

# TECK N O W

THE GREAT  
GROWLING  
ENGINE OF  
CHANGE -  
TECHNOLOGY

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**COMPUTER SCIENCE DEPARTMENT**  
**V.E.S. COLLEGE OF ARTS, SCIENCE AND COMMERCE**

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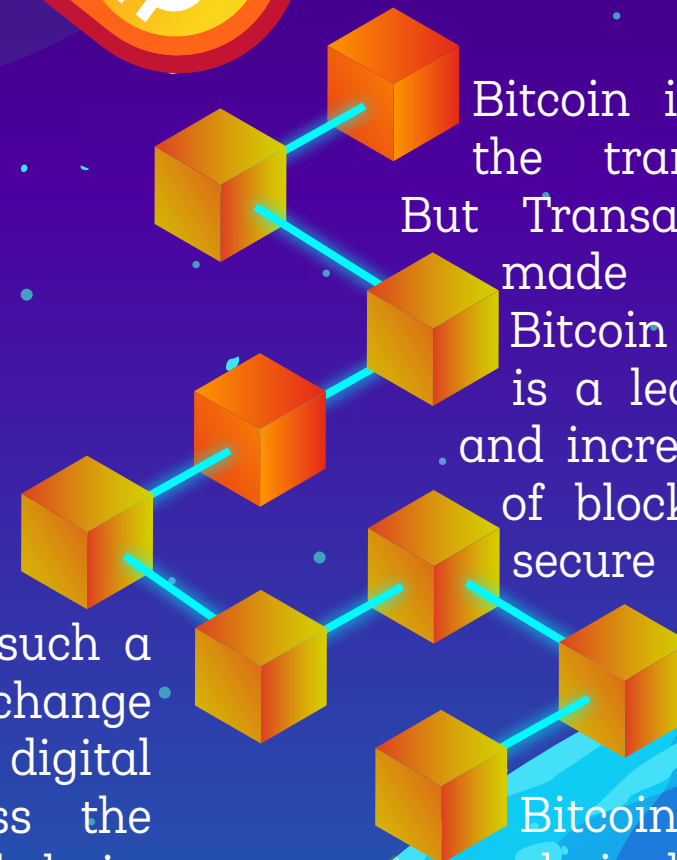
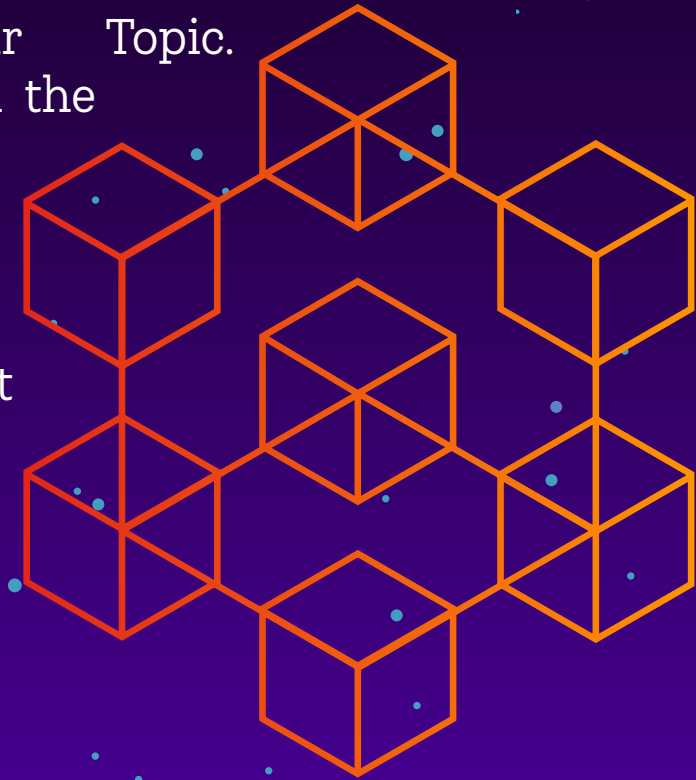


# BLOCKCHAIN is not equal to bitcoin

Bitcoin is a unanimity network that enables a new payment system. It is the first decentralized peer-to-peer payment network that works without any third-party or middlemen. Bitcoin is the first implementation of a concept called "Cryptocurrency", which was first described in 1998 by Wei Dai. The first Bitcoin specification was published in 2009 by Satoshi Nakamoto. The bitcoin network is sharing a public ledger called the "Block chain"

Blockchain is a system of recording information in such a way that makes it difficult almost impossible to change or hack the system. A blockchain is basically a digital ledger of transactions that is distributed across the entire network of computer systems on the blockchain. Every block in the chain contains a number of transaction. Blockchain is a type of Distributed ledger Technology in which transaction are recorded with an indeclinable cryptographic signature called a hash.

Now, Let's Start With Our Topic. Whenever hearing about blockchain the first thing that comes in our mind is bitcoin. But Bitcoin is not blockchain, bitcoin uses blockchain. Bitcoin is to Blockchain is same as email, FTP are to the internet. But blockchain is not equal to bitcoin they are closely linked, Since Bitcoin was the first application of blockchain people habitually used "BITCOIN" to mean blockchain.



Bitcoin is a cryptocurrency that is used to reduce the transaction time and transaction charges. But Transactions done through block chain are made public so that it can be transparent. Bitcoin is simply a cryptocurrency and block chain is a ledger. The main aim of bitcoin is to simplify and increase the speed of transaction. The main focus of block chain is to provide a low cost, safe and secure environment for peer-to-peer transactions.

Bitcoin is limited to trading as a currency. Where block chain can easily transfer anything from currencies to property rights of stocks. Bitcoin is powered by block chain technology, but block chain has found many uses beyond bitcoin. Bitcoin promotes anonymity while blockchain is about transparency. At last Both bitcoin and block chain have their own strength with millions of transactions being done every day, bitcoin and block chain will make the lives of the people easier.

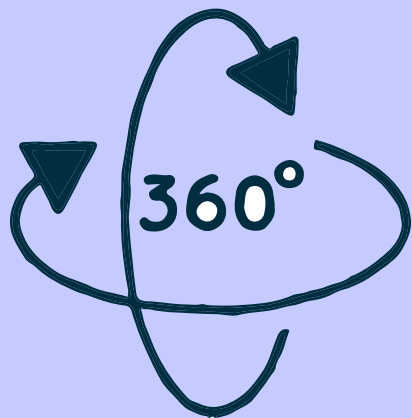
**-AKANKSHA ANIL JAGTAP &  
MAHALAXMI SARVAI GANESH.**



# EXTENDED REALITY



The first question that comes in our mind after listening or talking about some term or technology is that what is it and what's its proper definition or the concept behind it. So, the term extended reality refers to all real and virtual combined environments and human-machine interaction generated by computer technology and wearable, it is generally expressed as XR where 'X' represents a variable for any current or future spatial computing technologies. Extended reality includes augmented reality (AR), mixed reality (MR), and virtual reality (VR).



Now, the question comes how extended reality works? Virtual reality or extended reality immerses a person in a digital 3D environment, instead of watching on a display. Computer-generated imagery and content aim at simulating a real presence through senses (sight, hearing, touch). The two main requirements of extended reality is a source of content and a user device. Such systems

include headsets, all directions treadmills, special gloves, goggles, VR tools should be providing the realistic, natural, high-quality image, and interaction possibilities. Typically, a headset displays content before a user's eyes, while a cable (HDMI) transfers images to the screen from a PC.



The extended reality was introduced by Paul Milgram, in general, XR is a superset that includes the entire spectrum from "the complete real" to "the complete virtual" in the concept of reality virtuality continuum. XR is widely applied in areas such as marketing, gaming, and entertainment.

Although extended reality gives us a different view of digital world and personalized experience it also has some drawbacks like compromised privacy, reduced social engagement, physical harm, high cost of implementation, and development. I would conclude by saying that though we are living in an era of technologies still we should always consider the other side of the coin and use technologies accordingly.

**- Shubham Kumari Singh.**





# Gender Equality

As we know that, India was ruled by Britishers before Independence but as time evolved, we saw tremendous changes in the country whether it comes to infrastructure or powers etc. From this we can say that the most important factor which India pursue is democracy

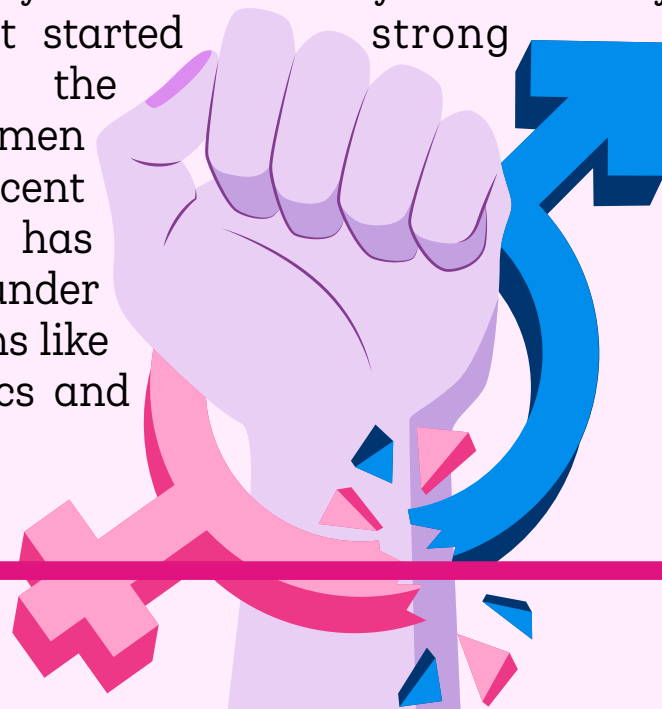
unlike the other countries.

The people in India are free to express their thoughts, they are liberal, and most glorifying thing about democracy is freedom to speech, freedom to stand against injustice, freedom to

raise voice according to our perspective. But when it comes to equality do you think men and women are treated equally? Considering the fact that, India ranks 141st among 142 countries in women health and safety.

Despite chromosomal difference, men are biologically strong than women because of their higher male muscle-mass to body-mass ratio. On the contrary, women are no longer away from the race, they almost started participating in the field where men can't reach. A recent academic study has shown that under extreme conditions like famines, epidemics and

enslavement, women are able to survive longer than men. So now-a-days it doesn't matter whether you are biologically strong or not at the end it only matters that you're mentally stable and have a strong support system i.e. parents who have blindfolded trust and faith in your dreams.



Getting into privileges given to women in India, some of the major privileges are:

## 1. Women Have Right To Equal Pay

According to the provisions listed under the equal remuneration act, one cannot be discriminated on the basis of sex when it comes to salary, pay or wages. Working women have the right to draw an equal salary, as compared to men.

## 2. Women Have The Right To Dignity and Decency

In an event if the accused is a woman, any medical examination procedure on her must be performed by or in the presence of another woman.

## 3. Women Have Right To Get Free Legal Aid

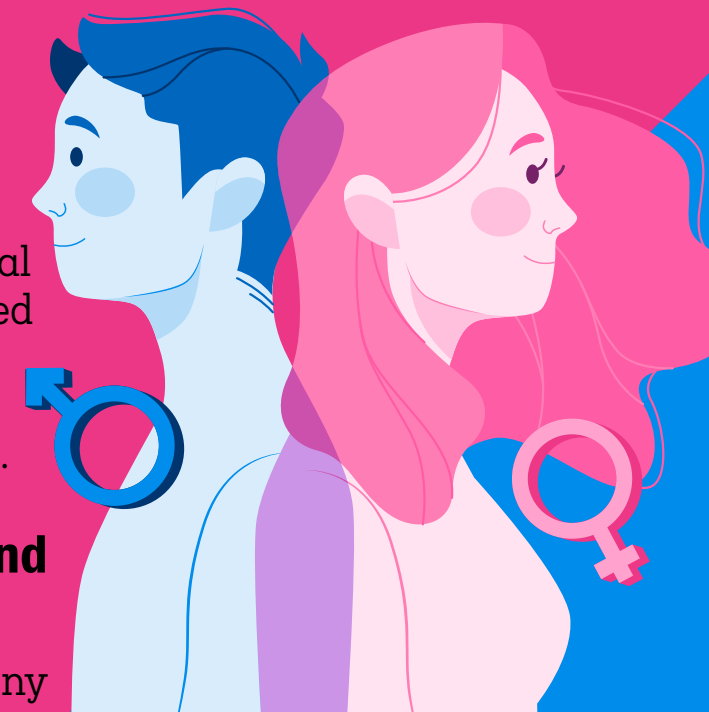
Under the legal services authorities act, female rape victims have the right to get free legal aid or help from the legal services authority who has to arrange a lawyer for her.

## 4. Women Have The Right Against Indecent Representation

Depiction of Women's figure (her form or any body part) in any manner that is indecent, derogatory, or is likely to deprave, corrupt or injure the public morality or morals is punishable offence

So, the conclusion is men do not get these reserved rights like women. Since we are talking about equality which means both should be treated equally but from above privileges it is clear that the rights are only for women and not for men which is incorrect in terms of equality. We all know women has to take more precautions when it comes to safety but there are men too which feels they are unsafe. When these rights would be applicable for both, then only we can say that there exists Gender Equality.

- Geeta Sidhwani & Preeti Kamrani.



# INTERNET SECURITY

Internet security is not specifically related to the internet it also involves browser security, network security, applications and operating systems internet security consists of a wide range of tactics for protecting online transitions, and other work that are accomplished online from hacking, or malicious software. internet is an insecure way for information exchange so it has a higher risk of intrusion. Internet security is all about biometric, mobile malware. Secure money transactions, how you can prevent being trapped in money frauds, security & login, what data should be downloaded etc.



Credit & Debit card fraud: When fraud is committed using payment cards like credit or debit then that time credit and debit card fraud are taken place. To reduce this type of fraud, the Payment Card Industry Data Security Standards (PCI DSS) is the data security standard created & to help businesses process card payments securely.

## Techniques that are used by fraudsters to steal your card information :-

### • Skimming :

The technique which uses a skimmer which is placed in the card reader slot to illegally collect the data from debit or ATM cards when one swipes the card. This technique also uses a setup camera near the ATM to get one's PIN.

### • Card trapping :

In this technique, fraudsters trapped your card in the machine when you insert it in the machine & the card is retrieved later.

### HACKING



### PENITRATION



### PHISHING



### • Pharming :

In this type of technique, when you do online transactions, fraudsters take you to a fake website that looks like an original one, so even if you make your payment via credit or debit card, your card information can be stolen.

## Ways to prevent payment cards fraud:-

### • ATM safeguards :

When you see ATMs that seem to be dirty or disrepair, then that time you should stay away from this type of ATMs. They may not work or maybe fake machines that are set by fraudsters to steal your card information.

### • Check machine:

While withdrawing money through the ATM, when you see unusual signs such as command like 'Enter your PIN twice', then that time you have to be careful maybe fraudster place skimming device to steal your PIN.

### • Cover keypad:

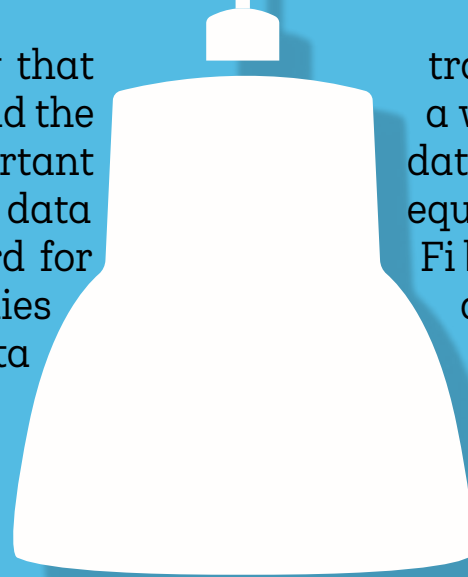
When you are entering your PIN, you have to cover keypad, so that your PIN can't reveal, because fraudsters may place cameras near ATMs.

- Puja Dhreshwar Khodke.



# Li-Fi Technology

As we all know that in today's world the most important thing is the data. The data is like the spinal cord for the biggest companies today. But if the data is not processed into the information and



transferred then it is just a waste. And to transfer data we have some equipment's like the Wi-Fi but they transfer data at a limited speed only. And here we need LI-FI technology to get in picture.

## History

The term Li-Fi was first coined by the University of Edinburgh, however, this technology was first introduced by Herald Has, a German professor, and physicist. He introduced and demonstrated it at a TED talk in July 2011. He believed light bulbs could act as wireless routers for

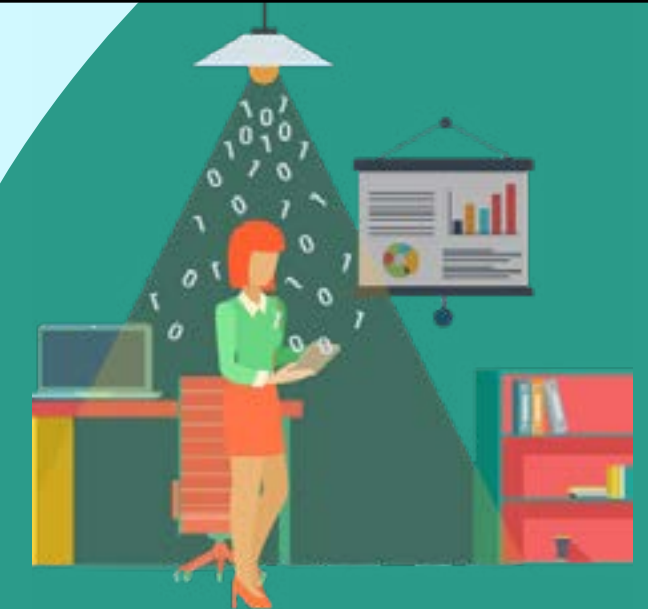
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Data transmission. His demonstration showed how changes in the amplitude of a light bulb at high speeds can be used for energy transmission. He demonstrated the use of LED for the transmission of a high definition video and then showed the same video to the audience.

## Components

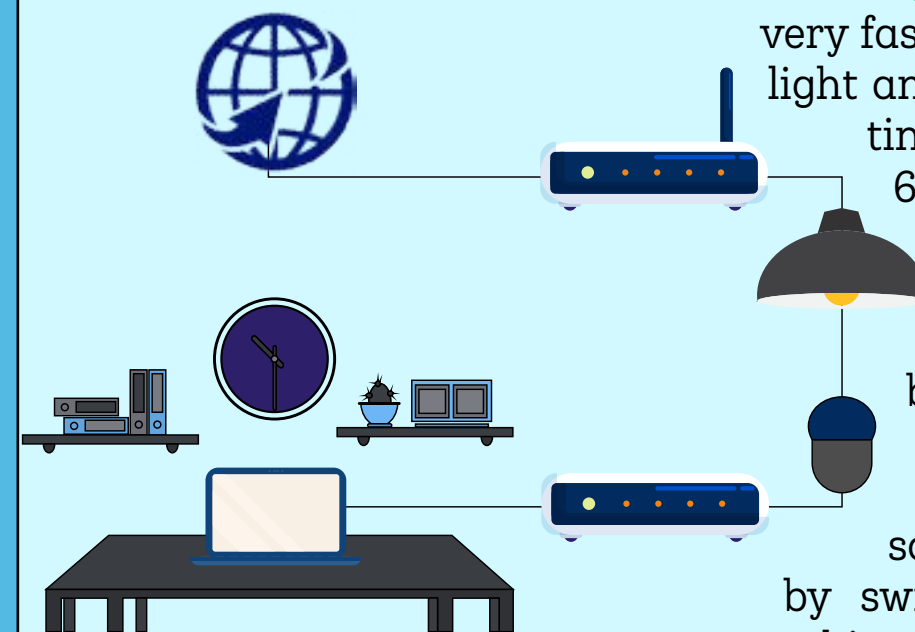
A) A LI-FI system has two main components

- 1) A transmitter most likely a Led bulb.
- 2) A receiver used to decode the received data



## Working

The LI-FI is networked, bidirectional wireless communication with light. It transfers data at very fast rate by harnessing the visible light and infrared light. LI-FI is a very timely technology, especially for 6th generation (6G) cellular communication. It is a technology for the wireless transmission of data between devices. LI-FI uses light as a medium for transmission of data. LED lamps are the source used for encoding data by switching the light on and off to generate binary code. That is transmitted to the other end where the receiver decides it.



## Advantages of LI-FI over WI-FI

**High speed:** LI-FI technology is way faster than WI-FI. It has the capability to transmit data up to 100mbps or 1GBps. That means you can download a HD movie in seconds.

**Free from interference:** Since the Wi-Fi uses radio waves to transmit data it can be interrupted by some radio waves and some obstacles can reduce the speed of the Wi-Fi. But in the LI-FI there is no such issue as it uses the visible light to transmit data

**- Mahesh.N.Kori & Vaishnavi Lawand.**



# Basic qualities that a person should have

What are the qualities that an ideal person should have? Being a good person means more than doing things for others. You have to accept and love yourself before you can put positive energy into this universe. In this competitive world every person is busy doing their own job and not considering others feelings and their own health and losing their humanity. Here are some tips to make yourself a better person. In this world every person have to face their problems. You can't hide from it. As every person's fingers are not similar to each other similarly every person doesn't have the same thing as you have in your life so you should stop comparing yourself with others. You have to love yourself and your life before you can put positive energy to this universe. The only way you can truly love others is to first have confidence and faith in yourself. So learn to love yourself in every way you can. Try to look at the bright side of things. Bring a positive attitude to yourself in every situation. If something doesn't turn your way, try to change what you can, smile, stay positive, and move on. Be empathetic. Try to put yourself in others' shoes and see things from their perspective and be kind not so that you look good to others, but more so others may benefit from your selfless acts.

**“You must not lose faith in humanity. Humanity is an ocean. If a few drops of the ocean are dirty, the ocean does not become dirty.”**



Be honest and direct with what you're feeling and thinking with those who are around you. Talk to those who are bothering you, instead of lying or getting others involved. You should be a good listener too. Don't get distracted by surrounding and be engaged with the person and the conversation.

**“Human beings are rather odd creatures when you think about it. From being the only creature in the animal kingdom that exhibits certain behaviors, to simply doing things that no other creature is capable of doing.”**

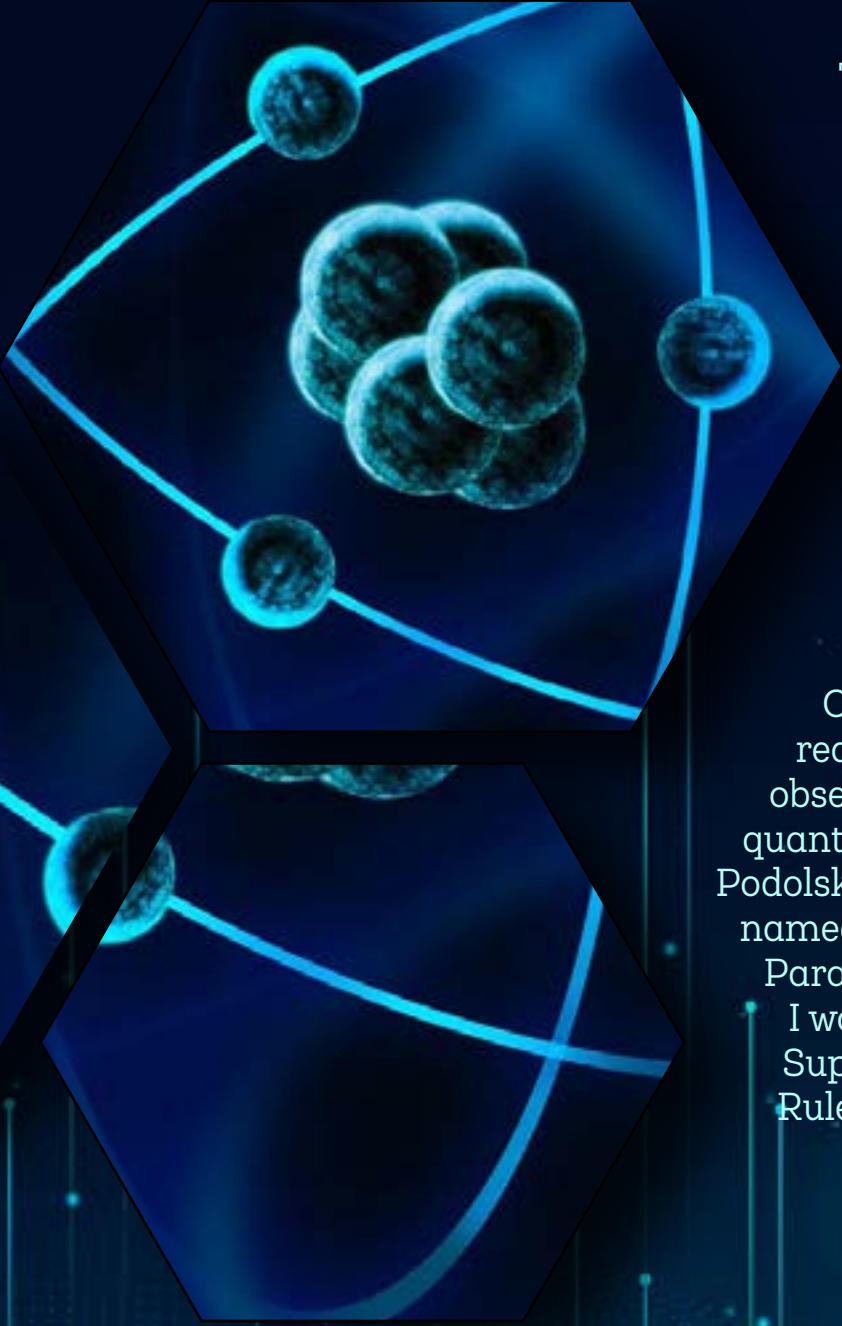
Practice forgiveness, forgiving can be a difficult task. But understand every human being can make mistakes in their life. By forgiving someone it makes you a compassionate person. When you forgive you let go of the resentment that can cause anger, and bitterness in your life. Be fair to all the people around you and respect them. Celebrate other people's victories and good quality. Don't be jealous. Be supportive and encouraging. Complement the people for their good deeds. Giving credit where due is respectful, and you would want the same respect for an achievement you've accomplished. Control your anger, when you argue with someone try to control your anger and

don't blame others. Try to accept your fault. Accept everyone around you. Realize that everybody has feelings, every person is valid and everyone should always be treated with respect. And I want to conclude by saying that respect everyone with love and affection. Don't unfairly judge others. You don't know what circumstances they are surrounded with. Treat others the way you want to be treated by others. Respect that other people share the same space as you. Be generous and encourage to share your good thoughts, opportunities with others. When other people see you doing good deeds, they will be reminded to take more positive action themselves.

**- Jyothi T & Mayuri Mahadik.**



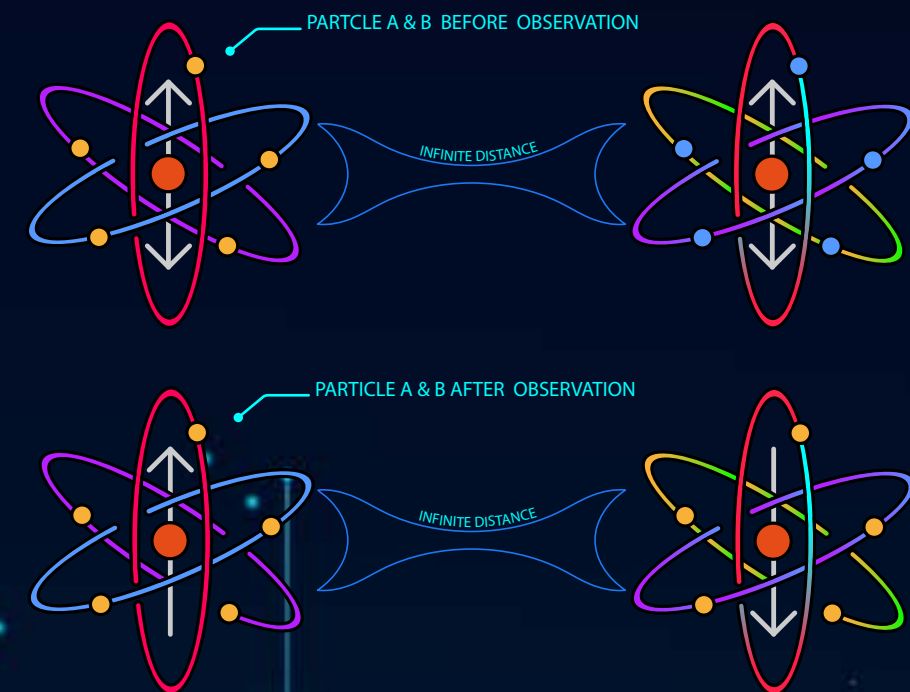
# QUANTUM ENTANGLEMENT



There are hundreds of mysterious things in the world, one of which is Quantum Entanglement or the EPR Paradox. As the name says, Quantum Entanglement, where Quantum means the study of subatomic particles and Entanglement means being entangled. In the year 1920, Niels Bohr put forward a theory in which he said (according to the rules of quantum theory). In the absence of measurement or observation, our reality doesn't exist. On the other hand, Albert Einstein said, "Our reality is fixed whether we measure/observe it or not." So to disprove the quantum theory, in the year 1935, Einstein-Podolsky-Rosen (EPR) made a theory named Quantum Entanglement or the EPR Paradox. Before starting with the paradox, I would like to explain you two things: 1. Superposition Principle 2. Measurement Rule.

## Consider This Example:-

Suppose there are two electrons, one with red color and another with blue color, according to the Superposition Principle, before observing the electron, it is present in both the colors (red and blue). This is called as superimposed state or Superposition Principle. And as when we observe the electron, their wave function collapses and we get to see only one color, either red or blue.



Now let us begin with the Paradox, suppose we have two particles (A-B). Every particle has a property called as spin; it may be up spin or down spin. Consider the two particles are separated at an INFINITE distance. Before measuring the spin of any particle, they are in a superimposed state (both up and down at once). Once we observe particle A and if its spin is up, at the same instance, particle B will show down spin.

- Akash Thorat.



# BLUE BRAIN



From centuries, we had remarkable brains taking birth within us. Newton, Einstein, Dr. Kalam and many more had Incomparable brains with knowledge that helped us a lot. But their knowledge was alive until these brains were alive. After that? Can we store their knowledge? Answer to this question is BLUE BRAIN PROJECT.....! EPFL's Blue Brain Project may be a Swiss brain research Initiative led by Founder and Director Professor Henry Markram. The project is about gaining an entire understanding of the brain and from this, help within the future to enable better and faster development of brain disorder treatments. Scientists at the project have adopted an innovative approach.

A radically new approach for understanding the multilevel structure and performance of the brain. The project's novel research strategy exploits interdependencies within the experimental data to get dense maps of the brain, without measuring every detail of its multiple levels of organization (molecules, cells, micro-circuits, brain regions, and the whole brain). This strategy allows the project to create digital reconstructions (computer models) of the brain at an unprecedented level of biological detail. Supercomputer-based simulation of their behaviour turns understanding the brain into a tractable problem, providing a new tool to study the complex interactions within different levels of brain organization and to investigate the cross-level links leading from genes to cognition

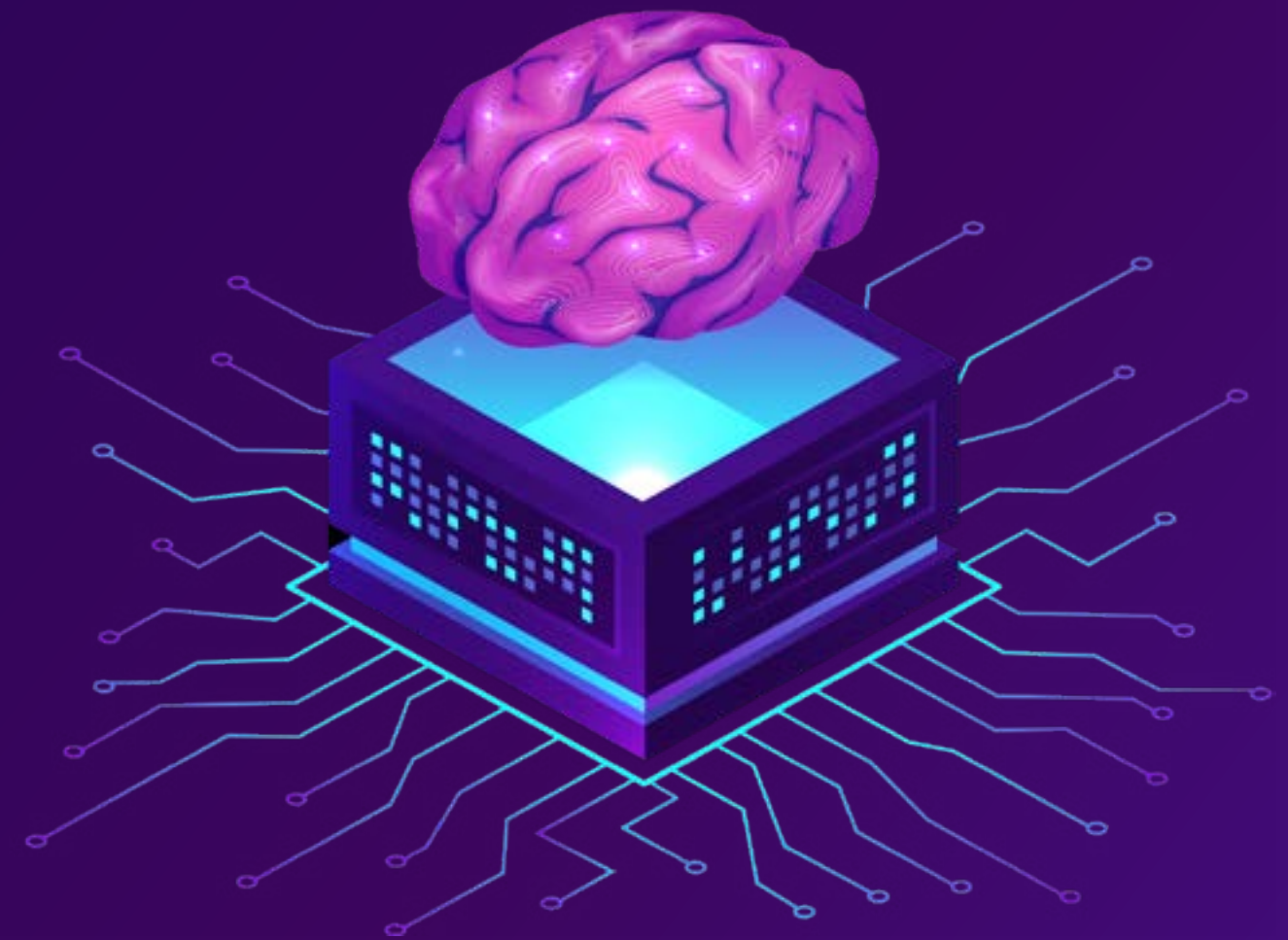
BLUE BRAIN PROJECT is an innovative upcoming technology which is an attempt to reverse engineer the human brain and recreate it at the cellular level inside a computer simulation. The goal of the Blue Brain Project is to create biologically detailed digital reconstructions and simulations of the rodent, and ultimately the human brain. The supercomputer-based reconstructions and simulations built by the project offer

The project entails using information from neuroscientific research to build comprehensive digital reconstructions of the brain, which include the brain's different levels of organization and interactions. The project is divided into three divisions:

The Computing Division

The Simulation Neuroscience Division

The Operations Division.



This is a huge undertaking bringing together many scientists and professionals from different fields. Additionally, the project works with numerous other collaborators. Due to the complexity of the scientific goal all the scientists have to work efficiently together, which is in itself not an easy task. At the moment, the project has 116 people officially employed representing

29 different nationalities. Understanding the brain is one among the most important Big Data challenges we've today. After years of theory and experimentation, simulation is that the evolved phase of the many of the sciences and engineering fields. Simulation neuroscience is prime to understanding the brain as a posh multi-scale system.

**- Tanmay Arulekar  
Bhavesh Bodke.**



# OM

## THE SPIRITUAL SOUND

Accepted by World & Scientific Proven regular chanting of Om mantra gives an experience of relaxation, specifically citing beneficial changes within the autonomic nervous system which regulates pulse, vital sign, metabolism, and other internal functions, and deactivates limbic system regions. Meditation is important for citizenry to return out of psychological state problems. OM may be a spiritual mantra that detach the whole mental pressure. It's an ancient mantra that's utilized in Hinduism and Buddhism, among other faiths.

The sound of OM is claimed to contain the whole universe. It's the primary sound from the start of your time and it also encompasses this and therefore the future. OM may be a seed mantra, or a one-syllable chant. Possibly the quintessential Sanskrit mantra thanks to its vibrational nature OM is simply the maximum amount vibration as sound. It's said to be the sound of the creation of the universe. Scientifically seen when the Om mantra is chanted, the frequency of the vibrations is claimed to be 432Hz which happens to be the vibrational frequency of everything within the universe.

Although usually written as OM, the mantra is more accurately written as A-U-M, for the sound of "o" is made by the combined sound of AU. Consistent with the Vayu Purana, OM is that the representation of the Hindu Trimurti and represents the union of the three gods, viz. A for Brahma, U for Vishnu, and M for Shiva. The mantra is really more like: ah-oh-mmm. The letter A represents the waking state, where we start. U symbolizes the dreaming state, through which we all

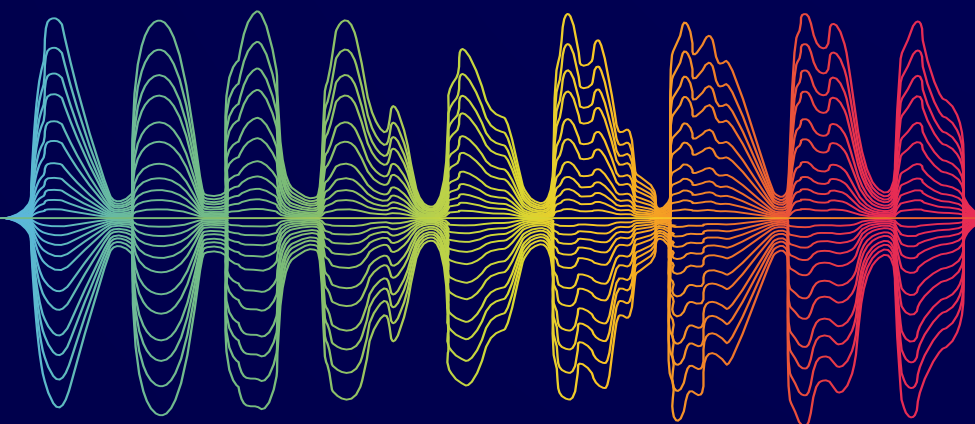
pass. And M represents the inner mind, which is accessible in fleeting moments. Importantly, the silence between each OM is as important because the sound. In Islam, Om mentioned as Samaa. Samaa is that the hum that helps you discover a spiritual reference to Allah. In Sikhism, Omkar is that the only truth. Om is auspicious and its chanting helps us in achieving harmony. Thus, OM is that the transcendental reverberation that carries magic which will free your mind from material conditioning.

The time-frequency has concluded that OM chanting affords steadiness within the mind scientifically. It provides calmness and peace to the stressed mind. Researchers have observed brain activity during the OM periods that was almost like that created by vagus stimulation, which is employed to treat depression and epilepsy. Scientists concluded that chanting OM may have potential within the treatment of major clinical depression. Although these results are considered preliminary, they provide scientific support for the positive effects many of us experience from chanting OM.

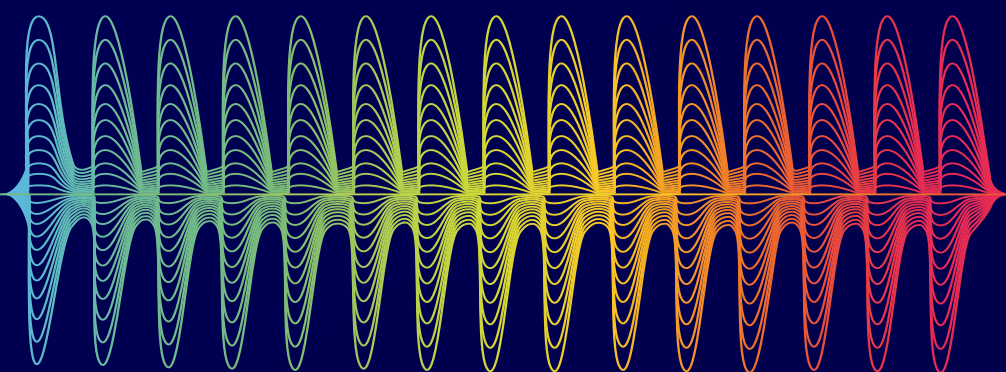
A professional recording of the Divine sound chanting OM was obtained and used for further scientific investigations. During the OM chanting, our mind focuses on the repetition of OM chanting. Moreover, this practice helps us to succeed in steadiness. The frequency of the mantra signal achieves steadiness following endless chanting. This specifies the attainment of the stability within the mind of an OM chanting person. This provides calm and peace to the stressed mind. The mental stress of an individual gets reduced while the mind reaches steadiness. Also concentration improves.

**- Bhavesh Salavkar  
Bhavesh Bodke.**

Chanting of OM by a person



Chanting of OM by a person after some days of chanting





# Chinese censorship

**Strict Strict Strict!!!**

In 2000, President Bill Clinton said China's attempts at censorship were "like trying to nail-0 to the wall". But China's government has proven very adept at censoring the internet and media. So, what do they restrict? Well anything that questions or threatens the ruling party, including any political, religious and cultural information.

## Internet and media censorship facts...

The government asserts that it has the legal right to control the internet's content within the territory. China defends their practice of censorship, based on protecting the people. This affects both publishing and viewing online material. Methods were used to block foreign websites so that uncensored, potentially regime-threatening information is out of the reach of citizens. Would providing uncensored access to the internet lead citizens to seek out politically sensitive



information???? Well we typically assume no because of lack of interest in politics, fear of government reprisal, or unawareness or mistrust of foreign media outlets. New laws have been passed that codify media controls enable more surveillance and increase penalties for political or religious expression.

A doctor who was accused of "spreading rumours" and silenced after sounding the alarm over the coronavirus outbreak in Wuhan. People mobilizing online, to oppose censorship of the news about the virus outbreak, which has so far taken over a thousand lives and later on created silence on the negative coverage. Online posts and hashtags related to the coronavirus were quickly deleted. Journalists and activists were harassed by authorities for sharing information about the coronavirus on social media. Fighting to get the message out in the country that aggressively censors information.

## Censorship reaches a global export...

Citizens of People's Republic of China (PRC) were accustomed to think and access of Chinese state as primarily domestic, enacted through the so-called "great firewall". A blocking technology that prevents citizens from viewing websites outside the country. In full view of the rest of the world, China is showing its hand, and revealing the tools it can use to silence dissent or criticism.

**- Sachi Kumari & Sunidhi Jain.**



# Time Travelling Through Wormhole.

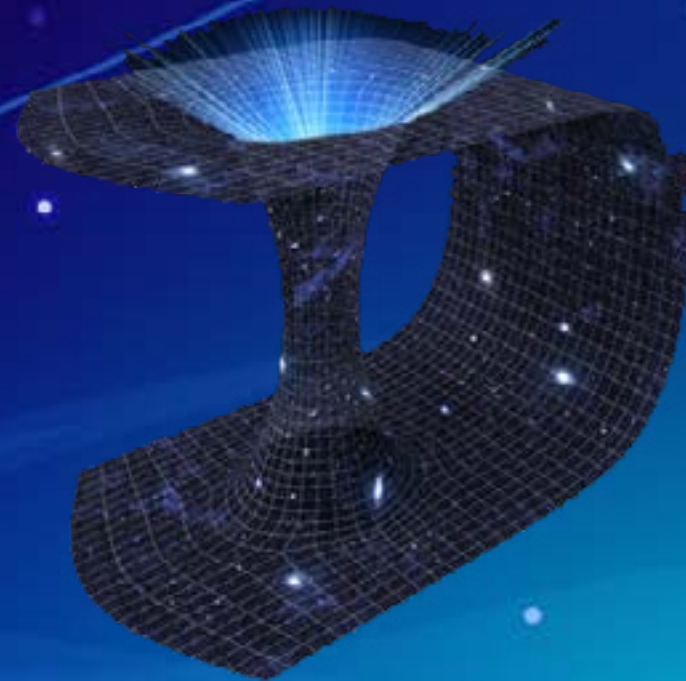
A Wormhole may be a structure which may link the 2 parts in space-time. A Wormhole could even be referred as a tunnel with two opening ends within the two dimensions of your time linking two timezones together. (i.e., different points in time, or both). Wormholes are considerably hooked in to the overall theory of relativity, but whether wormholes actually exist remains a mystery. Many scientists theories,books and postulates state that wormholes are just a projection of a Fourth Spatial Dimension

A wormhole is capable of connecting very long distances in space i.e million light years or quite that, small distances including several meters, different universes, or different points in time. The image showed that by creating two entangled black holes, then pulling them apart, they formed a wormhole.

WORKS ON THE PRINCIPLE OF GRAVITATIONAL PULL.

## Schwarzschild Wormholes: -

The very first and only sort of wormhole was discovered by the Schwarzschild wormhole, which was also claimed to be the eternal dark place, afterward it had been found that it anything passing through one end to the opposite would collapse too quickly. Wormholes that would be travelled through both ends is understood as traversable wormholes, also it might be only possible if exotic matter having negative energy density might be used.



## Traversal Wormhole:-

Time is connected differently through the wormhole than outside it, the time inside the wormhole might be slower than the timezone outside it Or it might be the fast ; the time span could either be as one second resulting in one year or one light year. Since no human body is capable of bearing the energy and force exerted on them, previously physicist successfully sent the electron sized particles called muons by changing their gravity pull around them.

Since traversing of human body through the wormholes has never been a successful experiment it cannot be claimed that time travelling is possible through it, as the body might not be able to take the pressure of high cosmic ray particles (HECR's).

Such wormholes in the galaxy posses various types of energies that sometimes in rare cases keeps them stable and giving them ability to connect to timezones together.

**- Akash Tiwari &  
Siddhesh Upadhyay.**





# Youth

## The Source of Endless Energy

### What is youth and how is it defined?

Youth is the new definition of changing times, as full of sparks and it burns everything it touches. They are enthusiastic, vibrant, innovative and dynamic in nature which is most important section of the population. This is well said by Joe that if young ones nourished properly, can grow like a huge redwood tree but if not controlled or neglected can erupt like a volcano.

### Youth as Innovator...

Youth are creative digital part that include communities and they participate as active citizens, eager to positively contribute towards sustainable development. They are the ones who can easily learn and practice the power of spirituality. They follow a campaign to achieve global goals to end poverty, inequality and climate change. Moreover, we can find their participation in education, politics and sport fields which empowers the country. Their work towards social campaign and economic development leads to the progress of the nation. This section of the population needs to be harnessed, motivated, skilled and streamlined properly to bring rapid growth of the country.

### Major issues concerning youth.

- o Education
- o Employment
- o Civic engagement
- o Migration
- o Sports
- o Politics
- o Social campaign and economic development

### Youth Ki Avaaz!!

### Are you familiar with it?

Yka was introduced in 2018. It's a campaign with single largest forum for young Indians to discuss, deliberate and allow them to take action on issues that they are passionate about. Stories that matter and cover Indian news, politics, pop culture, arts, led to policy change and more importantly enhanced youth participation. Although yka is award-winning platform that serves as the hub of opinions and reportage on the world's most pressing issues, as witnessed by the current generation. Thus, if it gets a meaningful and correct direction, the youth have capacity unmatched by anyone.

You are only young once, and if you work it right, once is enough

- Joe E. Lewis

- Sachi Kumari &  
Sunidhi Jain.





# Why Digital Twinning Is Important

A digital twin may be a virtual reproduction of a physical product, process, or system. It acts as a bridge between the physical and digital worlds by victimisation sensors to gather time period information a couple of physical item. This information is then wont to produce a digital duplicate of the item, permitting it to be understood, analysed, manipulated, or optimized. Different terms wont to describe the technology over the years have enclosed virtual prototyping, hybrid twin technology, virtual twin, and digital plus management.

Digital bipolarous is obtaining attention as a result of the conjointly integrate things like AI (AI) and machine learning (ML) to bring information, algorithms, and context along, sanctionative organizations to check new concepts, uncover issues before they happen, get new answers to new queries, and monitor things remotely.

Digital Twin thought is that the next massive factor in most of the business sectors, that helps in accurately predicting this state and way forward for physical assets by analysing their digital counter components.



## Applications of Digital Twins:-

### Manufacturing:

Digital Twin is poised to vary this face of producing sector. Digital Twins have a major impact on the manner product area unit designed factory-made and maintained. It makes producing additional economical and optimized whereas reducing the outturn times.

### Industrial IOT:

Industrial corporations with digital twin implementation will currently monitor, track and management industrial systems digitally. Excluding the operational information, the digital twins capture environmental information like location, configuration, money models etc.

### Automobile:

Digital Twins are often employed in the auto sector for making the virtual model of a connected vehicle. It captures the activity and operational information of the vehicle and helps in analysing the general vehicle performance additionally because the connected options. It conjointly helps in delivering a really personalized/ made-to-order service for the purchasers.

### Future of Digital Twinning:-

For firms and organizations that already use IoT, digital twins area unit ensuing step on the digital journey. They will be wont to improve efficiencies, optimize processes, observe issues before they occur, and initiate for the long run. If your organization is inquisitive about manufacturing not solely higher business outcomes, however conjointly higher outcomes for everybody, digital twins area unit price exploring.

- Aakash Verma &  
Vishal Pandey.



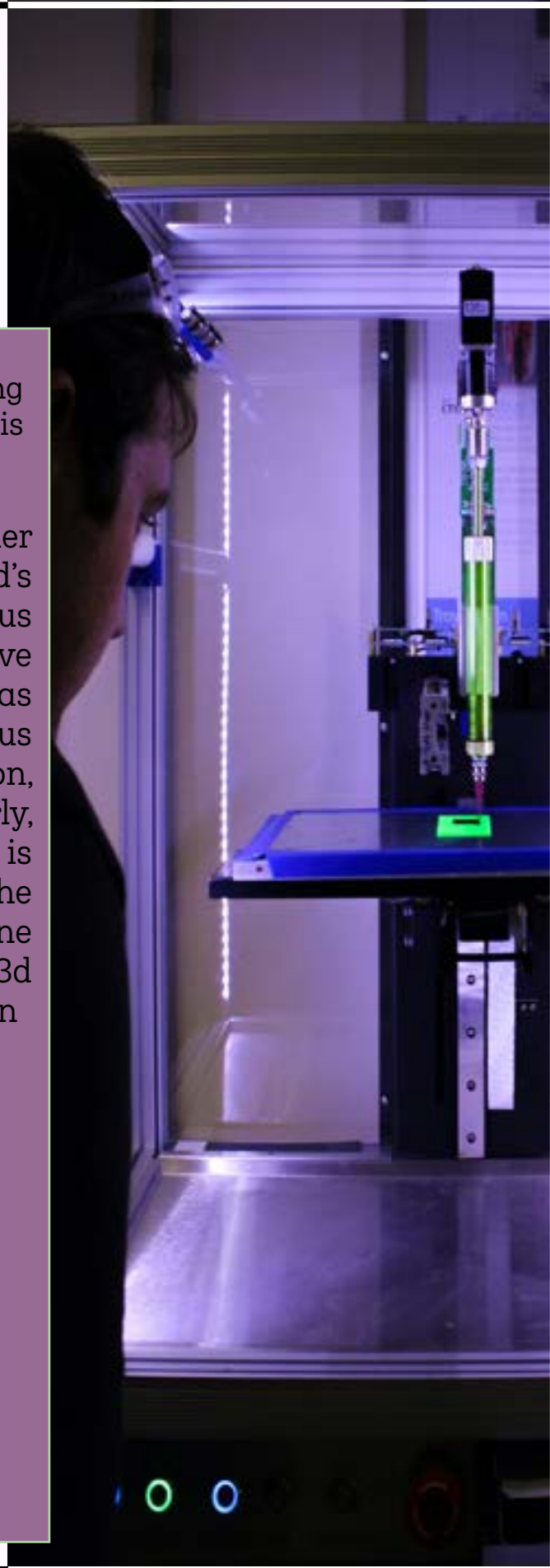
# 3D PRINTING TECHNOLOGY

The technology which is used for printing physical 3d objects from digital out is called as 3d printing technology.

In 1983 an Australian Researcher Chuck Hull have created world's first 3d printing technology. Various countries like US, Europe, India have adopted this type of technology. It has been used in a wide range in various fields including dentistry, fashion, educational institutions etc. Similarly, In India Makemendal company is the first company who adopted the 3d printing technology. India is one of the most leading nations using 3d printers, 3d scanners, 3d pens, etc. in various fields.

## There are 9 types of 3d printers are as follows:

Fused Deposition Modelling (FDM), Stereolithography (SLA), Selective Laser Sintering (SLS) are the most common 3d printers which are used in various fields like business, consumers, engineering industries etc.

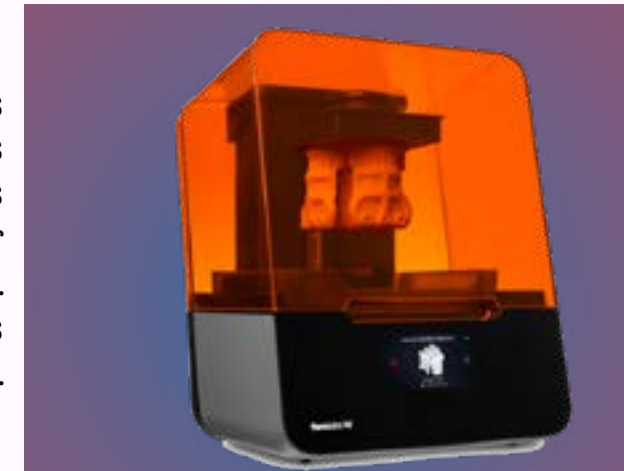


## Fused Deposition Modelling

FDM is the most common form of desktop 3d printing and it uses thermoplastics for excellent mechanical, thermal and chemical attributes. This form of 3d printing is most cost effective and small business to create parts quickly and effectively. It is the key way for the engineering & design department which is used currently in both affordable 3d printers as well as in 3d pens. FDM is widely spread in various industries like automobile manufactures, food producers, toy manufactures etc.

## Stereolithography

SLA is the oldest additive printing technology. This printing method is used to execute the projects that involve the 3d printing items. These machines do not act like desktop printers. It exposes a layer of photosensitive liquid resin to a UV laser beam. 3D printers usually have smooth surfaces but its quality depends upon the quality of SLA printer used.



## Selective Laser Sintering (SLS):

SLS is the technique that use laser as a power supply to form strong 3d printed objects. SLS printing technique uses a laser to solidify & bond grains of plastic, ceramic, glass, metal or other materials into layers to produce 3d objects and the major benefit of this technique that it does not require any support to produce complex designs. It is also known for its rapid production. In India Best 3d printers are widely used in industries such as:

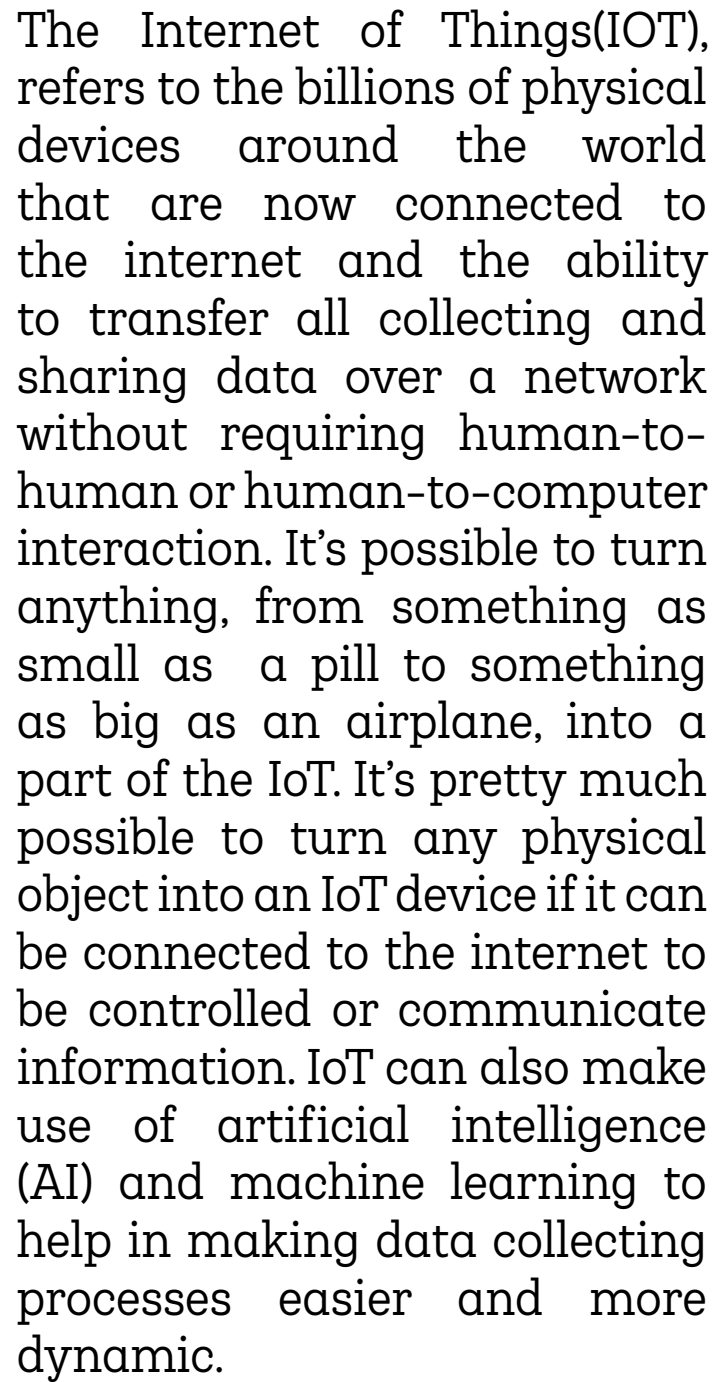
3D Bazaar Printer, Robocraze Creality 3D Printer, 3D Idea Imagine Create 3D Printer, Anet A8 Printer, 3D Bazaar Elegoo Printer.

## Applications:

3D printers are used to manufacture moulds for making jewellery, models of arts and dolls or consumable art such as 3D chocolate. 3D printing is used in various sectors from education to industry. 3D printing service can help us to develop faster, better and improved business. 3D printing is becoming popular in all over the world.

**Kapil Anil Sharma & Aditya More.**





## How IoT works:

## 5G:

network isn't supported. The solution to the present question is 5G. The mixture of IoT and 5G will lift up to the smart city with smart lights, smart sensors. We've self-driving cars but with 5g network, cars can communicate with other cars, street lights, and sensors. Remote Robotic Surgeries become easier when 5G will come. Instant action is feasible from the 5G network. 5G network is extremely useful for gamers, no lagging, and comfortable online streaming.

– Sandeep Rathod.

# RECESSION

**R**ecession a word that has a powerful impact on the world. A word that has an impact on the major economic activities of the world. A country in a recession may expect an environment where there is no manufacturing of goods or stock. It's mainly because there is no money left for the countries to manufacture goods, sell products, pay the landlords, etc. This situation has arisen many times in one of the superpowers of the world that is the USA. Facts suggest that the "GREAT

DEPRESSION" was one of the worst-hit attacks of recession which spread out globally in the 20th century (1929-1930). Experts say that a recession lasts for 11 months, it depends on how many months it may last. Sometimes it may last not more than 3 months and sometimes continue till years. Talking about "The Great Depression" this recession lasted for 43 months (3yrs, 7 months) which was never a hinted recession. It was expected that this recession occurred when the market lost almost all its investors. These intense starving

days can be explained very well by the changes in eating habits where it mentioned was mentioned that people ate hoarding pieces of foil, lettuce leaves with sugar. The Great Depression was also named as Black Tuesday. The unemployment rate almost hit by 25%.

We still remember the 2006 housing market crisis which created havoc in the USA and the whole world. Economic recessions are not new in world history which creates tsunamis in the economic activities in the whole world.



## The Credit Crisis of 1772

The Boston Tea Party. By the Boston boys. This famous crisis of economic recession arose in the 18th century was a time when the United Kingdom empire had a lot of money invested in their colonies all around the world. The Credit Crisis demanded a lot of loss to the economy as a lot of creditors queued up outside banks to take their money. The recession began on 8th June when Fordyce fled to France to avoid debt repayment, and the resulting collapse of the firm stirred up panic in London.

## The OPEC Oil Price Shock of 1973

Oil always plays an important role in the country's economic growth. The rate of crude oil from Arabian countries is something where people keep a watch. OPEC (Organization of Petroleum Exporting Countries) stopped providing oil to the USA. This was the time of deep economic crisis as oil is required in almost all activities including construction, vehicular movements and without these, the pillars of the country weaken and creates havoc. Oil has become the most important source of energy since the mid-1950.

## The Asian Crisis of 1997

## The Financial Crisis of 2007-2008

Many such recessions are expected to come ahead in the upcoming years. If people could survive these, we are strong enough to survive the upcoming ones. Keep an eye on "The Wall Street", "Nifty", "Sensex" any many more markets

**- Bhavik Dewnani.**



# DIGITAL



It is well stated by Father of digital marketing “every decision that a growth hacker makes is informed by growth. every strategy, every tactic, and every initiative, is attempted in the hopes of growing. growth is the sun that a growth hacker revolves around.”

## Let's list down the top 5 reasons as to why the future of digital marketing is going to be bright in India.

1. Drastic changes in traditional marketing
2. Small towns getting digitally equipped
3. Government's "Digital India" Initiative backs up
4. Reaching global markets.
5. Institutions coming up with Digital marketing courses.

The term digital marketing was first used in the 1990s. In 1993, the first clickable banner went live, after which hotwired purchased a few banner ads for their advertising. this marked the beginning of the transition to the digital era of marketing. because of this gradual shift, the year 1994 saw new technologies enter the digital marketplace. The digital marketing world saw its first steep surge in 2006 when search engine traffic was reported to have grown to about 6.4 billion in a single month.

Soon, social networking sites began to emerge. MySpace was the first social networking site to arrive, soon followed by Facebook. Many companies realized all these fresh

new sites that were popping up were beginning to open new doors of opportunities to market their products and brands. Products marketed digitally are now available to customers all time it is observed that most of the digital marketers use social platforms like 99% of Facebook, 97% use Twitter from this we came to know top three social media platforms are used by marketers are LinkedIn, Twitter, and Facebook.

As we can see that the mobile which is going on the market and skyrocketing. So, looking at this thing, every service that he provides to the people should be delivered through the internet as a source.

## How does digital marketing works

Online marketing works by strategy that support our target audience. That means your business uses multiple channels, like social, email, and search, to support an overarching strategy, like generating brand awareness, leads, or sales.

### For example:

Vlogs, website, links, emails, media.

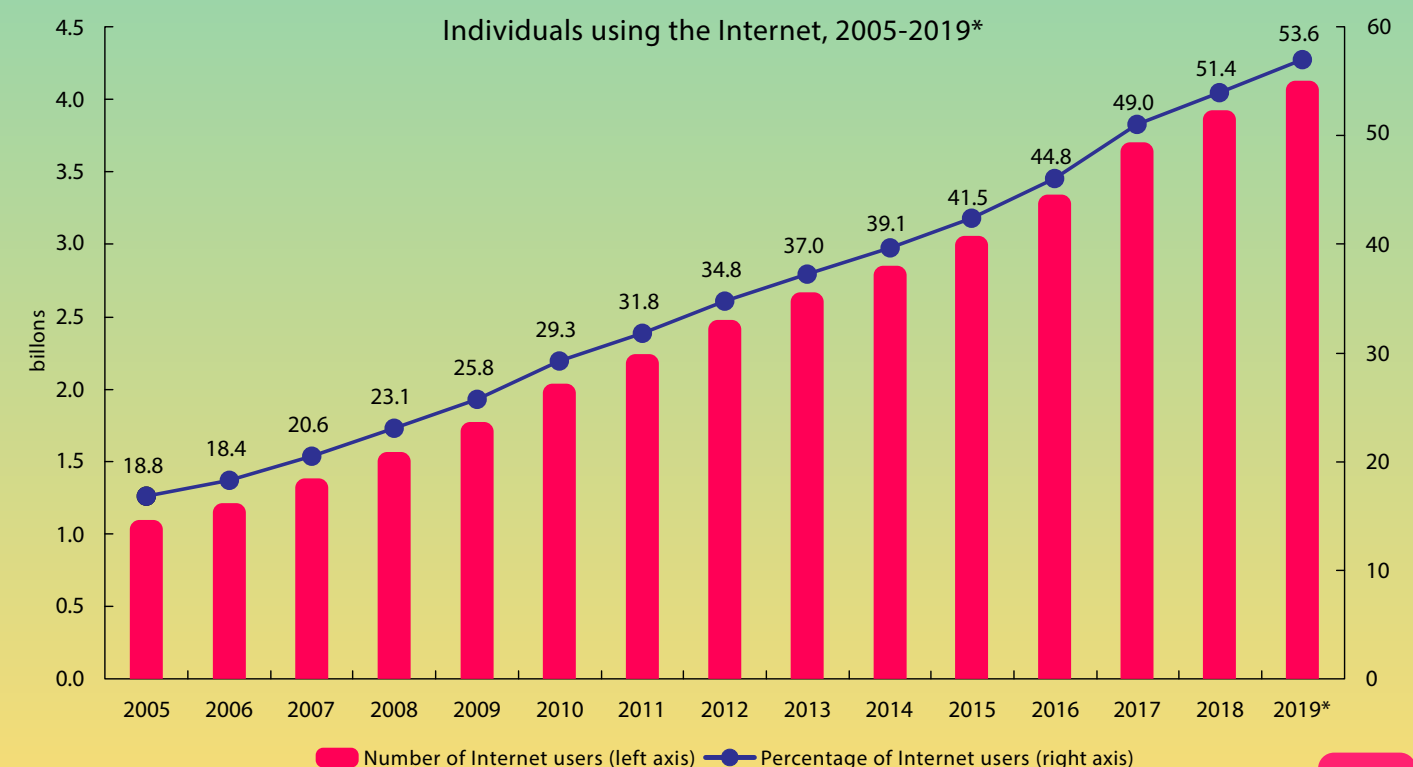
\*How we can safely use digital marketing in Today world.

- 1-Buy a product from trusted and genuine apps or website.
- 2-Do not go through any unauthorised links or website.
- 3-Read carefully apps guidelines and agreement. After installing app.
- 4-Sell your products on authorised and genuine companies app or website With Terms and condition. \*\*\*

The scope is wider when it comes to digital marketing. Digital marketing will remain as the most powerful way of marketing in the future.

So, if you are thinking ought to or not no, it's indeed right time for you to go digital!

– Urvashi Rohra & Zoya Khan.



# Robotic Process & Automation

The “robot” in robotic process automation is software robots running on a physical or virtual machine. RPA refers to software which will be easily programmed to try to do basic tasks across applications even as human workers do. The software robot is often taught a workflow with multiple steps and applications, like taking received forms, sending a receipt message, checking the shape for completeness, filing the shape during a folder and updating a spreadsheet with the name of the shape, the date filed, and so on.

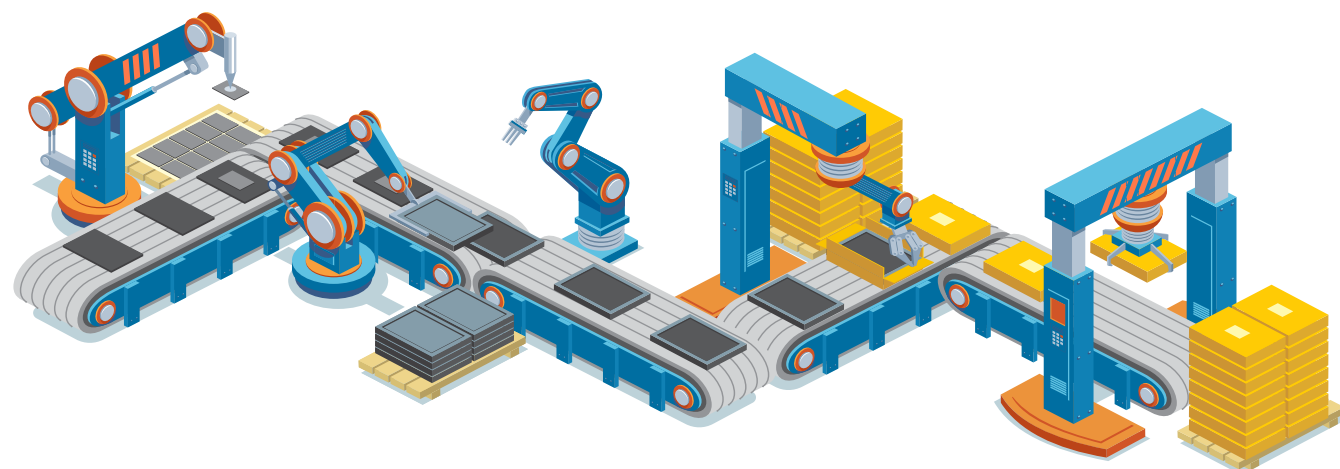
## Applications of RPA in Business: -

### 1) Retail:-

The Retail Industry involves many processes of RPA. In e-commerce, for placing an order, for Instance, and shipping statues-updating customers details when an order has been placed all the way through to expected delivery But RPA at some point won't have a great effect in Retail measurement.

### 2) Banking:-

We all know that recently digital innovations are being processed but still in the Banking Sector many lengthy processes take place which is not easy to handle. That is why RPA implementation becomes the territory to make Banking Ideal.



### 3) Insurance:-

In an Insurance Industry, RPA plays a key role because as we all know there are many prolonged, numerous steps that claim processes and documents heavy workflows that ought to be done.

### 4) Human Resources:-

HR is perhaps a permanent feature of all Businesses. So because the Business Grows, the larger it's HR department grows, and hence many processes have got to be taken place for its employees to regulate and manage. In many industries, still, human power is been used for working. This leads to a lot of time consumption. If this will get replaced with RPA, will make working faster with improved perfection and efficiency rates.

### Future of RPA: -

We're just at the start of the 4th industrial wave. Subsequent level of automation is going to be unlocked when machine learning capabilities and AI become smart enough to deploy RPA intelligently. It's a neighbourhood that must be orchestrated within the context of that broader vision, alongside other tools that deliver what RPA alone cannot: visibility, intelligent optimization, and an immediate impact on overarching business outcomes.

**-Aakash Verma & Siddhesh Upadhyay.**



### Business Impact of RPA In Future:

A decade could also be a short time to predict and RPA could also be a comparatively new and evolving industry. But RPA has proven its value and may still grow fast. Variety of the primary hype will settle down within the approaching years, and thus the technology landscape will become richer, with a variety of the massive early players fading to the background.



# COVID -19

## Warriors, Negative GDP & Positive effects

Ever since the Covid pandemic hit the world, almost all normal human life came to a standstill. Everyone was panicking, reaching out to their loved ones and fearing for their life. Some say they got a much-deserved break for themselves to sit at home and chill. But guess who didn't get a break?

Our doctors, nurses, BMC workers and very own Mumbai police. It breaks my heart to see some police officers, nurses and doctors having to leave their young children and families at home and reporting to work. It is absolutely devastating to see that despite them doing their thankless jobs to perfection, I saw images of people beating up police officials and covid positive people spitting on nurses.

Today when we wake up watch the news, we realise that majority of covid positive patients are these brave policemen, nurses and doctors, workers who stood up to serve their country. They have been diligently doing their duties despite having a family of their own. I can only say, today all those people who were pelting stones and hurling abuses at doctors and nurses have realised that doctors and nurses are the real army of the country. While all of India sits at home and takes safe shelter, doctors and nurses are out there saving lives! They are the real heroes of our society there actions are heroic. We salute their efforts and sacrifices in these difficult times and we promise to always stand by you. Aapko Salam! Jai Hind ...

**- Yash Parab & Yash Yadav.**

Corona pandemic had a deadly impact on the already tensed situations of the world. Anyway, the inevitable trade war with a global recession in 2020 got drastic support by this pandemic leading many people jobless, homeless, and left people shaken. A recession was already expected anytime between 2020 to 2022. However, the data provided by RBI "GDP growth in 2020-21 likely to be negative: RBI Governor" exact words is shocking as the country downslides its economic growth the first time since 1979. Now the pledge to boycott Chinese products, in the long run, is not as

Now expecting something on the positive aspects of corona" We can see the Himalayas for the first time in 30 years' - from India to Venice, the beautiful side effects of the coronavirus pandemic". "The health of Ganga River has seen significant improvement since enforcement of the nationwide lockdown that has led to a reduction in the dumping of industrial waste into it, water pollution and air pollution are reduced, experts have said. "It's oxygen level also increasing from 6 mg/ltr to 8.5 mg/ltr. traffic jams are reduced to a great extent But coming back to the point we need to know that "If we can make the correct diagnosis the healing can begin if we can't both our health and economy are doomed "And anyways people believe in the power of hope which gives them the strength to survive each day and expects a better day tomorrow.

**- Bhavik Dewnani & Mahesh Kori.**





# VIHAAN 2K20 E-WASTE DEDUCTION

VIHAAN isn't just an occasion. It's a festival for the computer science department of VES College of Arts, Science and Commerce. This year, the CS department hosted another successful version of its annual techfest. The theme for VIHAAN '20 was E-Waste reduction. Electronic gadgets such as cables, headphones, cassettes, mouse, etc. which were of no use were collected and submitted to the E-waste collection center. VIHAAN '20 which was conducted on 7th and 8th February 2020 hosted technical as well as non-technical events.

## Quotes

Technology is nothing, what's important is that you have faith in people, that they're basically good and smart, and if you give them tools, they'll do wonderful things with them.

- Steve Jobs

The motivation behind conducting VIHAAN'20 fest is to provide a platform for all students who have a skill hidden inside themselves. It provides opportunities for students to think out of the box and do something different and use their imagination to the full extent. VIHAAN '20 with support of students of the first year, second year, third year along with the faculty and staff members became a successful event.





## How good are you in technical and non-technical skills??

VIHAAN '20 had many events which included technical events as well as non-technical events. These events were designed to test your technical as well as non-technical skill

## EVENTS



### FREEZE THE MOMENT:



It was a non-technical event where a photography based exhibition was hosted where students would get to present their photography skills. It had 3 rounds. The selected entries through our Instagram page had to come to college and click photos in the college premises and give a presentation on their photographs. Mr. Mayur Chabria judged all the entries and selected 3 best entries based on their Photography and Editing Skills.



### POSTERIA:



Posteria was a poster making competition where participants would present their ideas in the form of posters and how they would implement their ideas on the given theme. The students had to submit their entries to VIHAAN through email and the selected ones had to give a brief presentation on their poster on the day of the event. Dr. Devidas Gulawade evaluated the participants based on their ideas and imagination and 3 winners along other participants were awarded.

**-conducted by Abhishek Gawade.**



### MAKE IT WORK:





It was a technical debugging event where participants had to find errors in the given code and debug it. The event consisted of two rounds where students had to first debug a given code and then had to write code according to the given problem statement. This event was conducted to test the coding skills and technical knowledge of the participants.

**-conducted by Tanya Talreja and Shweta Katkar.**



## MAD ADS:



Mad Ads was an event where the participants had an opportunity to showcase their marketing skills as well as their presentation skills. The whole event was divided into 3 rounds. Based on the cumulative performance in all 3 rounds, the top 3 teams were declared winners. All in all, it was a successful event.

**-conducted by Pooja Lalchandani.**



## GRAMMAR GURU:



This year, a new event was introduced called Grammar Guru and it became very popular with the participants. This event was targeted to test the Grammatical and Literary skills of the participants. Ms. Sneha Hariharan, our own alumni judged the event and it was a great honour to have her as the judge in this event. There were 3 rounds to test the participants. It was considered as a fun event by the participants.

**-conducted by Pritish Chatterjee.**



## GAME OF CODES:





Game of codes was an inter-collegiate technical treasure hunt event where the participants had to solve the quizzes which were based on programming languages to move to the further rounds of the event. The quizzes were based on Python, C, Java, and HTML. There was active participation of students from Vivekanand Junior College and many other colleges. There were a total of 9 teams.

**-conducted by Hrishikesh Sawant.**

## SEMINAR ON BLOCK CHAIN:



In this fest, the department organized a workshop on the technology called BlockChain by Anvira Edustation. It was conducted by Mr. Aniket Kal and coordinated by Mr. Rahul Puri. The goal behind conducting this event was to introduce the concept of BlockChain to students and create enthusiasm among them.

## INTROVIEW:

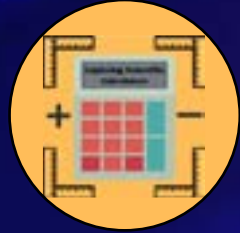


Introview was the star event of VIHAAN'20. Introview is an interactive session where eminent personalities share their struggles and achievement stories and their advice for the students in their area of expertise. This year we invited SSLR Consultancy Chairman Mr. G Rameshkumar, Environmentalist Mrs. Rashmi Joshi, and Mr. Niranjana Oak as our panelists. It was truly an inspiring session where we got to know about the life and success stories of our guests.



This was the first time in VIHAAN that we conducted Prelude events prior to our fest. It was to generate excitement and enthusiasm for the college's students about VIHAAN. We had various Prelude events as follows:

## PRELUDE EVENTS:



### I. SCIENTIFIC CALCULATOR:

Our first Prelude event, Scientific Calculator was held on 1st of February 2020. It aimed at giving basic knowledge and providing tips on how to use a scientific calculator in the most efficient manner.

**-conducted by Pritish Chatterjee and Ashma Kader.**



### II. STARTUP TALK:

Startup Talks was our 2nd prelude event held on 4th February 2020. It gave a brief description of the problems, experiences, and workload involved in a startup and some startup ideas that the students would think of. It helped the students explore the entrepreneur in them.

**-conducted by Pooja Lalchandani.**



### III. CODE MASTER:

It was an online prelude event that was held on VIHAAN's official Instagram page. The followers had to answer code related quizzes and the winners were given direct entry to our Make It Work event. 105 online users of Instagram participated in this event.

**-conducted by Shweta Katkar.**

## GAME ZONE:-

This year also saw the introduction of the Game Section in the VIHAAN fest. The games were developed by our own department students. The game section saw a lot of participation, especially from Junior college students. There were 4 different games in the Game Section.

### (I) IOT CAR RACING:

This game was similar to the remote control car. The car was made by our department students using IOT devices. Instead of remote, they made an App to control the car.



**-conducted by Pritish Chatterjee & Hritik Bhatt.**



## (II) LIGHT IT UP:



The second game was lighting up the LED. In this, the students had to answer some technical questions to light up every Led of alphabet V.

- **conducted by Tejal Rahate & Varsha Jayaswal.**

## (IV) TIC-TAC-TOE:



This game was similar to the traditional X & O games but for placing each X/O you had to answer a mathematical question. If your goes right, your turn to mark X/O else the chance shifts to the opponent player.

- **conducted by Hemangi Kodag, Siddhi More & Kirti Kapei.**

## (III) SIMON GAME:

The game was fully based on memory which was very interesting. The game creates a series of lights and requires a user to repeat the sequence. If the user succeeds, the series becomes progressively longer and more complex. Once the user fails or the time limit runs out, the game is over.

- **conducted by Sayali Pawar & Pooja More.**

- **Sandeep Rathod**





## VIVEKANAND EDUCATION SOCIETY'S College of Arts, Science & Commerce

NAAC Re-Accredited 'A' Grade

### Designers :

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VESASC CSDEPT

"If future generations are to remember us more with gratitude than sorrow, we must achieve more than just the miracles of technology. We must also leave them a glimpse of the world as it was created, not just as it looked when we got through with it."

- Lyndon B. Johnson,  
Former President of the United States of America