



INFOFLAME

Karpagam

College Of Engineering



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2021-22

INFORMATION TECHNOLOGY

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Programme Educational Objectives (PEOs)

PEO1: Graduates will be able to comprehend mathematics, science, engineering fundamentals, laboratory and work-based experiences to formulate and solve problems in Computer Science and Engineering and other related domains and will develop proficiency in computer-based engineering and the use of computation tools.

PEO2: Graduates will be prepared to communicate and work effectively on the multidisciplinary engineering projects practicing the ethics of their profession.

PEO3: Graduates will realize the importance of self-learning and engage in lifelong learning to become experts either as entrepreneurs or employees in the field to widen the professional knowledge.

Programme Outcomes (POs)

Engineering Graduates will be able to:	
PO 1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	Design/ Development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO 6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO 7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Outcomes (POs)

PSO 1	Ability to organize an IT infrastructure, secure the data and analyze the data analytic techniques in the field of data mining, big data as to facilitate in solving problems.
PSO 2	Ability to analyze and design the system in the domain of Cloud and Internet of Things.

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VISION

To become one of the best institutions at the National and International level by incorporating innovative teaching -learning methods to enable the students to secure a high-value career, motivate to pursue higher education and research to serve the society





Mission

To bring out knowledgeable engineers and professionals in their field of specialization by having trained and qualified faculty members and staffs besides necessary infrastructure and to create highly conducive teaching and learning environment.



To work in. close association with stakeholders by the way of enhanced industry-institute interaction, to take up need based and industry specific programmes.



To organise co-curricular and extracurricular activities for character and personality development to produce highly competent and motivated engineers and professionals to serve and lead the society.





ABOUT THE DEPARTMENT INFORMATION TECHNOLOGY



The Department of Information Technology was started in the academic year 2001. The Department is located in a newly constructed 70000 Sq.ft state-of-the art information Sciences Block. The block also houses a separate Laboratory block and one open Air Theater to seat 500 students.

The Department is equipped with excellent computing facilities. The Internet facility is extended to the students free of cost. The laboratory hours have been extended to enable students work on independent projects and to gain hands-on experience. The department is adorned with well-qualified faculty and technical staff members. Curriculum and Syllabus is upgraded with the feedback from all stakeholders from time to time for the benefit of students. The Potential skills of the students are improved by encouraging them to prepare technical articles for the department magazine.

Centers Of Excellence



INFOSYS CAMPUS CONNECT



MISSION

- Advanced Partner College status and rated among TOP 3 performers under Infosys, Chennai.
- 2000+ students have been trained in 9 technical modules of Infosys so far.
- During the last 3 years, 222 students had undergone internship at Infosys.

STUDENT ACTIVITIES

Bitcoin miners now have a tool to verify their machines' hashrate

Like most third-party verifiers, the tool, *HashTest*, is working to answer a common question for buyers and sellers: How does something actually work versus how it's advertised?

In the bitcoin mining context, it's important because there are few ways to verify how a machine is actually performing when plugged in and running at a mining site. That data is usually kept private by mining companies.



"HashTest is a tool we have created for everyone to identify independent and unbiased information regarding an ASIC," Compass Mining CTO Paul Gosker said in a statement, referring to the application-specific integrated circuit machines that power most bitcoin mining operations. **"HashTest will allow sellers to demonstrate the performance of an ASIC to a buyer."**



19F206
Balamurugan P

STUDENT ARTICLE



APPLE WATCH SERIES SE



**Best cheap Smartwatch
for iPhone owners**

REASONS TO BUY

Excellent fitness-tracking features
Faster Siri
Apple Music streaming with LTE
Affordable

REASONS TO AVOID

Still just 18-hour battery
life (even shorter when
connected to LTE)



LETSFIT 2 SMARTWATCH



**This 3000RS smartwatch
will surprise you**

REASONS TO BUY

Great battery life
Bright, easy-to-use display
Lots of notifications and alerts

REASONS TO AVOID

Not as accurate as top-end
fitness trackers



SMART WATCHES* & FIT TRACKERS UNDER ₹15K

Featuring first on the list is AMAZFIT GTS Smartwatch. It is a unisex smartwatch that comes with many cool features. As this smartwatch is available in different finishes and colours, it caters to people having different tastes. This watch's display technology is AMOLED, so it offers sharpness and richness to the screen. This smartwatch provides a 14-day battery life and 4GB storage capacity. So, you can easily store all your cherished memories.

The smartwatch offers special features like heart rate monitoring, a 24*7 activity tracker, 5ATM water resistance, and 12 sports modes. The watch is made using Aluminium material and is available in various colours such as Rose Pink, Black, Steel Blue, Gold Grey, and Vermillion Orange. With this watch, you will get two connectivity options like Bluetooth and Wi-Fi, Android and iOS compatibility, and one year warranty.



Deepan P
19F109



BLOCKCHAIN TECHNOLOGY

A blockchain is a distributed database or ledger that is shared among the nodes of a computer network. As a database, a blockchain stores information electronically in digital format. Blockchains are best known for their crucial role in cryptocurrency systems, such as Bitcoin, for maintaining a secure and decentralized record of transactions. The innovation with a blockchain is that it guarantees the fidelity and security of a record of data and generates trust without the need for a trusted third party.

One key difference between a typical database and a blockchain is how the data is structured. A blockchain collects information together in groups, known as blocks, that hold sets of information. Blocks have certain storage capacities and, when filled, are closed and linked to the previously filled block, forming a chain of data known as the blockchain. All new information that follows that freshly added block is compiled into a newly formed block that will then also be added to the chain once filled.

KEY TAKEAWAYS

- Blockchain is a type of shared database that differs from a typical database in the way that it stores information; blockchains store data in blocks that are then linked together via cryptography.
- As new data comes in, it is entered into a fresh block. Once the block is filled with data, it is chained onto the previous block, which makes the data chained together in chronological order.
- Different types of information can be stored on a blockchain, but the most common use so far has been as a ledger for transactions.
- In Bitcoin's case, blockchain is used in a decentralized way so that no single person or group has control—rather, all users collectively retain control.
- Decentralized blockchains are immutable, which means that the data entered is irreversible. For Bitcoin, this means that transactions are permanently recorded and viewable to anyone.



Nandhini Shree S
19F134





Guhan T
19F118

SHOPIFY



Shopify is the leading cloud-based, multichannel commerce platform designed for small and medium-sized businesses.

Merchants can use the software to design, set up, and manage their stores across multiple sales channels, including web, mobile, social media, marketplaces, brick-and-mortar locations, and pop-up shops.

The platform also provides merchants with a powerful back-office and a single view of their business. The Shopify platform was engineered for reliability and scale, using enterprise-level technology made available to businesses of all sizes. Shopify currently powers over 800,000 businesses in approximately 150 countries and is trusted by brands such as Tesla Motors, Budweiser, Red Bull, LA Lakers, the New York Stock Exchange, GoldieBlox, and many more.



Shopify is a cloud-based solution that uses the software as a service(SaaS) model via monthly subscriptions. So, a Shopify user need not worry about upgrading or maintaining software but has the liberty to access and run the business from anywhere using an internet connection. It allows users to create and customize the look of their online store, sell on the web, mobile, Social media, and online marketplaces, and manage products, payments, and shipping.

Shopify ensures safe payment info and business data as it is PCI compliant and supports 3D Secure checkouts.

Shopify Payments eliminates setting up a third-party payment provider as it is automatically set up when you create your Shopify store.



REVERSE IMAGE SEARCH

Reverse image search is a search engine technology that takes an image file as input query and returns results related to the image. Search engines that offer reverse image capability include Google and TinEye. Some websites, such as Reddit, also provide a reverse image search capacity.

Practical uses for reverse image search include:

- Locating the source information for an image.
- Searching for duplicated content.
- Ensuring compliance with copyright regulations.
- Finding information about unidentified products and other objects.
- Debunking faked images.
- Finding higher resolution versions of images.



CONTD.

Find Names of Unlabeled Products:

If you're the type to frequent sites like Pinterest or Tumblr, you see all kinds of cool products that often aren't labeled properly. This might include something as simple as a wedding dress or as complex as a shot of someone's apartment with a cool chair.

Find Recipes from Images:

Let's say you're browsing the internet and find a picture of a meal that looks terrific, but isn't actually named anywhere. If you throw that picture into reverse image search, there's a reasonable chance you'll pull up a recipe for it if it was used in a blog post or on one of the millions of different recipe web sites. This doesn't exactly work with just snapping a picture of something at a restaurant, but it's surprisingly effective for figuring out what some random picture of a meal on a news story or blog post is.



Ashok Kumar G
19F202

Virtual Reality and Augmented Reality



The next exceptional technology trend - Virtual Reality (VR) and Augmented Reality (AR), and Extended Reality (ER). VR immerses the user in an environment while AR enhances their environment. Although this technology trend has primarily been used for gaming thus far, it has also been used for training, as with VirtualShip, a simulation software used to train U.S. Navy, Army and Coast Guard ship captains.

Augmented reality is a more recent technology than VR and shows an interdisciplinary application framework, in which, nowadays, education and learning seem to be the most field of research. Indeed, AR allows supporting learning, for example increasing-on content understanding and memory preservation, as well as on learning motivation. However, if VR benefits from clear and more definite fields of application and research areas, AR is still emerging in the scientific scenarios.



CONTD.

Higher or lower degrees of immersion can depend by three types of VR systems provided to the user:

- Non-immersive systems are the simplest and cheapest type of VR applications that use desktops to reproduce images of the world.
- Immersive systems provide a complete simulated experience due to the support of several sensory outputs devices such as head mounted displays (HMDs) for enhancing the stereoscopic view of the environment through the movement of the user's head, as well as audio and haptic devices.
- Semi-immersive systems such as Fish Tank VR are between the two above. They provide a stereo image of a three dimensional (3D) scene viewed on a monitor using a perspective projection coupled to the head position of the observer (Ware et al., 1993). Higher technological immersive systems have showed a closest experience to reality, giving to the user the illusion of technological non-mediation and feeling him or her of “being in” or present in the virtual environment (Lombard and Ditton, 1997). Furthermore, higher immersive systems, than the other two systems, can give the possibility to add several sensory outputs allowing that the interaction and actions were perceived as real (Loomis et al., 1999; Heeter, 2000; Biocca et al., 2001).

-Kishore Ahmet K H
19F222





Guhan T
19F118

Swiggy has been successfully been through its ups and downs but what has majorly contributed in the company's success is the will and dedication of its founders. The consistent efforts put in by the team to adapt to everyday changes in the trends and the passion to serve as many people as possible with a standard experience is what founders: Sriharsha Majety, Nandan Reddy and former co-founder Rahul Jaimini have believed in and inculcated into the ethics and culture at Swiggy.

On the footprints of logistics, both the founders wanted something in the food industry which was related to technology and operational offline as well. 14th August 2014 was the date of inception for Swiggy, a dream project turned into reality by Harsha and Reddy. Swiggy was India's first online food ordering and delivering platform.

Both of these co-founders reached out to Rahul Jaimini to do the coding of the website and mobile app and welcomed him as a co-founder in Swiggy.

Swiggy was started in a small office space in Koramangala, Bangalore and the company started off with limitations. The initial setup of food delivery was targeted at a single neighbourhood with 25 partner restaurants and six delivery executive personnel.

The company has grown massively after the initial 25% month-on-month growth. Now, the company has a major presence in every household, the default name for anyone desiring to order food online. The company has successfully expanded to over 13 Indian cities including metro cities like Mumbai, Delhi, Hyderabad, Bangalore and Chennai. The company has a tie-up with more than 8, 00,000 restaurants and is committed to serving customers with a convenient ordering and delivery experience.



METaverse

Today we describe the metaverse as a fully immersive internet, where we will be able to access augmented and virtual reality and interact with all sorts of environments using persistent avatars and innovative digital technology.

The thing is: The metaverse is not new!

Let's take a look at some of the key historical milestones that have led to where we are today as we develop cutting-edge Web 3.0 technology.

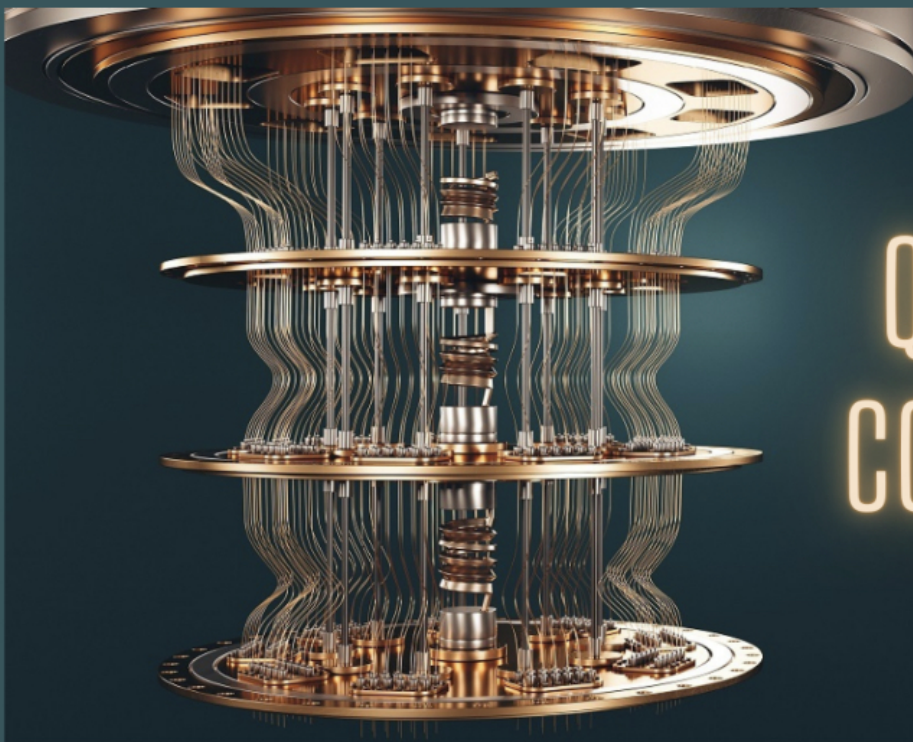
It all started back in 1838 when scientist Sir Charles Wheatstone outlined the concept of "binocular vision," where you combine two images — one for each eye — to make a single 3D image.

This concept led to the development of stereoscopes, a technology where you use the illusion of depth to create an image. This is the same concept used today in modern VR

CONTD.

The exact beginning of VR is disputed, but rests somewhere around the 1950s/60s. Morton Heilig, a cinematographer/filmmaker, wrote of an 'experience theatre' that draws viewers into the onscreen activity. He built a prototype of this idea in 1962.

The first 'VR headset' was created in 1968 by Ivan Sutherland with help from his students Bob Sproull, Danny Cohen, and Quentin Foster. This head-mounted display (HMD) was heavy and had to be suspended from the ceiling to be usable. The term virtual reality became popular in the 1980s, while widespread commercial releases of VR headsets began in the 1990s. There followed a dip in interest in the technology until the reveal and release of the Oculus Rift in the 2010s. Over the next decade, VR devices grew in development, and were popularly used in video games. With the availability of VR technology, the metaverse that Stephenson wrote of was more than distant science fiction. Rather, it had grounds in the technology of the time, and of today.



QUANTUM COMPUTING

Quantum Computing

The spark of quantum computing was struck by Richard Feynman. In 1981 at MIT, he presented the following quandary: classical computers cannot simulate the evolution of quantum systems in an efficient way. Thus, he proposed a basic model for a quantum computer that would be capable of such simulations. With this, he outlined the possibility to exponentially outpace classical computers. However, it took more than 10 years until a special algorithm was created to change the view on quantum computing, the Shor algorithm.

In 1994, Peter Shor developed his algorithm allowing quantum computers to efficiently factorize large integers exponentially quicker than the best classical algorithm on traditional machines. The latter takes millions of years to factor 300-digit numbers. Theoretically, the Shor algorithm is capable of breaking many of the cryptosystems used today. The possibility to break cryptosystems in hours rather than millions of years using quantum computers lit a fire of interest for quantum computing and its applications.

CONTD.

quantum computing is fundamentally different from classical computing. It is based on two laws in the quantum mechanical world: superposition and entanglement. A quantum superposition state of two pure states is a linear combination of these states with the coefficients representing the probability distribution of the pure states inherent in their quantum mechanical nature. Quantum entanglement describes the “entangled interaction” of qubits so that you cannot describe the state of two entangled qubits independently; if you measure one qubit, the measurement result of the other qubit is determined on the outset. Measurement results on qubits are still stochastic due to their quantum mechanical nature. These two effects in quantum computing, superposition and entanglement are responsible for the first step in the exponential speed boost provided by quantum computers.

The speed boost of quantum computing, in short, starts with a “spread” of all given pure states into superposition, so that every state is equally likely to appear. The second step is to “translate” the solution of the problem defined by a quantum mechanical algorithm into circuits using a set of qubits and quantum mechanical elementary gates. Additionally, oracles implement a Boolean function on a set of qubits representing the input of the problem. Final measurements on the set of qubits, with a high number of repetitions, provides a probability distribution as an interpretation of the final state being a superposition of all pure states of all involved qubits. The output of the quantum algorithm is a single pure combination of the set of qubits derived from the distribution; for example, one could take the combination with the highest frequency. Thus, quantum computing can only achieve a better performance compared to classical computers if an analysis of the quantum algorithm proves correct results and shows a lower complexity in the expected number of steps a set of gates and oracles needs to be applied. It's all about the algorithms!

THE SCHOOL MAGAZINE *

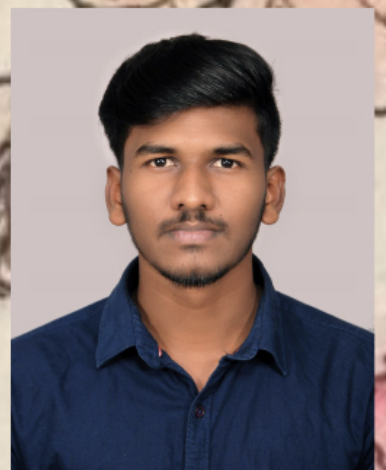
Here comes the school magazine filled with fun
and energy
covering our rush in studies making our mind
very busy

contains the glory of the school making it look
cool looks
like two roads diverged in woods

making the name of student council arose
as they are given a very high post
photos of some students feels like fools
as they are wearing a weird costume

looking in its writing part led to confusion
as some poems in it doesn't have any conclusion
the work teachers is highly appreciated
as all of them looks busy and suffocated

Cherish R
19F108



தமிழ் கவிதைகள் *

என் ஆசிரியர்கள்

கை எடுத்து வணங்குகிறேன்
நன்றியுடன் நினைத்துப் பார்க்கிறேன்

நான் வாழ ! நான் முன்னேற!
எனக்காக உழைத்தவர்கள்
நான் இன்று இன்பம் காண
அன்று துன்பம் பொறுத்தவர்கள்

நான் முத்து சேர்க்க
மூச்சடக்கி முத்து குளித்தவர்கள்
என் இளம் வயதில் கண்ட
நடமாடும் தெய்வங்கள் !
என் ஆசிரியர்கள்

IT-A
20F124



நிகழ் காலங்களில் வாழ்த்தாத நாளில்லை

நாங்கள் செய்த தவறுக்கு

தண்டனை எங்களுக்கு தந்து

வேதனையை - நீங்கள்

அல்லவா அனுபவித்தீர்கள்

எத்தனை அன்பு , அரவணைப்பு

எத்தனை அறிவுரைகள் , ஆலோசனைகள்

எல்லாம் எதற்கு

எங்கள் வாழ்வு வளம் பெறதானே

எத்தனை நாள்

மழையில் நனைந்தீர்கள்

வெயிலில் காய்ந்தீர்கள்

பசியை மறந்தீர்கள்

உங்கள் குடும்பத்தைவிட

எங்கள் நலனில் தானே

IT-A
20F104





DrawFest



20F120
IT-A



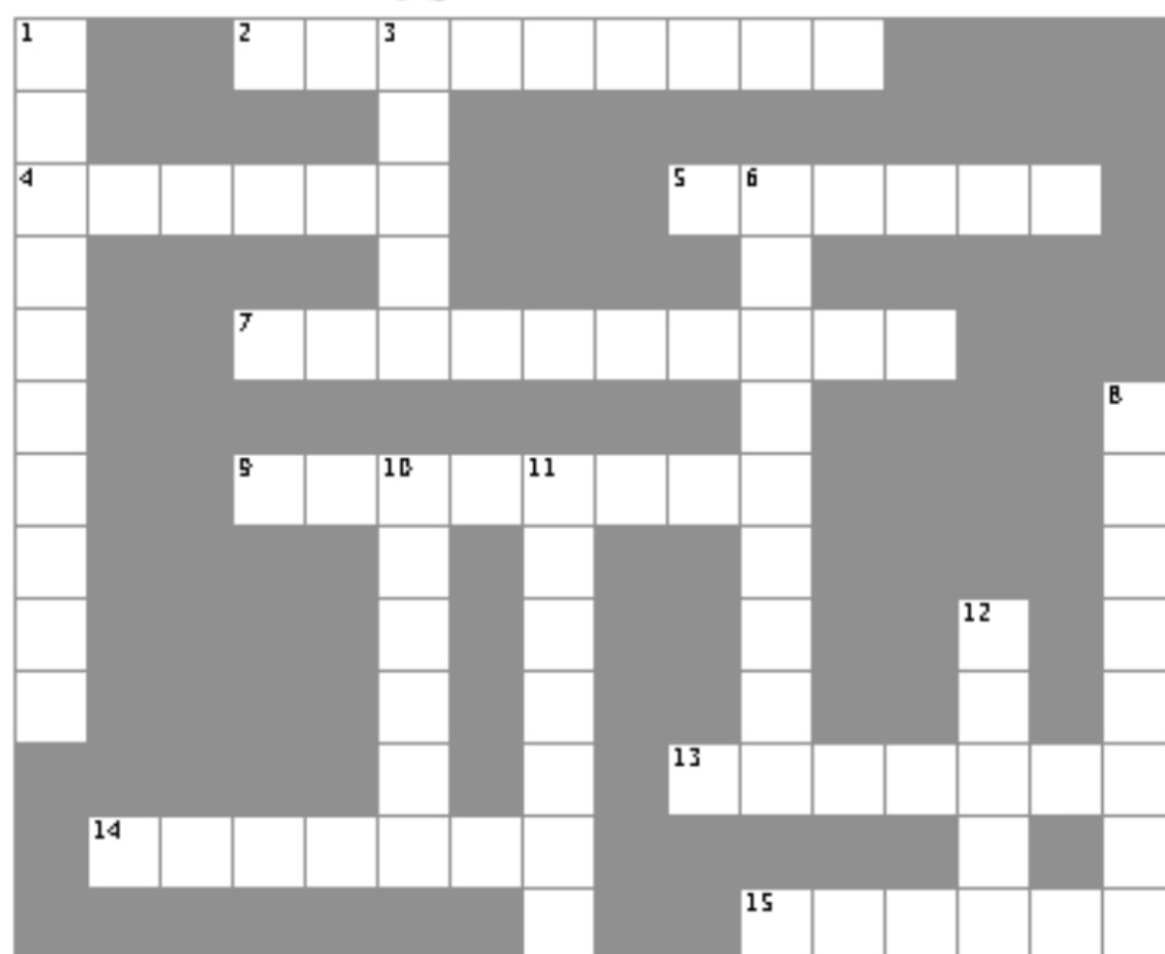
20F254
IT-B





20F159
IT-A

Carnatic Cryptic Crossword #1



Across

2. Ya! Taj and Agra do combine to reveal the greatest of them all (9)
4. Some kid that this rare raga could have come from an African nation! (6)
5. Salvage the rishabha to produce the raga (7)
7. Two coffees at the start of this raga? (10)
9. M & M contains a grand instrument (8)
13. Padmasura's head is muddled with trauma as he keeps complaining of a droning sound (7)
14. The final note produced by a Danish (7)
15. Virgina in a bad jail for singing something risque? (6)

Down

1. A lion's start is needed to keep this beat as it takes the longest time (10)
3. Single hair perhaps is the reason for no food? (5)
6. Anya held Yaman backwards to reveal him (9)
8. Rama and Sita combine to render this raga (8)
10. The rhythm to be kept looking at the northern sky? (6)
11. Ran around a vale and improvised (7)
12. Perhaps Asterix had this raga in his blood? (5)

We Are Changing The World With Technology

Bill Gates