

# DEPARTMENT OF INFORMATION TECHNOLOGY

JULY 2020 - JUNE 2021



# UNLOCKING MINDS



# INSTITUTE

## VISION

To be globally known and recognized as an educational institute of engineering, technology, management and research having a transformative impact on society.

## MISSION

M1: To impart knowledge, skills and creativity to all the students.

M2: To provide a conducive environment for quality teaching, learning, and research.

M3: To create awareness on sustainable technologies and innovative solutions to societal problems including entrepreneurship.

M4: To strengthen institutional and industrial collaborations nationally and internationally.

## IT DEPARTMENT'S

## VISION

To create globally competent professionals by imparting quality technical education, research aptitude and analytical skills to meet challenges in IT industry, thus contribute to the welfare of society.

## MISSION

M1: To nurture students with knowledge and programming skills of different IT domains necessary for development and testing of quality software solutions.

M2: To provide an integrated, responsive and comprehensive academic ecosystem with enhanced teaching and learning to promote intellect and excellence in research.

M3: To mentor students with applied problem solving and critical thinking leading to innovative and sustainable solutions to societal problems.

M4: To collaborate and exchange expertise with industry, research organizations and academic institutions.

## **IT DEPARTMENT'S**

### **PROGRAM EDUCATIONAL OBJECTIVES**

- The graduates will have core competencies in IT fundamentals necessary to solve hardware, software and integrated engineering problems relevant to IT industries.
- The graduates will be proficiently engaged in development of IT products and services to cater to the industry needs or perform as innovators or entrepreneurs.
- The graduates will successfully pursue higher education or career paths in research.
- The graduates will professionally function with social awareness, responsibility and ethical norms.

### **PROGRAM SPECIFIC OBJECTIVES**

PSO1

Design, develop and test software applications and project management solutions of real world problems.

PSO2

Be competent in emerging areas of Information Technology



# MESSAGE FROM THE DIRECTOR

Prof.(Dr.)Shakti Kumar (Director)



On behalf of the faculty members, staff, and students of the Department of Information Technology of PIET, I welcome you all to the creative world of IT. I believe the IT discipline has been widely recognized as an essential source and technique for the advancements in all spheres of human Endeavour now and in future. In PIET all the students get the opportunity to excel in their academic activities. This is the department where students publish papers in international journals, at the same time a student wishing to achieve some recognition in extra-curricular or co-curricular activities will also find the atmosphere helpful. Among the reasons why our graduates are such favorites of industry is the consistent hands-on experience-based approach of our curriculum, our excellent laboratories, the long-time connections between Department and the industry. Whether you are a student, parent, prospective faculty member or a curious member of the public, I invite you to read our web pages and find a way to become part of the PIET family. We hope you will also have the opportunity to visit us in our state-of-the-art facilities.

Prof.(Dr.)Shakti Kumar  
(Director)



## MESSAGE FROM THE HEAD OF DEPARTMENT



DR. MUKESH CHAWLA (HOD IT)

- B.Tech(CSE),
- M.Tech(CSE),
- Ph.D(CSE) in CyberSecurity

It gives me great pleasure to give my best wishes to "Unlocking Minds", an E-magazine from the Department of Information technology of PIET. A department magazine is an eloquent expression of the progress and outstanding achievements that a department has to its credit. The students and faculty members of the department are always proactive in taking initiatives in technical, cultural, and social events. I hope that this E-magazine will serve the purpose of reflecting all activities of the department and it will inspire others to do their best. My felicitation and congratulations to the editorial board for their meticulous work which is reflected in the pages of the magazine.

Dr. Mukesh Chawla  
HOD (IT)



# ***FACULTY ADVISORY BOARD***



## **KARUNA KHURANA**

“Unlocking Minds” is an amalgamation of Literary and artistic segments from students and faculty members. It also reflects the achievements of students and various activities that take place in the department. It is a prerequisite feeling for me to be a part

of this Biannual Magazine.

I want to extend my sincere thanks to Faculty Co-ordinators and Student Editorial Board for their dedication in helping the magazine in a stepwise manner for achieving a milestone. The purpose of this Departmental magazine is to unlock the hidden potential within the students.

**Dear Readers, I hope you all enjoy reading this issue.**



# **STUDENT EDITORIAL BOARD**



**VAIBHAV SANGWAN (Chief Editor)**



**SHREYA GUPTA  
(DESIGNER)**



**SAKSHAM PAHWA  
(DESIGNER)**



**SHUBHAM PANDEY  
(DESIGNER)**



## ***B.Tech. Information Technology***

**T**he Department of Information Technology caters to the emerging requirements of the students who wish to script softwares that render a great assistance to simplify administrative and technical nature of human efforts and can accomplish the astonishing feats in the tech-savvy world. The real strength of the department is the team of active and devoted faculty members who are dedicated to educate and guide students with rapidly changing technological advances. Department imbibe industry wide modern and well operational laboratories with latest hardware and softwares, high speed internet connectivity. The department has cultivated a vibrant environment conducive to rigorous training, which is exemplary for students to imbibe. Encouragement and guidance is offered to the students for participating in sports and various extra curricular activities to hone and strengthen their non-technical skills. Students are counseled by the faculty on one-to-one basis.

The Department is running two Programs i.e.

- Bachelor of Technology in Information Technology
- Bachelor of Technology (Honors)

Major Degree: Information Technology

Minor Specialization: Block Chain, IOT, AR/VR, AI & ML, AI & Data Science, Cyber Security



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## LEGACY OF AWARDS




### Eligibility

10+2 with Physics, Mathematics as a compulsory subject & Chemistry/Computer Science/Informatics Practices as optional Subject obtaining at least 45% marks (42.75% marks in case of SC/ST category).

### The key features of B.Tech (Honors) program are :

- The student can identify one area of minor specialization (mentioned above) along with the major specialization in information technology.
- In contrast to a traditional B. Tech program which is a 4 year(8-semester program) offering 160-course credits, the B.Tech (honors) program is 4 years (8-semester program) offering 180-course credits.
- The traditional 120 credits to be completed as part of the B.Tech (honors) program is evenly spaced out between the 3rd and 8th semesters.
- To successfully complete the B.Tech (Honors) program the student shall need to clear the examinations for the additional 20.


The examinations shall be conducted as per the AICTE as well as University guidelines.



# UNLOCKING MINDS

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# EMERGING TRENDS IN IT ENGINEERING

## INTERNET OF THINGS :-

1. The internet of things, or IoT, is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.
2. A thing in the internet of things can be a person with a heart monitor implant, a farm animal with a biochip transponder, an automobile that has built-in sensors to alert the driver when tire pressure is low or any other natural or man-made object that can be assigned an Internet Protocol (IP) address and is able to transfer data over a network.

## ARTIFICIAL INTELLIGENCE:-

1. Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.
2. The ideal characteristic of artificial intelligence is its ability to rationalize and take actions that have the best chance of achieving a specific goal. A subset of artificial intelligence is machine learning, which refers to the concept that computer programs can automatically learn from and adapt to new data without being assisted by humans.

## BLOCKCHAIN :-

Blockchain technology is a structure that stores transactional records, also known as the block, of the public in several databases, known as the "chain," in a network connected through peer-to-peer nodes. Typically, this storage is referred to as a 'digital ledger.' Every transaction in this ledger is authorized by the digital signature of the owner, which authenticates the transaction and safeguards it from tampering. Hence, the information the digital ledger contains is highly secure. In simpler words, the digital ledger is like a Google spreadsheet shared among numerous computers in a network, in which, the transactional records are stored based on actual purchases. The fascinating angle is that anybody can see the data, but they can't corrupt it.

## **MACHINE LEARNING:-**

It is the study of computer algorithms that improve automatically through experience. It is seen as a part of artificial intelligence. Machine learning algorithms build a model based on sample data, known as "training data", in order to make predictions or decisions without being explicitly programmed to do so. Machine learning algorithms are used in a wide variety of applications, such as email filtering and computer vision, where it is difficult or unfeasible to develop conventional algorithms to perform the needed tasks. A subset of machine learning is closely related to computational statistics, which focuses on making predictions using computers; but not all machine learning is statistical learning. The study of mathematical optimization delivers methods, theory and application domains to the field of machine learning. Data mining is a related field of study, focusing on exploratory data analysis through unsupervised learning. In its application across business problems, machine learning is also referred to as predictive analytics.

## **VIRTUAL REALITY :-**

It is a simulated experience that can be similar to or completely different from the real world. Applications of virtual reality include entertainment and education. Other distinct types of VR-style technology include augmented reality and mixed reality, sometimes referred to as extended reality or XR. One may distinguish between two types of VR; immersive VR and text-based networked VR. The immersive VR changes your view, when you move your head. While both VRs are appropriate for training, Cyberspace is preferred for distance learning. In some cases these two types are even complementary to each other. Currently, standard virtual reality systems use either virtual reality headsets or multi-projected environments to generate realistic images, sounds and other sensations that simulate a user's physical presence in a virtual environment. A person using virtual reality equipment is able to look around the artificial world, move around in it, and interact with virtual features or items.

## **CYBER SECURITY :-**

It refers to the body of technologies, processes, and practices designed to protect networks, devices, programs, and data from attack, damage, or unauthorized access. It may also be referred to as information technology security. Cyber security is important because government, military, corporate, financial, and medical organizations collect, process, and store unprecedented amounts of data on computers and other devices. A significant portion of that data can be sensitive information, whether that be intellectual property, financial data, personal information, or other types of data for which unauthorized access or exposure could have negative consequences. As the volume and sophistication of cyber attacks grow, companies and organizations, especially those that are tasked with safeguarding information relating to national security, health, or financial records, business and personnel information.

## **DATA SCIENCE :-**

Data science is an interdisciplinary field that uses scientific methods, processes, algorithms, and systems to extract knowledge and insights from many structural and unstructured data. Data science is related to data mining, machine learning, and big data. Data science is a "concept to unify statistics, data analysis, and their related methods" in order to "understand and analyze actual phenomena" with data. It uses techniques and theories drawn from many fields within the context of mathematics, statistics, computer science, domain knowledge, and information science. Turing award winner Jim Gray imagined data science as a "fourth paradigm" of science (empirical, theoretical, computational, and now data-driven) and asserted that "everything about science is changing because of the impact of information technology" and the data deluge.

## **BITCOIN :-**

Bitcoin(₿) is a cryptocurrency invented in 2008 by an unknown person or group of people using the name Satoshi Nakamoto. The currency began use in 2009 when its implementation was released as open-source software. Bitcoin is a decentralized digital currency, without a central bank or single administrator, that can be sent from user to user on the peer-to-peer bitcoin network without the need for intermediaries. Transactions are verified by network nodes through cryptography and recorded in a public distributed ledger called a blockchain. Bitcoins are created as a reward for a process known as mining. They can be exchanged for other currencies, products, and services. Research produced by the University of Cambridge estimated that in 2017, there were 2.9 to 5.8 million unique users using a cryptocurrency wallet, most of them using it. It has been criticized for its use in illegal transactions, the large amount of electricity used by miners, price volatility, and thefts from exchanges. Some economists, including several Nobel laureates, have characterized it as a speculative bubble at various times.

**BY VAIBHAV SANGWAN**  
2817315  
4TH YEAR



**EDUCATION IS THE MOST POWERFUL TOOL WHICH YOU CAN USE TO CHANGE THE WORLD.**

## **IT TOPPERS**

**4TH SEM 2018-22**  
**6TH SEM 2017-21**  
**8TH SEM 2016-20**



**PRINCE KUMAR**  
**1ST POSITION**



**NISHANT MALHOTRA**  
**2ND POSITION**



**SHUBHAM PANDEY**  
**3RD POSITION**



**HITESH SAINI**  
**1ST POSITION**



**RISHABH JHA**  
**2ND POSITION**



**PARVESH**  
**3RD POSITION**



**VIDHI**  
**1ST POSITION**



**SIMRAN**  
**2ND POSITION**



**MANSI**  
**3RD POSITION**

# TEAM IT



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# #SmartIndia Hackathon 2020

Smart India Hackathon is a nationwide initiative to provide students with a platform to solve some of the pressing problems we face in our daily lives, and thus inculcate a culture of product innovation and a mindset of problem-solving. In this same competition, nine teams got selected for the grand finale of SIH 2020. In these nine teams, the IT department had their three students in two different teams. One team out of these two ended up the second runner up in the innovation category and first in their problem statement. The team participated under the problem statement of innovation for smart cities and tackled the problem of delay and errors in the management of power outages in low tension power distribution using advance technology to make the whole procedure automatic. They dismissed all the unwanted manual work and changed it with automation. Not only their idea made them reach in top 6 positions but also helped them securing second-runner up in the overall innovation category and first in the category of smart cities

**Team Name:** Tech Monks  
**Position Secure:** 3<sup>rd</sup>  
**College Name:** Panipat Institute of Engineering & Technology  
**Problem Statement:** IoT Based Low Tension Power Transmission Monitoring Module Cum AI Based Power Outage Detector  
**Name of Team Members:**

- Gaurav Dhiman (Team Leader)
- Utkarsh
- Darshan
- Kangan
- Anshu
- Zuber

Nodal Center: G H Raisoni College of Engineering, Nagpur

Organisers: MHRD, MIC, Persistent, IITM  
Platinum Partner: aws

**Team Name:** TechMonks  
**3<sup>rd</sup> Prize: Rs.50,000/-**  
**Organization:** AICTE MIC (Student Innovation)  
**PS:IC463 | Idea Title : Power Outage info Module**

**Gaurav Dhiman**  
Team leader

**Kangan**

**Anshu Rana**

**Darshan Gupta**

**Zubair Ahmad Mir**

**Utkarsh Pandey**

Partners: CISCO, DevNet, intel, KPIT  
Communication Partner: Soma  
Media Partner: [Logo]

**Problem statement-** Digital Tracking Of Children Of Migrant Population To Follow-up On Their Health Status And Immunization Services Received/ To Be Given.

Facts and figures -

Roughly, 3 million children die each year of vaccine-preventable diseases (VPDs) in INDIA.

Sources:- [http://njcmindia.org/uploads/4-3\\_457-460.pdf](http://njcmindia.org/uploads/4-3_457-460.pdf)

## Study Showed That Only-

20% under-five children were fully immunized,  
75% were partially immunized and  
5% were not immunized at all.

Sources:- [http://njcmindia.org/uploads/4-3\\_457-460.pdf](http://njcmindia.org/uploads/4-3_457-460.pdf)

## Solution proposed-

TO PROVIDE A CENTRALIZED DATABASE (HEALTH HISTORY) FOR RECORD KEEPING OF INFANT.

## WHAT WE BUILT -

MEDOCS- A SECURE APP., LINKED WITH AADHAAR To Maintain Centralized Health History For Infant, Which Can Be Used In Any Health/ Medical Related Query Of An Infant.

## Features of MEDOCS -

### 1. Connecting Doctors And Patient

A doctor can fetch the previous vaccination record and can Update new vaccination records

Patients can fetch the previous vaccination record, Graphical representation of given vaccination and will receive Vaccination reminder via message and calls in their regional language.  
<https://cutt.ly/rkJsrK> (click here prototype message)

### 2. Volunteer Portal- A portal in which we will connect different govt. Workers like Anganwadi workers and Asha workers as a volunteer and they would be responsible for following tasks for such population which are not connected through mobile or internet -:

Vaccination reminder by the volunteer through SMS and calls.

One to one communication with infant's parent.

### 3. Keeping Record Of Vaccination- The vaccination records will be stored in our databases.

### 4. Live Immunization tracking / Public Portal- This portal will be present on our web app., where any can see the live vaccination happening in India in Real-time. <https://cutt.ly/KkJGFVa>

### 5. Child Health Status- From these features, a user can see the current health status based on the given vaccination.

### 6. Progressive Web App- This means or application will be able to run on any device i.e Android, Web, IOS, Desktop. It's also able to get installed on any device too.

### 7. Aadhar based platform- This platform will be Aadhar based, i.e. Doctor/Patient has to enter the Aadhar no. For accessing the data and then have to enter the OTP sent to the no. Liked with aadhar card.

## पाईट के विद्यार्थियों ने स्मार्ट इंडिया हैकथॉन-2020 में फिर मारी बाजी

समालखा (सच कहूँ/सनी कथूरिया)। दुनिया के सबसे बड़े कोडिंग महामुकाबले स्मार्ट इंडिया हैकथॉन सॉफ्टवेयर एडिशन में लगातार 72 घंटे की प्रोग्रामिंग के बाद पाईट कॉलेज के विद्यार्थियों ने फिर से पहला स्थान प्राप्त किया। इस बार कॉलेज की 2 टीमों ने अलग अलग सेक्टर के मुकाबले में पहला स्थान प्राप्त किया और एक टीम ने तीसरा स्थान हासिल किया। कोविड 19 के चलते इस बार इस महामुकाबले को ऑनलाइन ही रखा गया।

लाखों विद्यार्थियों ने इस मुकाबले में हिस्सा लिया और फाइनल राउंड के लिए 10000 विद्यार्थियों को अलग अलग टीम में जगह मिली। फाइनल राउंड में पाईट कॉलेज की 11 टीम के 66 विद्यार्थियों ने जगह बनाकर इतिहास रच दिया था। इस वर्ष



350 से अधिक सरकारी और निजी क्षेत्र की समस्याओं के समाधान के लिए ये मुकाबला हुआ जिसमें स्वास्थ्य, टेलीकॉम, पोस्टल, एम एच आर डी, एग्रिकल्चर, इरिगेशन, एजुकेशन आदि क्षेत्रों की समस्याओं के समाधान निकालने के लिए विद्यार्थियों ने 3 दिन लगातार

ऑनलाइन माध्यम के जरिए कोडिंग की पाईट कॉलेज पहले भी स्मार्ट इंडिया हैकथॉन की ट्राफी जीत चुका है और इस महामुकाबले के लिए नोडल सेंटर भी चुना जा चुका है। पाईट के शिक्षक विपिन तोमर की मेंटरशिप में टेक मॉक टीम के गौरव, उत्तराक्ष, दर्शन, कंगन, अंशु और जुवेर

ने ऐ आई सी टी ई इन्वेंशन प्रोजेक्ट की समस्या के समाधान के लिए तीसरा स्थान प्राप्त किया और 50000 रुपए का नकद इनाम उन्हें मिला। वहीं शिराज खुराना और संदीप अरोड़ा की मेंटरशिप में आईडिया स्ट्रैटेजिस्ट टीम के ऋषभ ढींगड़ा, सिमरन, वंशिका, जतिन

हेल्थ मिनिस्ट्री के प्रोजेक्ट में पहला स्थान हासिल किया और मुकाबले में 1 लाख रुपये की राशि प्राप्त की। संदीप सिंह बिंद्रा की टीम बोरड कोडर्स के विक्रांत, आयुष, प्रणव, मनन, निर्यात और गुंजन ने 2 फ आई एस ग्लोबल कॉर्पोरेट्स की समस्या के लिए सोल्यूशन देकर पहला स्थान प्राप्त किया और 1 लाख रुपए का इनाम जीता।

रakesh तायल ने बताया कि पहले भी हमारे विद्यार्थी स्मार्ट इंडिया हैकथॉन में चैंपियन बन चुके हैं और इस बार तो हमारी तीन टीमों जीत कर आई है कॉलेज के लिए यह बहुत खुशी का मौका है। सुरेश तायल ने बताया कि आज राम मंदिर भूमि पूजन के उपलक्ष्य में इस खुशी के अवसर पर कॉलेज में नए महाराजा अमरसेन ब्लॉक में हवन भी करवाया जा रहा है।

# BELIEVE IN YOURSELF

**Dear students, how many times somebody said to you, you can't do it. They can be your parents, relatives, and sometimes friends too. When you say, I want to participate in a music show or I want to be an actor or an athlete for that matter; they say you can't do it. When somebody wants to do something out of the league, people around them try to demotivate them. Why do they do it? What's their motive behind it? What I will say is, that's not important. You should believe in yourself first.**

*If you don't believe in yourself, why is anybody else going to believe in you? It's as simple as that.*

Most of the time, we blame others for not trusting in us or not supporting us. What I believe is rather than expecting acceptance from others, you must accept yourself first and always believe in yourself. Then only you can make progress and become a self-confident person.

The fact is that every human brain is the same. The only different thing between us is how we use our brain, how dedicated are you towards our goals, and that makes the difference. If you are demoralizing yourself then everybody around you is going to do the same. So rather than blaming others for drawing you back, you must take it on yourself and must prove that you are not a penny less than anybody else. The day you will get that feeling you will start to believe in yourself.

It doesn't matter whether they believe or not; all that matters is whether you believe in yourself.

If you are going to start believing in yourself, it is you who must make the change. Others cannot make you believe in yourself; they can only be supportive. If a goal seems too big for you, then keep breaking it down until you reach a point where you do believe you can do it.

Sometimes your difficulties in believing in yourself can stem from the fact that you haven't really given yourself anything to believe in. When you develop a clear vision for what you want, start developing strategies for realizing that vision and start achieving small goals along the way; you increase your self-belief, one small step at a time. Believing in yourself means you're motivated to get things done. Get into the habit of setting goals (both short-term and long-term). Then you can take active steps to achieve them. With every goal that you achieve, no matter how small, your confidence will increase.

The old saying that, where there is a will there is a way is very true. When you reinforce your motivation like this, you will create an iron-clad will to achieve your goals and you will find a way to make it happen.

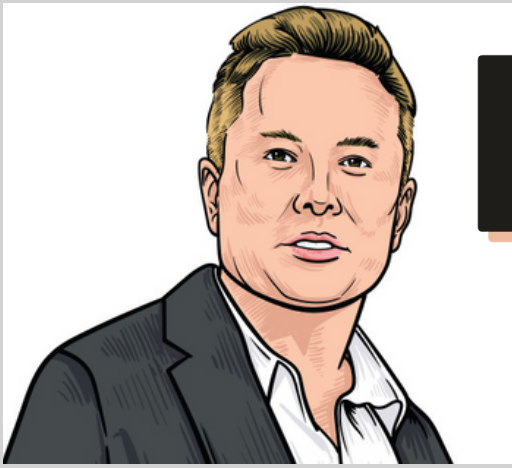
It can be of great value to keep a record of the tough times that you go through, and how you got through them. This will help you keep believing in yourself when things go wrong. At the same time be grateful for all the positives, at every opportunity, and you will have a lot more faith in yourself.

When you are feeling low it very tempting to think that your life is 100% bad but that is not true at all. Learn to compartmentalize i.e., if one area of your life isn't working, don't automatically assume that every area of your life is bad.

Regardless of what stage of life you are living, search for the good all around you. Get the most you can from each moment. Live in the moment and be determined to focus on and, be grateful for all the good things that are in your life.

Life is a journey and like any other journey, you are going to take some wrong turns. You are going to correct your course of actions from time-to-time. So, don't let setbacks get to you. Just identify the changes you need to make, make them and move on!

BY SHREYA GUPTA  
2818404  
3RD YEAR



# ELON'S EMPIRE

**ELON MUSK** IS A POLARIZING FIGURE IN THE TECH AND BUSINESS WORLDS, BUT NO MATTER WHAT ANYONE THINKS OF HIM, HE IS AN INNOVATIVE DISRUPTOR THAT IS TACKLING A WIDE SET OF ISSUES. HE MAY BE BEST KNOWN FOR HIS ELECTRIC VEHICLE COMPANY, TESLA, AND HIS AMBITIOUS ROCKET STARTUP, SPACEX, BUT HE HAS MUCH MORE GOING ON. HERE'S A QUICK LIST OF THE COMPANIES THAT MUSK HAS FOUNDED THAT ARE DISRUPTING LEGACY INDUSTRIES AND CREATING NEW ONES



## **The Boring Company**

In December 2016, Musk founded The Boring Company after growing frustrated with traffic in Los Angeles and the limitations of two-dimensional transportation networks. The startup aims to create subterranean

tunnels that allow pedestrians, freight, utilities, or autonomous electric vehicles to circumvent traffic on surface roads to more directly get from A to B.

The company has proposed multiple projects including a tunnel that would carry passengers between Washington DC and Baltimore, Maryland. The company has an initial test tunnel, located in Hawthorne, California, and a project under construction in Las Vegas to ferry people around the Las Vegas Convention Center campus.

The Boring Company has also made news by selling 20,000 flamethrowers to consumers, which made the company \$10 million in revenue. The "Not-a-Flamethrower" could have been a publicity stunt or a way to raise more money without taking on debt or diluting ownership.



## Neuralink

Neuralink Corporation was started by Musk in July 2016 and is developing an implantable brain-machine interface. The company initially plans to use the tech to help people with paralysis to regain independence through the control of computers and mobile devices. The company wants the

devices to give people the ability to communicate via text or speech synthesis, surf the web, or express their creativity through photography, art, or writing apps. In August 2020, Musk unveiled a pig called Gertrude with a coin-sized computer chip in its brain as a proof of concept.

## Open AI

OpenAI is an artificial intelligence research laboratory co-founded by Musk in December 2015. Musk resigned from the company's board in February 2018 but remains one of its top donors. OpenAI is seeking to build a machine with human intelligence while prioritizing transparency and safety. In June 2020, the lab

released its first commercial product. The tool, dubbed "the API," allows businesses to directly access OpenAI's powerful general-purpose text generation AI, which has been trained on trillions of words from the internet.



## SpaceX

SpaceX has made headlines for reusable rockets, space tourism, and its network of satellites that can provide internet connectivity on earth. The exciting space company was founded by Musk in 2002 to reduce space transportation costs and eventually enable the colonization of Mars. While the company was founded with lofty ambitions it has made

significant strides in the aerospace industry. The company completed its first reusable rocket launch in 2015 and in August 2020 the company celebrated a record sixth reuse of a Falcon 9 first stage booster.

The company's progress doesn't stop there as the company's Crew Dragon spacecraft is slated to complete its first operational mission launches to the International Space Station at the end of October. Additionally, in early October 2020 Musk announced the company launched its latest batch of connectivity satellites, and tweeted, "Once these satellites reach their target position.

## **Tesla**

Perhaps the venture Musk is best known for, Tesla is a game-changing electric vehicle maker that can be in-part be credited with popularizing the idea of battery-electric cars. Musk began the automaker in July 2003, and by 2005 the company had revealed the prototype of its electric car, the Roadster, which went into production in 2008. Now the company offers a wide range of



electric vehicles - including an SUV, sports car, and sedan - and soon the company will offer an electric semi-truck and pickup truck. Since its founding, Tesla has expanded beyond its core automotive business into clean energy generation and storage. In 2016, the company acquired SolarCity, another Musk-founded company, which sold solar power systems.

## **Honorable mention: X.com (now PayPal)**

X.com was an online bank founded by Elon Musk in November 1999. The company quickly merged with software company Confinity and changed its name to PayPal which was bought by eBay in 2001 for \$1.5 billion. In 2017, Musk bought the rights to X.com from PayPal, citing nostalgia. The website temporarily redirected visitors to The Boring Company's website, but now just features a single black "x" in the top left corner of an all-white page.

BY RANJEET SINGH  
2819363  
2ND YEAR

# DIGITAL FORENSICS

**Technology Is Safe. Only Humans Are Vulnerable**

## About

Digital forensics is a branch of Forensic Science encompassing the recovery and investigation of material found in digital devices, often in relation to computer crime.

Today the increasing number of computer and electronics components has demanded the use of Digital forensic showing that digital forensics can be implemented in specialized fields of law enforcement, computer security, and national defense. Digital Forensics is a branch of Forensics involving the recovery and investigation of material found in digital devices due to incidents of computer crime occurrence. Today digital forensics includes other areas of investigation like computer, database, and network.

**Digital forensics involves the following steps:**

- Identification
- Preservation
- Analysis
- Documentation
- Presentation

Due to much advancement in various types of technology devices, media, digital forensics has defined the sub-branches according to the investigation required. One of the digital forensics branches is Computer forensics, Malware Forensics, Memory Forensics, Wireless Forensics, Mobile device forensics, Network forensics, Forensic data analysis, and Database forensics. There are various challenges faced during a forensic investigation like Technical Challenges, Legal Challenges, Limited Tools.



CHIRAG GARG  
B.TECH IT 2ND YEAR  
BATCH 2019-23

BY CHIRAG GARG  
2819353  
2ND YEAR



# ETHICAL HACKING & CYBERSECURITY

## HACKING:-

- Hacking is the act of finding the possible entry points that exist in a computer system or a computer network and finally entering into them.
- Hacking is usually done to gain unauthorized access to a computer system or a computer network, either to harm the systems or to steal sensitive information available on the computer.

## ETHICAL HACKING:-

- Ethical hacking is the act of doing penetration testing finding vulnerabilities to ensure the security of an organization's information system.
- These professionals are part of a cybersecurity company
- Their goal in the company is –
- To protect systems from attackers.
- To ensure the privacy of the organization's data.
- Eliminate any potential threat.

## ETHICAL HACKING PHASES:-

**Reconnaissance:-** Gathering information about our targets.

**Scanning:-** We scan each and every component of a system in order to find vulnerabilities.

**Gaining access:-** We actually take access to a system

**Maintaining access:-** To maintain access we should create a backdoor and web shell in order to take access inside the system.

**Clearing tracks:-** Clearing our records.

**Information Gathering:-** The process of well knowing the target, digging, footprinting, and keep in touch with the target is called information gathering.



## Types of information gathering:-

### Active information gathering

Information is gathered directly.  
E.g. by phone calls, interviews, or face to face meetings.

### Passive information gathering

Information is gathered by using a third party.  
E.g. by using search engine tools and websites.

### Passive information gathering:-

1st target:- person  
2nd target:- website  
3rd target:- email id  
4th target:- webserver

## Information gathering – WEBSITE

Before testing any web application it is good to find information about that.

WHO is information.	Whois.se
Reverse IP check.	Yougetsignal.com
Website framework	builtwith.com
DNS Records.	

**knocksubdomainscan** tool is used to scan the subdomains of any website.  
**Knocky** website name...

## Information gathering – WEB SERVER

The web server provides access to internet resources.

Server operating system  
Services running on that server  
Open ports

## EMAIL HEADER ANALYSIS:-

An Envelope:- contains for internal processing like routing

Body:- our message

Header:- it contains message-id, date, to, from, User-Agent, IP address of sender and receiver

• First of all open your any email and then click on three dots and then click on show original and then copy the email header and paste it on **whatismyipaddress.com**

## **VIRTUALIZATION:-**

Virtualization in terms of computers is the duplicity of hardware as well as software.

The main concept behind virtualization to proper utilization of hardware as well as processor

## **Some popular Virtualization Software**

- Oracle Virtual Box
- VMware

# **KALI LINUX SETUP**

KALI Linux is one of the most popular Operating System which contains thousands of hacking tools used by ethical hackers.

KALI is ideal for Penetration Testing, Digital Forensics, Incident Response.

You can download this operating system from – [www.kali.org](http://www.kali.org)

## **Metasploitable Linux Setup:-**

Metasploitable is an intentionally vulnerable Linux virtual machine. This VM can be used to conduct security training, test security tools, and practice common penetration testing techniques.

For more details check:-

<https://sourceforge.net/projects/metasploitable>

## **NMAP(NETWORK MAPPER)**

Nmap is free and open source software used for scanning and auditing the networks.

## **Features-**

It will find open ports.

It will find running services and their version numbers running on particular port.

It also searches for operating system and it is available for both Linux and Windows.

Can be used for aggressive scan to get you more detailed information about your target including OS, Websites, Metadata, Internal files, dis-allowed directories and lot of more.

BY PARVESH KAUSHIK

2817610

4TH YEAR

# **MOBILE GAMING IS THE NEW GAMING – GAMES AND YOUTH**

Playing a game can be defined as an activity that someone engages in for amusement. We play games because it's fun, it increases brain function, enhances our cognitive skills and releases serotonin, the happy chemical. As technology has advanced, the thrill and allure of playing games has only increased, with a more visual stimulus, creativity, and satisfaction. Also, playing games proved to be a great time pass for people and helps them freshen up.

In India, we have many young people, leading to more competition among them. Now, in this hard time of competition, mainly this population continually seeks to escape into activities that are fun as well as refreshing. There are many other factors too which are leading a large portion of the population toward the gaming world. Showcasing one's gaming skill is one of the major reasons, followed by the sense of community and social engagement.

Now a day, game development companies are focusing more on creating online games. It is not always important to enable the multiplayer features in the game but adding the option to share the score is enough. This is not some coincidence but PR management. With the increase in usage of internet and social media, people are becoming more competitive, not in real life but in virtual life. Hosting the online game provides the player with the satisfaction of winning against the real players sitting on the other side of the world. This helps in increasing the happiness level and hence enhance the thinking capability. But all the successful games in India possess one thing in common, they all are on the mobile platform, mainly android.

I was wandering in the streets one night when I stopped to listen to some children conversing in a group. They were talking about some map in grand theft auto game. It was surprising, they were around 13- 14 years old but talking about 18 + game. I jumped in between the conversation and asked about the game. One of the boys from the group took out his phone and showed me the game.

Since, in India, smartphones are easily accessible in especially metropolitan and tier-2 cities. In the current scenario, over 500 million Indians are now using smartphones, a 15 % increase from 2018 primarily due to brands like Xiaomi and Realme that continue to bring new users to the ecosystem. With the increase in usage of smartphones, the audience for mobile games is getting bigger. Recently some decisions were taken by the government about the Aatmanirbhar Bharat that might also directly influence the growth of the gaming industry in India. Rising from the 'Action and Adventure' kind, in which 10s to 100s of players contend continuously to be the last player standing, games like Player Unknown's Battlegrounds (PUBG), Call of Duty, Free Fire, Fortnite which highlight relentless, hyperkinetic activity and development are drifting in India. Increasingly more easy-going gamers like to play multi-player games that don't last more than 15-20 minutes. This allows them to freshen up their minds without disturbing their work. Also, smartphone producers conveying skilful equipment like good GPU and more RAM even in mid-range smartphones has helped in quickening the hunger for versatile games in the Indian market and shows vast potential for mobile game distributors.

This likewise presents the obvious fascination for Esports — one more aspect of online gameplay. The present youth is as or more occupied with Multiplayer online mobile games like cricket. No other gaming stage has gotten Esports as quick as smartphones. With games like PUBG, Mobile Legends, and Clash Royale, Esports has made a positive impact and drawing in sway of youngsters of India. There are many brands which are organising Esports making it a real arena.

In India, this industry is ruled by the mobile gaming fragment. As per the Mobile Marketing Association (MMA), the income from this section of the gaming business in India will be worth \$943 million by 2022. This is a development of more than 200% over a time of six years from \$466 million out of 2016. So, now the increase in mobile users and game industry shows a substantial future as a career. Also, it opens up a new opportunity for small game developers to expand their business. So conclusive if we say, the gaming industry is going to open new gates for businesses and jobs. And since India is the second most populated country, there is a huge audience waiting for their product.

**BY UTKARSH PANDEY**  
**2818363**  
**3RD YEAR**

# NETWORK SECURITY

The tremendous rise in the use of mobile devices and the rising demand for integrated security solutions are some of the important factors that are fueling the growth of network security globally.

In a world where businesses rely increasingly on the internet more networks are getting connected to the internet. Networks can face severe threats from bugs, viruses and hackers at any time. Hence it is important to protect your network.

## Case study

An e-commerce web site on analysis of its revenue in different geographical regions found out that some regions are experiencing low revenue than normal from the past few weeks. On further research it was found that the customers of that region are frequently experiencing either latency in response from the website or the website becomes unavailable. As this was a serious impact on business revenue, this issue was reported to the security incident team. They listed the below observations:

- 1) The servers of the website deployed in specific regions were slow or down.
- 2) These servers received an unusual surge in the number of requests.
- 3) Most of these requests were bogus, received from 1,5000 Iot devices (mostly surveillance cameras and DVRs)
- 4) Overwhelmed by this surge in requests, the servers were unable to respond to legitimate users.
- 5) This resulted in the servers going down.
- 6) This type of attack is called a Distributed denial of service (DDoS) attack which occur due to vulnerabilities in the network layer.

Hence, we need security controls to protect networks from DDoS attacks and the other type of network attacks.

Let us see what is network security and how it is achieved.

Network security refers to an activity taken to protect the availability of networks, confidentiality and integrity of data in networks.

- The internet is an untrusted zone. Anything coming from it could be potentially harmful.
- The organizations network is a trusted zone
- Data entering the intranet (trusted zone) from the internet (untrusted zone) must be carefully scrutinized.
- There should be mechanisms to prevent certain data from entering the network

## How is network security Achieved?

It is achieved by using important security devices that perform the scrutinization.

- Firewalls
- an intrusion detection system (IDS)
- Virtual private network (VPN) gateways

## What is a firewall?

- A firewall is a special computer that is placed between an organizations intranet and the internet
- All communication between the internet and the intranet flow through this firewall
- A firewall has an access control list. Each entry in it is called a rule.
- The firewall inspects every packet header - source and destination IP addresses, ports etc.
- It compares the header information with each rule in the access control list, in an if-else way.
- If a packet matches a particular rule then, the action specified under the rule is applied.
- The action could be to allow or deny entry/exit for a packet.

Apart from controlling access to internet sites, a firewall is used to block several types of attacks like DDoS or to enforce an organization's network policy (E.g employees are not allowed to access specific internet websites).

## What is an intrusion?

- An unauthorized user logs on to a machine
- An authorized user disables logging functionality in a router
- A worm (a type of malware) spreads to all the hosts in the network
- An authorized user (say an employee) downloads all employee directory records to his computer
- An unusually high number of login attempts in a host

All the above examples involve a user (or computer process) trespassing or attempting to trespass into a network (or host). Such actions are called intrusions

A firewall cannot be useful to detect or stopping such intrusions. An Intrusion Detection System (IDS) is used to detect such intrusions.

## What is an IDS?

- An IDS is a dedicated computer or software running on a general-purpose computer
- It is positioned at certain points in the network. The IDS sniffs all the packets at that point.
- It analyses the contents of network packets (headers and apps data) and the sequence of packets.
- If analysis results indicate an intrusion, an alert message is sent to the administrator.
- An IDS can also use different log files (generated by hosts) as input for detecting the intrusions.

## What is VPN?

A VPN is an extension of a private network across a public network. It enables the user to send or receive data across shared or public networks as if their computing devices connected to the private network.

## Benefits of using VPN:

- Access a business network while traveling
- Protect yourself from snooping on untrustworthy wi-fi hotspots
- Get connected to organizations network securely

Now that we have learned how network security is important to an organization.

# 10 WAYS OF MEDITATION TO BENEFIT YOUR BRAIN POWER AND YOUR MOOD

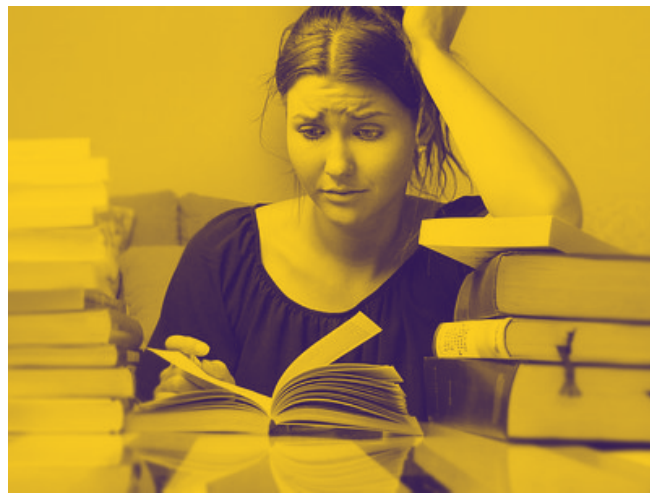
These days most of you feel like a robot. Like in every field stress and anxiety is harming our peace of mind due to which many health-related problems, social problems, brain powers are getting faded. And by all these problems your brain gets weaker and weaker and you start feeling depressed and dull due to which you cannot put 100% effort into your social as well as professional field. Many people whether in offices, or households are not in the condition to think well and take fluent decisions due to lack of concentration in their work space. So, to reduce these problems and to make your brain stronger, one needs to follow regular meditation. Meditation is the process of relaxing your brain and body by entering your subconscious mind. By entering the subconscious mind one can get whatever he dreams of.

**Here are 10 benefits of meditation which also help in increasing your brain power:**

## **1). Fluent decision making :**

Due to the increasing work load and tension in the workspace, people are leading stressful life due to which they are not able to take right decision on right time. By regular meditation one can enhance decision making and get effective skills in their work space.

Studies have demonstrated convincing proof that it helps individuals who have hindered leader working aptitudes from conditions, for example, Attention-shortage/hyperactivity issue (ADHD). An investigation run by Dr. Lidia Zylowska indicated 78% of grown-up members with ADHD encountered a decrease of by and large ADHD side effects when they consistently utilized contemplation rehearses.



## 2). Effective stress management:

Snapshots of stress trigger your amygdala, otherwise called your "reptile brain". It's the basic piece of your cerebrum that is related to dread and feeling and its essential capacity is to help you endure. Elevated levels of pressure can cause you to go into reptile mind mode. At the point when you are in this mode, other significant pieces of your mind like the pre-frontal cortex, which is the piece of your cerebrum that is equipped for more elevated level intuition,

## 3). Naturally remember useful and important information:

You utilize your working memory when you need to put a tacky note in your psyche so you can utilize it sooner rather than later. The issue is in some cases those tacky notes tumble off when you need it. In the event that your working memory is the data that goes on these psychological tacky notes, at that point your working memory limit is the means by which long you can have these tacky notes remain on before it tumbles off. The more drawn out time you need to hold data, the additional time you have for thinking and understanding to happen.

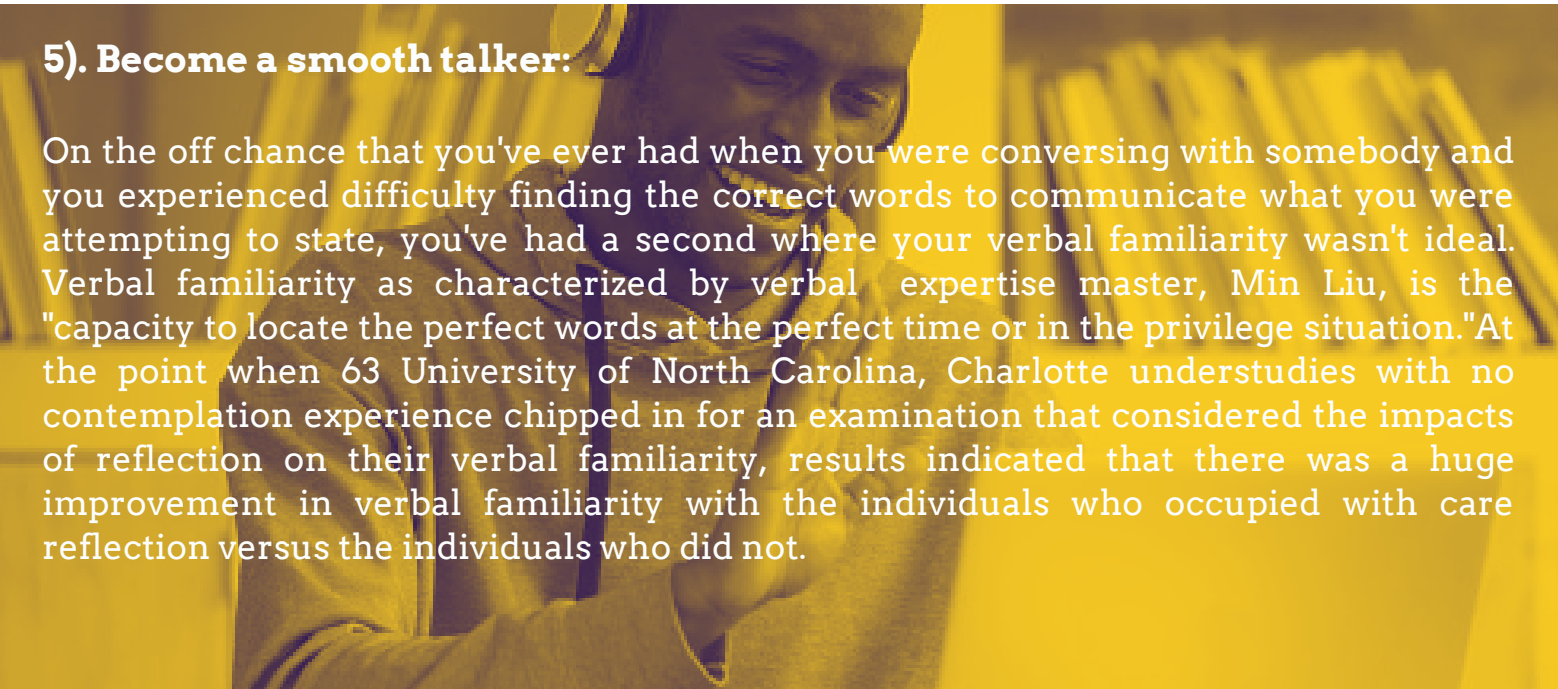


## 4). Enhance concentration and focus:

As you enter your subconscious mind you get more focus and can pay more attention to the subject and devote 100% attention to work. Effective concentration can help in achieving the goal as it gives a clear idea of what is to be done to achieve dreams.

## 5). Become a smooth talker:

On the off chance that you've ever had when you were conversing with somebody and you experienced difficulty finding the correct words to communicate what you were attempting to state, you've had a second where your verbal familiarity wasn't ideal. Verbal familiarity as characterized by verbal expertise master, Min Liu, is the "capacity to locate the perfect words at the perfect time or in the privilege situation." At the point when 63 University of North Carolina, Charlotte understudies with no contemplation experience chipped in for an examination that considered the impacts of reflection on their verbal familiarity, results indicated that there was a huge improvement in verbal familiarity with the individuals who occupied with care reflection versus the individuals who did not.





## 6). Make your brain a super power:

All the mark folds you see on the external surface on the mind that seem as though breezy streets have been shaped to help speed up synapse correspondence. The development of these folds is known as gyrification. Since your mind doesn't have any space inside your skull to get greater, it goes through gyrification to build the limit of your cerebrum work. Long haul meditators have been appeared to have a bigger measure of gyrification contrasted with the individuals who don't rehearse contemplation. All the more, curiously, an immediate connection was found between the measure of gyrification and the quantity of contemplation years, which is verification of the ability of our cerebrum to keep developing even as grown-ups.

## 7). Become a better problem solver:

At the point when your cerebrum is tackling a difficult issue, it requires the ability to zero in consideration on what's generally significant among a lot of data. A basic illustration of your mind at work participating in such compromise is the point at which you're at a noisy gathering conversing with a companion. On the off chance that your cerebrum didn't recognize and resolve all the clashing incitement around you by assisting you with overlooking the commotion around you and spotlight on your companion, you'd likely have a tangible over-burden. A similar principle applies when you run into bigger compromise difficulties.

## 8). Kill your anxiety by doing regular meditation:

When stressing turns into an ordinary piece of your everyday life, it can negatively affect you and you wind up losing rest, being tense, and have a dashing psyche that won't sit still. Reflection has been for some time set up as a cure for tension. Scientists at Wake Forest Baptist enlisted fifteen sound volunteers with typical degrees of ordinary nervousness to try out this hypothesis. The members had no past reflection experience. Subsequent to taking part in four 20-minute care contemplation classes, it was accounted for that uneasiness was perceptibly decreased in each meeting that they reflected. The mind imaging examines taken of these individual uncovered that contemplation was giving nervousness alleviation by enacting the front cingulate cortex which is one piece of the cerebrum that assists with the control of stress. Sweeps additionally uncovered reductions in the dark matter of the amygdala which is the piece of the cerebrum that assumes a significant part in tension and stress



### 9). Brain gets stronger forever:

The majority of the neurons in your mind are contained inside a bit known as dark matter. It's inside the dark matter where fundamental things, for example, memory, feelings, discourse, dynamic, and discretion occur. After you arrive at 30-years of age, your cerebrum starts to gradually recoil. In any case, proof shows that the individuals who keep their mind fit as a fiddle by

participating in customary contemplation practices can forestall the contracting by and large. One examination from UCLA indicated that in long haul meditators, age-related dark matter misfortune was less articulated contrasted with the individuals who didn't think. Cerebrum sweeps of the members who had been pondering for a normal of 20 years even demonstrated more dark matter volume all through their mind than anticipated.

### 10). Increased self-control:

On the off chance that you've ever wound up surrendering to the enticements of eating that tub of frozen yogurt when you're on eating regimen or illuminating that cigarette when you're attempting to stop, contemplation may be the specific thing you need to give you that additional push of discretion. Truth be told, contemplation can even assist individuals with recuperating different kinds of addictions. Reflection actuates the front cingulate and prefrontal cortex which are simply the pieces of your mind identified with restraint. One investigation demonstrated that smokers who were relegated to complete 5 hours of contemplation spread more than about fourteen days indicated a 60% decrease in smoking contrasted with the smokers who didn't meditate.

BY RITIKA SINHA  
2819360  
2ND YEAR

# HORIZON

Beginnings are said to scare everyone  
But have you ever got along with them..  
Paths that seem like a long run  
Become shallow when chased with fun..  
You amaze people by achieveing things  
That everyone said can't be done..  
Every night brings the unsaid confusion  
But you glorify with new horizons...

**BY PRACHI**  
**2817303**  
**4TH YAER**

# LIFE

Life will never stay by your side  
It will reveal its secret one by one with lots of sacrifice  
It will become worse sometimes  
But still, you have to shine

Life will never stay by your side  
You have to be the brightest of bright  
Calm down to control your anxiety in your mind  
Because you have to shine even with lots of sacrifice.

## A WEAPON IN YOUR HAND

The world is not yours or mine  
But you have power to redefine  
This world consists of lots of crime  
But you have power to redefine

This world provides lots of time for love and cries  
But you have power to redefine

This world will never stop for nine or nine hundred  
ninety-nine  
Because this world is not yours or mine  
But still, you have power to redefine.

कुचल जाते हैं कुछ लोग ,, मेरे सपनों की दुनिया को ,,

मशहूर हर किस्सा हुआ नहीं करता ॥

बेपरवाही में ही ,, परवाह कर लिया करता हूँ ॥

परवाह करने में अब ,, बेपरवाही नहीं करता ॥

राज़ जिन्दगी के हर किसी के सामने बतलाता नहीं ॥

मैं जिन्दा होके भी ,, अब जिन्दा नहीं रहता ॥

कौन कब आया ,, कौन कब गया ,, मेरी जिन्दगी से ॥

इसका हिसाब-किताब आजकल, मैं रखा नहीं करता ॥

कब तक महरबाँ हैं ये जिस्त, ये जिन्दगी मेरी ॥

कौन सी रात आखिरी हैं, अब मैं गिना नहीं करता ॥

मुझे शिकायतें करने का अब कोई सौख नहीं रहा।

दूर जाना हैं मुझको सबसे, इसलिये वास्ता कुछ खाश नहीं रखता ॥

अलविदा कहता हूँ अपने हमदर्द और कुछ बिछड़े तो कुछ खफ़ा यारों से ॥

तेरा ये यार दुबारा मिलेगा या नहीं इसका वादा नहीं करता ॥



BY SHUBHAM PANDAY

2818367

3RD YEAR

# "YES PIET"

ऐसा है मेरा कॉलेज PIET  
जिसको चुनकर लिया हमने निर्णय RIGHT  
यहाँ से सीख कर जरूर बनेगे सब BRIGHT  
और अपने भविष्य में फिर नहीं करनी पड़ेगी FIGHT  
इसलिए सभी कहेंगे YES PIET

ऐसा है मेरा कॉलेज PIET  
जो ले जाएगा हमें DARK TO LIGHT  
करलो अपना मन पढ़ने में TIGHT  
भविष्य बनाने की एक अच्छी SITE  
इसलिए सभी कहेंगे YES PIET

ऐसा है मेरा कॉलेज PIET  
जो है सपनों को पूरा करने की KITE  
अपने बेफालतू के कामों को करो BITE  
ज़िन्दगी तुम्हारी भी बन जाएगी BLACK TO WHITE  
इसलिए सभी कहेंगे YES PIET

# 30 TIPS THAT CAN SAVE YOU FROM BEING HACKED

Most of us like to think we're pretty tech-savvy, but research has shown that 59% of people use the same password for most websites.

So, there is less fault of machines, the, more is in the humans.

Follow these simple steps to avoid being hacked:

## **STAYING SAFE ONLINE**

Update regularly.

Update rePasswords: don't re-use them regularly.

Download from authorised sources.

Administrator shouldn't be your default setting.

Turn off your when you're done.

## **CHECK YOUR SOCIAL MEDIA SECURITY SETTING**

Don't broadcast every update to the whole world.

Don't accept friend requests from folk you don't know

Enable login alerts

Review app permissions

Be careful what you share on your social, especially your date of birth or any info. Banks use to verify accounts or lost passwords

## **HOW TO CREATE A STRONG PASSWORD**

Replace letters with numbers or punctuation marks(O instead of o, or 3 for E).

Change password at least a couple of times a year

Use two step verification which helps to secure your account more

## **HIDE YOUR EMAIL FROM SPAMBOTS**

Don't use an easily guessed email- like yourname@gmail.com  
Use alias emails for all aspects of your online life  
If your email account displays the location of the last login, take a look at it every now and again to spot any rogue usage.

## **PROTECTING YOUR PHONE AND GADGETS**

Always use fingerprint recognition, a secure pin, or a unique gesture.  
Know how to wipe your gadgets if they're lost or stolen  
Enable login put a sticker over any unused webcams alerts  
Read app permissions to see exactly what data you're allowing them to access before you install them  
Install Find My Device

## **PROTECT YOUR COMPUTER FROM HACKERS AND VIRUSES**

Decent anti-virus and firewall software  
Backup important data  
Be picky about which companies you share your personal info  
Be aware of phishing attacks  
Encrypt the content you keep in the cloud  
Login accounts from your own devices  
If there's something really, don't want anyone else to know or get hold of, don't put it online!

**ALTHOUGH SECURITY IS MYTH. BUT IT IS OUR DUTY TO  
MAKE YOUR AWARE ABOUT HUMAN ERRORS.**

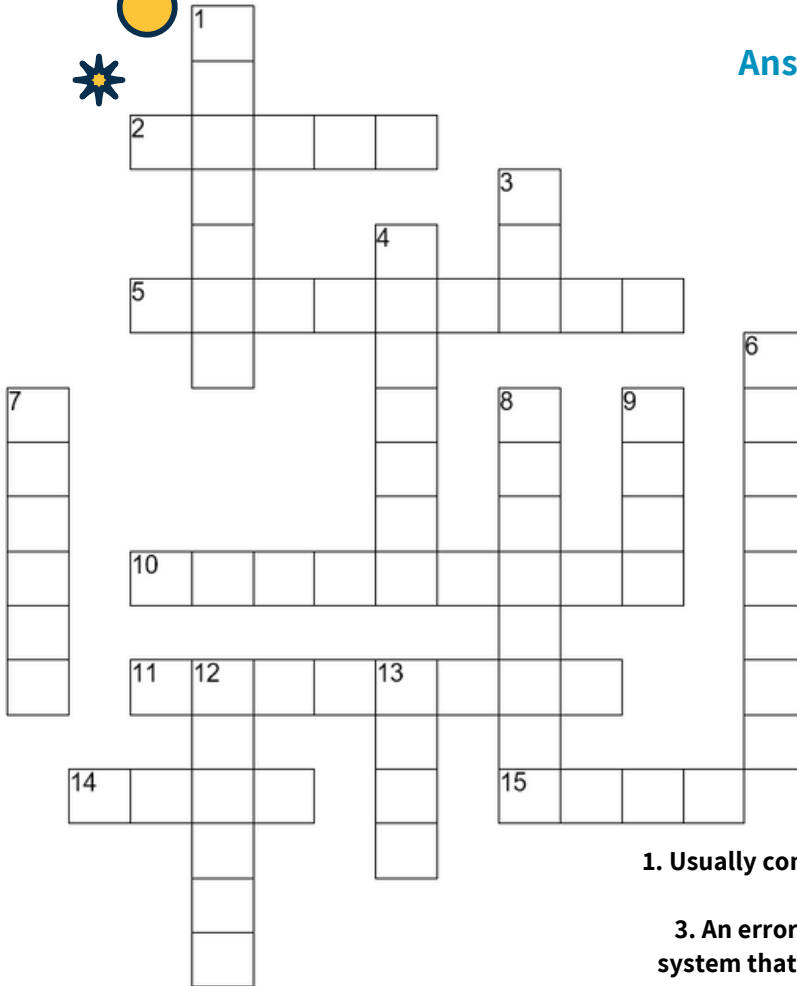
**BE SAFE ONLINE**

**BY ROHIT CHALOTRA  
2818931  
4TH YEAR**



# Technology Crossword Puzzle

Answer the questions below by filling in the blanks in the puzzle.

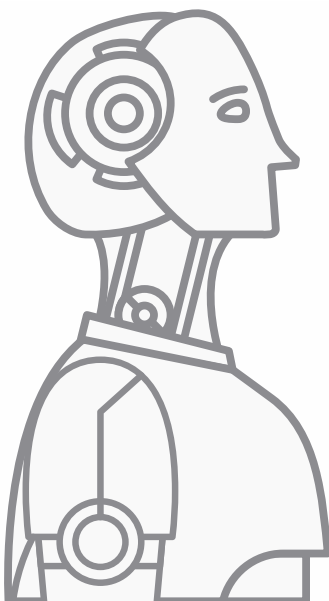


## Across

- 2. A device that feeds data into a computer, such as a keyboard or mouse.
- 5. The exclusive right, as recognized separately in each country, to publish and sell literary, artistic, or musical materials.
- 10. A software system that links topics on the screen to related information and graphics, which are typically accessed by a point-and-click method.
- 11. copy (data) from one computer system to another, typically over the Internet.
- 14. Usually consists of eight bits.
- 15. A measure of the amount of computational work that a computer system performs

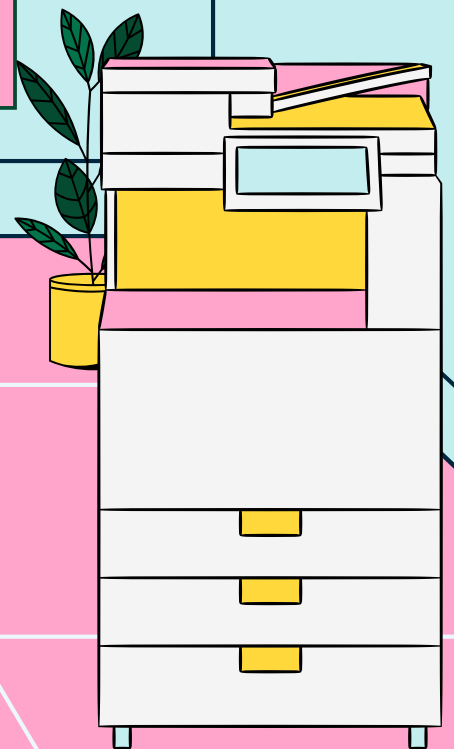
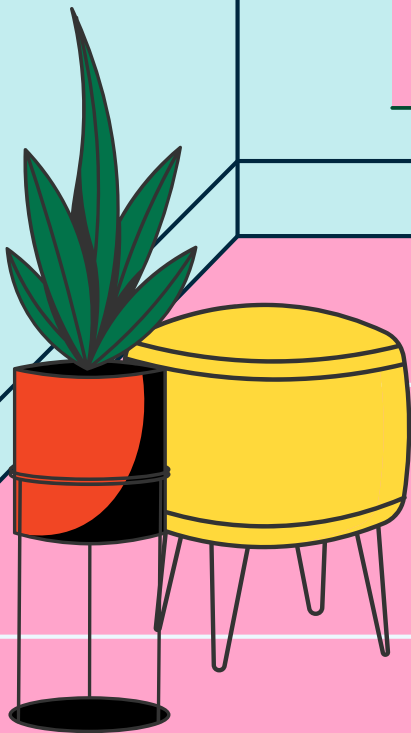
## Down

- 1. Usually comprises the display device, circuitry, casing, and power supply.
- 3. An error, flaw, failure, or fault in a computer program or system that causes it to produce an incorrect or unexpected result or to behave in unintended ways.
- 4. A client software program that runs against a Web server or other Internet server and enables a user to navigate the World Wide Web (WWW) to access and display data.
- 6. The collection of physical parts of a computer system.
- 7. Sending an email, posting photos on a social media site and using your webcam.
- 8. A part of a computer system or network that is designed to block unauthorized access while permitting outward communication.
- 9. The combination of typeface and other qualities, such as size, pitch, and spacing.
- 12. Any computer-generated information displayed on screen, printed on paper or in machine readable form, such as disk and tape.
- 13. A word or group of words that act as a way to cross reference to other documents or files on the computer.



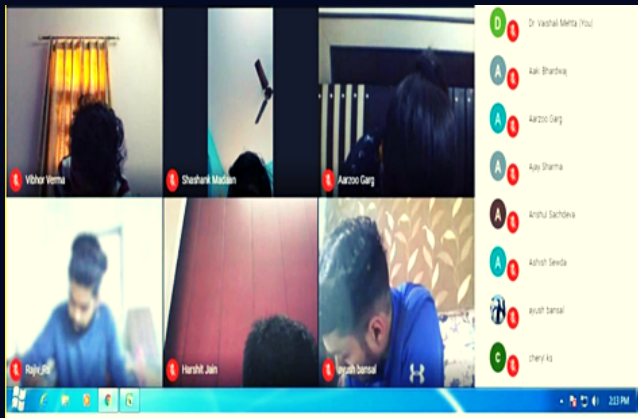
# *online classes*

Since the COVID -19 pandemic has disrupted the normal lifestyle of people across the globe, the virtual world has come to the rescue. Consequently, catering to the needs of all stages of education from pre-primary to university level, online education has emerged as an alternative to ordinary face to face classes. It is commendable how easily PIET has moved to virtual classrooms. During the lockdown period Online classes were conducted on Microsoft Teams and Proper Assessment and Evaluation of students

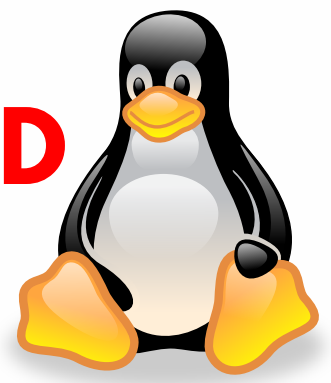


# ONLINE EXAMINATION

The pandemic had forced people across the world to stay indoors causing postponement of examinations. In view of the University Grants Commission's guidelines asking universities across the country to conduct the final year examination by end-September to protect the academic future of students, online examinations was the only answer. After the ambiguity and uncertainty faced by thousands of students, Online Examinations were held successfully in September.



# THE LINUX COMMAND CHEATSHEETS



## Terminal

<b>clear</b>	Clear the terminal screen.
<b>history</b>	Display recently used commands. You can also view these commands via the Up and Down keys.
<b>!</b>	Repeat a recently used command. You can use !n to repeat the n-th command in history or !-n to repeat what happened n commands ago.
<b>man</b>	Display the manual for a terminal program.
<b>whatis</b>	Display a brief description of a terminal program. A simpler alternative to the man command.
<b>alias</b>	Create a shortcut to a command or, when combined with the cd command, directory.
<b>exit</b>	Exit or close the terminal.

## Navigation & File Management

<b>cd</b>	Change directory. Used to navigate between folders.
<b>pwd</b>	Display current directory.
<b>cd</b>	Change current directory.
<b>ls</b>	Display a list of files in the current directory.
<b>cp</b>	Makes a copy of a file. Defaults to the current directory unless you specify a specific one.
<b>mv</b>	Move a file from one directory to another.
<b>rm</b>	Remove a file or set of files.
<b>stat</b>	Display when a file was last accessed, modified, or changed.
<b>touch</b>	Change the date accessed or date modified time of a given file to right now.
<b>rmdir</b>	Delete a file or files.

<b>mkdir</b>	Create a directory. Defaults to the current directory, but you can also specify one.
<b>rmdir</b>	Delete a directory. Defaults to the current directory, but you can also specify one. The target directory must be completely empty.
<b>rename</b>	Change the name of a file or set of files.
<b>find</b>	Search a specific directory (or your entire PC) to find files that match designated criteria.
<b>locate</b>	Search for files or directories. Faster than the find command, but has fewer options.
<b>grep</b>	Search a specific file or set of files to see if a string of text exists and where.
<b>mount</b>	Attach a separate filesystem (such as an external hard drive or USB stick) to your system's main filesystem.
<b>umount</b>	Detach a separate filesystem from your system's main filesystem.
<b>cat</b>	Display the contents of a text file. Also works with multiple files.
<b>chmod</b>	Modify the read, write, and execute permissions of a file.
<b>chown</b>	Change the user or group that owns a file.

BY SAKSHAM PAHWA  
2819369  
2ND YEAR



# Microsoft® SQL Server®

String Functions	
<b>Exact Numerics</b>	
bit	decimal
tinyint	money
smallint	numeric
bigint	
<b>Approximate Numerics</b>	
float	real
<b>Date and Time</b>	
smalldatetime	timestamp
datetime	
<b>Strings</b>	
char	text
varchar	
<b>Unicode Strings</b>	
nchar	ntext
nvarchar	
<b>Binary Strings</b>	
binary	image
varbinary	
<b>Miscellaneous</b>	
cursor	table
sql_variant	xml

Date Functions	
DATEADD (datepart, number, date)	
DATEDIFF (datepart, start, end)	
DATENAME (datepart, date)	
DATEPART (datepart, date)	
DAY (date)	
GETDATE()	
GETUTCDATE()	
MONTH (date)	
YEAR (date)	

Create a Stored Procedure	
CREATE PROCEDURE name	
@variable AS datatype = value	
AS	
-- Comments	
SELECT * FROM table	
GO	

Dateparts	
Year	yy, yyyy
Quarter	qq, q
Month	mm, m
Day of Year	dy, y
Day	dd, d
Week	wk, ww
Hour	hh
Minute	mi, n
Second	ss, s
Millisecond	ms

Create a Trigger	
CREATE TRIGGER name	
ON	
table	
FOR	
DELETE, INSERT, UPDATE	
AS	
-- Comments	
SELECT * FROM table	
GO	

Type Conversion	
CAST (expression AS datatype)	
CONVERT (datatype, expression)	

Create a View	
CREATE VIEW name	
AS	
-- Comments	
SELECT * FROM table	
GO	

Ranking Functions	
RANK	NTILE
DENSE_RANK	ROW_NUMBER

Mathematical Functions	
ABS	LOG10
ACOS	PI
ASIN	POWER
ATAN	RADIANS
ATN2	RAND
CEILING	ROUND
COS	SIGN
COT	SIN
DEGREES	SQUARE
EXP	SQRT
FLOOR	TAN
LOG	

Create an Index	
CREATE UNIQUE INDEX name	
ON	
table (columns)	

Grouping (Aggregate) Functions	
AVG	MAX
BINARY_CHECKSUM	MIN
CHECKSUM	SUM
CHECKSUM_AVG	STDEV
COUNT	STDEVP
COUNT_BIG	VAR
GROUPING	VARP

Create a Function	
CREATE FUNCTION name	
(@variable datatype(length))	
RETURNS	
datatype(length)	
AS	
BEGIN	
DECLARE @return datatype(length)	
SELECT @return = CASE @variable	
WHEN 'a' THEN 'return a'	
WHEN 'b' THEN 'return b'	
ELSE 'return c'	
RETURN @return	
END	

Table Functions	
ALTER	DROP
CREATE	TRUNCATE

String Functions	
ASCII	REPLICATE
CHAR	REVERSE
CHARINDEX	RIGHT
DIFFERENCE	RTRIM
LEFT	SOUNDEX
LEN	SPACE
LOWER	STR
LTRIM	STUFF
NCHAR	SUBSTRING
PATINDEX	UNICODE
REPLACE	UPPER
QUOTENAME	

# Words from Alumni



**Karamjot Singh(2009-2013)- Engineering days are the memorable days of life. 4 years of it are equivalent to 40 years of life. You learn to how to survive in this small IT world. We explore the unknown sides of education with the help of ideals, professors and friends. The relations that you build in this journey are long lasting."**



**Sukrant Dev(2009-2013)- I am deeply honored as well as privileged to the aid provided by my professors of IT for my career boom .I have a good experience with PIET . I was selected as a testing engineer in Amdocs in the year 2013 itself , served for 18months there, which has given me a such an exposure to execute my abilities to the fullest. I left my job and started business of trading of raw material for bags.Soon I took an elevation due to my skills and knowledge enhanced in PIET and now I have 4 outlets in Delhi.One thing I have noticed is if you have courage, skill , confidence and some basic knowledge of every field , you can do anything and become master of it. All these skills of mine have been nourished in PIET only.  
Proud to be a PIETian.**



**Himani Soni(2015-2019)-It feels great being a part of PIET and IT department.. The IT department or I should say IT family was a bunch of great people who took care of each other very beautifully. The teachers genuinely cared for us all and gave us regular guidance for the future.I am thankful to my college faculty, batchmates, juniors and seniors for their support and making my college life beautiful.**



**Manish Kumar (2015-2019): It was a great journey in PIET and being a part of IT department always make me happy. The department gave me great teachers , true friends , supportive juniors and seniors. The department bring the best out of me. I learnt a lot being a part of IT family. Thanks to all my teachers, friends junior and seniors for being there in my 4 years of journey.**



**Rohit Arora (2015-2019):My experience at PIET was a complete package of fun, entertainment, punishment, fine, reappears(as you are in btech), discipline, and studies.Most important is You are so lucky you have many good mentors in department who will guide you for the same but it's there duty to give lectures which are assigned to them as per University. Also enjoy your this beautiful journey because this is the most most beautiful time which you will adore in future and will miss this time a lot as we are missing. bunking classes, going out for parties all these things you can only do this in your clg life so jst enjoy this time.**



**Rajat Chawla (2014-2018)**  
**I am a passout of IT department batch 2014-2018. In this journey of four years, I got a really good support from all the faculty members in terms of Academic help, professional growth and key points for getting a good placement. In nutshell, IT department memories will be cherished for life and I am glad that I was a part of this journey.**