

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DIGIFLASH PROUDLY PRESENTS

DIGITIMES

2020 - 2021 ISSUE 2



MAY, 2021

VISION OF THE DEPARTMENT

To develop engineers with global employability, entrepreneurship capability, research focus and social responsibility

MISSION OF THE DEPARTMENT

- To develop internationally competent engineers in dynamic IT field by providing state-of-art academic environment and industry driven curriculum.
 - To motivate and guide students to take up higher studies and establish entrepreneurial ventures.
 - To enrich the department through committed and technically sound faculty team with research focus in thrust areas.
 - To undertake societal problems and provide solutions through technical innovations and projects in association with the industry, society and professional bodies.
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Programme Educational Objectives (PEOs)

PEO 1: Domain Expertise - Possess expertise and emerge as key players in IT integrated domains.

PEO 2: Computing Skills and Ethics - Employ computing skills to solve societal and environmental issues in an ethical manner.

PEO 3: Lifelong Learning and Research - Involve in lifelong learning and research to meet the demands of global technology.

Programme Outcomes (POs)

PO1.Engineering Knowledge : Apply the knowledge of mathematics, science, engineering fundamentals and concepts of Computer Science to solve complex engineering problems.

PO2.Problem Analysis : Identify, review literature, formulate and analyse complex engineering problems using first principles of mathematics and engineering sciences.

PO3.Design and Development of Solutions : Design and develop computing solutions for complex engineering problems with societal and environmental awareness.

PO4.Complex problem Investigation : Investigate complex problems by employing research methods to arrive at valid conclusions.

PO5.Modern Tool Usage : Evaluate and use appropriate tools and techniques in engineering activities .

PO6.Societal contribution : Follow professional engineering practice by applying contextual knowledge to assess societal and legal issues.

PO7.Environment and Sustainability : Understand and provide professional engineering solutions taking into consideration environmental and economic sustainability.

PO8.Ethics : Follow ethical principles and norms in engineering practice.

PO9.Individual and Team work : Function effectively as an individual, team member or leader in diversified environments.

PO10.Communication : Communicate effectively through various modes for all engineering activities.

PO11.Project Management and Finance : Apply Engineering knowledge and management principles for effective project management in multi-disciplinary environments.

PO12.Life-long Learning : Engage in independent life-long learning and skill development for professional and social well being.

Programme Specific Outcomes (PSOs)

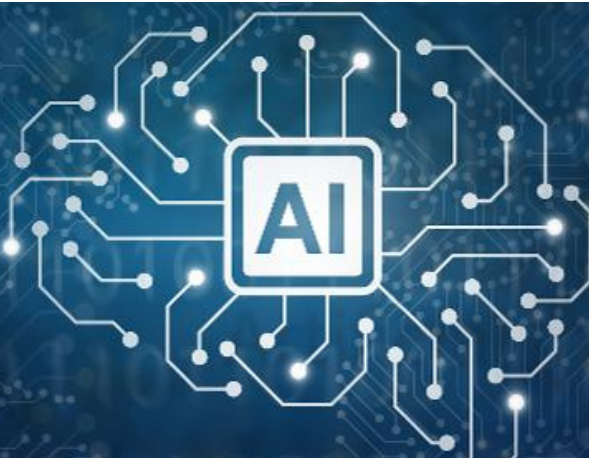
PSO1. Systems Engineering: Employ software engineering principles in the design and development of efficient systems.

PSO2. Knowledge Engineering: Apply data analytics techniques for solving real world problems.

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ROLE OF ARTIFICIAL INTELLIGENCE IN SMART EDUCATION SYSTEM

Abinaya M 18BCS012

Machine Learning (ML) and Artificial Intelligence (AI) are essential drivers of innovation and growth in all sectors, including education. While AI-powered technologies have been around for a while in EdTech, the sector has been sluggish in their acceptance. The pandemic, on the other hand, radically altered the scene, pushing educators to rely on tech for virtual instruction. Now, 86 percent of educators believe that technology should be an integral element of education. AI has the potential to improve both learning and teaching, assisting the education industry, simultaneously evolving to benefit both students and educators.

AI Benefits for Students

To be precise, a student's sole purpose of going to an educational institute is to get a degree or credential demonstrating their expertise.

AI can have a huge impact on students' educational journeys by offering access to the relevant courses, enhancing contact with teachers, and allocating more time to work on other aspects of life.

Personalization

Personalization is one of the most prominent educational trends. Students now have a customized way of learning programs that focus on their own distinct experiences and interests; thanks to AI applications. AI can adjust to each student's level of expertise, learning speed, and desired goals to ensure they get the most from their learning. Furthermore, AI-powered systems can examine students' previous educational histories, detect shortcomings, and recommend courses better suited for improvement, allowing for a highly personalized learning opportunity.

Tutoring

While it is not unusual for kids to require additional assistance outside of the class, many educators would not have the time to assist children after school. While no chatbot can really replace a teacher, AI programs can assist students in honing their skills outside the classroom by helping with improving on weak areas. They offer one-on-one experiential learning without the teacher being available to answer questions at all hours of the day. In addition, an AI-powered bot can respond to queries in 2.7seconds.

Quick Responses

Nothing is more aggravating than posing a question and having it answered 2 days later. On a regular basis, teachers and instructors are assaulted with repetitious queries. With the support of automation and cognitive intelligence, AI can assist students to get solutions to their most frequently asked questions in seconds. This not only saves teachers a lot of time but also students' time looking for answers or awaiting a response to their inquiries.

Universal 24/7 Access

AI-powered solutions make learning available to all students, at any time and from any location. Each learner has his own pace, and having 24/7 access allows kids to experiment with what works best for them without having to wait for an educator. Furthermore, students from all around the world can obtain high-quality learning without paying travel or living fees

AI Benefits for Educators

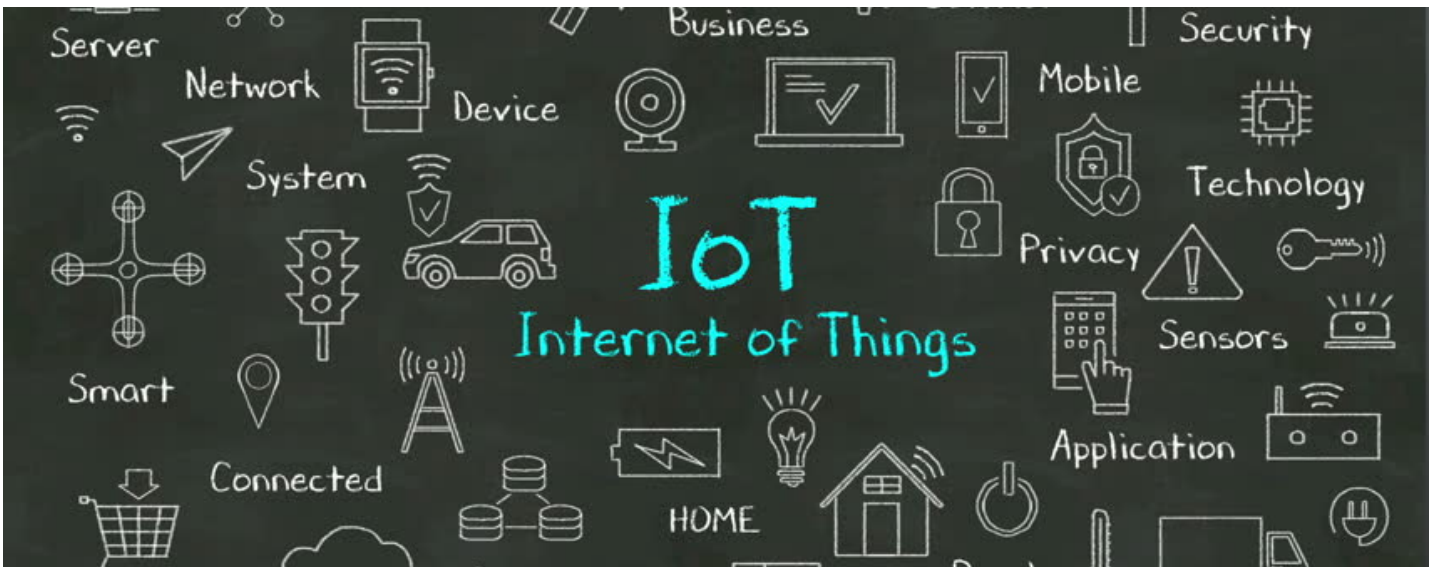
Most teachers and staff aren't ashamed to say they battle with time management, which makes sense given the number of tasks on their daily to-do lists. By automating chores, assessing student performance, and eliminating the educational gap, AI can assist in freeing up teachers' time. Here's how it works:

Answering Questions

AI-powered chatbots with accessibility to a school's entire base of knowledge can answer a range of generic and repetitive inquiries students commonly have without having to contact a faculty member. This way, AI frees up time for teachers to concentrate on curriculum design, coursework research, and ways of increasing student engagement.

Task Automation

AI's potential to automate the most basic job includes tasks such as replacing administrative labour, grading papers, measuring learning patterns, responding to general questions, etc. A Telegraph poll found that teachers spend 31% of their time organizing courses, grading tests, and doing administrative duties. Teachers, on the other hand, can use support automation systems to automate manual tasks, giving themselves more time to concentrate on improving their teaching competency.



INTERNET OF THINGS

Reena Sajad Hydeer 19BCS006

What is Internet of Things?

The Internet of Things, or IoT, refers to the billions of physical devices around the world that are now connected to the internet, collecting and sharing data. Thanks to cheap processors and wireless networks, it's possible to turn anything, from a pill to an aeroplane to a self-driving car into part of the IoT. This adds a level of digital intelligence to devices that would be otherwise dumb, enabling them to communicate real-time data without a human being involved, effectively merging the digital and physical worlds.

Example of IOT devices

Pretty much any physical object can be transformed into an IoT device if it can be connected to the internet and controlled that way. A light bulb that can be switched on using a smartphone app is an IoT device, as is a motion sensor or a smart thermostat in your office or a connected streetlight.

An IoT device could be as fluffy as a child's toy or as serious as a driverless truck, or as complicated as a jet engine that's now filled with thousands of sensors collecting and transmitting data back to make sure it is operating efficiently. At an even bigger scale, smart cities projects are filling entire regions with sensors to help us understand and control the environment.

The term IoT is mainly used for devices that wouldn't usually be generally expected to have an internet connection, and that can communicate with the network independently of human action. For this reason, a PC isn't generally considered an IoT device and neither is a smartphone even though the latter is crammed with sensors. A smart watch or a fitness band or other wearable device might be counted as an IoT device.

Benefits of IoT

Say goodbye to the era of manually operating a different device for every task. Say hello to the ability to operate multiple things from one device; for example, your smart phone. From controlling your thermostat to turning up the volume on the TV to dimming the lights and more, soon practically every device will be connected for streamlined control.

Efficiency

An increase in connectivity means a decrease in the amount of time normally spent performing the same tasks. For example, voice assistants like Apple's home pod or Amazon's Alexa can provide answers to your questions without you needing to pick up your phone or turn on your computer. According to Lang (2017), they may even eliminate the need for many business meetings, as they can quickly provide important updates and information.

Convenience

Smart appliances are becoming more commonplace, especially at home. Smart refrigerators and Amazon Dash buttons are a few examples of IoT devices that are making it easier for you to reorder items, requiring little more than an action or two signaling your consent. These IOT benefits can save you time and make your life easier.

Wellness

Whether you have invested in wearable technology or not, there are many ways to monitor your health goals using IoT. A things scale can record your weight and body composition, provide suggestions, and reward progress towards weight loss goals.

Conservation

Smart cities are also on the rise, and IoT developers are devising ways to use the IoT to monitor city conditions such as traffic, air quality, electric/water usage, and environmental factors. Doing so can assist city planners as well as residents to come up with solutions to current issues and conserve resources.

Personalization

According to Lindsay (2017) more personalized connections are better connections, as personalized connections are more relevant, more interesting, less distracting, and more enjoyable. As your IoT devices gather more data from you, they will quickly learn your likes as well as dislikes and tailor their services to your preferences. Big data, IoT, Digital supply chain- all have a great potential.



INTEL vs AMD

Arun Shankar A R 18BCS038

With the arrival of AMDs (Advanced Micro Devices) so called “RYZEN” microprocessors series, there has been a muddle amongst the consumers. To break down this bewilderment, this article shares the information about the top leading industries in processor manufacturing. For building the best gaming PC, not only do we have to select the best graphics card, but the processor is more important than that. A good graphics card cannot unlock its full potential if not used on a decent CPU. Depending on the micro architecture used, the processors are broadly classified. They use the following architectures for their processors (Chronological order)

INTEL

Sand bridge, Ivy Bridge 2nd and 3rd gen

- Haswell-4th GEN
- Broadwell-5th GEN
- Sky-Lake-6th GEN
- Kaby Lake-7th GEN(2017)

AMD

- Phenom, Athlon series-K10 core micro architecture
- FX series-Bulldozer, Piledriver, Steamroller, Excavator micro architectures
- Bobcat core micro architecture
- Jaguar, Puma micro architecture
- RYZEN series(2017)- Zen core architecture

Now, take a look at the comparison between the prices of AMD and INTEL

I3- Rs. 1k -13k FX-Rs. 8k-21k

I5-Rs. 32k-43k Athlon II-Rs.13k-18k

I7-Rs. 32k-40k Ryzen 5-Rs 12k-20k

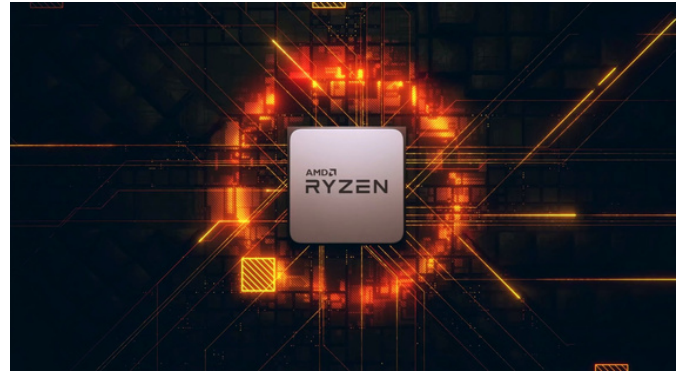
Ryzen 7-Rs 23k- 40k

Instead of complicating things, by mentioning the specifications of the processors, The Pros and Cons of both the processors and have been listed.

AMD

PROS

- Affordable compared to Intel
- Has better integrated graphics card



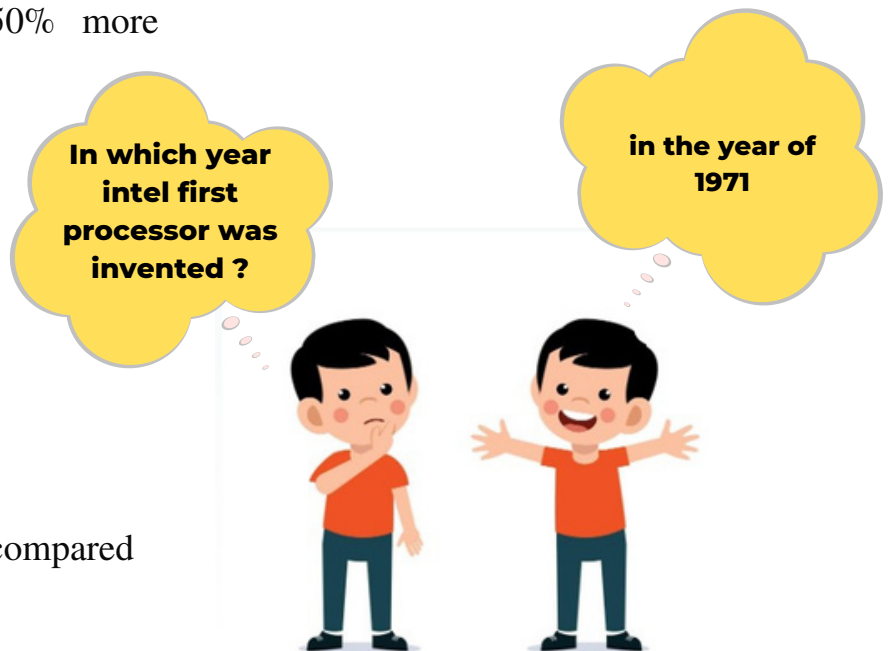
CONS

- Higher heat output
- Power drawn is high (30-50% more compared to Intel)
- Needs to be over clocked

INTEL

PROS

- Arguably better performance compared to AMD
- Well built and reliable
- Power drawn is less



CONS

- Expensive
- Integrated graphics card performs poorly
- Cannot be over clocked like AMD



BLOCKCHAIN TECHNOLOGY

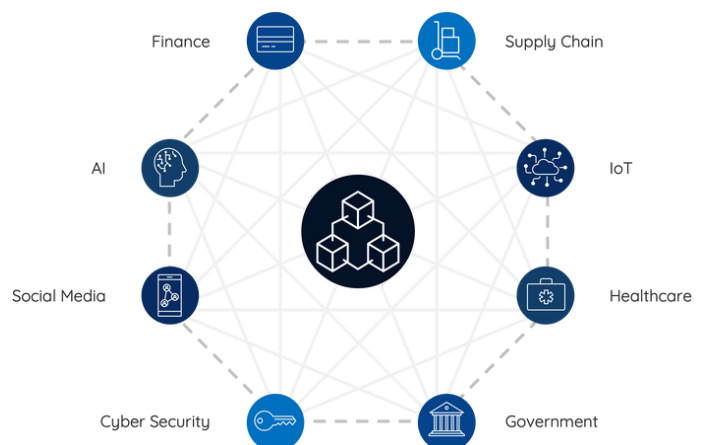
BLOCKCHAIN AN INTRODUCTION

Kamala Lakshmi S 18BCS010

A blockchain is a distributed database that is shared among the nodes of a computer network. As a database, a blockchain stores information electronically in digital format. Blockchains are best known for their crucial role in cryptocurrency systems, such as Bitcoin, for maintaining a secure and decentralized record of transactions.

The innovation with a blockchain is that it guarantees the fidelity and security of a record of data and generates trust without the need for a trusted third party. One key difference between a typical database and a blockchain is how the data is structured. A blockchain collects information together in groups, known as blocks, that holds sets of information. Blocks have certain storage capacities and, when filled, are closed and linked to the previously filled block, forming a chain of data known as the blockchain.

A database usually structures its data into tables, whereas a blockchain, like its name implies, structures its data into chunks (blocks) that are strung together. This data structure inherently makes an irreversible time line of data when implemented in a decentralized nature. When a block is filled, it is set in stone and becomes a part of this time line. Each block in the chain is given an exact time stamp when it is added to the chain.



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

Without trusted intermediaries, the needed trust within a blockchain network is enabled by four key characteristics of blockchain technology, described below:

- Ledger - the technology uses an append only ledger to provide full transactional history. Unlike traditional databases, transactions and values in a blockchain are not overridden.
- Secure - blockchains are cryptographically secure, ensuring that the data contained within the ledger has not been tampered with, and that the data within the ledger is attestable.

- Shared – the ledger is shared amongst multiple participants. This provides transparency across the node participants in the blockchain network.

- Distributed – the blockchain can be distributed. This allows for scaling the number of nodes of a blockchain network to make it more resilient to attacks by bad actors. By increasing the number of nodes, the ability for a bad actor to impact the consensus protocol used by the blockchain is reduced

Block Chain Categorization

Permissionless vs. Permissioned Blockchains

All types of blockchains can be characterized as permissionless, permissioned, or both. Permissionless blockchains allow any user to pseudo-anonymously join the blockchain network (that is, to become “nodes” of the network) and do not restrict the rights of the nodes on the blockchain network. Conversely, permissioned blockchains restrict access to the network to certain nodes and may also restrict the rights of those nodes on that network. The identities of the users of a permissioned blockchain are known to the other users of that permissioned blockchain.

Permissionless blockchains tend to be more secure than permissioned blockchains, because there are many nodes to validate transactions, and it would be difficult for bad actors to collude on the network. However, permissionless blockchains also tend to have long transaction processing times due to the large number of nodes and the large size of the transactions. On the other hand, permissioned blockchains tend to be more efficient. Because access to the network is restricted, there are fewer nodes on the blockchain, resulting in less processing time per transaction. Like so many things, pros come with cons, and the reduced processing time in permissioned blockchains is no exception: the centralization of permissioned blockchains to some central authority (be it a government, a company, a trade group, or some other entity or group that is granting the permission to nodes and creating the restrictions of the blockchain) makes it a less secure system that is more prone to traditional hacking vulnerabilities. The fewer nodes there are on a blockchain, the easier it is for bad actors to collude, so private blockchain administrators must ensure nodes adding and verifying blocks are highly trusted.

APPLICATIONS OF BLOCKCHAIN TECHNOLOGY

Reena Sajad Hyder 19BCS006

Financial Applications

Private Securities It is very expensive to take a company public. A syndicate of banks must work to underwrite the deal and attract investors. The stock exchanges list company shares for secondary market to function securely with trades settling and clearing in a timely manner. It is now theoretically possible for companies to directly issue the shares via the blockchain. These shares can then be purchased and sold in a secondary market that sits on top of the blockchain. Here are some examples:

NASDAQ Private Equity: NASDAQ launched its Private Equity Exchange in 2014 . This is meant to provide the key functionalities like Cap table and investor relationship management for the pre-IPO or private companies. The current process of trading stocks in this exchange is inefficient and slow due to involvement of multiple 3rd parties. NASDAQ has joined hands with a San Francisco based Start-up called chain.com to7 implement private

Medicis being developed as a securities exchange that uses the Counterparty implementations of Bitcoin 2.0. The goal here is to create a cutting edge stock market. Counterparty is a protocol that implements traditional financial instruments as the self-executing smart contracts. These smart contracts facilitate, verify or enforce the negotiation of contract and eliminate the need for a physical document. This eliminates the need for an intermediary, such as broker, exchange or bank.

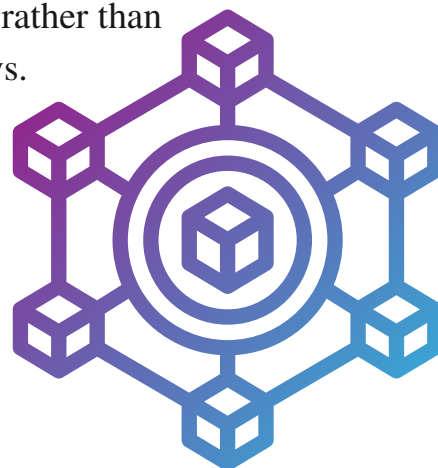
Block stream is an open source project with focus on sidechains—interoperable blockchains—to avoid fragmentation, security and other issues related to alternative crypto-currencies. Uses can range from registering securities, such as stocks, bonds and derivatives, to securing bank balances and mortgages.

Coin setter is a New York based bitcoin exchange. It is working on a Project Highline, a method of using the blockchain to settle and clear financial transactions in T+ 10 minutes rather than the customary T+3 or T+2 days.

Augur is a decentralized prediction market that will allow users to buy and sell shares in anticipation of an event with the probability that a specific outcomes will occur. This can also be used to make financial and economic forecasts based on the “wisdom of crowds”.

Bit shares are digital tokens that reside in the blockchain and reference specific assets such as currencies or commodities. The Token holders may have the unique feature of earning interest on commodities, such as gold, and oil, as well as dollars, euros and currency instruments.

Insurance Assets which can be uniquely identified by one or more identifiers which are difficult to destroy or replicate can be registered in blockchain. This can be used to verify ownership of an asset and also trace the transaction history. Any property (physical or digital such as real estate, automobiles, physical assets, laptops, other valuables) can potentially be registered in blockchain and the ownership, transaction history can be validated by anyone, especially insurers.



Everledger is a company which creates permanent ledger of diamond certification and the transaction history of the diamond using blockchain. The characteristics which uniquely identify the diamond such as height, width, weight, depth, color etc are hashed and registered in the ledger. The verification of diamonds can be done by insurance companies, law enforcement agencies, owners and claimants. Everledger provides a simple to use web service API for looking at a diamond, create/read/update claims (by insurance companies) and create/read/update police reports on diamonds.

Non-Financial Applications

Notary Public Verifying authenticity of the document can be done using blockchain and eliminates the need for centralized authority. The document certification service helps in Proof of Ownership (who authored it), Proof of Existence (at a certain time) and Proof of Integrity(not tampered) of the documents. Since it is counterfeit-proof and can be verified by independent third parties these services are legally binding. Using blockchain for notarization secures the privacy of the document and those who seek certification. By publishing proof of publication using cryptographic hashes of files into block chain takes the notary timestamping to new level. It also eliminates the need for expensive notarization fees and ineffective ways of transferring documents.



Stampery is a company which can stamp email or any files using blockchain. It simplifies certifying of emails by just emailing them to an email specifically created for each customer. Law firms are using Stampery's technology for a very cost effective way to certify documents.

Viacoin is one of the companies which uses clearing house protocol for notary service. Block Notary is an iOS app which helps to create proof of existence of any content (photo, files, any media) using TestNet3 or Bitcoin network.

Crypto Public Notary which uses Blockchain of Bitcoin to notarize documents by using trivial amount of bitcoins to record the file's checksum in public blockchain.

Proof of Existence is another service which uses blockchain to create SHA256 digest of the document in bitcoin blockchain.

Ascribe is another company which does authorship certification using blockchain. It also offers transfer of ownership service with attribution to the original author.



STUDENT PROJECTS



**CONNECTING
THROUGH
TECHNOLOGY**



SECURED DECENTRALIZED E-LEARNING PLATFORM USING BLOCKCHAIN TECHNOLOGY

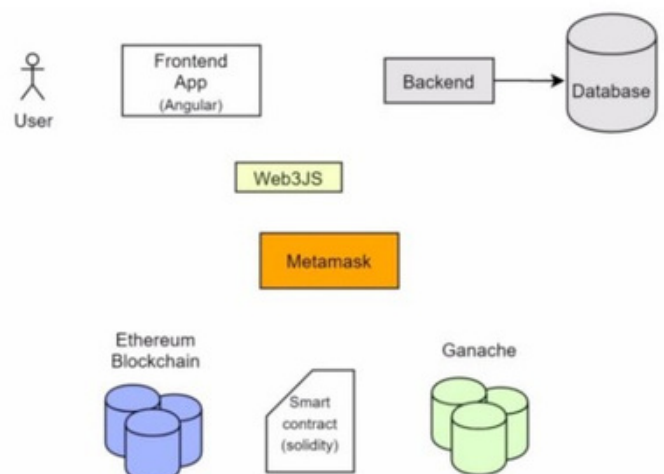
Arvindraj Anguraju 17BCS048

Ikram Mohideen M 17BCS068

Dhivya G 18BCS304

In this era, one significant change is the transformation of education mode from the traditional classroom-based teaching-and-learning to an online way. As the most important way of online education, e-learning is popular for its no-limitation in learning time and space as well as diverse forms of learning, which has become an effective way to share high-quality educational resources and encourage self-learning in society. In this project, we consider the solutions of the problems in online education together with blockchain technology, and propose a secured decentralized e-learning platform using blockchain technology. Comparing with the traditional e-learning and online education platforms, the proposed system exploits the advantages of its structure and functional modules to establish a fairer, healthier and more open e-learning and online education environment.

We are proposing a secured decentralized e-learning platform with blockchain. In this system we use decentralized file storage IPFS as database and smart contracts written in solidity language are used on the server-side. The smart contracts will be deployed in Ethereum Blockchain. The front end will be connected to the smart contract through Web3JS. Metamask is used to track the user transactions. This system is better than the existing systems because it improves integrity and security.



Block diagram of Decentralized E-Learning Platform



IOT BASED VEHICLE EMISSION MONITORING SYSTEM

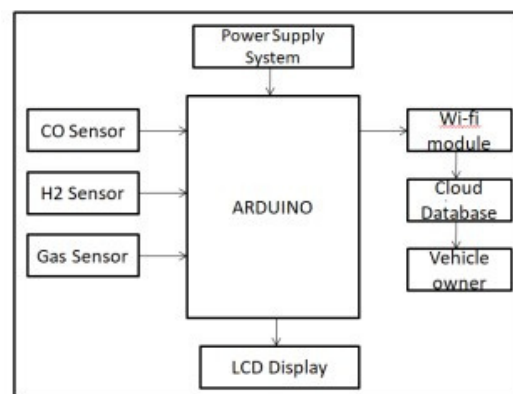
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Sneha Pooja R 17BCS102

The main source of atmospheric taint happens due to automobiles. Using empirical scrutiny, ritual mechanized air monitoring system has high rigor, but uneconomical and single datum class make it unfeasible for large-scale furnishing. In order to overcome the issues in ritual systems we have introduced Internet of Things (IoT) into the field of environmental protection. This project aims to introduce vehicle emission monitoring system using Internet of Things (IoT) which is a green thumb for tracking down vehicles causing taint on the city roads and measures multifarious genres of toxic wastes, and its level in air.

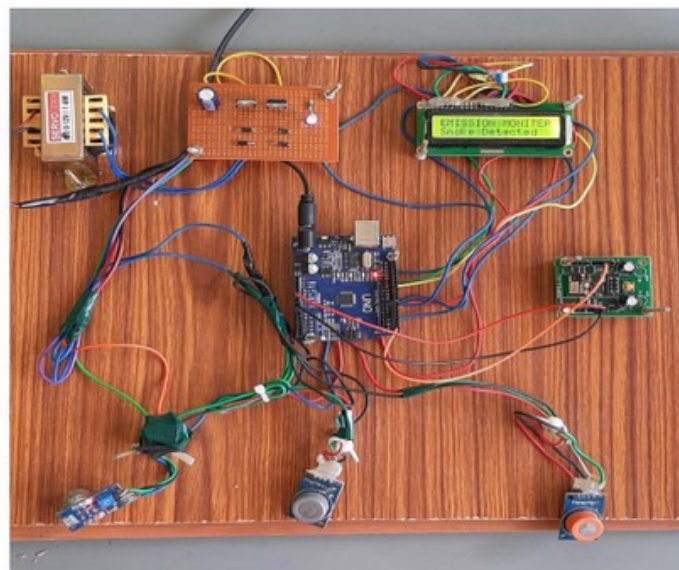
This project puts forward a kind of real-time air pollution monitoring system at any time anywhere using Gas Sensor. The measured data is shared to vehicle owner via text message. This working shows that the system runs economically and can be controlled tractably, and can improve the detecting level and accuracy of the exhaust monitoring system. This system provides good outcomes in monitoring the air pollution exclusively in the urban areas.



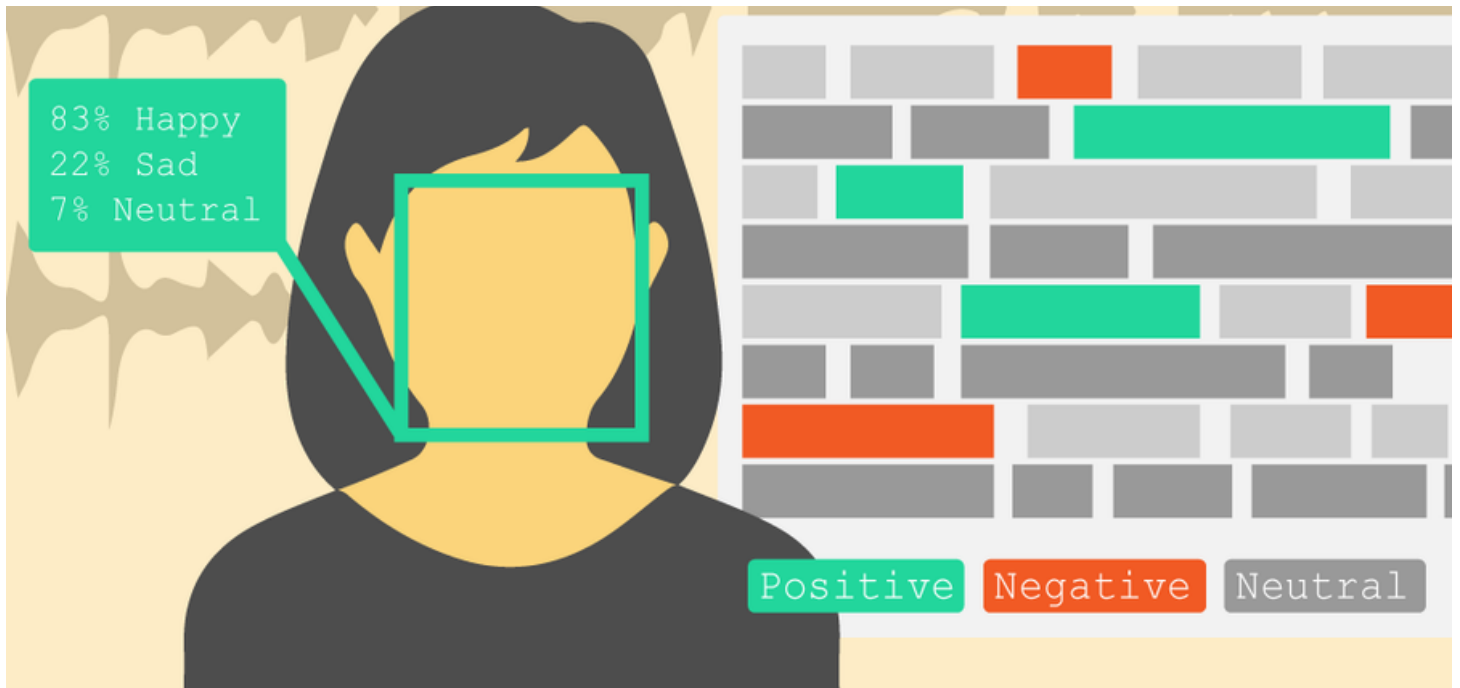
Block diagram of Decentralized E-Learning Platform

In this System, When the vehicles engine is ignited, the MQ-2 Hydrocarbon gas sensor, MQ-7 Carbon monoxide gas sensor, MQ-135 Nitrogen Oxide gas Sensor and Microcontroller system are activated. The microcontroller is programmed to do three functions namely comparison, timer and triggering circuit. The microcontroller takes in two inputs; one from the smoke sensors output and another being the pre-defined threshold value specified for the demo project. When the smoke sensor output is more than the threshold value, the microcontroller triggers the timer circuit,

IoT and Wifi modules and an alarm is set off to inform the driver that his vehicle has some pollution related issues and also indicate that the vehicle will come to a halt as soon as the IoT detects a safe zone. For the above working to be done, the arduino board should have the power supply system which includes the following components: power guard, Transformer, bridge rectifier, capacitor, regulator and a Light emitting diode as the parts of the power supply section.



IoT Based Vehicle Emission Monitoring System



DEPRESSION ANALYSIS WITH FACIAL PATTERN

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Shrigomathivalli T **17BCS005**
Dhinesh K **17BCS057**

Nowadays Depression has become a common threat for everyone. Every age group is facing this problem. Since people are having repeated heavy work routine the only the thing left for them is frustration. People have developed a mindset of not to crying because of the social pressure and their beliefs. So there is no way for adults to cry in order to let out their depression. There are numerous factors responsible for the depression of people.

At the same time there are numerous factors which stops the people to let out their emotions. If this emotion was constantly stacked inside them, they will burst one day with higher intensity. So is there chance to find those emotions at the intermediate stage, it will be an easier precaution. This measure will also find a way for the emergence of a healthy society. There should be a method which does not involve with the personal life of the people.

Human Computer Interaction (HCI) paved a way to find a solution for some kind of depressed people. We can analyze these people since computer vision has improved a lot in this era. In order to build a trusted tool kit for the people, this project has been initiated. The dataset from the resources like AVEC can be taken to build the real time depression recognition system. There are so many old systems for emotion detection which is also considered as the depression recognition. But this work completely aims at constructing a depression analysis based system. The system can be trusted in building a good depression analysis model.

The Depression Analysis is done with the help of Facial Recognition which has the combination of both the regression and the classification. This Depression Analysis model is used to identify the depression state of the people. This depression identification has several phases of face detection, depressnet construction, depression score calculation, building of the Depression analysis module and our final stage will be deployment. In order to find out the results for the normal people, we should do the camera implementation section, so that we can perform the depression analysis without the prior data collected from the test subjects.



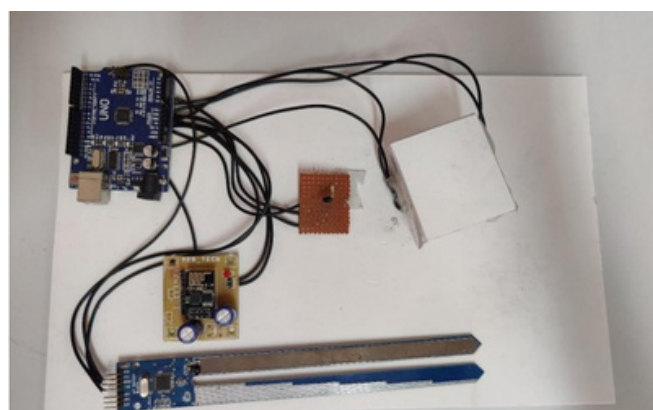
FACIAL EXPRESSION

SMART WATER QUALITY MANAGEMENT SYSTEM USING IOT

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Sudarshanan R **17BCS059**
Naveen Nishanth M **17BCS069**

Water pollution is one of the biggest fears for the green globalization. In order to ensure the safe supply of the drinking water the quality needs to be monitored in real time. To overcome this difficulty, a real time monitoring of water goodness by using IoT has been proposed. Internet of things together with the Sensor water meters for the effectiveness, govern the quality of water. The disadvantages of this existing system are that; there is no continuous and remote monitoring, human resource is required, less reliable, no monitoring at the source of water i.e. no on field monitoring and the frequency of testing is very low. Here we are executing, system for monitoring the water goodness.

We present the design and development of a low cost system for real time monitoring of the water quality in IoT(Internet of Things).The system consist of several sensors used to measuring physical and chemical parameters of the water. The parameters such as temperature, PH, turbidity of the water can be measured. The measured values from the sensors can be processed by the core controller. The Arduino model can be used as a core controller. Finally, the sensor data can be viewed on internet using Wi-Fi system. The economical and effective system of water quality observation is the most robust implementation of impure water.



IoT based smart water quality management system

SECURE FILE STORAGE ON CLOUD USING HYBRID CRYPTOGRAPHY

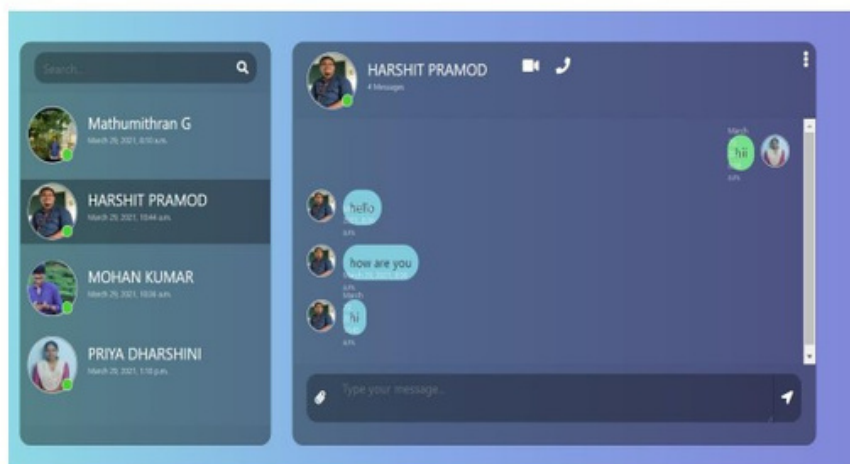
Harshit Pramod S 17BCS077

Priyadharshni K 17BCS083

Mohan Kumar S 17BCS075

Cloud computing is used in many areas like industry, military colleges and so on for storing huge amount of data. The user can retrieve data from cloud on request of user. To store data on cloud we have to face many issues. To provide the solution to these issues there are multiple ways. Cryptography techniques are more popular nowadays for data security. Use of a single algorithm is not effective for high level security for data in cloud computing. In this project the user are introduced to new security mechanism using symmetric key cryptography.

Key information contains which part of file is encrypted by using which algorithm and key. Each and every part of file is encrypted using encryption algorithm. All parts of file are encrypted simultaneously with the help of polynomial encryption and decryption technique. For file decryption purpose reverse process of encryption is applied. In the proposed method, for securely storing files in the cloud a hybrid cryptography algorithm is presented. In this method, the user can store the file safely in online cloud storage as these files will be stored in encrypted form in the cloud and only the authorized user has access to their files.



Sending Messages to customers

EXTRACTIVE TEXT SUMMARIZATION USING CLUSTERING WITH SEMANTIC WORD COUNT

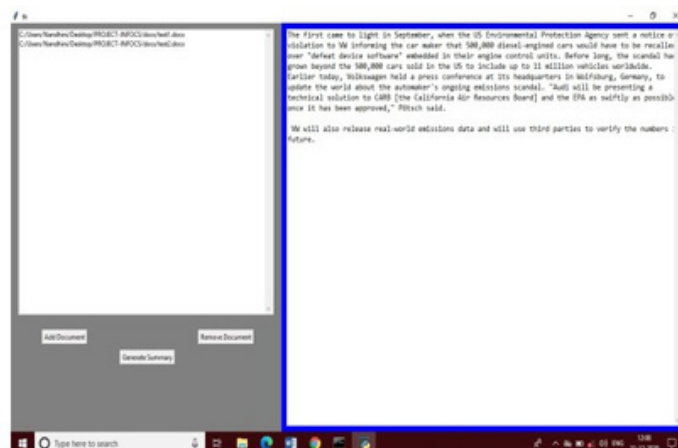
Nandhinidevi B 17BCS032

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Automatic text summarization method using the weighted TF-IDF model for reducing the dimensionality of the extracted features has been proposed. The various similarity measures are utilized in order to identify the similarity between the sentences of the document and then they are grouped in cluster on the basis of their term frequency and inverse document frequency (tf-idf) values of the words. Term frequency is the occurrence count of a term in one particular document only, to identify TF, divide number of times the term occurs in the document by how many words are there. Appropriate features are extracted from the data, tf-idf values for each word are computed and the entire pre-processed data is then transformed into a tf-idf matrix.

Using TF-IDF model the summary has been generated with more accuracy. This project consists of four modules. They are preprocessing, Calculating TF-IDF, Ranking using Matching score, Ranking using Cosine similarity. TF-IDF is an acronym for Term Frequency Inverse Document Frequency. This is a technique for quantifying a word in a document; we assign a weight to each word that represents its importance in the document and corpus. We may perform additional tasks such as finding relevant documents, rating, clustering, and so on by vectorizing the documents. In other words, whenever data is gathered from various sources, it is collected in raw format, which makes analysis impossible. Now, we apply machine learning algorithm to finally get our output summary.



Summary of Semantic word count

INTRUDER DETECTION SYSTEM FOR HOME SECURITY USING OPEN CV ON RASPBERRY PI 3

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Home security system has established its importance and benefits numerous times by providing immediate monitoring of the house. This is because of the increasing home theft and burglary incidents that create an awareness among most of the house owners. CCTV-based security systems are not real-time because the alert comes to the owner after the incident occurred unless they are at home during the incident. To overcome this problem, many researchers are developing cost-effective custom-based security systems, which are affordable for everyone. Most of these systems use a Passive Infrared (PIR) motion sensor for motion detection. Although affordable, such a system still has many limitations. For example, false alarms triggered due to an abnormal condition such as rapid heating from sunlight exposure. In this work, a vision-based home security system using OpenCV on Raspberry Pi 3 model B was developed to improve the effectiveness of motion detection.

This system applied the Haar-Cascade algorithm coupled with background subtraction as well as considered the Histogram of Oriented Gradients (HOG) during the development stage. The developed prototype was tested under a few conditions to determine the accuracy of motion detection and compare the results with a system that uses a PIR motion sensor for motion detection. From the results obtained, the developed vision based home security system using OpenCV has 100% of detection rate compared to the PIR motion sensorbased security system with 76% of the detection rate. In this work, a home security system using a camera with OpenCV implementation has been successfully developed on Raspberry Pi 3 Model B. The system is composed of both hardware and software implementations, where both parts collaborate to form an effective motion detection mechanism. The Haar-Cascade algorithm coupled with a background subtraction method was applied in the OpenCV implementation. The results obtained from the three conducted experiments suggest the high-accuracy of a vision-based motion detection system, eliminating false alarms.



RIDDLES

1. How do we measure forty-five minutes using two identical wires, each of which takes an hour to burn? We have matchsticks with us. The wires burn non-uniformly. So, for example, the two halves of wire might burn in 10 minutes and 50 minutes respectively.
2. 100 prisoners in jail are standing in a queue facing in one direction. Each prisoner is wearing a hat of color either black or red. A prisoner can see hats of all prisoners in front of him in the queue, but cannot see his hat and hats of prisoners standing behind him. The jailer is going to ask color of each prisoner's hat starting from the last prisoner in queue. If a prisoner tells the correct color, then is saved, otherwise executed. How many prisoners can be saved at most if they are allowed to discuss a strategy before the jailer starts asking colors of their hats.
3. In a country, all families want a boy. They keep having babies till a boy is born. What is the expected ratio of boys and girls in the country?
4. Two trains are on same track and they are coming towards each other. The speed of the first train is 50 km/h and the speed of the second train is 70 km/h. A bee starts flying between the trains when the distance between two trains is 100 km. The bee first flies from first train to second train. Once it reaches the second train, it immediately flies back to the first train ... and so on until trains collide. Calculate the total distance travelled by the bee. Speed of bee is 80 km/h.



Answers

1) 30 minutes

2) At-most 99 prisoners can be saved and the 100th prisoner has 50-50 chances of being executed. The idea is that every prisoner counts number of red hats in front of him. 100th prisoner says red if the number of red hats is even. He may or may not be saved, but he conveys enough information to save 99th prisoner.

3) Number of girls = 1.

4) 66.67 km approx.

ABOUT DIGITIMES

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