer, who was heavily influenced by steam-powered road and rail transport, his most important contributions being the development of the first high-pressure steam locomotive and the first working railway steam locomotive. The world's first locomotive-haul rail journey took place on 21 February 1804.

John Napier **logarithm**

John Napier's nickname was Marvelous Merkiston. He was a Scottish landowner known as a mathematician, physicist and astronomer. John Napier is known as the discoverer of the logarithm. Along with which he also generalized the use of the decimal point in arithmetic and mathematics.

Charles Hard Towns **Laser**

Charles Hard Townes was an American physicist. Towns worked on the theory and application of the maser, for which he obtained the fundamental patent. He achieved a remarkable victory in quantum electronics involving both maser and laser devices, sharing the 1964 Nobel Prize in Physics with Nikolay Basov and Alexander Prokhorov.

William Gascoigne **Micrometer**

William Gascoigne was an English astronomer, mathematician and manufacturer of scientific instruments who

invented the micrometer and telescopic. He was one of a group of astronomers in the north of England.

David Hughes **Microphone**

David Hughes was a British-American inventor, practical experimenter and professor of music, best known for his work on the printing telegraph and microphone. In addition, he is also known for the early radio wave detection.

Richard Jordan Gatling **Machine Gun**

Richard Jordan Gatling was an American inventor best known for his invention of the Gatling gun, officially considered the first successful machine gun.

Karl Benz **Motorcar**

Karl Benz was a German engine designer and automotive engineer. His Benz Patent Motorcar from 1885 is considered the first practical automobile in series production. He received a patent for a motorcar in 1886.

Edward butler **Three-wheeled petrol automobile**

Edward Butler was an English inventor who invented an early three-wheeled petrol automobile called the Butler Petrol Cycle. Which is accepted by many as the first British car.

Edward Joel Pennington **Motorcycle**

Edward Joel Pennington was the inventor and originator of many mechanical devices, including airships, motorcycles and automobiles. He applied for and received patents for the Stirling engine, ignition system, planning machine and pulley.

Georges Claude **Neon lamp**

Georges Claude was a French engineer and inventor. He is best known for his early work on the industrial liquefaction of air and the invention of neon lighting. He is considered by some to be the "Edison of France".

Wallace Carothers **Nylon**

Wallace Carothers was an American chemist, inventor credited with the invention of nylon.

W.H. Focus Tablet **Paper photography**

William Henry Fox Talbot was an English scientist, inventor and photographer, who invented the salted paper and calotype processes, which he later used for photographic processes.

James Harrison **Refrigerator**

James Harrison was a Scottish-Australian newspaper printer, journalist, politician Harrison is remembered as the inventor of the mechanical refrigeration process that produces ice and the founder of the Victorian Ice Works. For which he is often referred to as the "Father of Refrigeration".

Samuel Colto **Revolver**

Samuel Colto was an American inventor, industrialist, and businessman. who founded the "Colts Patent Fire-Arms Manufacturing Company". and made the mass production of revolvers commercially practical.

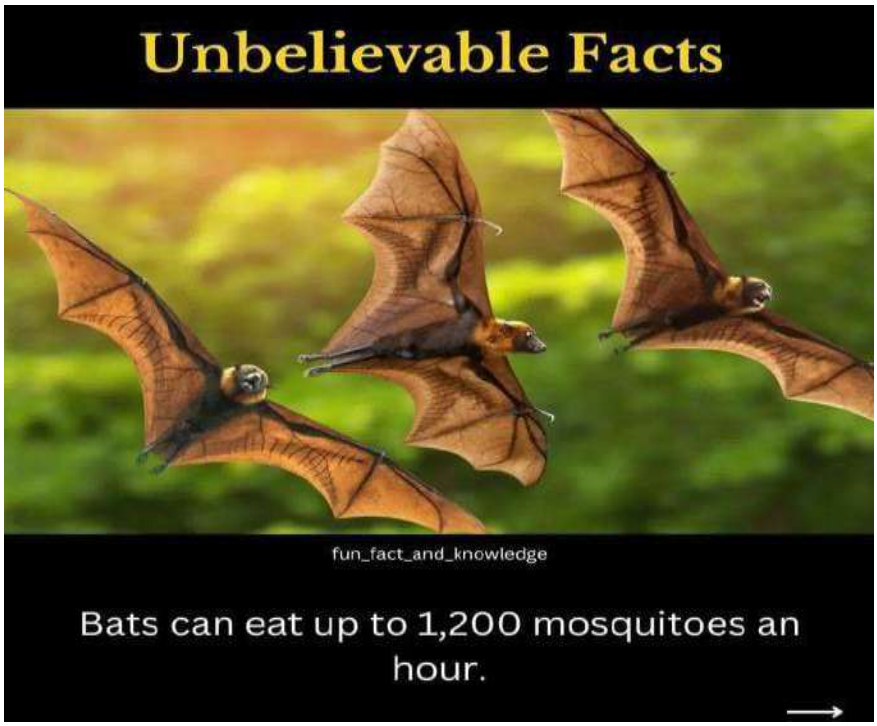
P.RAMA KRISHNA

2nd B.Sc Computers

FUN FACTS

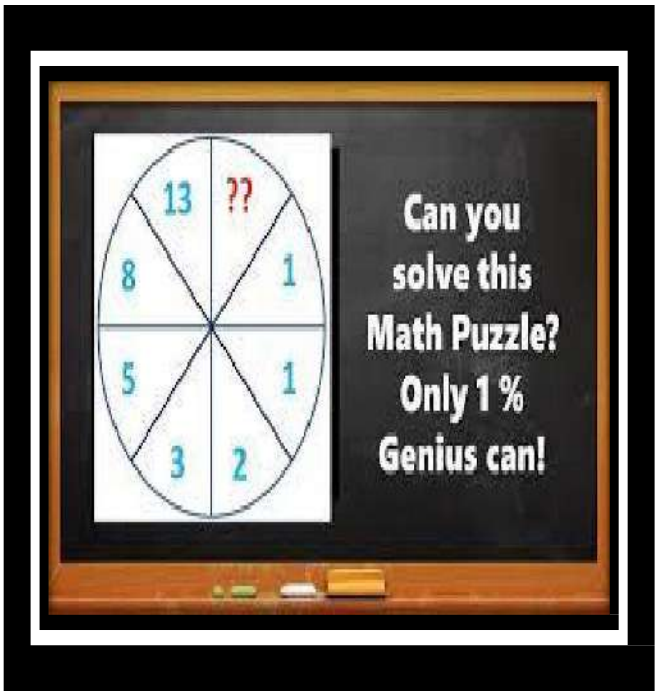

did you know...
more people are killed by Champagne Corks than poisonous spiders


did you know...
popping bubble wrap makes you feel calmer and more awake, a study found


Unbelievable Facts
fun_fact_and_knowledge
Bats can eat up to 1,200 mosquitoes an hour.

"Potato chips cause more weight gain than any other food"

FUN IN MATHS

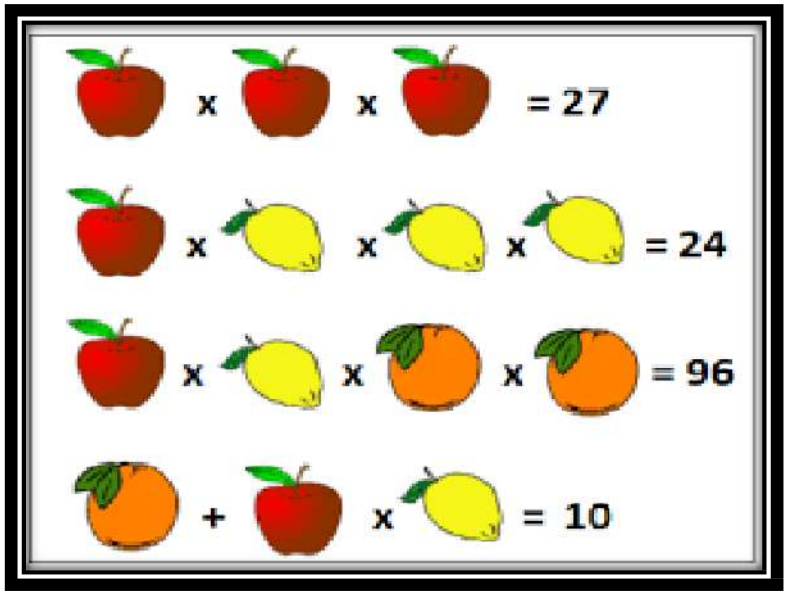


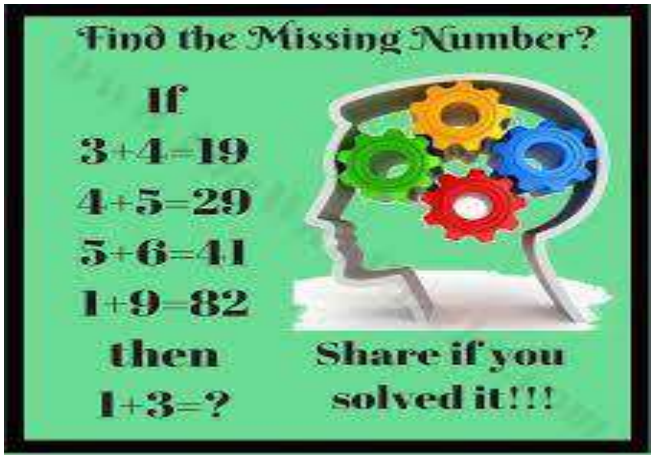
ANSWER:- 21

ANSWER : APPLE : 03

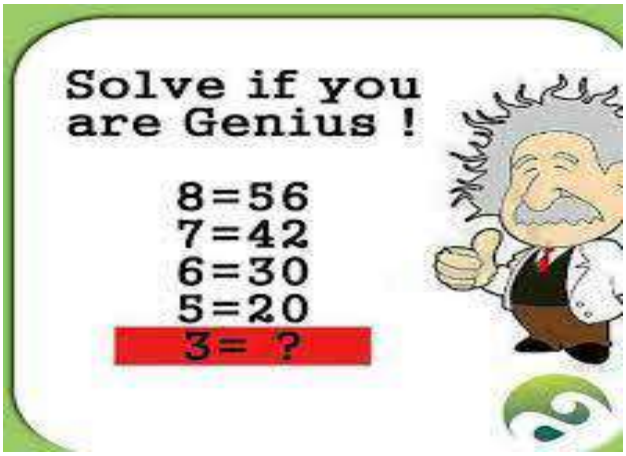
LEMON : 02

ORANGE :04

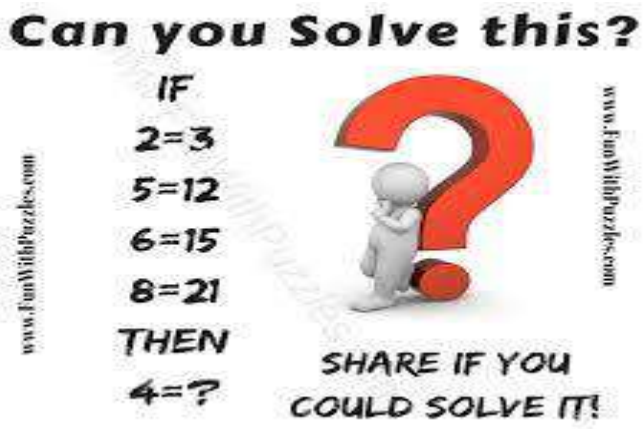




ANSWER:-10



ANSWER:-6



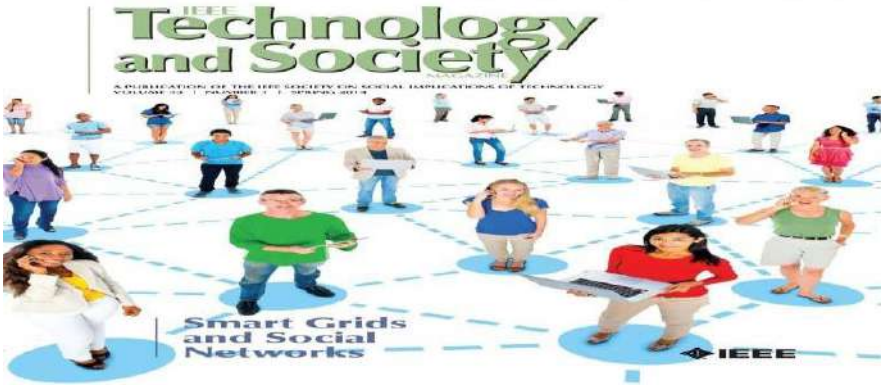
ANSWER:-9

M.SUSMITHA

3rd B.Sc Computers

HOW WAS TECHNOLOGY EFFECTED HUMAN LIFE

Technology affects the way individuals communicate, learn, and think. It helps society and determines how people interact with each other on a daily basis. Technology plays an important role in society today. It has positive and negative effects on the world and it impacts daily lives. We are living in an era where technological advances are common. The internet and cell phones are some examples. However, with technological advances, there's a downside to it all.



One aspect of technology that has had a great impact on society is how it affects learning. It's made learning more interactive and collaborative, this helps people better engage with the material that they are learning and have trouble with. Also, it gets you better access to resources. With the creation of the internet, it gives us access to information at a twenty-four-hour rate and you have access to almost anything online. In addition, it allows students to get work done easier. Students can take quizzes and exams more easily, and teachers being able to hold online classes can be very effective. It also expands the boundaries of the classroom, encouraging self-paced learning. People can access learning through YouTube and social media. This helps students learn better than sitting down for lectures and reading from textbooks. These technological advancements made learning more fun and convenient.

Another way technology has impacted society is through communication, how we talk and communicate with one another worldwide. Technology brought many new methods of electronic communication. For example, there are emails, social networking, you can facetime a person that lives on the other side of the world, and here's video conferencing where you can have conferences electronically. Lastly, the technological advancements that were made within the

health industry have helped keep people safe and healthy. There are many innovate apps on phones that although people to watch their weight, how many calories they intake, heart rate and other health properties any time of the day. There's increased accessibility of treatment available, there's the change in healthcare that adds benefits for the elderly, and hospitals using advanced technology within their surgical rooms

However, studies show that mobile communication affects people in a negative way when it comes to being sociable and making face-to-face contact. Mobile technology can decrease communication and relations between people. There's less personal time, where you find that you don't enough time for yourself because you're always in contact with someone. Also, it can be distracting from your

schoolwork. There is also loss of privacy, because anyone can find you anywhere, at any time of the day. In conclusion, all of these things impact how humans act today. Without technological advancements, our way of life would not be as complex. Technological influences shape the way humans act today. HowSociety and Technology Become Partners in Changing Our Lives

Ancient and modern human civilizations have both benefited from and been impeded by the technological innovations, inventions and engineering applications used within societies to perform specific tasks. For societies to thrive and evolve, technological innovations have become necessary, while at the same time the culture, ideals and aspirations of human societies have shaped how thosecivilizations have created, benefited from, and been impeded by, technology.

As technological systems are invented by humans and reflect the very essence of a population's needs and culture, human societies/civilizations and their technology have become inseparable from one another. The cyclical nature of society and technologies is one where each factor greatly affects the o…

BS - Website Asset - Logo

made-in-america-and-developed-in-colorado-menu

How Society and Technology Become Partners in Changing Our

LivesBy DJ Wardynski | Published October 24, 2019

Ancient and modern human civilizations have both benefited from and been impeded by the technological innovations, inventions and engineering applications used within societies to perform specific tasks. For societies to thrive and evolve, technological innovations have become necessary, while at the same time the culture, ideals and aspirations of human societies have shaped how those civilizations have created, benefited from, and been impeded by, technology

As technological systems are invented by humans and reflect the very essence of a population's needs and culture, human societies/civilizations and their technology have become inseparable from one another. The cyclical nature of society and technologies is one where each factor greatly affects the other, starting with human societies and resulting in the development of different technologies to meet the needs of the society. Those technologies change the way societies behave and operate - which also affects and evolves their economies, producing a potential greater need for more technology,

Resulting in a cycle. This co-dependent relationship of co-influence and co-production has been the case from the beginning of history, resulting in two major forms of this synergistic relationship co-evolving, dependingon the type of society in question:

Agricultural Cycles: Agricultural societies were based on the cycle of the seasons, and thus would have an agricultural, cyclical concept of social evolution based on agricultural technologies. Since the technologies of a society also help to determine the economy of a society, agricultural societies, technologies and their economy were all intertwined.

Progressive: While also cyclical, the explosion of technology before and after the industrial revolution resulted in societies moving forward in social progress (via technology) in a way that was not necessarily tied to agriculture, which resulted in more diverse economies and the development of new societal novelties, such as an interconnected world (e.g. the Internet) and globalization.

The Relation of Technological Development and Society Advancements s

No single piece of technology - even failed technology - has had zero impact on a human society. Since "necessity is the mother of invention," all invented technology was created to meet the needs of a society and is thus innately tied to the culture and its populace's behaviors. Once developed, whatever problem is solved by the technology then alters the behaviors and operations of the society, which may result in new problems, different economic structures, or new ways of life, which may then give way to even more technological innovations

On a macro-scale, the society may simply use the technology to survive and thrive, or it may help the society to evolve and attain higher levels of global progress by creating a greater level of societal efficiency. At the same time, on the micro-scale, technological developments may even change human behavior to the point of altering human adaptive mechanisms and thus affecting organismal evolution. These evolutions have reached even to how societal languages (i.e. words associated with developed technologies in a given society) developed within certain civilizations. The History Of Technology And Society In Changing Our Lives

How Has Technology Affected Human Life?

Ultimately, technology has positively affected human life from antiquity until now by solving problems associated with everyday life, and making it easier for different tasks to be completed. Technology has made it easier to farm, more feasible to build cities, and more convenient to travel, among many other things, effectively linking together all countries on earth, helping to create globalization, and making it easier for economies to grow and for companies to do business. Virtually every facet of human life can be carried out in an easier, more effective, and quicker fashion via technological solutions, resulting in less problems in one way, and more problems in another.

Positive Impact Of Technology On Society

While technology has had several less-than-desired impacts on society as a whole, there are potentially more positive impacts on society than negative impacts. Such impacts have made life easier for multitudes, and have gifted many with the resources, education and tools needed to live a better life. Such impacts have greatly affected agriculture, transportation, communication, and the education sectors within societies globally.

Mechanization Of Agriculture

Ancient agricultural practices have seen a radical change with the mechanization of

agriculture. Such mechanization simply means that machines and technological systems (including robots) have replaced ancient farming systems such as work animals and manual labor. This has resulted in more automated, highly efficient farm practices, producing far more abundant food resources for more people.

Improvement Of Transportation

While it is still possible to walk to most places on earth, the advent of trains, buses, cars, airplanes, speed boats, etc. has made it feasible for people to travel to and from their required destination in much less time. Adding to that are ridesharing apps, such as Uber and Grab, which have made it incredibly easy to get to a destination very quickly and inexpensively. The backbone of any society is its infrastructure, which includes both telecommunication and transportation systems, so the evolution of both systems has greatly helped to shape the modern world.

Improving The Education And Learning Process

In the modern world, it is as easy as utilizing a Google search, podcast, or YouTube video to learn virtually any skill that one needs to succeed, whether it be a new language, a programming language, a technical skill, or an obscure part of history. As opposed to having to learn from printed paper books, now ebooks and even online seminars allow people to learn in a faster, more efficient fashion, and with the convenience of mobile computer systems/apps. Online gateways and websites have also allowed institutions of education to offer educational materials in an all new, streamlined manner, helping students to master materials using computer systems that they are familiar with, and also allowing them to consolidate their educational materials in a single place.

Negative Impact Of Technology On Society

The depletion of fossil fuels, the need for more rare-earth elements, the use of rare elements such as gold, coltan and tantalum (as is required for modern electronics) - which have often helped fuel wars in mineral rich continents and countries - and the burning of fuels potentially impacting Global Warming are all very real issues created by an increasing use of technology.

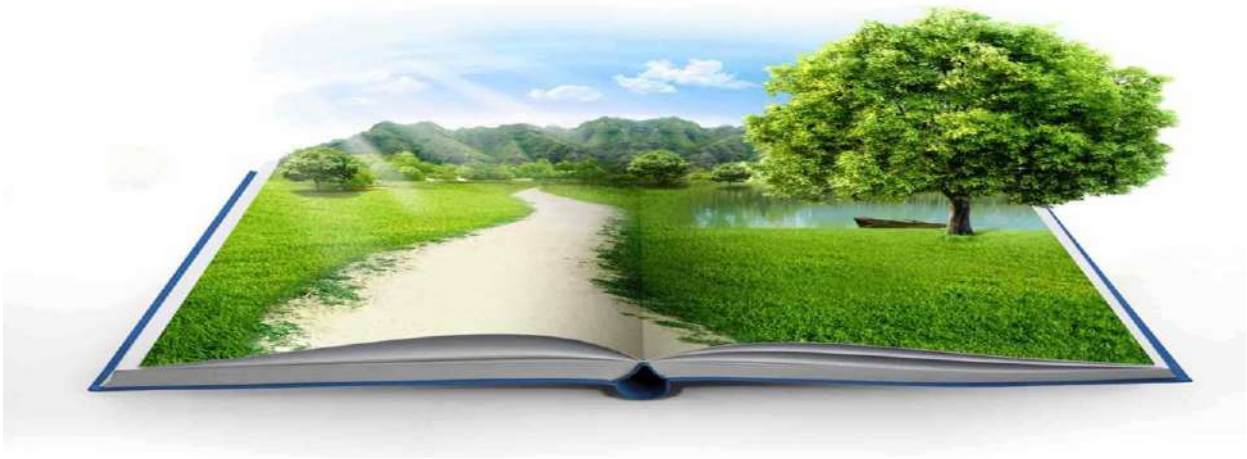
M.VARALAXMI

3rd B.Sc Computers

ENVIRONMENTAL EDUCATION

WHAT IS ENVIRONMENTAL EDUCATION?

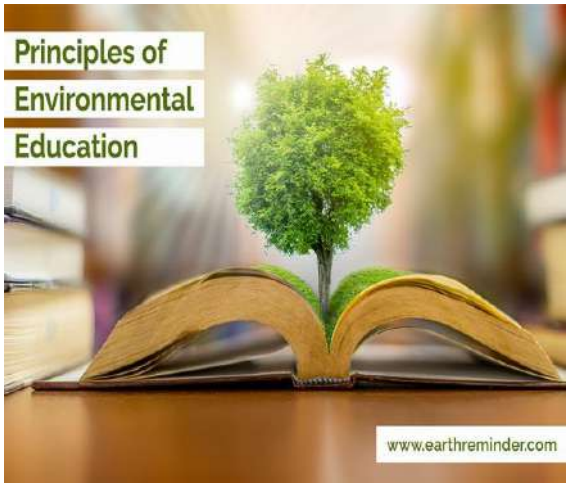
Environmental Education (EE) is a process in which individuals gain awareness of their environment and acquire knowledge, skills, values, experiences, and also the determination, which will enable them to act - individually and collectively - to solve present and future environmental problems.



The Principles of Environmental Education:

- Environmental Education should be compulsory and continuous.
- Environmental Education Should encompass all aspects of the environment in Totality.
- Environmental Education should be interdisciplinary.
- Environmental Education Should Focus on The Complexity of the Issue.

What are the 5 steps of environmental education?



The Environmental Literacy Ladder outlines Steps 1-5:

1) Awareness of the relationship between the environment and human life.

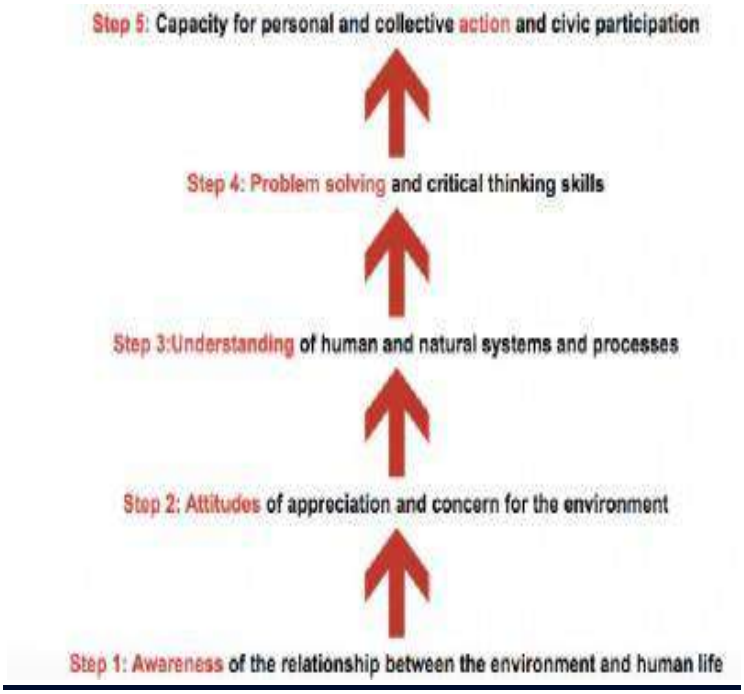
2) Attitudes of appreciation and concern for the environment;

3) Understanding of human and natural systems and processes;

4) Problem-solving and critical-thinking skills

5) Capacity for personal and collective action and civic participation.

Environmental Literacy Ladder

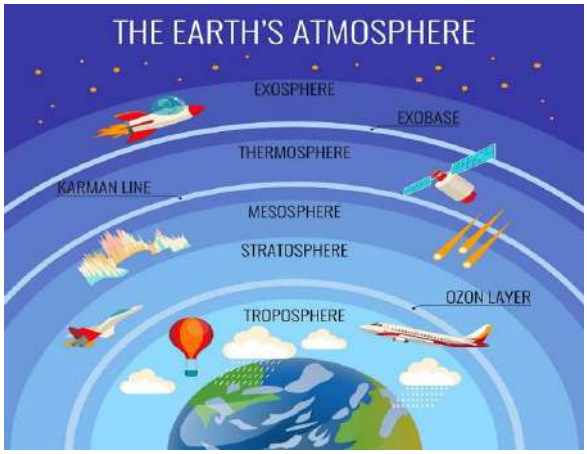


WORLD ENVIRONMENT DAY:

environmental issues as marine pollution, overpopulation, global warming, sustainable development and wildlife crime. World Environment Day is a global platform for public outreach, with partic First held in 1973, it has been **a platform for raising awareness on** ipation from over 143 countries annually.

What are the environmental activities?

Environmental Activities are **activities that promote awareness on how to care for the planet**. reduce pollution, clean up the environment, teach recycling, composting and using natural materials and resources.



Four scopes of Environment

The environment consists of four segments of the earth namely

Atmosphere

Hydrosphere

Lithosphere

Biosphere

Respect the nature and save the environment.

R.SIRISHA

3rd B.Sc Computers

ONLINE SHOPPING

A form of electronic commerce which allows consumers to directly buy goods or services froma seller over the Internet using a web browser or a mobile app. Consumers find a product of interest by visiting the website of the retailer directly or by searching among alternative vendors using a shopping search engine, which displays the same product's availability and pricing at different e-retailers. As of 2020, customers can shop online using a range of different computers and devices, including desktop computers, laptops, tablet computers and smartphones.

An online shop evokes the physical analogy of buying products or services at a regular "bricks-and-mortar" retailer or shopping center; the process is called business-to-consumer (B2C) online shopping. When an online store is set up to enable businesses to buy from another businesses, the process is called business-to-business (B2B) online shopping. A typical online store enables the customer to browse the firm's range of products and services, view photos or images of the products, along with information about the product specifications, features and prices.

Online stores usually enable shoppers to use "search" features to find specific models, brands or items. Online customers must have access to the Internet and a valid method of payment in order to complete a transaction, such as a credit card, an Interact-enabled debit card, or a service such as PayPal. For physical products (e.g., paperback books or clothes), the e-tailer ships the products to the customer; for digital products, such as digital audio files of songs or software, the e-tailer usually sends the file to the customer over the Internet. The largest of these online retailing corporations are Alibaba, Amazon.com, and eBay.

Terminology

Alternative names for the activity are "e-tailing", a shortened form of "electronic retail" or "e- shopping", a shortened form of "electronic shopping". An online store may also be called an e-web-store,

e-shop, e-store, Internet shop, web-shop, web-store, online store, online storefront and virtual store. Mobile commerce (or m-commerce) describes purchasing from an online retailer's mobile device-optimized website or software application ("app"). These websites or apps are designed to enable customers to browse through a companies' products and services on tablet computers and smartphones.

History of online shopping

One of the earliest forms of trade conducted online was IBM's online transaction processing (OLTP) developed in the 1960s, which allowed the processing of financial transactions in real-time. The computerized ticket reservation system developed for American Airlines called Semi-Automatic Business Research Environment (SABRE) was one of its applications. There, computer terminals located in different travel agencies were linked to a large IBM mainframe computer, which processed transactions simultaneously and coordinated them so that all travel agents had access to the same information at the same time.[2] At some point between 1971 and 1971, students at Stanford and MIT used the internet precursor ARPANET to make a deal to exchange marijuana, but the interaction doesn't qualify as e- commerce because no money was transferred online.

Many of these products did well as they are generic products which shoppers did not need to touch and feel in order to buy. But also importantly, in the early days, there were few shoppers online and they were from a narrow segment: affluent, male, 30+. Online shopping has come a long way since those early days and – in the UK

– accounts for significant percentage (depending on product category as percentages can vary).

Growth in online shoppers

As the revenues from online sales continued to grow significantly researchers identified different types of online shoppers, Rohm & Swaminathan identified four categories and named them "*convenience shoppers, variety seekers, balanced buyers, and store-oriented shoppers*". They focused on shopping motivations and found that the variety of products available and the perceived convenience of the buying online experience were significant

motivating factors. This was different for offline shoppers, who were more motivated by time saving and recreational motives.

English entrepreneur Michael Aldrich was a pioneer of online shopping in 1979. His system connected a modified domestic TV to a real-time transaction processing computer via a domestic telephone line. He believed that videotex, the modified domestic TV technology with a simple menu- driven human–computer interface, was a 'new, universally applicable, participative communication medium — the first since the invention of the telephone.

' This enabled 'closed' corporate information systems to be opened to 'outside' correspondents not just for transaction processing but also for e- messaging and information retrieval and dissemination, later known as e-business. His definition of the new mass communications medium as 'participative' [interactive, many-to-many] was fundamentally different from the traditional definitions of mass communication and mass media and a precursor to the social networking on the Internet 25 years later. In March 1980 he launched Redfin's Office Revolution, which allowed consumers, customers, agents, distributors, suppliers and service companies to be connected online to the corporate systems and allow business transactions to be completed electronically in real-time. During the 1980s he designed, manufactured, sold, installed, maintained and supported many online shopping systems, using videotex technology. These systems which also provided voice response and handprint processing pre-date the Internet and the World Wide Web, the IBM PC, and Microsoft MS- DOS, and were installed mainly in the UK by large corporations.

The first World Wide Web server and browser, created by Tim Berners-Lee in 1989, opened for commercial use in 1991. Thereafter, subsequent technological innovations emerged in 1994: online banking, the opening of an online pizza shop by Pizza Hut, Netscape's SSL v2 encryption standard for secure data transfer, and Inter shop's first online shopping system. The first secure retail transaction over the Web was either by Net Market or Internet Shopping Network in 1994. Immediately after, Amazon.com launched its online shopping site in 1995 and eBay was also introduced in 1995. Alibaba's sites Taobao and Mall were launched in 2003 and 2008, respectively

International statistics

Statistics show that in 2012, Asia-Pacific increased their international sales over 30% giving them over $433 billion in revenue. That is a $69 billion difference between the U.S. revenue of $364.66 billion. It is estimated that Asia-Pacific will increase by another 30% in the year 2013 putting them ahead by more than one-third of all global ecommerce sales. The largest online shopping day in the world is Singles Day, with sales just in Alibaba's sites at US$9.3 billion in 2014.

Statistics on online retail sales

Country	% Retail Sales Online
United States	9.8%
Canada	2.8%
United Kingdom	20%

Customer

Online customers must have access to the Internet and a valid method of payment in order to complete a transaction. Generally, higher levels of education and personal income correspond to more favorable perceptions of shopping online. Increased exposure to technology also increases the probability of developing favorable attitudes towards new shopping channels.[21]

Customer buying behaviour in digital environment

The marketing around the digital environment, customer's buying behaviour may not be influenced and controlled by the brand and firm, when they make a buying decision that might concern the interactions with search engine, recommendations, online reviews and other information. In modern shopping environments, people are more likely to use their mobile phones, computers, tablets and other digital devices to gather information. In an online shopping environment, interactive decision may have an influence on aid customer decision making, through online product reviews and user-generated content, typically provided through software from companies like Bazaar voice and Trustpilot, or via social media. This content, which can include text or video-based reviews, customer photos, and feedback, is often displayed alongside products being sold on websites like Amazon, Target, and most other digital storefronts.

Subsequently, risk and trust would also be two important factors affecting people's' behaviour in digital environments. Customers consider to switch between e-channels, because they are mainly influence by the comparison with offline shopping, involving growth of security, financial and performance-risks in other words, a customer shopping online that they may receive more risk than people shopping in stores.

There are three factors may influence people to do the buying decision, firstly, people cannot examine whether the product satisfy their needs and wants before they receive it. Secondly, customer may concern at after-sale services. Finally, customer may afraid that they cannot fully understand the language used in e-sales. Based on those factors' customer perceive risk may as a significantly reason influence the online purchasing behaviour.

Product selection

Further information: Buyer decision process Consumers find a product of interest by visiting the website of the retailer directly or by searching among alternative vendors using a shopping search engine. Users can compare and evaluate products using product information on the website, as well on other websites such as websites about product tests.

Once a particular product has been found and selected on the website of the seller, most online retailers use shopping cart software to allow the consumer to accumulate multiple items and to adjust quantities, like filling a physical shopping cart or basket in a conventional store. A "checkout" process follows (continuing the physical-store analogy) in

which payment and delivery information is collected, if necessary. Some stores allow consumers to sign up for a permanent online account so that some or all of this information only needs to be entered once. The consumer often receives an e-mail confirmation once the transaction is complete. Less sophisticated stores may rely on consumers to phone or e-mail their orders (although full credit card numbers, expiry date, and Card Security Code, or bank account and routing number should not be accepted by e-mail, for reasons of security).

Impact of reviews on consumer behavior

One of the great benefits of online shopping is the ability to read product reviews, written either by experts or fellow online shoppers. The Nielsen Company conducted a survey in March 2010 and polled more than 27,000 Internet users in 55 markets from the Asia-Pacific, Europe, Middle East, North America, and South America to look at questions such as "How do consumers shop online?", "What do they intend to buy?", "How do they use various online shopping web pages?", and the impact of social media and other factors that come into play when consumers are trying to decide how to spend their money on which product or service. According to the research, reviews on electronics (57%) such as DVD players, cell phones, or PlayStations, and so on, reviews on cars (45%), and reviews on software (37%) play an important role in influencing consumers who tend to make purchases online. Furthermore, 40% of online shoppers indicate that they would not even buy electronics without consulting online reviews first.

In addition to online reviews, peer recommendations on online shopping pages or social media websites play a key role for online shoppers when they are researching future purchases. 90% of all purchases made are influenced by social media.

Payment

Online shoppers commonly use a credit card or a PayPal account in order to make payments.

However, some systems enable users to create accounts and pay by alternative means, such as:

- Billing to mobile phones and landlines
- Bitcoin or other cryptocurrencies
- Cash on delivery (C.O.D.)
- Cheque/ Check
- Debit card
- Direct debit in some countries
- Electronic money of various types
- Gift cards
- Invoice, especially popular in some markets/countries, such as Switzerland
- Postal money order
- Wire transfer/delivery on payment

Some online shops will not accept international credit cards. Some require both the purchaser's billing and shipping address to be in the same country as the online shop's base of operation. Other online shops allow customers from any country to send gifts anywhere.

The financial part of a transaction may be processed in real time (e.g., letting the consumer know their credit card was declined before they log off), or may be done later as part of the fulfilment process.

Product delivery

Once a payment has been accepted, the goods or services can be delivered in the following ways. For

physical items:

- Package delivery: The product is shipped to a customer-designated address. Retail package delivery is typically done by the public postal system or a retail courier such as FedEx, UPS, DHL, or TNT.
- In-store pick-up: The customer selects a local store using a locator software and picks up the delivered product at the selected location. This is the method often used in the bricks and clicks business model.

For digital items or tickets:

Downloading/Digital distribution: The method often used for digital media products such as software, music, movies, or images.

Printing out, provision of a code for, or e-mailing of such items as admission tickets and scrip (e.g., gift certificates and coupons). The tickets, codes, or coupons may be redeemed at the appropriate physical or online premises and their content reviewed to verify their eligibility (e.g., assurances that the right of admission or use is redeemed at the correct time and place, for the correct dollar amount, and for the correct number of uses).

Shopping cart systems

Simple shopping cart systems allow the off-line administration of products and categories. The *Furtherinformation: Comparison of shopping cart software*

shop is then generated as HTML files and graphics that can be uploaded to a webspace. The systems do not use an online database. A high-end solution can be bought or rented as a stand-alone program or as anaddition to an enterprise resource planning program. It is usually installed on the company's web server and may integrate into the existing supply chain so that ordering, payment, delivery, accounting and warehousing can be automated to a large extent. Other solutions allow the user to register and create an online shop on a portal that hosts multiple shops simultaneously from one back office. Examples

are BigCommerce, Shopify and Flick Rocket. Open source shopping cart packages include advancedplatforms such as Interchange, and off-the-shelf solutions such

as Magento, ecommerce, WooCommerce, Prestation, and Zen Cart. Commercial systems can also be tailored so the shop does not have to be created from scratch. By using an existing framework, softwaremodules for various functionalities required by a web shop can be adapted and combined.

Design

Customers are attracted to online shopping not only because of high levels of convenience, but also because of broader selections, competitive pricing, and greater access to information. Business organizations seek to offer online shopping not only because it is of much lower cost compared to bricks and mortar stores, but also because it offers access to a worldwide market, increases customervalue, and builds sustainable capabilities.

Information load

Designers of online shops are concerned with the effects of information load. Information load is a product of the spatial and temporal arrangements of stimuli in the web store. Compared with conventional retail shopping, the information environment of virtual shopping is enhanced by providing additional product information such as comparative products and services, as well as various alternatives and attributes of each alternative, etc. Two major dimensions of information load are complexity and novelty. Complexity refers to the number of different elements or features of a site, often the result of increased information diversity. Novelty involves the unexpected, suppressed, new, or unfamiliar aspects of the site. The novelty dimension may keep consumers exploring a shopping site, whereas the complexity dimension may induce impulse purchases.

Consumer needs and expectations

Internet consumers are self-conscious and emphasize personalized consumption, which makes the demand for online consumption different. Online consumers have different needs depending on their time and environment. Even different online consumers have different needs at the same level of demand due to the difference in income level and other factors. Compared with the centralized nature of traditional markets, online consumption is more decentralized. In the online consumer market, consumers have a short decision time, a large variability of consumer demand, a large number of purchases, but a relatively small amount of each purchase, a considerable mobility of purchases, a strong substitutability of goods, and a

large elasticity of demand. According to the output of a research report by Western Michigan University published in 2005, an e-commerce website does not have to be good looking with listing on a lot of search engines. It must build relationships with customers to make money. The report also suggests that a website must leave a positive impression on the customers, giving them a reason to come back. However, resent research has proven that sites with higher focus on efficiency, convenience, and personalised services increased the customers motivationto make purchases.

Advantages: -

Convenience

Online stores are usually available 24 hours a day, and many consumers in Western countries have Internet access both at work and at home. Other establishments such as Internet cafes, community centres and schools provide internet access as well. In contrast, visiting a conventional retail store requires travel or commuting and costs such as gas, parking, or bus tickets, and must usually take place during business hours. Delivery was always a problem which affected the convenience of online shopping. Additionally, the online shopping industry has not only involved the concept of providing convenience for customers but also improved perceptions of social inclusion. However, to overcome this many retailers including online retailers in Taiwan brought in a store pick up service. This now meant that customers could purchase goods online and pick them up at a nearby convenience store, making online shopping more advantageous to customers. In the event of a problem with the item (e.g., the product was not what the consumer ordered or the product was not satisfactory), consumers are concerned with the ease of returning an item in exchange for the correct product or a refund. Consumers may need to contact the retailer, visit the post office and pay return shipping, and then wait for a replacement or refund. Some online companies have more generous return policies to compensate for the traditional advantage of physical stores. For example, the online shoe retailer Zappos.com includes labels for free return shipping, and does not charge a restocking fee, even for returns which are not the result of merchant error.

(Note: In the United Kingdom, online shops are prohibited from charging a restocking fee if the consumer cancels their order in accordance with the Consumer Protection (Distance Selling) Act 2000). A 2018 survey in the United States found 26% of online shoppers said they never return items, and another 65% said they rarely do so. Merchants may benefit from online shopping due to low sales inventory pressure, low operating costs, and the scale of operation is not limited by the site.

Delivery

Especially in cases of large or heavy products, delivery can be not only more convenient but also not require having or using a car. Not using or depending on personal vehicles, which can have substantial impact on the environment, to travel to local stores can make online shopping more sustainable than buying in local stores if such are used otherwise (especially if items are bundled and delivery vehicles are electric and use optimized routes).

Information and reviews

Online shopping is usually more informationally rich than shopping at physical storestravelled to and usually has higher comparability and customizability.

Online stores must describe products for sale with text, photos, and multimedia files, and sometimes have features such as question and answers or filters, whereas in a physical retail

store, the actual product and the manufacturer's packaging will be available for direct inspection (which might involve a test drive, fitting, or other experimentation). Some online stores provide or link to supplemental product information, such as instructions, safety procedures, demonstrations, or manufacturer specifications

Disadvantages

Fraud and security concerns

Given the lack of ability to inspect merchandise before purchase, consumers are at higher risk of fraud than face-to-face transactions. When ordering merchandise online, the item may not work properly, it may have defects, or it might not be the same item pictured in the online photo. Merchants also risk fraudulent purchases if customers are using stolen credit cards or fraudulent repudiation of the online purchase. However, merchants face less risk from physical theft by using a warehouse instead of a retail storefront. Secure Sockets Layer (SSL) encryption has generally solved the problem of credit card numbers being intercepted in transit between the consumer and the merchant. However, one must still trust the merchant (and employees) not to use the credit card information subsequently for their own purchases, and not to pass the information to others. Denial of service attacks are a minor risk for merchants, as are server and network outages.

Quality seals can be placed on the Shop web page if it has undergone an independent assessment and meets all requirements of the company issuing the seal. The purpose of these seals is to increase the confidence of online shoppers. However, the existence of many different seals, or seals unfamiliar to consumers, may foil this effort to a certain extent.

A number of resources offer advice on how consumers can protect themselves when using online retailer services. These include:

- Sticking with well-known stores, or attempting to find independent consumer reviews of their experiences; also ensuring that there is comprehensive contact information on the website before using the service, and noting if the retailer has enrolled in industry oversight programs such as a trust mark or a trust seal.
- Before buying from a new company, evaluating the website by considering issues such as: the professionalism and user-friendliness of the site; whether or not the company lists a telephone number and/or street address along with e-contact information; whether a fair and reasonable refund and return policy is clearly stated; and whether there are hidden price inflators, such as excessive shipping and handling charges.

Privacy

Privacy of personal information is a significant issue for some consumers. Many consumers wish to avoid spam and telemarketing which could result from supplying contact information to an online merchant. In response, many merchants promise to not use consumer information for these purposes, many websites keep track of consumer shopping habits in order to suggest items and other websites to view. Brick-and-mortar stores also collect consumer information. Some ask for a shopper's address and phone number at checkout, though consumers may refuse to provide it. Many larger stores use the address information encoded on consumers' credit cards (often without their knowledge) to add them to a catalogue mailing list. This information is obviously not accessible to the merchant when paying in cash or through a bank (money transfer, in which case there is also proof of payment).

Aggregation

High-volume websites, such as Yahoo!, Amazon.com and eBay offer hosting services for online stores to all size retailers. These stores are presented within an integrated navigation framework, sometimes known as **virtual shopping malls** or online marketplaces.

See also

- ✓ Bricks and clicks business model
- ✓ Dark store
- ✓ Digital distribution
- ✓ Electronic business
- ✓ Online auction business model
- ✓ Online music store
- ✓ Online pharmacy
- ✓ Online shopping malls
- ✓ Online shopping rewards
- ✓ Open catalogue
- ✓ Package delivery
- ✓ Personal shopper
- ✓ Product tracing systems: allow to see source factory of a product
- ✓ Retail therapy

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T.PALLAVI

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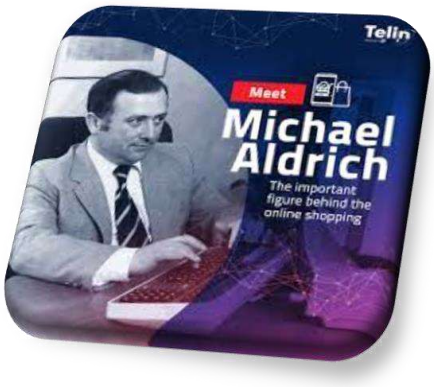
ONLINE TRANSACTION

Who invented online transaction?



Michael Aldrich (22 August 1941 –19 May 2014) was an English inventor, innovator and entrepreneur. In 1979 he invented online shopping to enable online transaction processing between consumers and businesses, or between one

business and another, a technique known later as e-commerce.

Online transactions are those **business transactionswhich are conducted electronically through the network of computer**

Online transaction processing

- **Online transaction processing (OLTP)** Information systems typically facilitate and manage transaction- oriented applications. This is contrasted with online analytical processing.
- The term "transaction" can have two different meanings, both of which might apply: in the realm of computers or database transactions it denotes an atomic change of state, whereas in the realm of business or finance, the term typically denotes an exchange of economic entities (as used by, e.g., Transaction Processing Performance Council or commercial transactions. OLTP may use transactions of the first type to record transactions of the second. Online transaction processing applications have high throughput and are insert- or update-intensive in database management.
- However, like many modern online information technology solutions, some systems require offline maintenance, which further affects the cost-benefit analysis of an online transaction processing system.

Requirements for an OLTP system

- **Concurrency:** OLTP systems can have enormously large user populations, with many users trying to access the same data at thesame time.
- **Scale:** OLTP systems must be able to scale up and down instantly to manage the transaction volume in real time.
- **Availability:** An OLTP system must be always available and always ready to accept transactions.
- **Security:** Because these systems store highly sensitive customer transaction data, data security is critical. Any breach can be very costly for the company.

❖ **What is online payment processing?**

❖ If you're going to accept payments online, you'll need three key pieces of software. These three components work together, and if even one of them is missing, the entire system will stop working. Here's a little more information about the key components of online payment processing.

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❖ **Payment processor** – The payment processor manages the card transaction process by transmitting information from your customer's credit/debit card to your bank and the customer's bank.

❖ **Payment gateway** – The payment gateway is essentially an online version of a point-of-sale device, helping to connect your website and the payment processor. Furthermore, payment gateways can help connect your merchant account with credit/debit card issuers. In short, the payment gatewayhandles the technical side of the transaction and ensures that you'll be able to receive your customers' payments.

❖ **Merchant account** – The merchant account is a specific type ofbank account that enables your business to accept online payments. Without a merchant account, there's nowhere for the money that your customers have transferred to you to go.

NATIONAL ELECTRONIC FUND TRANSFER (NEFT)

How can I transfer money through NEFT?

For an NEFT remittance, the remitter has to furnish the following information:

1. Amount to be remitted.
2. Remitting customer's account number which is to be debited.
3. Name of the beneficiary bank.
4. Name of the beneficiary.
5. Account number of the beneficiary.
6. Sender to receiver information, if any.

N.HARSHINI
3rd B.Sc Computers

What is Cyber Security

Cyber security is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks. It's also known as information technologysecurity or electronic**information security.** The term applies in a variety of contexts, from business to mobile computing, and can be divided into a few common categories. Network security is the practice of securing acomputer network from intruders, whether targeted attackers or opportunistic malware.

Application security focuses on keeping software and devices free of threats. Acompromised application could provide access to the data its designed to protect. Successfulsecurity begins in the design stage, well before a program or device is deployed. Information security protects the integrity and privacy of data, both in storage and in transit. Operational security includes the processes and decisions for handling and protecting data assets. The permissions users have when accessing a network and the procedures that determine how and where data may be stored or shared all fall under this umbrella.

Disaster recovery and business continuity define how an organization responds to a cyber-security incident or any other event that causes the loss of operations or data. Disaster recovery policiesdictate how the organization restores its operations and information to return to the same operating capacity as before the event.

Business continuity is the plan the organization falls back on while trying to operate without certain resources.

End-user education addresses the most unpredictable cyber-security factor: people. Anyone can accidentally introduce a virus to an otherwise secure system by failing to follow good security practices. Teaching users to delete suspicious email attachments, not plug in unidentified USB drives, and various other important lessons is vital for the security of any organization.The scale of the cyber threat

The global cyber threat continues to evolve at a rapid pace, with a rising number of data breaches each year. A report by RiskBased Security revealed that a shocking 7.9 billion recordshave been exposed by data breaches in the first nine months of 2019 alone. This figure is morethan double (112%) the number of records exposed in the same period in 2018.

Medical services, retailers and public entities experienced the most breaches, with

malicious criminals responsible for most incidents. Some of these sectors are more appealing to cybercriminals because they collect financial and medical data, but all businesses that use networks can be targeted for customer data, corporate espionage, or customer attacks.

With the scale of the cyber threat set to continue to rise, the International Data Corporation predicts that worldwide spending on cyber-security solutions will reach a massive $133.7 billion by 2022. Governments across the globe have responded to the rising cyber threat with guidance to help organizations implement effective cyber-security practices. frame work recommends continuous, real-time monitoring of all electronic resources.

The Australian Cyber Security Centre(ACSC) regularly publishes guidance on how organizations can counter the latest cyber-security threats.

Trojans: ***A type of malware that is disguised as legitimate software. Cybercriminals trick users into uploading Trojans onto their computer where they cause damage or collect data***.

Types of cyber threats:

1. Cybercrime includes single actors or groups targeting systems for financial gain or to causedisruption.
2. Cyber-attack often involves politically motivated informationgathering.
3. Cyber terrorism is intended to undermine electronic systems to cause panic or fear

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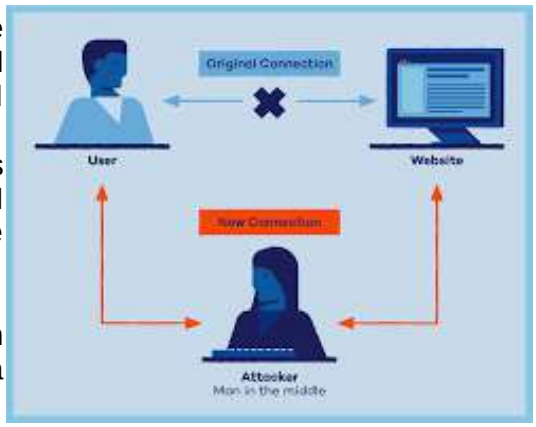
In February 2020, the FBI warned U.S. citizens to be aware of confidence fraud that cybercriminals commit using dating sites, chat rooms and apps. Perpetrators take advantage of people seeking new partners, duping victims into giving away personal data.

The FBI reports that romance cyber threats affected 114 victims in New Mexico in 2019, withfinancial losses amounting to $1.6 million.

Cyber safety tips - protect yourself against cyber attacks

- Here are our top cyber safety tips
- Update your software and operating system :This means you benefit from thelatest security patches.
- Use anti-virus software Security solutions like Kasper sky Total Security will detect and removes threats. Keep your software updated for the best level of protection.
- Use strong passwords Ensure your passwords are not easily guessable.4. Do not open email attachments from unknown senders These could be infected with malware.



- Do not click on links in emails from unknown senders or unfamiliar websites This is a common way that malware is spread.
- Avoid using unsecure Wi-Fi networks in public places Unsecure networksleave you vulnerable to man-in-the-middle attacks.
- Kasper sky Endpoint Security received three AV-TEST awards for the best performance e, protection, and usability for a corporate endpoint security productin 2021. In all tests Kasper sky Endpoint Security showed outstanding performance, protection, and usability for businesses.

PEGASUS AND SPYWARE

Pegasus is spyware developed by the Israeli cyber-arms company NSO Group that can be covertly installed on mobile phones (and other devices)running most[1] versions of iOS and Android. Pegasus is able to exploit iOS versions up to 14.7, through a zero- click exploit.[1] As of 2022, Pegasus was capable of reading text messages, tracking calls, collecting passwords, location tracking,accessing the target device's microphone and camera, and harvesting information from apps.[3][4] The spyware is named after Pegasus, thewinged horse of Greek mythology. It is a Trojan horse computer virus that can be sent "flying through the air" to infect cellphones.

Pegasus was discovered in August 2016 after a failed installation attempt on the iPhone of a human rights activist led to an investigation revealing details about the spyware, its abilities, and the security vulnerabilities it exploited. Newsof the spyw are caused significant medicoverage. It was called the "mostsophisticated" smartphone attack ever, and was the first time that a malicious remote exploit used jailbreaking to gain unrestricted access to an iPhone

The spyware has been used for surveillance of anti-regime activists, journalists,and political leaders fromseveral Z nations around the world.[7] In July 2021 the investigation initiative Pegasus Project, along with an in-depth analysis by human rights group Amnesty International, reported that Pegasus was still being widely used against high-profile targets.

In 2019 WhatsApp revealed that NSO's software had been used to send malware to more than 1,400 phones by exploiting a zero-day vulnerability. Simply by placing a WhatsApp call to a target device, malicious Pegasus code could be installed on the phone, even if the target never answered the call. More recently NSO has begun exploiting vulnerabilities in Apple's iMessage software, giving it backdoor access to hundreds of millions of iPhones. Apple says it is continually updating its software to

prevent such attacks. Technical understanding of Pegasus, and how to find the evidential breadcrumbs it leaves on a phone after a successful infection, has been improved by research conducted byClaudio Guarnieri, who runs Amnesty International's Berlin-based Security Lab.

Once installed on a phone, Pegasus can harvest more or less any information or extract any file. SMS messages, address books, call history, calendars, emails and internet browsing histories can all beexfiltrated.

Where neither spear-phishing nor zero-click attacks succeed, Pegasus can also be installed over a wireless transceiver located near a target, or,according to an NSO brochure, simply manually installed if an agent cansteal the target's phone.

Purpose:

- Pegasus is designed for three main activities:
- collection of historic data on a device without user knowledge
- continuous monitoring of activity and gathering of personal information and
- transmission of this data to third parties.

ADVANTAGES OF PEGASUS

Pegasus spyware can **hack** any iOS or Android device and steal avariety of data from the infected device.

- It works by sending an **exploit link** and if the target user clicks on the link, the malware or the code that allows the surveillanceis installed on the user's phone.
- Pegasus can be **deleted remotely**. It's very hard to detect andonce it's deleted, **leaves few traces.**

- **National security implications: The use of Pegasus poses a national security risk. Who else will have access to that information? How much geopolitics is now influenced by theseshadowy cyber weapons?**
- The issue also indicates that surveillance rules in India are not asper global standards. This **hinders India's ability to enter data sharing agreements,** which allow government agencies to access data stored overseas when required, with other countries.

- **Weakness of India's cyberwarfare capacity: Beyond national security, the Pegasus revelations highlight a disturbing weaknessin India's cyber warfare capacity. If it is indeed true that Indian government agencies had to purchase a foreign commercial cyber-weapon for their needs, then we have advertised a strategic vulnerability that is bound to be exploited unless rectified quickly.**
- **Misuse of data insights**: Vendors of commercial cyber-weapons can get insights as to how their product is being used. This information can be misused by making it available to their governments.

Agriculture and industry technology

Agriculture:- Agriculture is the art and science of cultivating the soil, growing crops and raising livestock. It includes the preparation of plant and animal products for people to use and their distribution to markets. Agriculture provides most of the world's food and fabrics Modern agronomy, plant breeding, agrochemicals such as pesticides and fertilizers, and technological developments have sharply increased crop yields, but cause ecological and environmental damage.

The technology of farming, the system of practices followed in crop growing. The object of agricultural technique is to assure high crop yield with minimal investment of labor and capital per unit of realized product..

Traditional agriculture is based on treating the soil and plants with products that are more likely than not noxious, and more likely than not synthetically produced in a laboratory.India is an agriculturally important country. Two-thirds of its population is engaged in agricultural activities. Agriculture is a primary activity, which produces most of the food that we consume. Besides food grains, it also produces raw material for various industries.Agriculture in India started with the Indus valley civilization.

Industrial technology:-Industrial technology is the use of engineering and manufacturing technology to make production faster, simpler, and more efficient. The industrial technology field employs creative and technically proficient individuals who can help a company achieve efficient and profitable productivity. Computers, robots, management systems, ERP's and cutting machines are the best example of industry technology. Industrial technology is used daily in business to streamline and accelerate production and increase productivity, profitability, and safety. Edge computing is one of the latest technologies in the software industry

The information technology industry in India comprises information technology services, consulting, and outsourcing. The share of the IT-BPM sector in the GDP of India is 7.4% in FY 2022. The IT and BPM industries' revenue is estimated at $230 billion in FY 2022.

The major industries in the Indian Economy are Iron & Steel, Textiles, Jute, Sugar, Cement, Paper, Petrochemical, Automobile, Information Technology (IT), and Banking & Insurance.

The major industries in the Indian Economy are Iron & Steel, Textiles, Jute, Sugar, Cement, Paper, Petrochemical, Automobile, Information Technology (IT), and Banking &Insurance. The Automobile Industry in India has been one of the prime contributors to the country's macroeconomic growth and technological advancement. By the year 2026, it is anticipated that the industry would reach US $300 billion. Also, India is expected to be the third largest automobile market by volume, in the year 2026.According to Invest India, the Indian healthcare industry is projected to reach $372 billion by 2022. In addition, India's hospital sector contributes 80% of the healthcare industry and is projected to increase by 16-17% to $132.84 billion by 2022. It is, without a doubt, one of the fastest-growing sectors in India.

Relation between the Agriculture and industry technology:-Agriculture and industries are interdependent i.e. they depend on each other. In other words, they both help each other and without one, the other cannot develop. Agriculture helps various industries by providing them raw materials, labour, a market for their goods and also food for workers in the industrial sector.Agriculture serves as a major source of raw material to many industries . Industries in turn obtain raw material from agriculture and produce finished goods, eg sugar , textile. Agriculture acts as a major consume of industrial products like farm machineries , fertilisers , etc. Industries provide many agricultural inputs like irrigation pumps, fertilizers, insecticides, PVC pipes, machines and tools, etc.

(i) Agriculture provides market for industrial products, e.g. farm machinery, chemicals, fertilizer, etc. (ii) Provides food to industrial workers. (iii) both agriculture and industry compete for labour. (iv) agricultural development allows for a shift of factors of production to the industry.

(ii) However, agriculture is focused on the working of soil and other facilities to produce crops, animals and trees for human consumption or further refinement into products, while industry is focused more on refining and processing raw materials into products for sale.

(iii) Productivity is higher in the industrial sector than the agricultural sector due to technological advances**.**

Technology help the nation:-

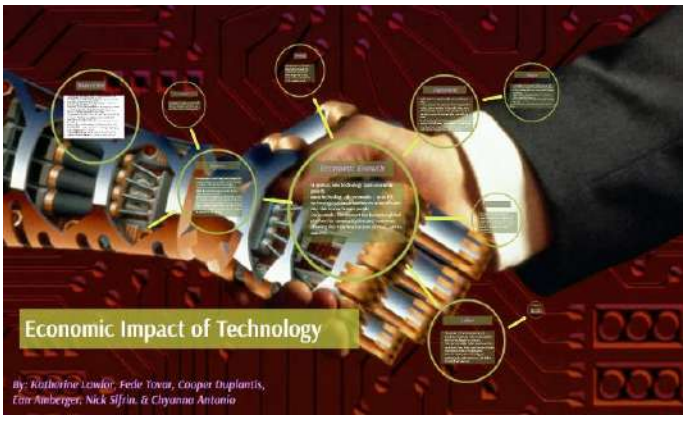
Technological progress allows for the more efficient production of more and better goods and services, which is what prosperity depends on.Technology affects almost every aspect of 21st century life, from transport efficiency and safety to access to food and healthcare, socialization and productivity. The power of the internet has enabled global communities to form, and ideas and resources to be shared more easily.

Over time, technology will enable financial stability and discipline without the need for people to gain relevant knowledge. AI and machine learning advisors will become ubiquitous, constantly recommending the next gig, next investment or next online class to us, truly democratizing growth and financial wellbeing.

The technology can be regarded as primary source in economic development and the various technological changes contribute significantly in **the development of underdeveloped countries**

Present inventions of the agriculture and industry technology:-

Today's agriculture routinely uses sophisticated technologies such as robots, temperature and moisture sensors, aerial images, and GPS technology. These advanced devices and precision agriculture and robotic systems allow businesses to be more profitable, efficient, safer, and more environmentally friendly. Drones are mainly use to monitor crops, spray fertilizers and pesticides, etc. They are called unmanned aerial vehicles, and they are as per their definition. This latest trend in agriculture and agricultural technology is revolutionizing the farming tech by reducing the amount of labour required to grow a crop.Automation – including the use of robots, drones, and autonomous tractors to make farming more efficient. Precision farming – which involves applying irrigation, fertilizers, and pesticides at variable rates, depending on the needs of crops, rather than uniformly applying them at set times, quantities, and frequencies.



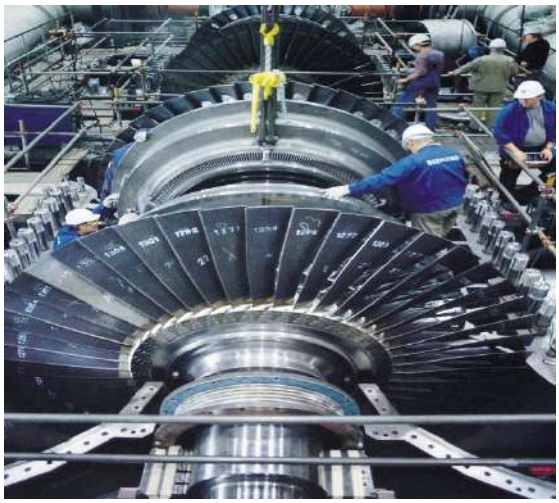
Present inventions of the industry technology:- Some of the IoT technologies that help in manufacturing include sensors for everything from identification tags to production equipment, 3-D printing, digital twins, swarm intelligence, artificial intelligence, automation, collaborative robots, and augmented

reality.Additive Manufacturing Advanced Analytics Advanced Robotics AI AGVs Autonomous Vehicles. Big Data Biometrics Blockchain Drones Immersive Technologies Internet of Things.

Top 10 Emerging Technologies in 2022

- Augmented and Virtual Reality. Virtual reality is an obvious choice when it comes to highly coveted, highly visible advancements in technology this year. ...
- Natural Language Processing. ...
- Server less Computing. ...
- The Metaverse. ...
- Block chain Technology. ...

Top 10 Manufacturing Technology Innovations



- Artificial Intelligence. Artificial intelligence (or AI) is any technology that mimics human intelligence.
- Quantum Computing.
- Industrial Internet of Things.
- Programming Languages.

IMPACT OF TECHNOLOGY ON AGRICULTURE

Technological innovations have greatly shaped agriculture throughout time. From the creation of the plow to the global positioning system (GPS) driven precision farming equipment, humans have developed new ways to make farming more efficient and grow more food. We are constantly working to find new ways to irrigate crops or breed more disease resistant varieties. These iterations are key to feeding the ever-expanding global population with the decreasing freshwater supply.

Explore developments in agricultural technology and its impacts on civilization with this curated collection of classroom resources.

SUBJECTS

Earth Science, Geography

ARTS AND SCIENCE OF AGRICULUTRE

Geography, Human Geography, Physical Geography, Social Studies, World History

Agriculture is the art and science of cultivating the soil, growing crops and raising livestock.

IRRIGATION

Geography, Human Geography, Physical Geography, Social Studies, World History To irrigate is to water crops by bringing in water from pipes, canals, sprinklers, or other man-made means, rather than relying on rainfall alone.

CROPS

Biology, Experiential Learning, Geography
A crop is a plant or plant product that can be grown and harvested for profit or subsistence. By use, crops fall into six categories:food crops, feed crops, fiber crops, oil crops, ornamental crops, and industrial crops.

GRAIN

Biology, Experiential Learning, Geography, Human Geography, Physical Geography Grain is the harvested seed of grasses such as wheat, oats, rice, and corn. Other important grains include sorghum, millet, rye.

FARMING FOR FUTURE EDUCATOR

Use this educater guide to engage students in grades 6 to 9 with top crop.forming for the future game in a variety of settings,both in and out of the classroom.

Agriculture is the art and science of cultivating the soil, growing crops and raising livestock. It includes the preparation of plant and animal products for people to use and their distribution to markets.

Agriculture provides most of the world's food and fabrics. Cotton, wool, and leather are all agricultural products. Agriculture also provides wood for construction and paper products.

These products, as well as the agricultural methods used, may vary from one part of the world to another.

Start of Agriculture

Over centuries, the growth of agriculture contributed to the rise of civilizations.

Before agriculture became widespread, people spent most of their lives searching for food—hunting wild animals and gathering wild plants. About 11,500 years ago, people gradually learned how to grow cereal and root crops, and settled down to a life based on farming.

By 2,000 years ago, much of the Earth's population had become dependent on agriculture. Scholars are not sure why this shift to farming took place, but it may have occurred because of climate change.

Agriculture kept formerly nomadic people near their fields and led to the development of permanent villages. These became linked through trade. New economies were so successful in some areas that cities grew and civilizations developed. The earliest civilizations based on intensive agriculture arose near the Tigris and Euphrates Rivers in Mesopotamia (now Iraq and Iran) and along the Nile River in Egypt.

The first domesticated animals were dogs, which were used for hunting. Sheep and goats were probably domesticated next. People also domesticated cattle and pigs. Most of these animals had once been hunted for hides and meat. Now many of them are also sources of milk, cheese, and butter. Eventually, people used domesticated animals such as oxen for plowing, pulling, and transportation.

Farming in Water

Agriculture includes such forms of cultivation as hydroponics and aquaculture. Both involve farming in water.

Hydroponics is the science of growing plants in nutrient solutions. Just one acre of nutrient solution can yield more than 50 times the amount of lettuce grown on the same amount of soil.

Aquaculture—primarily the cultivation of fish and shellfish—was practiced in China, India, and Egypt thousands of years ago. It is now used in lakes, ponds, the ocean, and other bodies of water throughout the world. Some forms of aquaculture, such as shrimp farming, have become important industries in many Asian and Latin American countries.

Climate change and improved technology are altering the way freshwater and ocean fisheries operate. Global warming has pushed warm-water species toward the poles and reduced the habitats of cold-water species. Traditional fishing communities in both developed and developing countries find the number of fish dwindling.

P.SRAVAN KUMAR

3rd B.Sc Computers

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