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“Learn,
Unlearn,
Relearn”

**STATISTICS
ON CURRENT
PLACEMENT
DRIVE**

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VISION OF THE DEPARTMENT

The Department of Information Science and Technology pledges to educate students with conceptual knowledge and technical skills to forge ahead in the field of IT, while inculcating deep moral and ethical values to achieve excellence, by providing a vibrant academic and research environment in collaboration with industry.

MISSION OF THE DEPARTMENT

1. To inculcate in students a firm foundation in theory and practice of IT skills coupled with the thought process for disruptive innovation and research methodologies, to keep pace with emerging technologies.
2. To provide a conducive environment for all academic, administrative and interdisciplinary research activities using state-of-the-art technologies.
3. To produce graduates and doctorates, who will enter the workforce as productive IT engineers, researchers and entrepreneurs with necessary soft skills, and continue higher professional education with competence in the global market.
4. To enable seamless collaboration with the IT industry and Government for consultancy and sponsored research.
5. To cater to cross-cultural, multinational and demographic diversity of students.
6. To educate the students on the social, ethical, and moral values needed to make significant contributions to society.

From ISTA...

ISTA is a student run, department managed society of DIST which is solely responsible for conducting I++ and ITrix every year. It has always enjoyed a respectable status amongst the students and was set up with the objective to organize various activities that contributes to the academic and professional development of students along with leadership qualities, teamwork and other essential employability skills. Some of this years intiatives are,

-> CACHE Magazine is our initiative to represent and uphold the IT department as a whole among CEG's various other departments.

-> We are proud to announce the release of third Edition of CACHE - February Issue '22.

-> Internship and Placement training groups to train our students to perform well in the Campus placements and Internship drives are going good.

-> We have successfully conducted our intra-college symposium I++'21 last year and are working on our signature event ITrix'22.

->The websites for ISTA, ITrix and Chamber of Secrets are under development and will be released soon.

-> Hackofista'22 will be considered as a part of ITrix'22 and will be conducted a week prior to ITrix'22.

ISTA has a LinkedIn page, ISTA CEG and an Instagram page, ista__ceg. We expect your wholehearted support and will continue to strive hard for the betterment of the Students of our department.

**-Adhis H
Chairman, ISTA**

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Art work by,
S K Anulatha,
First Year, BTech IT

Interview with Shwetha Ramachandran

Shwetha is a 2021 batch alumnus of the Department of Information Science and Technology and is currently pursuing her MS in Computer Science from the prestigious University of Texas, in the US.

Q: How did your experiences in the Department of IST contribute towards your masters admission?

Shwetha: A lot of opportunities have been offered time to time to the students, but sadly not everyone makes the best use of it. My interest in research was sparked by a Summer Research Fellowship Program, which featured in the newspaper. I got in, and I feel I have come a long way from that to research in the US. The HOD then, Dr. Saswati Mukherjee also encouraged a couple of friends and me to pursue research. These experiences have helped act as a guide for my research now, as research is an important part of the Post-Graduation Programme.

Q: How do you choose between Post-Graduation and Placements, when confused? What are the factors that one may consider before choosing either?

Shwetha: I had experience in research as I mentioned, before I got my Industry Internship at Citicorp. I identify as a person who loves learning, and the Industry Internship reinforced my idea to work towards a Post-Graduation. I feel its entirely dependent on the person, and every person must try out both aspects, to find out what their calling is.

Q: What would you like to tell the students of 2nd, 3rd and 4th year students of our department?



Shwetha Ramachandran
IT - Batch '21, CEG

Shwetha: The most important point is to build your resume. Most students have a lot of stuff but there is a problem with the presentation. 2nd and 3rd years must understand that competitive coding is key and students who choose quality of questions over quantity do better in company interviews. Finally subjects such as OS, Database and Data Structures require sufficient attention and should be understood well.

Q: Is the curriculum in the US different from your experiences in AU?

Shwetha: It's vastly different. Exams here play a very minor role, and the grading is based on projects and understanding of concepts. I would advise students to not worry too much about their grades, and explore more projects and assignments. Academic Integrity is a huge thing in the US, and I strongly feel it is better to understand a concept completely despite having a relatively lower score in it, than score high, but have no idea about what it is.

Interviewed by,
Susruth Vinayak K
Final Year, BTech IT

Project Works

Life Made Easier

In our life, we have many services available to us. But they are not accumulated at one point, at the same time the proper details are not provided at the need of the hour. So, the solution is based on the concept of providing service as a type of service at a point, anytime, anywhere. All type of services (Electrician, Plumbers, Newspaper and Dairy products, etc.,) are available which are gathered from the service providers and are organised in a structured manner. So, services can be easily accessed by the users.

The users are separated based on their entity as Customers and the Service Providers. The application features two types of interfaces, one for service providers and the other for customers, which will be classified accordingly based on their needs and activities. Service providers register themselves and provide a particular service to a certain area/city. Service providers are managed based on their activities, especially based on their ratings and recent service activities. The rating is an important factor for assigning a service provider to a particular job,

a customer asked for. So, the service provider should maintain discipline in order promote themselves and their service quality. These are the main aspects of services that are considered by us to provide a genuine service quality to the customers. The customers also have to maintain discipline, otherwise the credibility of the customer will be reduced and beyond a particular level of credibility, services to that particular customer will be prohibited. These are the basic concepts and business logic behind this web application.

This app intends to offer best-in class service to the customers which can be attained by the functionalities in this application. It assures the genuineness to the customers by offering them a highly rated service provider in their surrounding. The app owners can also filter the registered service providers based on the identity and certificates provided by them. Additional security features like on-site service provider verification and service status updates are helpful in assisting the customer.



Service Registration



Dashboard



Pending

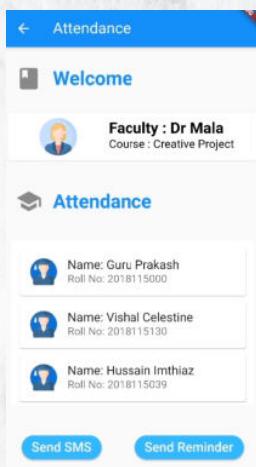
Touch 'n' Go - A Near-Field Communication (NFC) Toolkit [Mobile App]

NFC is a short-range wireless technology that enables simple and secure communication between electronic devices. Many mid-range to high-range smartphones are now NFC-enabled, meaning they can read and write data from NFC stickers with a single touch. Our project uses this mechanism to simplify and automate tasks such as: storing business cards, managing flight boarding, taking academic attendance, interactive e-learning, guiding tourists, event management, contactless ordering and payments at restaurants, and even tracking pets!



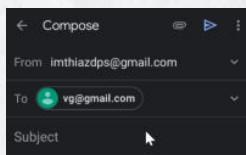
1) Attendance Feature:

Students can be provided with an NFC card/sticker containing data such as roll number, name, etc. On entering the class, students tap the faculty's phone (on which the app runs), and attendance is recorded. A SMS notification to the absent students can be sent using the Send SMS button, and a general class announcement can be sent using the Send Reminder button.



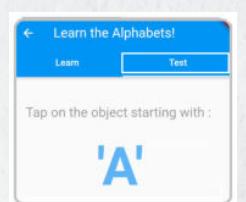
2) Biz-Card Storage:

Business card details can be stored on an NFC sticker in JSON format. By tapping the phone on any such NFC sticker, the app adds the person's details to a list of tiles. Clicking the phone number auto-starts a chat with the person. Clicking the address opens it up in Google Maps. Clicking on the email ID opens up a new email to the person.



3) Preschool Education:

This feature aims to bring interactive learning to classrooms. In the use case considered, NFC stickers can be attached to objects (e.g. Apple) representing the English alphabets. Children can explore objects by tapping the phone on them for a visual display and audio pronunciation of the letter and object. The 'Test' mode can be used to check the understanding of the child.

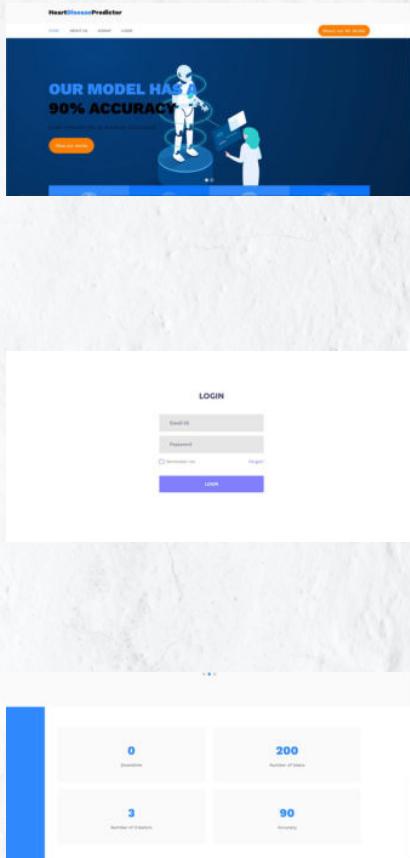


Scan the QR Code to know more about other features.

This project won second place in the TIP-2021 Exhibition!



Heart Disease Prediction

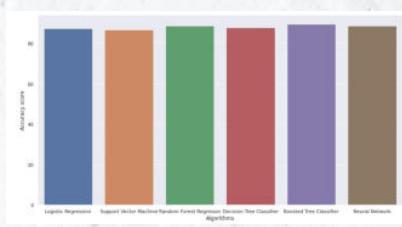


The goal of the project is to create a web application that is coupled with a machine learning model that can predict whether or not a user is at risk for heart disease based on 13 attributes. The web application's front end is built with HTML, JS, and SASS, while the backend is built with NodeJS. All of the user's movements and data were stored in MongoDB across the website. Python3 and TuriCreate, an open-source library built by Apple, was used for the development of machine learning model. TuriCreate, unlike sci-kit learn, does out-of-core computations and allows for data visualisation. We examined the results of the algorithms shown below for the provided dataset and chose the one with the best accuracy and false negative rate for integration with the web application. Out of the six algorithms tested, Boosted Decision Trees gave better accuracy with a lower false negative rate. The threading library for running shell scripts is then used to integrate it into the NodeJS backend.

The Boosted Decision Trees Classifier implemented into the Web-Application can forecast the percentage of users who are at risk for heart disease.

Problem Statement:

- => India has more than 30 million heart patients.
- => In the healthcare industry, large amounts of data are frequently generated. However, it is often not used effectively.



Algorithms Compared:

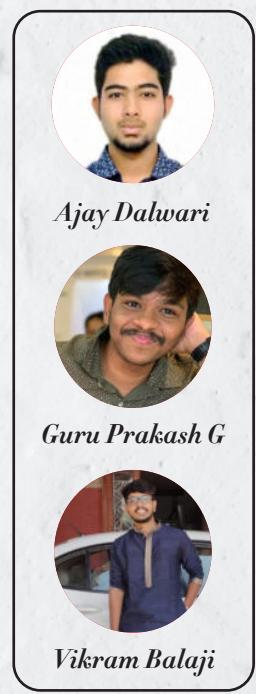
- => Logistic regression
- => Nearest neighbor classifier
- => Support vector machines (SVM)
- => Boosted Decision Trees
- => Random Forests
- => Multi Layer Perception

Scope :

- => Early disease detection
- => Patient care and community services
- => Cuts Medical Cost.

Dataset:

- <https://www.openml.org/d/140>
- <https://archive.ics.uci.edu/ml/datasets/heart+disease>



SAFARI

Data Leak



Earlier this month, researchers at browser identification company FingerprintJS discovered and disclosed an intriguing data leakage bug in Apple's web browser software. A bug in Apple Safari could allow rogue website operators to track you even if they appeared to be acting in good faith and even if you had strict privacy protection turned on. Technically, the bug exists in the open source WebKit browser engine, so it affects any WebKit-based browser. This includes all versions of Apple's own Safari browser, whether you're using it on macOS, your iPhone or your iPad. That vulnerability, now known as CVE-2022-22594, was the result of a bug in WebKit, the "browser rendering engine", as these are commonly referred to, on which Safari is based. All browsers or browser-like apps in the App Store, the sole software source for iPhone, iPad, Apple Watches, etc., must utilize WebKit, even if it uses third-party rendering engines on other platforms. Users of macOS could simply switch browsers to avoid the bug, but users of iDevices could not. At first glance, the bug seems both undramatic and unimportant: even if it leaks private data from separate browser tabs that contain content from unrelated websites, the amount of data that is leaked is small. The CVE-2022-22594 bug was incredibly simple. A function called `indexedDB.databases()` is included in Apple's implementation of the IndexedDB feature to provide a list of all IndexedDB databases currently available to the browser. That function posed the single point of failure. Even though an attacker's website couldn't access any

data stored locally by my website (a consequence of the Same Origin Policy enforced by browsers to keep web data private to the page that victim created in the first place), it could list the names of any databases that the victim created for their data. By choosing a database name unique to my service, I would avoid clashes with anyone else, but it would uniquely identify my site, and therefore leak the user's browsing history. Choosing a random name instead of identifying my website would act instead as a type of "supercookie" that would uniquely identify users. The good news is that CVE-2022-22594 has been patched in Apple's latest security updates, available as follows: iOS 15.3 and iPadOS 15.3, macOS Monterey, tvOS 15.3, watchOS 8.4 and Safari 15.3.



This update is automatically included in the four listed above, but needs downloading separately for macOS Big Sur and Catalina. HT213058. Of course, the big-news Safari "supercookie" bug isn't the only security hole patched in this batch of updates: numerous other yet-more-serious bugs were patched as well. There aren't any updates for iOS 12 or iOS 14, the previous two official versions of Apple's iDevice platform, but there are bulk patches for both Catalina and Big Sur, the previous two macOS versions: MacOS Big Sur 11.6.3 and Catalina Security Update 2022-001. These security updates can be considered critical, given the number of remote code execution (RCE) bugs that could, in theory at least, be used without your consent to install covert surveillance software, implant malware, steal data, secretly jailbreak your device, and more. Indeed, on iOS 15, iPadOS 15, Monterey 12 and BigSur 11, one of the RCE bugs that potentially gives kernel-level control – typically the worst sort of RCE bug you can get – is listed with Apple's typically understated warning that the company "is aware of a report that this issue may have been actively exploited."

Is there a way to eliminate this vulnerability? There is only one plausible way to develop immunity from zero-day vulnerabilities, and that is by patching or updating the software provided by the developer. You should keep an eye out for the new version numbers listed above. If you're using a Mac, it's Apple menu > About this Mac > Software Update... and if you're using an iDevice, it's Settings > General > Software Update.

Don't delay, take action now!

-Balaji Anbalagan
Second Year, BTech IT

TECH' SPOSURE

BLOCKCHAIN TECHNOLOGY

WHAT IS BLOCKCHAIN?

A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger. The decentralised database managed by multiple participants is known as Distributed Ledger Technology (DLT).

WHAT ARE THE KEY ELEMENTS OF A BLOCKCHAIN?

Distributed ledger technology

All network participants have access to the distributed ledger and its immutable record of transactions. With this shared ledger, transactions are recorded only once, eliminating the duplication of effort that's typical of traditional business networks.

Immutable records

No participant can change or tamper with a transaction after it's been recorded to the shared ledger. If a transaction record includes an error, a new transaction must be added to reverse the error, and both transactions are then visible.

Smart contracts

To speed transactions, a set of rules — called a smart contract — is stored on the blockchain and executed automatically. A smart contract can define conditions for corporate bond transfers, include terms for travel insurance to be paid and much more.

HOW BLOCKCHAIN WORKS?

As each transaction occurs, it is recorded as a “block” of data

Those transactions show the movement of an asset that can be tangible (a product) or intangible (intellectual). The data block can record the information of your choice: who, what, when, where, how much and even the condition — such as the temperature of a food shipment.

Each block is connected to the ones before and after it

These blocks form a chain of data as an asset moves from place to place or ownership changes hands. The blocks confirm the exact time and sequence of transactions, and the blocks link securely together to prevent any block from being altered or a block being inserted between two existing blocks.

Transactions are blocked together in an irreversible chain: a blockchain

Each additional block strengthens the verification of the previous block and hence the entire blockchain. This renders the blockchain tamper-evident, delivering the key strength of immutability. This removes the possibility of tampering by a malicious actor — and builds a ledger of transactions you and other network members can trust.

APPLICATIONS:

1. Money transfers

The original concept behind the invention of blockchain technology is still a great application. Money transfers using blockchain can be less expensive and faster than using existing money transfer services. This is especially true of cross-border transactions, which are often slow and expensive. Even in the modern U.S. financial system, money transfers between accounts can take days, while a blockchain transaction takes minutes.

2. Financial exchanges

Many companies have popped up over the past few years offering decentralized cryptocurrency exchanges. Using blockchain for exchanges allows for faster and less expensive transactions. Moreover, a decentralized exchange doesn't require investors to deposit their assets with the centralized authority, which means they maintain greater control and security. While blockchain-based exchanges primarily deal in cryptocurrency, the concept could be applied to more traditional investments as well.

3. Lending

Lenders can use blockchain to execute collateralized loans through smart contracts. Smart contracts built on the blockchain allow certain events to automatically trigger things like a service payment, a margin call, full repayment of the loan, and release of collateral. As a result, loan processing is faster and less expensive, and lenders can offer better rates.



*Praghadeesh S
Final year, BTech IT*



salesforce

Creative Work Behind Strategic Play

From working in a small, one bedroom apartment in San Francisco in 1999 to becoming the #1 in Customer Relationship Management (CRM) today, the growth of Salesforce has been steady and undeniable.

To understand how Salesforce functions, one must know what CRM is. CRM is any tool, strategy, or process that helps businesses better organize and access customer data. It started with handwritten notes, but with the advent of technology, it evolved into databases stored on individual computers. Now the definition of CRM is far more complex. Managing your business's relationships with customers became a complicated process. Now, to compete in any industry, one needs a reliable system built on CRM software. Here is where Salesforce steps in.

Salesforce is a cloud computing service as a software (SaaS) company that specializes in CRM. Salesforce's services allow businesses to use cloud technology to better connect with customers, partners and potential customers. The software has become the number one for customer success and helps businesses track customer activity, market to customers and many more services. At present, Salesforce is used by over 150,000 customers, holds 20% market share of CRM software, and has a company revenue of \$17 billion. But Salesforce didn't reach its height of glory in a single day. The story was quite different back in the day.

23 years ago, Mark Benioff, a former Oracle employee, got a brilliant idea. He wanted to intro-

duce an inexpensive software that was available 24X7 and was never needed to be installed, updated, or monitored. But the year was 1999, and the power and scalability of cloud-based computing was greatly underestimated. Mark Benioff was joined by Parker Harris, Dave Moellenhoff and Frank Domingus (the other co-founders of Salesforce) with the support of Larry Ellison (Oracle Founder), Bobby Yazdani (Dropbox Investor) and Halsey Minor (CNET Founder) inaugurated Salesforce. In February 2000, Salesforce launched its CRM product at 'The End of Software' event. They created a catchphrase and logo revolving around the theme 'No Software' to be different and unique. To catch the eye of the public Benioff sent employees to protest at the Seibel Systems conference. This disrupted his competitors and got Salesforce its first piece of major press coverage from the 'The Wall Street Journal'. The company proceeded to launch its annual 'dreamforce' convention in 2003 which paved way for an IPO on the NYSE, raising \$110 million at \$11 per share in 2004. In September of 2005, Salesforce introduces its AppExchange service, offering third-party developers a place to work on their own applications and open them up to Salesforce customers. In 2017 Salesforce launched Einstein, the first comprehensive AI technology for CRM, making AI accessible to every company and business user. In 2021, Salesforce acquired Slack which will become their new interface.

Salesforce uses Apex to develop the Salesforce CRM applica-

tion. It is used to access data from the CRM's database and manipulate it too. Developers also use it to customize the application as per the requisites of the business. They use Visualforce (markup language like HTML) to create custom interactive UIs for mobile and web apps. Some products offered by Salesforce are Sales Cloud (manages end-to-end functioning of the sales department for an organization), Service Cloud (consists of accounts, cases, and their solutions), Analytics Cloud (Business intelligence module that helps the organization with data visualisation and analytics), Marketing Cloud (aids marketers to manage the campaigns and maintain an interactive approach with clients) and Community Cloud (helps in collaboration of partners, employees, and customers for a better customer experience). With Microsoft Dynamics, Oracle and HubSpot all offering competing products, Salesforce still tops the charts because they use cloud computing, the application can be customized, have effective communication channels with their clients and great analytics.

Salesforce strongly believed in completing the task at hand perfectly the first time in an uncomplicated fashion, and they followed this to a T. They were ingenious and seized every opportunity without thinking twice. They executed their ideas flawlessly thereby creating history.

-Jovina Virgin
Second Year, BTech IT

∞ METAVERSE THE NEXT INTERNET

What is the Metaverse?

The metaverse is where the physical and digital worlds come together. Metaverse refers to digital spaces which are made more lifelike by the use of VR or AR. To reach it, people would need to wear VR headsets or augmented reality glasses that superimpose the digital realm onto the physical world. It is a space where avatars interact at work and play, meet in their office, go to concerts and even try on clothes! The metaverse is predicated to be an open, interoperable decentralized technological architecture. It integrates a suite of crypto community innovations in decentralized finance (DeFi) for payments and NFTs (non-fungible tokens) for digital in-world items that hold real value. A virtual economy needs currency, and cryptocurrency is your answer to it. Blockchains and cryptocurrencies will become an integral part of the metaverse. A blockchain will allow transactions to be cryptographically secured.

What's the scope? – Tech Giants on the Metaverse

Mark Zuckerberg believes Metaverse is the future of the internet and the next evolution for social networking. Unity's CEO John Riccitiello says "The metaverse is about presence and there is so much potential." Unity is one of the major underlying tools set for creating the metaverse. Unity will help define gaming's new metaverse concept and usher in a new era of 3D. Google CEO Sundar Pichai said "We are excited about the future of immersive computing. There will be many experiences as part of it, including immersive, interactive virtual worlds." India is on track to have the largest app developer base in the world by 2024, and already has one of the largest spark AR developer communities. "We're going to need to empower millions of creators around the world. And that's what we're so excited about seeing here in India, a developer ecosystem, and the ecosystem of individual entrepreneurs.

I think we're going to see a huge foundation for metaverse to get built here in India," said Mark Zuckerberg. The metaverse is the future of social platforms and there are many existing examples of this happening already. For example, Sensorium is a metaverse that unites various conceptual worlds in a single VR environment, offering users a deeply immersive experience to interact with others and engage in exciting activities. Others include ROBLOX, Microsoft Mesh, Niantic, among many others. Disney is the latest firm to announce metaverse plans as it plans to 'connect the physical and digital worlds allowing for storytelling without boundaries'. Nike is ready to sell products in the Metaverse and has filed patent applications for its products as "downloadable virtual goods", extending the brand's rights into the virtual world. Even the Korean city of Seoul announced a plan to make a variety of public services and cultural events available in the metaverse. NVIDIA is going big with its Omniverse — a metaverse meant for engineers.

How to be a developer for The Metaverse? – Technologies in the Metaverse

The metaverse is a huge spectrum encapsulating various technologies that make the virtual worlds work together in symphony. To develop for the metaverse, you can create/develop using:

Software: Blender, Unity, Unreal, Lens studio by snap, SparkAR, Vuforia, ARCore, ArKit, WebXR, Google VR, A-Frame, OpenHMD, Zbrush, Cinema4D and more

Languages: C#, Three.Js, Renderer etc.,

Metaverse Tech: Blockchain, Augmented Reality, Virtual Reality, Mixed Reality, AI, 3D Modelling/ Reconstruction, IoE/IoT, Edge Computing, 5G.

-Nauvyashree A
Final year, BTech IT

Quantum Apocalypse

Imagine how cool will it be if you have access to a technology that could simulate things that do not even exist at all. Like molecules and compounds that haven't been discovered yet. Sounds intriguing right? Sadly, this technology is still in its infancy, but after reading this article you'll be rather relieved to have heard this. Should be a bit obscure, so we'll start with quantum computing.

Since nearby past, binary computing is the technology that has been relied upon by classical computers. As you know here data is represented in the form of bits which have two states 0 and 1. Quantum computing is based on qubits or quantum bits, which is analogous to a bit except that qubit can have infinitely many quantum logical intermediate states between 0 and 1. To be clear, a qubit also offers only two discrete states – 0 and 1. Remember the word logical?

To better understand how this is possible, imagine hiking with a magnetic compass. During the day you navigate as you please and the terrain dictates, glancing at your compass and noting that your direction changes. You might begin walking east, then turn north, spin around to go south, before finally nearing northwest. But at the end of each day, you record only whether your encampment is north or south of your departure point that morning. This two-choice answer belies your more elaborate trajectory containing all the other directions available to the compass. North represents "1" and south represents "0," but of course, there are many other "intermediate" choices which can be expressed. This is similar to a quantum calculation. During the calculation, a qubit may take any value, but in the final answer there is only a 1 or 0 logged. During a calculation, a qubit pointing in the east direction isn't simply weighted 50 percent north, 50 percent south—it will specifically remember that it was an eastern direction. This preservation of the direction is called coherence, and it is the most important property for quantum computers. Coherence is the property of a qubit to experience the full range of values and for qubits to share these values with each other. Since

qubits sharing mixed states speeds up computation—this is how they perform multiple calculations at once—it is absolutely essential the qubit maintain coherence during the calculation.

Using this quantum computing technology, quantum computers are capable of performing computations that classical computers find time consuming. In 2019, Google created a quantum processor in the name of Sycamore and it completed a task in 200 seconds which would take a state-of-the-art super computer, 10,000 years to finish. Google also announced that Sycamore is 100 million times faster than any other classical computer in its lab.

On the contrary to the above said features of a quantum computer, in future quantum computers might impose a serious threat to all your encrypted private data. A number of countries, including the US, China, Russia and the UK, are working hard and investing huge sums of money to develop these super-fast quantum computers with a view to gaining strategic advantage in the cyber-sphere. Everyday vast quantities of encrypted user data is being stored in data banks by the so called data thieves, without our permission. When the data thieves' quantum computers are powerful enough to decrypt it, the most valued thing – our personal data will be exposed to the data thieves. All the encryptions that are existing now will be rendered useless with the advent of these powerful quantum computers.

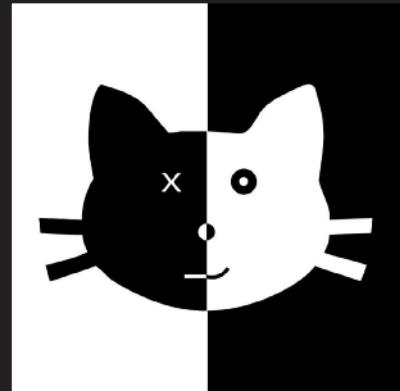
The only way to prevent this from happening is to upgrade all the encryptions to a level such that quantum computers won't be able to decrypt it. Hopefully companies like Google, Microsoft, Intel and IBM as well as specialist companies like Quantinuum and Post-Quantum are working on quantum proof encryptions. So as I said at the start, you must be pleased to hear that we're at least a decade away from achieving this powerful quantum computing technology.

-Edumba Vannia Raja T
Second Year, BTech IT

Schr0ding3r5

The Cyber Security Enthusiasts of CEG

A black hoodie, a Guy Fawkes mask, inhuman typing speeds, the customary “I’m in” within 5 minutes after targeting a system, and payments in cryptocurrency is the norm when it comes to hackers, or so we thought. Reality however, is much different, characterized by lack of information, long hours of probing to find a single vulnerability and not a single floating Mandarin symbol. Disappointed? Well at least we were, till we saw the scope of the subject we were dealing with. Ranging from a small comment in the source code of a webpage, leaking information, to exploiting the physics of chip manufacturing, cybersecurity is an enthralling domain, more of an artform, looking at how beautifully crafted most exploits are. And this is where we chose to explore the depths of this artform.



Two years ago, Schr0ding3r5 (pronounced Schrodingers) started our journey with Capture the Flag tournaments. They are the equivalent of hackathons in the cybersecurity domain. Learning and growing rapidly, we were ranked among the top hundred Capture the Flag teams in India for the year 2020. Our group, since then has come a long way from just participating in Capture the Flag competitions, to conducting a session on OSINTs in the ACM event Prodigy, and hosting a talk on Zero Day vulnerabilities in the ACM weeklies series and even discovering a zero day vulnerability in an Open Source package. We are grateful to ACM for giving us a platform to work from, and we have a lot more in store. Here is a small preview. We hope you enjoy it.

Objective: "A mysterious cute cat appeared outta nowhere. Is it from Atlanta? Is it from the dark moons of Titan? Is it from the galactic inter-dimensional portals? No one knows for sure, but the name of the cat's owner is hidden on the website. Find his name so that we can return our furry friend to his home. (=^·I·^=)) / ♡☆

How to play :

- 1) Go to <http://tryhackme.com/> and register.
- 2) Then visit <http://tryhackme.com/jr/istactf2022february> or scan this QR code to play.



-Balaji Anbalagan
Second Year, BTech IT

Union's Stand on AIS

After a heavy rainfall in the winter evening we would be waiting for our district collector to announce holiday the next day. Ever wondered how the collectorate and bureaucracy works in India? Let us go back a few centuries to know some facts about them.

British India and its administration:

During 1770's East India company appointed collectors to collect revenue. Later during Lord Cornwallis, executive powers were vested on the collectors. What is an executive? let us understand with the help of functioning of School. In a School, the board of directors meet , debate, deliberate and come with set of rules and procedure for the effective functioning of the School. This process is called **legislation**. The Head Master, Vice principle, Co-ordinators, teachers ensure the **execution** of the rules and procedure . So they form the executive part of the school system. Similarly, Collectors ensure the proper functioning of acts and policies of the British India.

Until 1853, only the English were allowed to write Indian Civil Service (ICS) Exam. After 1858, open competition for selection of Indians Civil Services were thrown open for Indians. In 1864, the first Indian, Shri Satyendranath Tagore, brother of Shri Rabindaranath Tagore succeeded in the civil service exam. ICS exams was conducted in London. Notable freedom movement like Swadeshi movement demanded for ICS exams to be held in India. It was only after the First World War and the Montagu Chelmsford reforms, this was agreed to. From 1922, the Indian Civil Service Examination held in India too, first in Allahabad and later in Delhi with the setting up of the Federal Public Service Commission, which later with the commencement of the Constitution renamed as **Union Public Service Commission (UPSC)**.

Commencement of Indian constitution and the state of ICS:

Sardar Vallabhai Patel is remembered as the 'Patron Saint of India's Civil Servants' as he established the modern all-India services system. Many members in the Drafting committee argued against the establishment of All India Services (AIS) due to its inherent British legacy but Sardar Vallabha Patel took a strong stand for the established of AIS because it would enable better administration at grassroot level in diversified India. Speaking to the Constituent Assembly on October 10, 1949, Patel said, - The Union will go, you will not have a united India if you have not a good All India Service which has the independence to speak out its mind, which has a sense of security. UPSC hold the constitutional status as an Independent body which conducts examination for the recruitment of AIS. After Independence, Indian Civil Service was renamed

as Indian Administrative Service (IAS), Indian Police as Indian Police Service (IPS) and Imperial Forest Service as Indian Forest Service (IFS), all three being AIS. All India Service (AIS) members would be recruited and appointed by the Centre and allotted to various States, and who could serve both under the State and the Centre.

Recent proposal of Union government to amend the IAS cadre rules 1954:

When an AIS officer is working under the state government, the Union government can depute the AIS. Such a deputation of officer must need the concurrence of the state government and concern of the officer. The convention followed is that no officer to be sent on central deputation against her/his own will. States will prepare offer list and centre will choose officers from the offer list. The officers chosen by the centre will be relieved by the state .

The amendments proposed includes the following provisions:

Disagreement between Union and state in the deputation matters, states should implement Centre's decision within specified time. Delay by the state government in posting state cadre officer to Centre - the officer shall stand relieved from the date as may be specified by the Centre. Centre has to decide the actual number of officers to be deputed in consultation with the State. During special situations for public interest, the Centre can ask for state cadre officer.

Union government stand:

Union blames the States for not Sponsoring sufficient officers to meet its requirements which is 40% of Central Deputation Reserve (CDR). The CDR utilisation has gone down from 25% in 2011 to 18% presently. Centre sometimes may need AIS officers with Specific domain expertise.

States and experts concern:

Due to mandatory allocation of fixed number of officers ,the wish of the officer is not given importance. Other reasons for the shortage include poor working condition, lack of security of tenure is not addressed. Ambiguity in phrase "specific situation" and "public interest" may cause the subjects to be misused for political consideration. States might doubt the morale and loyalty of the officers and would prefer officers from State civil service cadre. It is also against the spirit of co operative federalism.

AIS provide uniform standard administration for whole nation. It acts a connecting bridge between policy formation and policy implementation. It plays a vital role in nation building process by ensuring inclusiveness, capacity building and decentralisation of powers. Hence, a holistic approach is needed to address the issues of the stakeholders regarding the deputation.



-Pavithra P
Final Year, BTech IT

Physical Well-being is a Process



We all know that in today's world, fitness plays a huge role in maintaining one's wellbeing. It is a fact that exercises and healthy diet keeps you active and healthy throughout. This article throws light on some of insights of dieting which will help everyone to find a clear path in their fitness journey.

As human beings, food is essential in our day to day lives. What exactly is there in our foods and why do we need them? As human beings, we need macro and micro nutrients to meet the adequate energy levels to meet the physical requirements for the day. Micronutrients are the nutrients your body needs in smaller amounts, which are commonly referred to as vitamins and minerals. We need macronutrients to help with energy and we need micronutrients to help our body be healthy and digest those macronutrients. Carbohydrates, proteins and fats are the macro nutrients needed for every individual.

How do these help in my fitness journey?

Globally, about 1 to 2 out of every 5 people are trying to shed pounds, and they're using everything from diets to exercise regimens to supplements to help them toward their goal. To understand the process of gaining or losing weight, we need to understand how these macro nutrients affect our body. Every individual will have their own metabolism rate and that will burn a certain amount of calories. And the food which we consume is also

made of calories. Does it ring a bell? Yes, this is where the calorie tracking comes in. When your goal is to lose weight, you be in a calorie deficit diet and when your goal is to gain weight, you be in a calorie surplus diet. In simple words, burn more than you eat to lose the fat and consequently the weight.

Fitness is a process which needs faith and determination. It is a long-term journey which will indisputably reflect positively in your life. Every person should get into this journey at least once in their life to know what's on this side of the world. Exercise is a powerful depression fighter for several reasons. Most importantly, it promotes all kinds of changes in the brain, including neural growth, reduced inflammation, and new activity patterns that promote feelings of calm and well-being. Exercise is a natural and effective anti-anxiety treatment. It relieves tension and stress, boosts physical and mental energy, and enhances well-being through the release of endorphins.

The easiest and the least expensive way to take care of your physical and mental health. Hope everyone has a healthy and a positive life ahead.



-Kaushic Aravind B
Final year, BTech IT

LIFELESS CYLINDER

At the time of waiting for my cappuccino
Had a view through the glass door
What a busy clumsy road! Cocktail sounds
Time for my hot sizzling coffee to roar

A old gaunt tattered figure
Thin cylinder in between in his fingers
White smoke arrives from his mouth
And this cylinder reduces as it burns

Suddenly, that cylinder makes a free fall
While he sprays, vomits a ruby red liquid
With an earthquake, his body is in floor
Ah! The ground is in a reddish shade

Minutes later, the sound of ambulance
Tears, cries and shouts from a woman aside
"He's no more" words of main in white coat
Sounds of commotion, the crowd started

Cries and shouts sounded louder and louder
Beating her chests and heads became constant
I shifted my unmoved view down
Still burns, a bit of that lifeless cigarette.

-Sanmitha V S
First Year, B Tech IT



Placement Stats

Accenture:

2018115027 - Divya Dharshini B
2018115044 - Kannathasan E

Accolite Digital:

2018115057 - Mohamed Muzzamil S

Adobe:

2018115074 - Prathiksha P

Agilysis:

2018115098 - Saravanakumar R

Alstom:

2018115106 - Shreeranjani R

Athena Health:

2018115079 - Priya R

Bank of America:

2018115036 - Harini V K
2018115052 - Lavanya S
2018115067 - Pasim Jerusha
2018115085 - Rajashree S

Barclays:

2018115058 - Monika V

Capgemini:

2018115135 - Yamini G

Caterpillar:

2018115007 - Adithya Hariharan
2018115018 - Balasubramaniam M
2018115095 - Sanjayram R
2018115123 - Varshini V

Chronus:

2018115038 - Hrithik K

Citicorp:

2018115008 - Aishwarya K
2018115023 - Deepthi V
2018115039 - Hussain Imthiaz Hussain
2018115051 - Koushalya Somasundharam
2018115062 - Nirupama A R
2018115063 - Nithyasri L
2018115110 - Srikarthikeyan M K
2018115113 - Subhadharshini K
2018115116 - Sushrut Vunayak K

D E Shaw:

2018115047 - Keerthana S

Eli Lilly:

2018115014 - Ananthi M
2018115107 - Sivanandham P

Equitas:

2018115128 - Vijayabharathi K

FoodHub:

2018115096 - Santhiya M

FULL Creative:

2018115114 - Subitsha T L K

HCL Technologies:

2018115020 - Bhuvaneswari V

Hubstream India:

2018115088 - Ravikumar S

IBM:

2018115118 - Tharun B

KPMG:

2018115016 - Arthi A

Kyndryl:

2018115120 - Thupalli Hethana

L&T ECC:

2018115105 - Sharmila K

LTI:

2018115075 - Pravinbabu B

Lister Technologies:

2018115012 - Amizhthan Madan

2018115028 - Divya M

2018115059 - Murugan A

2018115122 - Varoon S B

Mbit Wireless:

2018115017 - Aswath Ganesh R

2018115136 - Yashwanth A

Morgan Stanley:

2018115108 - Sri Akshya S

Mphasis:

2018115042 - Janani S

2018115048 - Keerthna A J

2018115053 - Logesh T

2018115073 - Prasanth M

2018115078 - Priya J

2018115091 - Rose Mary Varghese

2018115092 - Rubapriya S

2018115097 - Saranya V

2018115100 - Selvaraj P

2018115104 - Sharmila J

2018115126 - Vethamathura S

Mu Sigma:

2018115050 - Kirubananthan R

2018115081 - Priyankaa K

2018115121 - Usha Nanthini N

MulticoreWare:

2018115035 - Harini S

Natwest(RBS):

2018115093 - Sakthi A

NielsenIQ:

2018115089 - Reesha R

2018115117 - Tamil Eniyan S

Rapid Data:

2018115087 - Ramya Sneha A

2018115131 - Vishali M

Searce Inc:

2018115001 - Abbinaya Arivazhagan

2018115019 - Bharathi Selvakumar

2018115034 - Harinarayanan K S

2018115046 - Kaushic Aravind B

2018115065 - Paavani M

2018115083 - Raghav Tinnalur Swaminathan

Siemens Technology:

2018115021 - Buvanarani K

2018115031 - Gokul S

2018115045 - Karthikeyan R M

2018115090 - Rifanaparveen A

Societe Generale:

2018115082 - Ragavendhra Ramanan M R

Tata Digital:

2018115015 - Anirudh Hariharan

2018115033 - Hariharan S

2018115069 - Praghadeesh S

TCS Digital:

2018115084 - Ragul B

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Tekion:

- 2018115006 - Adhithyan S
- 2018115112 - Subash Raja S

Temenos:

- 2018115138 - Yuvabala P

Trimble:

- 2018115066 - Palaniappan N
- 2018115137 - Yogeshwar S

Verizon:

- 2018115055 - Madhumitha Sri K S
- 2018115127 - Vibha Alaguraj
- 2018115130 - Vishal Celestine G
- 2018115134 - Vishwa Kumar S

Viasat:

- 2018115133 - Vishnupriya S M

Virtusa:

- 2018115009 - Ajay Sankar D
- 2018115064 - Niveta Ashley Anix
- 2018115140 - Ananya Jaya Kumar

Visa:

- 2018115037 - Harsha Vardhan H R
- 2018115061 - Naveena M
- 2018115102 - Shankar Subramanian

Walmart:

- 2018115125 - Venkat Karthick P

Wells Fargo:

- 2018115010 - Akil Vishnu M
- 2018115026 - Dhrisha G
- 2018115030 - Eashwar P
- 2018115032 - Guru Prakash G
- 2018115099 - Selchia Teresa



Total number of students Placed - 104

*Numbers in the boxes indicates the number of students placed in each company

**Cover Photograph by,
Raghav Swaminathan
Final Year, BTech IT**

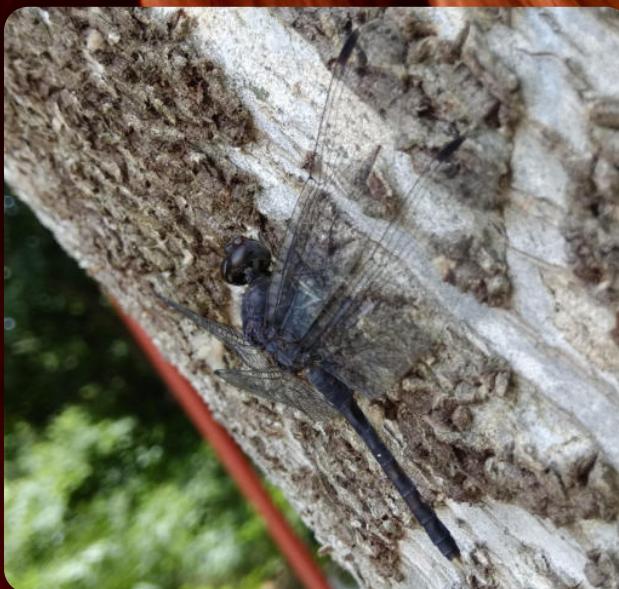


**Shankar Subramanian
Final Year, BTech IT**

**Anulatha S K
First Year, BTech IT**



**Palaniappan P
Final Year, BTech IT**



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