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Data De duplication in Parallel Mining of Frequent Items

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Abstract

A Parallel Frequent Item sets mining algorithm called FiDooop using Map Reduce programming model. FiDooop includes the frequent items ultra metric tree(FIU-tree), in that three Map Reduce jobs are applied to complete the mining task. The scalability problem has been addressed by the implementation of a handful of FP-growth-like parallel FIM algorithms. InFiDooop, the mappers independently and concurrently decompose item sets; the reducers perform combination operations by constructing small ultra metric trees as well as mining these trees in parallel. Data Deduplication is one of important data compression method for erasing duplicate copies of repeating data and reduce the amount of storage space and save bandwidth. The technique is used to improve storage space utilization and can also be applied to reduce the number of bytes. The first MapReduce job discovers all frequent items, the second MapReduce job scans the database to generate k-item sets by removing infrequent items, and the third MapReduce job complicated one to constructs k-FIU-tree and mines all frequent k-item sets.

In this paper, we applying Deduplication technique in third MapReduce job to avoid the replication of data in frequent item sets and improve the performance. It produces highly related mining results with less time and increase the storage capacity. Hadoop supports nine different tools, while Mahout is based on core algorithm and classifications. Having sequence algorithm to produce the output in better way.

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We aim to implement recommendation algorithm using Mahout, a machine learning device, on Hadoop platform to provide a scalable system for processing large data sets efficiently. This can be performed on such platforms for quicker performance.

Keywords: FiDooop, ParallelMining, FrequentItemsets, Mahou

1.INTRODUCTION

FREQUENT item sets mining (FIM) is a core difficulty in association rule mining (ARM), sequence mining, and the similar to. Speeding up the procedure of FIM is critical and crucial, because FIM expenditure accounts for a significant section of mining instance due to its high computation and input/output (I/O) intensity. Frequent item sets mining algorithms can be divided into two categories namely, Apriori and FP-growth schemes. Apriori is a standard algorithm with the generate-and-test process that generates a huge number of aspirant item sets; Apriority has to frequently scan an whole database. Earlier developed parallel FIM algorithms were built leading the A priority algorithm. Unfortunately, in Apriori-like parallel FIM algorithms, every processor have to check a database several times and to exchange an unnecessary number of candidate item sets with other processors. Data deduplication is a focused data compression technique for eliminating photocopy copies of repeating data in storage. It brings a lot of benefits, security and privacy concerns happen as users, sensitive data are subject to both insider and outsider attacks. Fixed encryption, while providing data privacy, is incompatible with data deduplication. Particularly, traditional encryption requires different users to encrypt their facts with their individual keys. To avoid unauthorized access, a secure proof of ownership procedure is also essential to provide the evidence that the user indeed owns

the same file when a duplicate is established. Hadoop has two subdivisions namely HDFS (Hadoop Distributed File System) with MapReduce programming model. Hadoop perfectly breaks the data into large chunks and distributes it to its product hardware cluster nodes for additional processing using MapReduce programming model for distributed computing thus able to handle large datasets.

1. INTRODUCTION

MapReduce was initially developed by Google for counting the number of times a word occurs in particular document. It works well for applications where data is stored at distributed file system which allows local computing on each datanode.

2. ASSOCIATION RULES

ARM provides a considered resource used for decision support by extracting the most significant regular patterns that concurrently happen in a large transaction database. A usual ARM application is market basket analysis. The final object of ARM is to notice all policy that satisfies a user-specified minimum support and minimum confidence. The ARM method can be decomposed into two phases: 1) identifying all regular item sets whose support is better than the minimum support and yielding name frequencies). The "MapReduce System" (also named "infrastructure" or "framework") arranges the treating by marshalling the distributed servers, running the various jobs in parallel, handling all communications and data transfers among the various parts of the system, and providing for redundancy and fault tolerance. The model is motivated by the map and reduce functions usually used in functional programming, while their purpose in the MapReduce framework is not the similar as in their unique forms. The key helps to the MapReduce framework are not the real map and reduce purposes, but the scalability and fault-tolerance realized for a change of requests by optimizing the execution engine once. As such, a single-threaded implementation of MapReduce will usually not be earlier than a traditional (non-MapReduce) application; any gains are typically only seen with multi-threaded applications. The usage of this typical beneficial only while the improved

distributed shuffle process (which reduces network communication cost) and fault tolerance structures of the MapReduce framework arise into tragedy. Raising the statement cost is vital to a good MapReduce algorithm. The three MapReduce jobs of our proposed FiDooop are described in detail. The first MapReduce job discovers all frequent items or frequent one-itemsets (see Algorithm 2). In this phase, the input of Map tasks is a database, and the output of Reduce tasks is all frequent one-itemsets. The second MapReduce job scans the database to generate k-itemsets by removing infrequent items in each transaction. The last MapReduce job—the most complicated one of the three—constructs k-FIU-tree and mines all frequent k-itemsets.

3. MAPREDUCE FRAMEWORK

A MapReduce program is collected of a Map() procedure (method) that executes filtering and sorting (such as sorting students by first name into queues, one queue for each name) and a Reduce() method that performs a summary operation (such as counting the number of students in each queue. Apache Mahout is Java carved library for machine learning algorithms that are scalable and can be applied on the top of Hadoop using MapReduce framework for studying Big Data. Its an open source machine learning library from the Apache Software Substance. It implements many data mining algorithms similar Recommend engines (), clustering(), classification() and is accessible to verybig data sets (up to terabytes and petabytes) that are in the Big Data realm. These methods are also used in outlier discovery (also called anomaly detection), which means classifying events or explanations that do not conform to an estimated outcome, to support in classifying fraud in online transactions, etc. The Clustering algorithms applied in Apache Mahout are K-Means, Fuzzy K-Means, Streaming K-Means and Spectral Clustering. Clustering a cluster of objects includes three things: An algorithm, which is the technique used to collection things composed. An idea of both similarity and dissimilarity — which item goes to an existing stack and which must start a new

one. A ending situation, which capacity be the point past which objects can't be arranged any more, or while the stacks are previously quite different.

4. EFFECTIVE FOUR STEPS TO DATA DEDUPLICATION

Around a dozen major vendors for Deduplication applications, Irrespective of retailer implementation Data Deduplication can be considered into four major steps:

1. Identifying the unit of comparison
2. Creating smaller unique identifier of these units to be compared.
3. Match for duplicates
4. Saving unique data blocks

Implementation of each of these stages differs from vendor to vendor. But, the main objective of any implementation is to: Achieve maximum Deduplication ratio ($\text{SizeofRealData} / \text{SizeofDataonceDeduplication}$)

- 1) Maximize Data Deduplication quantity (Megabytes of Data Deduplicated per sec) Minimize system resource utilization.
- 2) forming qualified implication system among the frequent itemsets. The first stage is more demanding and difficult than the second one. As such, most previous studies are mainly focused on the topic of discovering frequent itemsets.

The design aim of FiDooop is to construct a mechanism that enables repeated parallelization, load balancing, of frequent itemsets on huge clusters. To assist the appearance of FiDooop. Aiming to recover data storage efficiency and to prevent structure provisional pattern bases, FiDooop incorporates the idea of FIU- tree rather than traditional FP trees.

5. MAHOUT

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6. CONCLUSION

To solve the scalability and load paired tasks in the existing parallel mining algorithms for frequent itemsets, we functional the MapReduce encoding model to improve a parallel frequent item sets mining algorithm called FiDooop. FiDooop combines the frequent items ultrametric tree or FIU-tree rather than conventional FP trees, thus achiev-ing compressed storing and avoiding the need to build qualified pattern bases. We also offered some new deduplication creations supportive certified duplicate check in frequent item sets Time wanted to solve the difficult has reduced. Mahout is able to handle big data but it still want some algorithms. The reference for single user want to be developed for better results. . New dividing platforms like Apache Spark are attainment prominent in the field of Big Data analysis. Approval algorithms can be completed on such stages for quicker performance.

REFERENCES :

1. http://www.tcs.com/SiteCollectionDocuments/White%20Papers/HiTech_Whitepaper_Effective_Data_Deduplication_Implementation_05_2011.pdf#page=5&zoom= auto,-107,644.
2. http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=62424&url=http%3A%2F%2Fieeexplore.ieee.org%2Fexpls%2Fabs_all.jsp%3Farnumber%3D6802424.
3. <https://www.irjet.net/archives/V2/i4/Irjet-v2i418.pdf>.

Using IoT defining Comprehensive structures for implementation of Home automation systems

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Abstract

The IOT (Internet of Things) is presently a hot technology worldwide. Government, academia, and industry are involved in several aspects of research, implementation, and business with IOT. In this paper comprehensive architectures, platforms, sensors and prototyping techniques were designed for Home automation systems. IOT cuts across different application domain verticals ranging from civilian to defense sectors. These domains include agriculture, space, healthcare, manufacturing, construction, water, and mining, which are presently transitioning their legacy infrastructure to support IOT. Today it's possible to ascertain the need and scope of IOT in developing a prototype and applications to manage each and every devices, hardware components, electronic appliances, home utilities, IOT supporting devices, using IoT as architecture and communication technologies and protocols to talk with various components.

Keywords: smart sensors, IOT supporting protocols, gateways, Paas, Iaas.

1. INTRODUCTION

Home automation has three major parts:

- Hardware
- Software/Apps
- Communication protocols

Each of those parts is equally important in building a very smart home experience for your customers. Having the proper hardware enables the power to develop your IoT prototype iteratively and answer technology pivots with ease.

A protocol selected with the proper testing and careful consideration helps you avoid performance bottlenecks that otherwise would restrict the technology and device integration capabilities with sensors and IoT gateways.

Another important consideration is that the firmware that resides in your hardware managing your data, managing data transfer, firmware OTA updates, and performing other critical operations to form things talk.

Today within the headway of Automation innovation, life is getting simpler and fewer demanding altogether spheres. Home automation may be a modern technology that modifies your home to perform different sets of task automatically. Today Automatic frameworks are being favoured over manual frameworks. No wonders, home automation in India is already the excitement word, especially because the wave of second generation home owners grows, they need quite shelter, water, and electricity. The primary and most blatant advantage of Smart Homes is comfort and convenience, as more gadgets can affect more operations (lighting, temperature, then on) which successively frees up the resident to perform other tasks. Smart homes crammed with

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connected products are loaded with possibilities to form our lives easier, more convenient, and easier. There's no shortage of possibilities for smart home IoT devices as homeautomation seems to be the wave of the longer term. The needfor Office and residential automation arises thanks to the arrival of IoT, during a big way in homes and office space. The smart home/office gadgets interact, seamlessly and securely; control, monitor and improve accessibility, from anywhere across the world. These smart automation devices happen to possess an interface with IoT. IT automation is going to be thekey to bridging the gap between human limitations and technology's capabilities. With automation, data are ofteninstantly collected and seamlessly passed between devices as it's simultaneously analyzed. Home automation is an appealing context for the web of Things (IoT), by connecting the IP gateway on to the web or through a home/residential gateway; this technique areoften managed remotely employing a PC, Smart phone, Tablet or other devices The IoTbased Home Automation will enable the user to use a Home Automation System supported Internetof Things (IoT). The fashionable homes are automated throughthe web and therefore the home appliances are controlled. Theuser commands over the web are going to be obtained by the Wi-Fimodems. The Microcontroller has an interface with this modem. The system status is displayed through the LCD display, alongside the system data. This is often a typical IoT based Home Automation system, for controlling all of your home appliances. The smart home market is beginning as IoT device prices come down and therefore the general public involves understand the advantages of those products. And from smart homes, subsequent logical step is sensible cities, which might take the IoT to subsequent level. And yet, smart homes are only one small a part of our daily lives that the web ofThings will transform within the coming years.

We have already witnessed some early commercial success within the IoT industrywhere today, most are talking about Internet of Things which is that the "next big" thing within the world of technology. The

prospect of 30 billion objects connected to the web by the year 2020 is staggering, because the opportunities for brand spanking new lines of service and new business models grow out of this realm. IoT is predicated on the inclusion of devices within the world of connected environments. The devices are embedded and connected, supported a singular identity. The IoT devices in Home Automation have the utmost applications in energy. the househeating devices are readyto control the temperature with the deviceslike laptops, tablets or smart phones and every one of those appliances, systems, and devices contain sensors that connect themto a network. This is often where IoT comes into place, and makes it such an integral a part of the house automation. With the assistance of IoT technology, you'll control devices as and once you want. The beauty of the house Automation system lies within the incontrovertible fact that the settings are manageable from your smart phones and other remote-control devices. Smart home IoT devices can help reduce costs and conserve energy. the house Automation segment includes smart lighting, smart TVs and other appliances. Wearable's (Smart Watch, fitness brands, smartheadphones, smart clothing) also are expected to witness the expansion within the future. IoT is basically the key that creates thiswhole system work. Today in India, nearly 22.5 per cent of the consumers surveyed were conversant in the concept of IoT, with maximum awareness seen within the 36-55 age bracket which clearly indicates that there's immense opportunity for increased adoption of such technologies. the longer term of the house automation market will happen with few key up gradations within the Automation technology. For instance, Wireless Automation solutions also as lowering of price points because the market beginsto simply accept Home automation usage in larger volumes. With an increased internet penetration and data usage, the connected devices segment is predicted to witness an enormous growth by 2020. Home Automation in India is creating big opportunities, not just for Indian automation companies, but also for foreign companies. The rapid development of home-based automations, alongside M2M (machine-to-machine) communications will still create billions of latest connected objects over subsequent 5 years and beyond.

3. METHODOLOGY

The components playing a serious role, but let's clearly separate our components which will finally assist you build a sensible model of what major components are involved in building a sensible home. The main components are often broken into: IoT sensors

- IoT gateways
- IoT protocols
- IoT firmware
- IoT cloud and databases
- IoT middleware (if required)

IoT sensors involved in home automation are in thousands, and there are many home automation gateways also. Most of the firmware is either written in C, Python, Node.js, or the other programming language.

The biggest players in IoT cloud are often divided into a platform-as-a-service (PaaS) and infrastructure-as-a-service (IaaS).

CHARACTERISTICS

Characteristics of IoT Platforms

Again, these platforms are extremely divided over the IoT application and security-related features that they provide. A few of these platforms are open source.

Let's have a look at what you should expect from a typical IoT platform:

- Device security and authentication
- Message brokers and message queuing
- Device administration
- Support towards protocols like CoAP, MQTT, and HTTP
- Data collection, visualization, and simple analysis capabilities
- Integrability with other web services
- Horizontal and vertical scalability
- Web Socket APIs for real-time for real-time information flow

Apart from what we mentioned above, more and more platform builders are open sourcing their libraries to developers. Deem

example the Dallas temperature library for DS18B20 for Arduino was quickly ported due to open source development to a replacement version that helped developers to integrate DS18B20 with Link it One. Understanding this stuff become crucial as IoT tends to evolve continuously and having an equally responsive platform makes it business safe to proceed.

Let's now deeply evaluate each of those components, starting with IoT sensors.

4. ARCHITECTURE

Home Automation Sensors

There are probably thousands of such sensors out there which will be a neighborhood of this list, but since this is often an introduction towards smart home technology, we'll keep it brief. We'll break down IoT sensors for home automation by their sensing capabilities:

- Temperature sensors
- Lux sensors
- Water level sensors
- Air composition sensors
- Video cameras for surveillance
- Voice/Sound sensors
- Pressure sensors
- Humidity sensors
- Accelerometers
- Infrared sensors
- Vibrations sensors
- Ultrasonic sensors

Depending upon what you would like, you'll use one or many of those to create a very smart home IoT product. Let's have a glance at a number of the foremost commonly used home automation sensors.

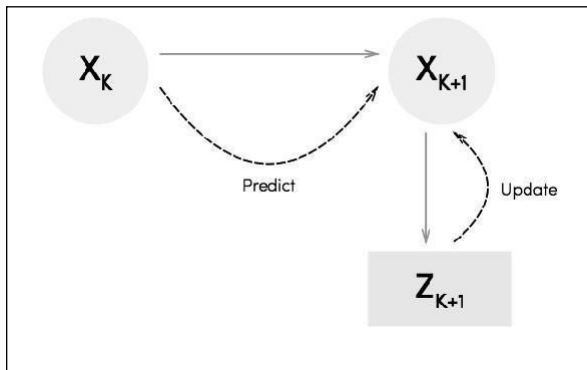
Temperature Sensors

The market is filled with them, but the famous temperature sensors are DHT11/22, DS18B20, LM35, and MSP430 series from TI. The MSP430 series is more accurate than the remainder, but at an equivalent time, it's one among the foremost expensive for prototyping or initial product testing purposes. MSP430 tops all temperature sensors, because the precision and battery consumption

is minimal with them.

The DHT11 features a very restricted temperature range and suffers from accuracy issues. DHT22, on the opposite hand, may be a bit more accurate but still, doesn't make it because the preference.

The DS18B20, on the opposite hand, is more accurate, as against digital temperature sensors just like the DHT22 and 11. Dallas temperature sensors are analog and may be extremely accurate right down to 0.5 degrees.



Take note that always, the temperatures that you simply directly sense from these sensors might not be very accurate, and you'd occasionally see 1000 F or greater values regardless of what you're doing.

There's a whole logic that goes around building temperature sensors that we'll address in another blog post.

Lux Sensors

Lux sensors measure the luminosity and may be wont to trigger various functions range from cross-validating movements to show the lights on if it becomes too dark. a number of the foremost popular light sensors are TSL2591 and BH1750.

Recent tests to incorporate TSL2591 and BH1750 into low-powered IoT devices have found them to be working fairly well for many use cases.

Here's a study done by Robert and Tomas that shows how these two compare against a spectrometer and a photodiode. To get an honest idea of whether these two sensors would meet your needs, we might suggest illuminance tests followed by normalizations of the info to watch deviations under various situations.

Water Level Sensors

While building your prototype, you'll consider a solid state eTape liquid level sensor or, like others, just use an HC-SR04 ultrasonic sensor to live the water level.

On the opposite hand, in other cases where those two don't suffice, one has got to utilize something which will deliver a way higher performance.

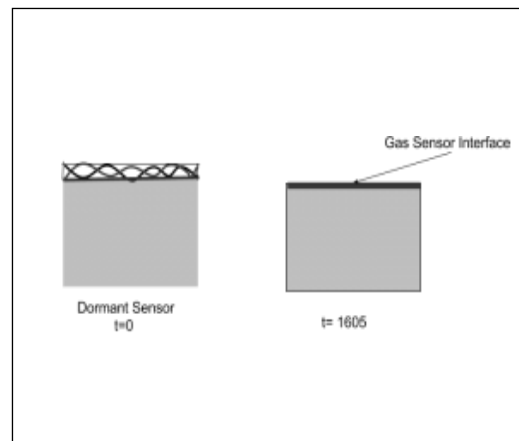
Float level sensors and other ICs like LM1830 offer a more precise measurement capability to IoT developers — although, they're substantially far more expensive than others.

Air Composition Sensors

• There are a few of specific sensors that are employed by developers to live specific components within the air:

- CO monitoring by MiCS-5525
- MQ-8 to measure Hydrogen gas levels
- MiCS-2714 to measure nitrogen oxide
- MQ135 to sense hazardous gas levels (NH₃, NO_x, Alcohol, Benzene, smoke, CO₂)

Most of those are sensors have a heating time, which also means they require a particular time before they really start delivering accurate values.



These sensors mainly believe their surface to detect gas components. Once they initially start sensing, there's always something that's there on their surface, some kind of deposition that needs some heating to travel away. Hence, after the surface gets heated enough, true values start to point out up. Video Cameras for Surveillance and Analytics. A range of webcams and cameras specific to hardware development kits are usually utilized in such scenarios.

Hardware with USB ports offer to integrate camera modules to create functionality.

But utilizing USB ports isn't very efficient, especially within the case of real-time video transfer or any quite video processing.

Take the Raspberry Pi for instance. It comes with a camera module (Pi cam) that connects employing a flex connector on to the board without using the USB port. This makes the Pi cam extremely efficient.

Sound Detection

Sound detection plays an important role in everything from monitoring babies to automatically turning lights on and off to automatically detecting your dog's sound at the door and opening it up for your pet.

Some commonly used sensors for sound detection include the SEN-12462 and EasyVR Shield for rapid prototyping. These sensors aren't nearly as good as industrial-grade sensors like those from 3DSignals, which may detect even ultra-low levels of noise and fine tune between various noise levels to create even machine break-up patterns. Humidity Sensors These sensors bring the potential of sensing humidity/RH levels within the air to smart homes. The accuracy and sensing precision depends tons on multiple factors, including the general sensor design and placement.

But certain sensors just like the DHT22 and 11, built for rapid prototyping, will always perform poorly in comparison to high-quality sensors like HIH6100 and Dig RH.

While building a product to sense humidity levels, make sure that there's no localized layer of humidity that's obscuring the particular results. Also, confine mind that in certain small spaces, the humidity could be too high at one end as compared to the others. When you check out free and open spaces where the air components can move much freely, the distribution round the sensor are often expected to be uniform and, subsequently, would require fewer corrective actions for the proper calibration.

APPLICATIONS

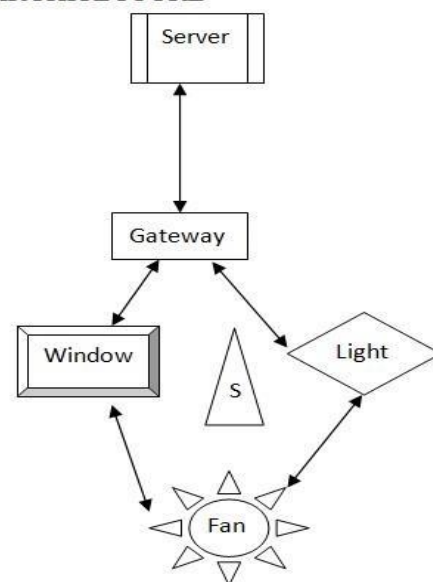
Home automation has been projected to focus on big selection applications for the new digital consumer. a number of the areas where consumers can expect to ascertain home automation led IoT-enabled connectivity are: Lighting control

- HVAC
- Lawn/Gardening management
- Smart Home Appliances
- Improved Home safety and security
- Home air quality and water quality monitoring
- Natural Language-based voice assistants
- Better Infotainment delivery
- AI-driven digital experiences
- Smart Switches
- Smart Locks
- Smart Energy Meters

The list remains not exhaustive and can evolve over the time to accommodate new IoT use cases.

Now that you simply are conversant in home automation applications, let's have an in depth check out what components are involved in building a typical home automation prototype.

ARCHITECTURE



In this prototype, the four components are used, the server, the gateway, the window, the light, the fan. The Server computer which controls the whole architecture, which is been connected with all the opposite components and which receives the communication from the IoT devices connected with it. These communication happens using some predefined protocols or the user could define their own protocols supported the need and requirements. This architecture is been designed with a thought to automate the IoT enabled devices to figure automatically supported the conditions set. The window will get opened automatically supported the space temperature and light weight will glow automatically when the space gets darker. All these components within the architecture registered with the server and controlled by server and therefore the server is configured to speak with the components and to regulate the IoT devices. Though the components are connected and work as per the necessity of the environment, but there are a number of problems to be identified and rectified. Some of the problems are:

- i. Protocols to be used
- ii. Sensors lifetime
- iii. Compatibility issues
- iv. External disturbances
- v. Communication constraints
- vi. Sensing and Processing data

These are a number of the issues that to be concentrated as an entire to define a architecture with zero problem, to satisfy the environment to handle all the situations.

In this diagram I even have used some 3 components, one sensor, one gateway which can act as base station to archive the info, of these components are first registered with the server and obtain connected with the server, the communications between these components are in Wi-Fi based accessing mechanism, where the gateway device which can

act sort of a accessing point to disseminate the info between the components. This prototype maybe a basic one to make an area based IoT controls. The sensor which is an temperature and light weight sensor which sense the environment and pass the info to gateway and forwarded to server, where it'll get processed. Depends on the configuration the components are going to be controlled and activated or deactivated to perform particular task.

CHALLENGES IN IoT

The concept of Home Automation aims to bring the control of operating your a day home electrical appliances to the tip of your finger, thus giving user affordable lighting solutions, better energy conservation with optimum use of energy. aside from just lighting solutions, the concept also further extends to possess a overall control over your home security also as build a centralised home entertainment system and far more. the web of Things (or commonly mentioned as IoT) based Home Automation system, because the name suggests aims to regulate all the devices of your smart home through internet protocols or cloud based computing.

The IoT based Home Automation system offer tons of flexibility over the wired systems as it comes with various advantages like ease-of-use, ease-of-installation, avoid complexity of running through wires or loose electrical connections, easy fault detection and triggering and above and every one it even offers easymobility.

Basic Setup

Thus IoT based Home Automation system contains a servers and sensors. These servers are remote servers located on Internet which assist you to manage and process the info without the necessity of personalized computers. the web based servers are often configured to regulate and monitor multiple sensors installed at the specified location.

Let us understand intimately the working of various smart devices which together constitute the home Automation system.

Controller: The Brain of Your System

The main controller or the hub is that the most essential part of your

Home Automation system regardless of whether you connect single or multiple sensors in your home. the most controller or the hub is additionally mentioned as gateway and is connected to your home router through the coaxial cable . All the IoT based sensors transmits or receive commands through the centralized hub. The hub successively receives the input or communicates the output to cloud network located over the web .

Due to this type of architecture, it's possible to speak with the centralized hub even from remote and distant locations through your smartphone. All you would like is simply a reliable internet connection at the hub location and therefore the data package to your smartphone that helps you hook up with the cloud network.

Most of the smart home controllers available within the market from several manufacturers cater to all or any three widely used protocols of wireless communication for Home Automation: ZigBee, Z-Wave and Wi-Fi .

SMART DEVICES: THE SENSORY ORGANS OF YOUR HOME

The IoT based home automation contains several smart devices for various applications of lighting, security, home entertainment etc. of these devices are integrated over a standard network established by gateway and connected during a mesh network. this suggests that it gives users the pliability to work one sensor based followed by the action of the opposite . For e.g. you'll schedule to trigger the frontroom lights as soon because the door/windows sensor of your main door triggers after 7pm within the evening. Thus all the sensors within a standard network can perform cross-talk via the most controller unit. As shown within the figure, a number of the smart sensors in home automation acts as sensor hubs. These are basically the signal repeaters of signal bouncers which that are located within the midway between the hub installation location and therefore the sensors that the sensors that are at a foreign location.

For such long distances, these sensor hubs play a crucial role to permit easy transmission of signals to sensors that are distant from the most controller but in closer proximity to the sensor hub. The commonly used sensor hubs in IoT based Home Automation systems are Smart Plugs.

Wireless Connectivity: How the Internal Communication Occurs

Most of the IoT based Home Automation systems available today work on three widely used wireless communication protocols : Wi-Fi, ZigBee and Z-Wave

The ZigBee and therefore the Z-Wave controllers are assigned a network ID which is distributed over other sensors within the network. The communication amongst devices happens during a mesh where there's no fixed path for the signals transmitted from the controller to the sensors and the other way around . counting on the supply of the shortest path the signal from the controller For e.g. the motion sensor will instantaneously notify the user wither through emails, SMS, calls or App notifications when it detects any unwanted motion or intrusion. After receiving such notification, the user can quickly activate the IP based home security smart camera can check the status of your home even from remote location. visit the target sensors either directly or through signal hops.

Events and Notifications: Get Notified Instantly

Real-time monitoring and notifications is one among the key features of IoT based Home Automation systems. Since the hub is connected over the cloud network through the web , you'll schedule various events as per your routine activities or daily schedules. The cloud network can receive and store all the user inputs and transfer them to the hub as per the scheduled events. Once the hub transfer the required signals to the target sensor and thus the specified action takes places, it'll quickly upload the new status over the cloud notifying user instantaneously.

If any intermediate sensor within the pathway is busy or occupied the signal will trace another path within the mesh network to succeed in the ultimate destination. Note that sensors with different Network IDs cannot communicate with one another over common channel.

Wi-Fi: Connected with the Cloud: Access Everything on the Go

The Cloud-based-Networking system involves storage and maintenance of knowledge over the web location. This provides users the pliability to possess access to the info from any location on the planet. As a results of this, in IoT based Home Automation systems users over the cloud network can send commands to the hub even from a faraway or remote location. The hub will further send the signal for the intended sensors to trigger and perform the user-requested action. Once the action is performed, the hub will update the status of the action taken to the cloud network .

CONCLUSION

It is not practically possible to trigger every action one by one in your day long busy schedule. This is often where you'll put the web to figure for you. The IF This Then That (IFTTT) Integration helps you during this condition.

This enables you to make cascading effect of actions where the target action will trigger only the IF condition is satisfied. A number of the samples of IFTTT triggers are like "IF" day temperature above 25 degrees turns the ACs on and roll-down the curtain blinds. IF Movie Mode is ON,

then turn the lights to 10% brightness, If soil moisture less than specific values, turn the water sprinklers **within the** garden ON.

There are endless possibilities **that you simply** can create with IFTTT triggers and thus make the optimum use of your Home Automation system thereby making optimum use of energy and simultaneously enjoying a **cushty** lifestyle.

REFERENCES :

- [1] P. S. Pandey, P. Ranjan, M. K. Aghwariya, “The Real-Time Hardware Design and Simulation of Thermoelectric Refrigerator System Based on Peltier Effect” ICICCD 2016 DOI 10.1007/978-981-10-1708-7_66, Vol. 7, pp. 581-589,(2016).
- [2] G. Rani, P. S. Pandey, M. K. Aghwariya, P. Ranjan, “LASER as a Medium for Data Transmission Proceeding of International conference on” ICARE MIT-2016 9-11 DEC-2016 Organized by Department of Mechanical Engineering, M.J.P. Rohilkhand University, Bareilly-.ISBN No. : 978-93-82972-19-8.
- [3] P. S. Pandey, M. K. Aghwariya, P. Ranjan, G. Rani, “Designing of Tracking System And Emergency Vehicle Locator With UltraSensitive GPS Receiver ActiveAntenna” on National conference on Advancement in Engineering Materials (NCAEM- 2016) M. J. P. Rohilkhand University , Bareilly, 24-25 Feb 2016, ISBNNo.: 978-93-82972-12-9.
- [4] P. Ranjan, G. S. Tomar, R. Gowri, “Metamaterial Loaded Shorted Post Circular Patch Antenna” on International Journal of Signal Processing Image Processing and Pattern Recognition (IJSIP) SERSC Publication, ISSN 2005-4254, Vol. 9, No.10, pp 217-226,(2016).
- [5] P. S. Pandey, D.S. Chauhan, R. Singh, “The RealTime Hardware Design and simulation of moving message Display System Integrated with PLCC Modem” Innovative Systems Design and Engineering, ISSN 2222-1727 (Paper) ISSN 2222- 2871 (Online), Vol. 3, No. 10, (2012).
- [6] Oudji, S., Courrèges, S., Paillard, J. N., Magneron, P., Meghdadi, V., Brauers, C., and Kays, R. “ Radiofrequency Interconnection between Smart Grid and Smart Meters Using KNX-RF and 2.4 GHz Standard Protocols for Efficient Home Automation Applications”.Journal of Communications, Vol.10, No. 10, (2015).
- [7] Kumar, M., and Shimi, S. L. “Voice Recognition Based Home Automation System for Paralyzed People. System”, Vol. 4, No. 10, (2015)
- [8] A. N. Shewale, J. P. Bari. “Renewable Energy Based HomeAutomation System Using ZigBee” (2015)
- [9] Dey, S., T. Kundu, S. Mukherjee, and M. Sarkar. “Web Based Real-time Home Automation and Security.System” (2015).

A Study on Consumers' Perception pattern of Curd Brands in Coimbatore City

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Abstract

Human health is very important to carry on their workings. That too good health helps to perform better and stay long with happiness. For obtaining good health he has to follow good diet in his food habits. Dairy and dairy products provide him all essential inputs when he consumes it. So, Curd which is an important dairy product which is loved by all age people provides all necessary nutrients to human health. It gives all energy inputs to the person who consumes it.

Keywords: Human, Dairy, Health, Curd.

1. INTRODUCTION:

Human health is a mixing of Physical and mental combination. So he requires good health to do all his activities. Dairy industry plays a vital role in India's agro-based economy and involves production, procurement, storage processing and distribution of dairy products. It also involves processing of raw milk into products as consumer milk, butter, skimmed milk powder, yogurt, cheese, condensed milk, etc in which each undergoes different processing methods. India is the largest producer & consumer of milk in which buffalo milk production exceeds cow milk⁴.

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The main aim of Indian Dairy industry is to manage the resources available to increase production. It acts as a tool for social and economic development. It is an important source of calcium and vitamin D and provides healthy teeth, gums, strong muscles & healthy bones. Each dairy product will be providing different sources of nutrients to all parts of the body.

Curd is a good source of bacteria which help in detoxification, regularizing bowel movements and helps soothe an inflamed digestive system. It is a common food consumed by all people and all times as it does not harm the health. It is rich in calcium that helps to protect strong gums, teeth, bones and treatment of osteoporosis. The bacteria named Probiotics which is present in curd are beneficial for optimal functioning of the digestive system. It is rich in casein and lactose which provides more nutrients to human body. The bacteria present in curd helps to control blood pressure and maintain fitness and dietary body. The presence of good bacteria in curd helps to boost overall immunity and helps to fight infections. 70-80% of the immunity lies in the gut which is mainly controlled by the gut bacteria. It is also rich in protein. It is also used for skin care treatments which remove dirt and infections from the skin.

2. REVIEW OF LITERATURE

Dhanabalan(2012) conducted a study entitled "Importance of Dairy Industry in Rural Areas". The author reveals that dairy has an important role in improving the overall economic conditions of rural India and to maintain the ecological balance, there is a need for considerable and balanced growth of agriculture and allied sectors. From first plan onwards, planners have given priority to allied sector for the economic development of the rural sector. Dairy farming is denoted as a small industry which gives beneficial employment opportunities. It comprises about six percent of the national income.

Ganapathy, Kanniah and Anbumalar(2009), in their study entitled 'Consumer loyalty for processed milk with reference to Coimbatore city', were aiming at knowing the prevailing trend of customer loyalty towards processed milk consumption and studying the customers' loyalty linkage with consumer behavior for processed milk consumption. Descriptive research was undertaken and the study was based on primary and secondary data.

3. RESEARCH METHODOLOGY

Research methodology is the particular strategy or skill used to identify, select and analyze information about a topic. Research is an art of scientific investigation. The validity of a researcher is based on systematic method of collecting the data and analyzing them in a sequential order. It refers to the organized method which is made up of expressing the problem, formulating a hypothesis, gathering the facts or data, analyzing the facts and arriving at certain conclusions regarding the problems concerned in certain generalizations for some theoretical formulation.

Sample Design

The study covers the area of Coimbatore city, which is the Manchester of South India and is further well known for its best dairy industry.

Data Collection

- **The Research Design Used for the Study**

The research design used for the study is descriptive. Descriptive research studies are those, which are concerned with describing the characteristics of a particular individual or group. The studies concerned with specific prediction with narration of facts and characteristics concerning individual group or situation are all examples of descriptive research studies.

- **Population Size**

The total population size is indefinite.

- **Sample size**

This refers to the number of items to be selected from the total population to constitute the sample. The sample size used

for study is 50.

- **Sample design**

It is a definite plan for obtaining a sample from a given population. It refers to the technique the researcher adopts in selecting items for the sample. The respondents are selected based on convenient sampling.

- **Statistical Tools**

The data collected through questionnaires were analyzed using simple percentage analysis and ranking analysis.

Objectives of the study

1. To study the socio economic profile of consumers who buy branded milk and milk products in Coimbatore City.
2. To study the consumers' perception pattern of curd in Coimbatore city.

Statistical Tools

The difference in the extent of using the dairy products between the different types of respondents are based on their age, gender, educational qualification, occupational status, monthly income, marital status, family size, family style were studied by means of percentage analysis and other objectives were found out by using Anova, Weighted mean score, percentage, Garrett ranking, correlation, path analysis and some other tools.

DEMOGRAPHIC PROFILE OF THE RESPONDENTS

- Most of the consumer (64.4%) belongs to 21-30 years of age group.
- Majority (78%) of the consumers are females.
- Majority (88%) of the consumers are undergraduates.
- Majority (45%) of the consumers are Professionals.
- Majority (90%) of the consumers are married.
- Majority (85%) of the consumers belong to nuclear family.
- Majority (76%) of the consumers have above four members in their family.

AVAILABILITY OF CURD BRANDS

Null Hypothesis

- There is no significant difference in the mean scores of awareness of curd brands among the consumers.

- ANOVA Table**

Source	DF	SS	MS	F
Between groups	10	4698.86	469.89	208.35**
Within groups	7689	17340.68	2.26	

- ** - Significant at 1% level
- Since the F is significant then the null hypothesis of no difference in the mean scores of awareness on curd and butter milk brands is rejected and there is a significant difference in the mean scores of awareness among the consumers. The mean scores of awareness among the consumers are furnished below:

Level of Most Preferred Curd Brands

S. No.	Brands	Mean score	Rank
1	Aavin	4.47	1
2	Aroma	4.15	2
3	Hatsun	3.14	8
4	Sakthi	4.05	4
5	Nutra	3.16	7
6	Suguna	2.64	10
7	Fresh	3.21	6
8	Amirtha	3.29	5

9	Arokya	4.10	3
10	Raaj	1.67	11
11	Arjuna	2.77	9

Source: Primary Data

The above table shows the awareness of the respondents among 11 brands of curd, and the mean scores ranged from 1.67 to 4.47, and the brand 'Aavin' secured the highest mean score and stood at the top position, followed by the brand 'Aroma' which secured next higher mean score and stood at the second position, and the brand 'Arokya' secured next higher mean score and stood at the third position and finally the brand 'Raaj' secured the least score and stood at the last position.

REFERENCES

- Mrs. Heena Rawal. (2012), "Analysis of Productivity of Co-operative Dairy and Milk Supply Units of Gujarat State", Ph. D. Thesis, Saurashtra University, Rajkot, November, pp. 119-124. (<http://etheses.saurashtrauniversity.edu/id/eprint/103>).
- Kurup & Mittal, "Milk marketing in India: A review paper on the role and performance of informal sector", Indian dairyman, 2013.
- Dr. Radder. L and Natalie heather smith, "A Study on milk marketing by selected dairy companies in port elizabeth" Dec. 2010. http://shodhganga.inflibnet.ac.in/bitstream/10603/36576/10/10_chapter3.pdf

Reshaping the Banking Transaction Using Blockchain

John Paul.J

Abstract

Reshaping the banking transaction using Blockchain technology is an immutable, unhackable distributed ledger of digital assets. The main objective of the structure is to provide a secured payment gateway. The client face with an issue of transactional charges, double spending, reverse banking, net banking frauds etc. In order to overcome these problems a real-time, open-source and trusted platform that securely transmit data and value has been introduced via Blockchain technology. The main purpose of the technology is to help banks not only reduce the cost of processing payments, but also rely on a trusted third-party to realize fair payment. Ethereum cryptocurrency acts as a medium of exchange to make the transaction more secure

KEYWORDS : Blockchain, Cryptocurrency, Ethereum, Mining.

1. INTRODUCTION :

This is a process in which the fair payment framework is based on the blockchain technology. Blockchain technology offers hope because 45% of financial intermediaries are prone to economic crime. Hence by reshaping the structure of the transaction that can cut down the massive frauds in the banking sector by linking each block of transactions to their past transactions. The process is achieved through the Ethereum Blockchain technology. This system has the ability to store enormous digital information. With blockchain in the banking industry, individuals and banks can access their transactions. No one can delete or tamper with transactions done in blockchain technology. Because this technology locks each transaction with timestamp. Unlike other cryptocurrencies, the validity of each

other is provided by a blockchain, linked and secured using cryptography. It is an Ethereum blockchain Technology used for both the users and as well as the Banks. Any user can use this system for an Online Transaction with a secured and minimal transaction cost. Whenever a new block is added to the blockchain, every computer on the network updates its blockchain to reflect the change. Storing it in one central database, becomes more difficult to deal with. But this system requires a decentralized database. The Blockchain technology has the potential to solve a lot of problems in the banking sector. It is safe, secured, decentralized, transparent as well as transactional cost is relatively cheaper. The system would allow only authorized participants to access the data and every data's are inside the blocks. Moreover, the proposed system will utilize blockchain technology to combine multiple existing data storage platforms into one. This secure single network will increase the overall efficiency and reduce the number of storage locations of the user's data. Ethereum blockchain enables developers to build and deploy decentralized applications.

2. RELATED WORKS :

Stefan K. Johansen, Department of Information Systems, proposed a comprehensive Literature Review On The Blockchain As A Technological Enabler For Innovation in the year of November 2017, Decentralization and Digital Innovation is amongst the most common concepts found in the literature. Dr. Michael Gebert, proposed an Application of Blockchain Technology in Crowdfunding in the year of March 2017. Crowdfunding is a critical utility particularly for small market enterprises as the new venture amidst a pervasive threat of employment crisis and insecurity. The Blockchain technology is a tool that provides immense hope for a revival of crowdfunding across the world.

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Dr. Eric G. Krause, Denny Nack, Dr. Vivek K. Velamuri, Moritz Schmidt, proposed Blockchain Technology and the Financial Services Market in the year of September 2017, The technology could remove decrease costs and ultimately increase profits for various players within the industry.

Martin Schade, proposed Blockchain Technologies for the Automotive Industry in the year of 2017. This paper deals with the Automobile Industry by using the Bit Coin Payment and real time data based Car Insurance dynamically and the various documentation of all Vehicle related information in Smart Contracts.

3. MATERIALS AND METHODS :

Creating Cryptocurrency

The Ethereum cryptocurrency created with the use of python code. The Ethereum bytes created one by one. Thus the created Ether will be deposited in the Ethereum wallet. Ethereum is a platform that can be used to create any arbitrary smart contract including smart contracts that represent digital assets called Ethereumtokens.

Payment gateway

The payment gateway performs the important role in processing and authorizing the payments or transactions between client and service providers. The payment gateway is provided only to the clients. Using this payment gateway amount will be transferred faster and also in a secured manner.

While performing the transactions the client need not give any kind of their personal bank details. There will also be no third party interface. Every transactions will be recorded and stored in the form of Blocks. The transaction details will be in a decentralized manner. All the online transactions can be replaced using thisEthereum Blockchain Gateway.

Mining Process

The Mining process has been performed. In this it determines whether the transaction being processed is of valid or not. If the transaction is invalid, the process will be terminated. In the output,

- Ethereum lap speed will be calculated.
- Threads in pool will be calculated.

- Final Ethereum Hash value will be generated.
- The Hash value will be unique for everytransaction.
- To fulfill this process, Stop the mining process.

Block generation

All the transactions will be recorded and generated as blocks. The blocks once generated cannot be changed. If changed, it will be created as another block. The block contains,

- Transaction ID.
- Transaction amount.
- Generated hash value.
- The next block will contain the previous Hash value and its Hash value.

4. ALGORITHM :

STEP 1 : Creating the Cryptocurrency by the use of python

STEP 2 : After the creation of cryptocurrency they are to be added in the wallet.

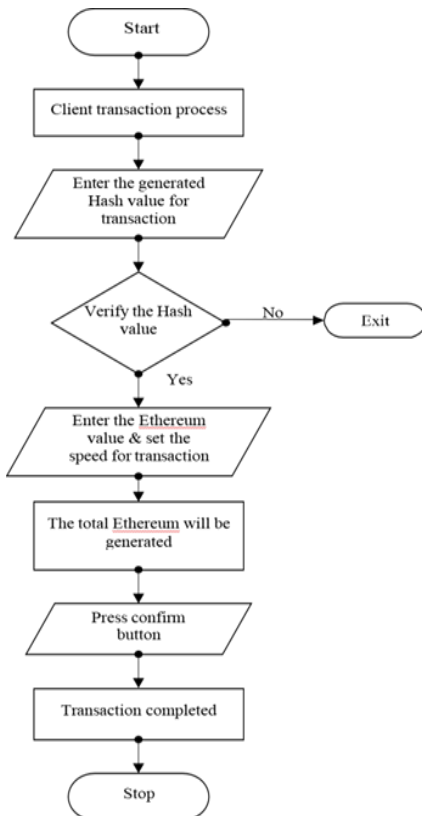
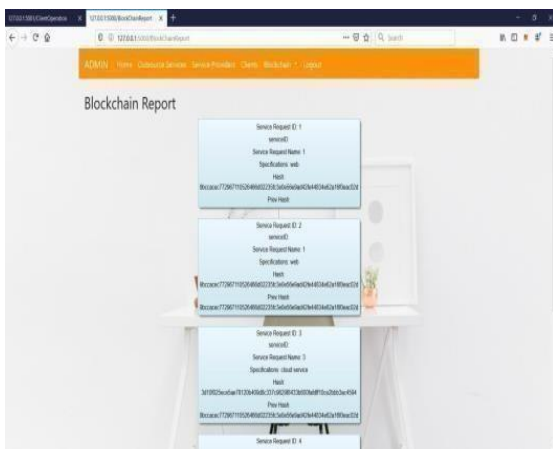
STEP 3 ; Then the created cryptocurrencies are sent to the wallet of the users needs, this is done bythe Banks.

STEP 4 : Using the Hash values the user can send the Ethereum to the required person.

STEP 5 : Those Transactions will be configured as a Block and will generate a new Hash value(M15) and store it into the Previous block.

STEP 6 : The Mining Process will take place in order to check whether the transaction is legal.





5. RESULT :

To open the console, the path is specified.



For starting the mining process, the (miner.start) command will be given. After the mining process the NULL value will be returned. Miner.stop() command is given to stop the mining process. The created blocks will be viewed in the Blockchain report page.

6. CONCLUSION AND FUTURE WORK :

In this study, Various information about the banking attacks from hackers were provided to the banking sector through the



blockchain technology. Overall process of Reshaping the Banking Transaction using Blockchain Technology can change

the banking system and make it far more efficient by making transactions faster, safer, and cheaper. Banks will be able to avoid any fraudulent transactions and secure the system. Transactions will not be completed with just the knowledge of one person, the whole organization will know about it.

The Paper titled Reshaping the Banking Transaction using Blockchain Technology is tested with real-time data and found to be working well. This system has been developed for the users as well as Banks. The database approach of developing the system has helped in reducing redundancy of data and improving the consistency of data in the system. This is possible to upgrade the system and can be adaptable to the desired environment. Because it is based on an Ethereum blockchain, any further changes can be easily adaptable by both the users and as well as the Banks. Converting the Rupees to Ethereum Amount module can be added. Unlike Ethereum other cryptocurrencies can also be used for the further enhancement. Based on the future security issues, security can be improved using this Blockchain technology.

REFERENCES:

1. <https://www.ethereum.org>
2. <https://www.coindesk.com › information › how-Ethereum -works>
3. <https://www.blockchain.com › learning- portal › ether-basics>
4. <https://www.blockchain.com › explorer>
5. <https://www.fullstackpython.com/flask.html>
6. <https://opensource.com/article/18/4/flask>

A Network Security with Its Attacks and prone Security Mechanisms

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Abstract

Security could be a elementary part within the computing and networking technology. the primary and foremost factor of each network planning, planning, building, and operative a network is that the importance of a robust security policy. Network security has become a lot of necessary to private pc users, organizations, and therefore the military. With the appearance of the web, security became a serious concern. the web structure itself allowed for several security threats to occur. There square measure completely different sorts of attack that may be once sent across the network. By knowing the attack strategies, permits for the acceptable security to emerge. several businesses secure themselves from the web by means that of firewalls and coding mechanisms. In this paper, we have a tendency to are attempting to check most sorts of attacks in conjunction with varied different sorts of security mechanism that may be applied in step with the necessity and design of the network.

Keywords- Network Security, attacks, hackers, Cloud-environment security, zero-trust model, Trend Micro internet security.

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1. INTRODUCTION

Network Security management is totally different for every kind of things and is important because the growing use of web. A home or tiny workplace could solely need basic security whereas massive businesses could need high-maintenance and advanced package and hardware to forestall malicious attacks from hacking and spamming

[1]. New Threats Demand New methods because the network is that the door to your organization for each legitimate users and would-be attackers. For years, IT professionals have designed barriers to forestall any unauthorized entry that would compromise the organization's network. And this network security is vital for each network planning, planning, building, and operative that accommodates robust security policies. The Network Security is consistently evolving, thanks to traffic growth, usage trends and also the ever dynamic threat landscape [3]. For example, the widespread adoption of cloud computing, social networking and bring-your-own-device (BYOD) programs are introducing new challenges and threats to an already complex network. According to the UK Government, Information security is: "the practice of ensuring information is only read, heard, changed, broadcast and otherwise used by people who have the right to do so". (Source: UK Online for Business). Information systems need to be secure if they are to be reliable. Since many businesses are critically reliant on their information systems for key business processes (e.g. websites, production scheduling, transaction processing), security can be seen to be a very important area for management to get right. The vast topic of network security is analyzed by researching the following

History of security in networks.

- Internet architecture and vulnerable security aspects of the Internet.
- Types of internet attacks and security methods.
- Security for networks with internet access.
- Current development in network security hardware and software.

When considering network security, it must be emphasized mainly that the whole network should be remaining secure. Network security does not only concern the security in the computers at each end of the communication chain. When transmitting data the communication channel should not be vulnerable to attack, where the chances of threats are more penetrating.

When developing a secure network, the following need to be considered,

- Accessibility – authorized users are provided the means to communicate to and from a particular network.
- Confidentiality – Information in the network remains private, disclosure should not be easily possible.
- Authentication – Ensure the users of the network are, the user must be the person who they say they are.
- Integrity – Ensure the message has not been modified in transit, the content must be same as they are sent.

2. TYPES OF ATTACKS

Networks are subject to attacks from malicious sources. And with the arrival and increasing use of web attacks is most typically growing on increasing. The most classes of attacks will be from 2 categories: "Passive" once a network persona non grata intercepts information travelling through the network, associated "Active" within which an persona non grata initiates commands to disrupt the network's traditional operation [6]. A system should be ready to limit harm and recover quickly once attacks occur. There are

measure some additional styles of attack that also are essential to be considered:

1. **Passive Attack-** A passive attack monitors unencrypted traffic and appears for clear-text passwords and sensitive info which will be employed in alternative varieties of attacks. The observance and listening of the channel by unauthorized attackers are referred to as passive attack. It includes traffic analysis, observance of unprotected communications, decrypting decrypted traffic, and capturing authentication info like passwords. Passive interception of network operations permits adversaries to visualize coming actions. Passive attacks lead to the revealing knowledge of data or data files to associate aggressor while not the consent or knowledge of the user.
2. **Active Attack-** In an energetic attack, the aggressor tries to bypass or burgled secured systems within the occurring communication. This will be done through concealing, viruses, worms, or Trojan horses. Active attacks embody tries to avoid or break protection options, to introduce malicious code, and to steal or modify info. The unauthorized attackers monitors, listens to and modifies the info stream within the channel are referred to as active attack. These attacks are mounted against a network backbone, exploit info in transit, electronically penetrate associated territorial dominion, or attack a licensed remote user throughout a trial to attach to associated territorial dominion. Active attacks lead to the revealing or dissemination of knowledge files, DoS, or modification of knowledge.
3. **Distributed Attack-** A distributed attack needs that the resister introduce code, like a computer program or back-door program, to a trusty element or code that may later be distributed to several alternative corporations and users. Distribution attacks concentrate on the malicious modification of hardware or code at the manufactory or

throughout distribution. These attacks introduce malicious code like a back door to a product to realize unauthorized access to info or to a system perform at a later date.

4. Corporate executive Attack- consistent with a Cyber Security Watch survey insiders were found to be the cause in twenty one % of security breaches, and an additional twenty one % might be thanks to the actions of insiders. Over 1/2 respondents to a different recent survey aforesaid it's tougher these days to discover and forestall corporate executive attacks than it absolutely was in 2011, and fifty three % were increasing their security budgets in response to corporate executive threats [7]. Whereas a major variety of breaches square measure caused by malicious or dissatisfied staff or former staff several square measure caused by well that means staff WHO square measure merely attempting to try to their job. BYOD programs and file sharing and collaboration services like Drop box mean that it'll be tougher than ever to stay company knowledge below company management within the face of those well-meaning however scatterbrained staff.

5. Close-in Attack- A close-in attack involves somebody making an attempt to urge physically about to network elements, data, and systems so as to be told additional a few network. Close-in attacks include regular people attaining shut physical proximity to networks, systems, or facilities for the aim of modifying, gathering, or denying access to info.

One in style sort of draw in attack is social engineering. During a social engineering attack, the aggressor compromises the network or system through social interaction with an individual, through associate e-mail message or phone. Numerous tricks may be utilized by the individual to revealing info concerning the safety of company. The data that the victim reveals to the hacker would possibly be employed in a consequent attack to realize unauthorized access to a system or network.

6. Spyware attack- a significant pc security threat, spyware is any program that monitors your on-line activities or installs programs while not your consent for profit or to capture personal info. And this capture info is maliciously used because the legitimate user for that specific quite work.

7. Phishing Attack- In phishing attack the hacker creates a fake web site that looks exactly like a popular site such as the SBI bank or PayPal. The phishing part of the attack is that the hacker then sends an e-mail message trying to trick the user into clicking a link that leadsto the fake site. When the user attempts to log on with their account information, the hacker records the username and password and then tries that information on the real site.

8. Spoof attack- In the spoof attack, the hacker modifies the source address of the packets he or she is sending so that they appear to be coming from someone else. This may be an attempt to bypass your firewall rules.

9. Password attack- An attacker tries to crack the passwords stored in a network account database or a password-protected file. There are three major types of password attacks: a dictionary attack, a brute-force attack, and a hybrid attack. A dictionary attack uses a word listfile, which is a list of potential passwords [9]. A brute-force attack is when the attacker tries every possible combination of characters

3. TECHNOLOGIES FOR PROVIDING SECURITY TO THE NETWORK

Internet threats can still be a serious issue within the international world as long as info is accessible and transferred across the web. completely different defense and detection mechanisms were developed to cope with attacks mentioned earlier. a number of these mechanisms at the side of advance ideas are mention during this section.

1. Scientific discipline systems- Cryptography could be a helpful and wide used tool in security engineering these days.

2. Firewall- The firewall could be a typical border management mechanism or perimeter defense. The aim of a firewall is to dam traffic from the surface, however it may even be accustomed block traffic from the within. A firewall is that the front defence reaction against intruders to enter within the system. it's a system designed to stop unauthorized access to or from a personal network. Firewalls will be enforced in each hardware and package, or a mixture of each [9]. the foremost wide oversubscribed answer to the issues of net security is that the firewall. this is often a machine that stands between an area network and therefore the net, and filters out traffic which may be harmful. the concept of an answer in an exceedingly box has nice charm to several organizations, and is currently thus wide accepted that it's seen as a necessary a part of company due diligence. Firewalls are available in essentially 3 flavors, looking on whether or not they filter at the informatics packet level, at the transmission control protocol session level, or at the appliance level.

3. Driving Security to the Hardware Level-To more optimize performance and increase security, Intel develop platforms additionally embrace many complementary security technologies designed into multiple platform parts, as well as the processor, chipset, and network interface controllers (NICs). These technologies give low-level building blocks upon that a secure and high performing arts network infrastructure will be sustained. These technologies embrace Virtualization Technology, trustworthy Execution Technology and fast Assist Technology.

4. Intrusion Detection Systems-An Intrusion Detection System (IDS) is a further protection live that helps chase away laptop intrusions. IDS systems will be package Associate in Nursing hardware devices accustomed discover an attack. IDS merchandise are accustomed monitor association in determinant whether or not attacks are been launched. Some IDS systems simply monitor Associate

in Nursing alert of an attack, whereas others try and block the attack. The everyday Associate in Nursing tivirus merchandise is Associate in Nursing example of an intrusion detection system. The systems accustomed discover unhealthy things happening ar mentioned generically as intrusion detection systems. Intrusion detection in company and government networks could be a invasive field of security research; this growth has been prompted by the conclusion that several systems build no effective use of log and audit information.

4. ADVANCED NETWORK POLICIES

1. Making Security in Clouds Environment- Analysts challenge that IT spending will increase barely from 2013. This boom in investment is essentially attributed to cloud computing [10]. Over half of of IT companies plan to increase their spending on cloud computing to enhance bendy and green use of their IT assets. Intel Trusted Execution Technology (Intel TXT) is specially designed to harden platforms against hypervisor, firmware, BIOS, and gadget level assaults in virtual and cloud environments. It does so through presenting a mechanism that enforces integrity exams on these pieces of software at release time. This ensures the software has no longer been altered from its known state. This TXT also presents the platform level believe statistics that higher level safety packages require to enforce role-based safety policies. Intel TXT enforces manage through measurement, reminiscence locking and sealing secrets.

2. Zero-Trust Segmentation Adoption-This version was initially developed with the aid of John Kindervag of Forrester Research and popularized as a vital evolution of conventional overlay safety models. One alternative that is a strong candidate to improve the safety situation is the zero-consider version (ZTM). This aggressive technique to network safety monitors each piece of data possible, under the belief that every record is a capability hazard [11]. It requires that

all sources be accessed in a secure manner, that get right of entry to manage be on a want-to-know basis and strictly enforced.

3. It simplifies how statistics protection is conceptualized by using assuming there are now not relied on interfaces, programs, traffic, networks or users. It takes the old version trust but verify and inverts it, because recent breaches have proved that when an employer trusts, it doesn't verify.

4. Trend Micro Threat Management Services-Because traditional protection answers now not adequately defend against the evolving set of multilayered threats, users want a new approach. Trend Micro gives you that technique with the Trend Micro Smart Protection Network [12]. The Smart Protection Network infrastructure offers innovative, real-time safety from the cloud, blocking off threats earlier than they attain a user's PC or a agency's network. Leveraged throughout Trend Micro's answers and services, the Smart

Protection Network combines particular Internet-based totally, or in-the-cloud, technology with lighter-weight clients.

By checking URLs, emails, and files in opposition to continuously up to date and correlated danger databases within the cloud, clients continually have instant access to the latest protection anywhere they join from home, within the business enterprisenetwork, or at the go. Trend Micro's Threat Management Services gives a complete view of the sports occurring inside the community. The answer evaluation gives a completely unique network protection evaluation that affords businesses with tangible info at the fee of adding an over watch protection layer for a modern defense-in-intensity strategy [13].

The over watch protection layer can discover while a breach has occurred and, extra importantly, immediately take motion to intercept it and remediate it to make certain that it doesn't happen again. Threat Management Services gives an approach to network protection that assesses threat and gives perception on capacity gaps inside the present daysafety environment.

The Smart Protection Network consists of a global community of danger intelligence technology and sensors that supply comprehensive safety in opposition to all sorts of threats malicious files, spam, phishing, net threats, denial of service attacks, internet vulnerabilities, and even information loss. By incorporating in-the-cloud reputation and patent-pending correlation technology, the Smart Protection Network reduces reliance on conventional pattern file downloads and eliminates the delays commonly associated with desktop updates.

5. CONCLUSION

Security is a very hard and vital critical topic. Everyone has a one of a kind idea concerning protection' guidelines, and what tiers of hazard are acceptable. The key for constructing a stable community is to outline what safety means to your want of the time and use. Once that has been defined, the whole thing that goes on with the network may be evaluated with appreciate to that policy. It's vital to build systems and networks in such a way that the user is not continuously reminded of the security gadget around him however Users who locate protection guidelines and systems too restrictive will find approaches round them.

There are specific types of assaults on the security regulations and also growing with the development and the developing use of internet. In this paper we try to take a look at these one of a kind varieties of assaults that penetrates our gadget. As the threats are increasing, so for steady use of our structures and internet there are numerous exceptional security regulations also are developing. In this paper we have mention a number of the protection rules that may be used typically via wide variety of customers and some new advance qualities that fits to the today's extra penetrating environments like Trend micro protection mechanism.

REFERENCES:

[1]. Predictions and Trends for Information, Computer and

Network Security [Online] available:
<http://www.sans.edu/research/security-laboratory/article/2140>

[2]. A White Paper, Securing the Intelligent Network powered by Intel Corporation.

[3]. NetworkSecurity [Online] available:
http://en.wikipedia.org/wiki/Network_security.

[4]. —Network Security: History, Importance, and Future, University of Florida Department of Electrical and Computer Engineering, Bhavya Daya.

[5]. Ateeq Ahmad, —Type of Security Threats and its Prevention”, Ateeq Ahmad, Int.J.Computer Technology & Applications, Vol 3 (2), 750-752.

[6]. Wright, Joe; Jim Harmening (2009) "15" Computer and Information Security Handbook Morgan Kaufmann Publications Elsevier Inc p. 257

[7]. Dr. G. Padmavathi, Mrs. D. Shanmugapriya, A Survey of Attacks, Security Mechanisms and Challenges in Wireless Sensor Networks, (IJCSIS) International Journal of Computer Science and Information Security, Vol. 4, No. 1 & 2, 2009.

[8]. Network Security Types of attacks [Online] available:<http://computernetworkingnotes.com/netw>

E- Commerce Customer Segmentation

Keerthana.S

Abstract

E-Commerce customer segmentation is a machine learning based project in which the customer base is classified based on their total amount of purchase made by them in the e-commerce website. With an increase in the number of e-commerce websites, the competitions have significantly increased. Hence to meet the impending expectations of the growing customer base appropriate advancements has to be done. Taking a customer purchase dataset from github, effectively using machine learning algorithms like Naive Bayes algorithm with K - Means and clustering the customers based on the total purchase amount into categories like platinum, gold, and silver and based on their categories the customers are classified and discounted amounts are generated for each category respectively.

KEYWORDS : Naive Bayes, K- means, Clustering, dataset, frequency table, likelihood table.

1. INTRODUCTION :

The current E-Commerce websites provide a variety of user friendly options to its customers. But what it has failed to provide to make it more advanced and user friendly for the customer's is that they don't provide their customers with discounts that they deserve for according to their purchase. This can only be achieved by clustering and classifying the customer's based on their purchase history and putting them into various categories according to which the customer's can avail discounts to the products the e-commerce websites provide.

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Inducing various machine learning algorithms to categorize the customer base accordingly by their purchase history. This proposed system is developed with an intention to make the system more user friendly and to achieve higher levels of customer satisfaction in a highly competitive industry.

2. ANALYSIS DISCUSSION

Collect a dataset from kaggle/UCI repository/github based on the project requirements. Based on the dataset which is preferably a customer purchase dataset for this project pre-process the data and extract the data through the process of various data extraction methods and have the necessary data in which we can move forward to apply various classification algorithms to classify and categorize the customers.

$$P(c|x) = \frac{P(x|c)P(c)}{P(x)}$$

Likelihood
Class Prior Probability
Posterior Probability
Predictor Prior Probability

$$P(c|X) = P(x_1|c) \times P(x_2|c) \times \dots \times P(x_n|c) \times P(c)$$

2. ALGORITHMS INDUCED IN THE PROPOSED PROJECT

One such algorithm that is to be induced in the project is the "Naive bayes algorithm" which is a classification technique based on Bayes' Theorem with an assumption of independence

among predictors. Bayes theorem provides a way of calculating posterior probability $P(c|x)$ from $P(c)$, $P(x)$ and $P(x|c)$.

- $P(c|x)$ is the posterior probability of class (c, target) given predictor (x, attributes).
- $P(c)$ is the prior probability of class.
- $P(x|c)$ is the likelihood which is the probability of a predictor given class.
- $P(x)$ is the prior probability of the predictor.

On how the algorithm works is explained in the following steps :

1. The dataset is converted into a frequency table.
2. Create a likelihood table by finding the probabilities.
3. Lastly the naive bayesian equation is put into work to calculate the probability of each category one by one. In this case calculate the probability of discount percentage for each category.

One of the other algorithm that is imposed in this proposed project is the K-Means algorithm that are vividly used in data mining projects which is an iterative algorithm that divides the unlabeled dataset into k different clusters in such a way that each dataset belongs only one group that has similar properties. It has the ability to cluster data in an unlabeled format without imposing any training in the dataset.

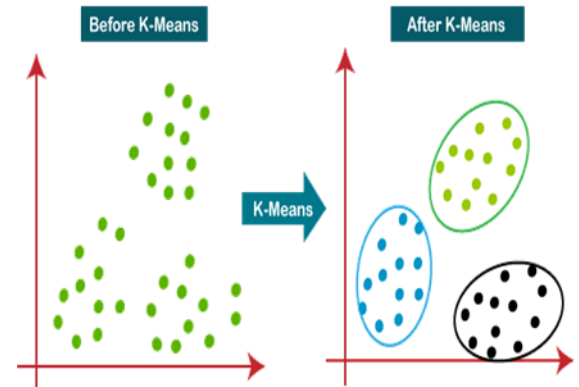
The K-means algorithm identifies the k number of centroids, and then allocates every data point to the nearest cluster, while keeping the centroids as small as possible. The means in the K-means refers to averaging of the data - finding the centroid.

The working of k-means algorithm in data mining is explained below:

To process the training data the algorithm starts with a randomly selected centroid to perform iterative calculations to optimize the positions of the centroid. The iteration of the calculations halts when one of the following outcomes happen:

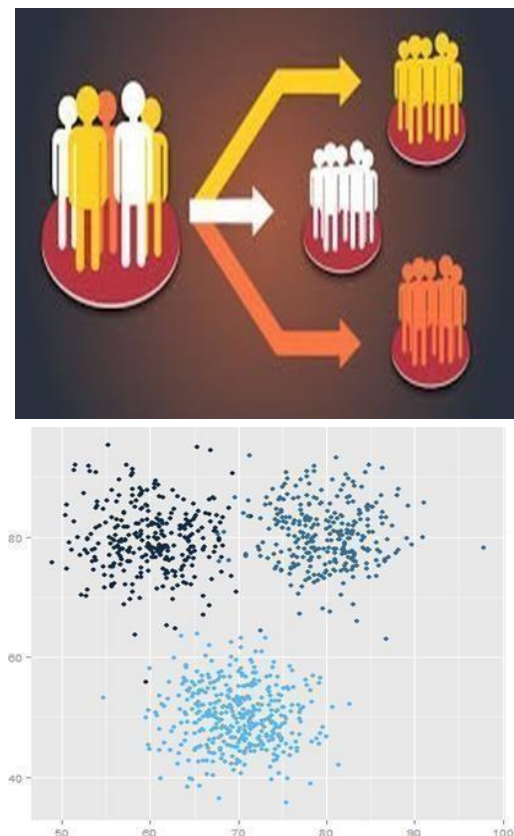
1. The centroids are stabilized where there will be no change in the value because the clustering turns out to be successful.

2. The defined number of iterations are achieved.



3. RESULTS

On the application of algorithms to the extracted dataset, it clusters the customers based on their purchase total into platinum, gold, and silver and finally calculates the probability of the discounted percentage of each category.



4. CONCLUSION

With the help of machine learning algorithms for the process of clustering, we can achieve the output of categorized customers and by applying the equation we can achieve the individual percentage probability of each category of customers. Based on the algorithm the probability may vary accordingly.

REFERENCES :

- [1] <https://towardsdatascience.com/customer-segmentation-using-k-means-clustering-d33964f238c3>
- [2] <https://www.optimove.com/resources/learning-center/customer-segmentation-via-cluster-analysis>
- [3] <https://www.analyticsvidhya.com/blog/2017/09/naive-bayes-explained/>
- [4] <https://www.crrresearch.com/methods-quantitative-market-research-segmentation>
- [5] <https://www.pointillist.com/blog/behavioral-segmentation/#section9><https://www.javatpoint.com/k-means-clustering-algorithm-in-machine-learning>

Virtual Reality in Medical Studies

M. Prem prakaash

Abstract

Difficulties that arise during training are sometimes identified by learners themselves, who might individually seek help from their clinical teachers or from other services. However, in most cases, problems are identified by the learners' clinical preceptors who might either note a change from previous performance or identify a learner with a lower level of performance compared with his or her peers. These often subjective "impressions" require further critical assessment to better characterize the actual underlying behaviour of concern to develop a constructive plan to help learners with difficulties. In order to improve learning with experience, I created a solution which will help learners, in better understanding and experience them in the real world. This is drastically increasing the chance of better knowledge and practical way of educating method.

This is a web application powered by virtual reality technology that can help the user with better experience and it also allow the user to view at 360-degree, of human organs in this application. This web app will surely help the learner to learn and understand the functionality of organs in a better way.

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KEYWORDS: Medical studies, organs in human body, studies in virtual reality, via website

1. INTRODUCTION

The growth of the medical field is kept on increasing day by day, in order to increase the learning method, many smart class and VR tools are created in high pay that can increase the knowledge of students. But on the other side, all these things are not provided in many medical colleges, so the student will not have knowledge about their subjects. In order to make things better and easy to understand with their subject.

This project can be used as solution for the medical student who needs to learn the fundamentals of the human body and functionalities of human organs in a better way.

The solution is probably free and that can be available online, so that students can just login and learn in these platforms. The platforms are powered by Three.js and html. Three.js is a framework of JavaScript that is used to load 3d models in website and apply VR technology in that environment.

Animation and texture of 3d model will help the students to understand how human organs works and for the better understanding a text description is also provided in the model which explain the complete data about that particular part of the organ.

WebVR and WebGL technology in website is going to be a huge success in the future, this will help the students and teacher to teach the concepts in an effective way.

This experience is right up there with the educational. The technology is one of the rapid growing technology that will surely be used by every educational institution in the future. The VR will also help the student to experience very things in education and also improve better understanding of the concept presented by using this technology.

ADVANTAGES

1. Experience the new way of learning
2. Teachers can use these systems to teach student
3. Online connectivity will help students to access anywhere in these world
4. All the concepts are in Virtual reality
5. The user can rotate the model and experience with animations

2. LITERATURE REVIEW

The meta analysis by Gurusamy et al (2008) included a methodical search of all the relevant medical, educational and computer literature databases including the grey literature, and included randomized trials that evaluated the effectiveness of VR training. A total of 2176 primary studies were identified through electronic searches and a total of 23 trials involving 622 participants were included for final assessment. Four trials compared VR and video trainer (VT) training; 12 trials compared VR and no training or standard laparoscopic training (SLT); four trials compared VR training, VT training and no training; and three trials compared different methods of VR training. Six trials compared VR training in surgical trainees with limited experience in laparoscopic surgery. One trial did

not state the experience of the participants. The other trials included medical students or surgical residents without any experience in laparoscopic surgery.

Aggarwal (2004) reviews the tools available for training and assessment in laparoscopic surgery. Medline searches were performed to identify articles and further articles were obtained by manually searching the reference lists of identified papers. Overall, the findings from this systematic review suggest that training involving box trainers with either innate models or animal tissues lacks objective assessment of skill acquisition. Virtual reality simulators have the ability to teach laparoscopic psychomotor skills, and objective assessment is now possible using dexterity-based and video analysis systems. The authors of the review concluded that there is sufficient evidence for incorporation of virtual simulation into current training programmes and they emphasized that the expanding scope of this technology should be coupled with validated training programmes.

Botden et al. (2008) conducted RCT on participants of several European Association for Endoscopic Surgery (EAES)-approved laparoscopic skills courses (n = 45). First participants filled out a questionnaire on their opinion on laparoscopic suturing training. After a general introduction of the simulators was given, all participants were randomly and blinded divided into two equally sized groups: group A (n = 10), started with a training session on the traditional box trainer for half an hour followed by a session on the SimSurgery VR simulator for half an hour; group B (n = 10), started with the same session on the SimSurgery VR simulator, followed by the session on the

traditional box trainer. Finally, suturing and knot tying skills were assessed by an expert observer, using a standard evaluation form. The same was done after the initial training on the box in group A, as a control. Overall, the total score of group A was higher than both group B and control. All the participants scored the features of the box trainer significantly higher than those of the VR simulator ($p < 0.001$), 46.7% was of the opinion that the box alone would be sufficient for laparoscopic suturing training. The authors concluded that VR simulation does not have a significant additional value in laparoscopic suturing training, over traditional box trainers.

Cohen et al. (2006) conducted an RCT ($n = 45$) to determine whether a 10-hour structured training program that used the GI Mentor simulator provided an objective benefit to novice gastroenterology fellows before performing real colonoscopies. Subjects were randomized to receive 10 hours of unsupervised training on the GI Mentor or no simulator experience during the first 8 weeks of fellowship. After this period, both groups began performing real colonoscopies. Study measured the mixed-effects model comparison between the 2 groups of objective and subjective competency scores and patient discomfort in the performance of real colonoscopies over time.

Eversbusch et al. (2004) analyzed the learning curve for the GI Mentor II endoscope trainer and assessed the contribution of psychomotor training for an improvement in the performance of virtual colonoscopy. 28 subjects were divided into three groups on the basis of their experience with gastrointestinal (GI) endoscopy: experienced surgeons (group 1, $n = 8$), residents (group 2, $n = 10$); and medical students (group 3, $n = 10$). The participants were tested on the GI Mentor II virtual

reality simulator 10 consecutive times. Assessment of the learning curve was based on time used, number of punctured balloons, and number of wall collisions. In the second part of the study, 20 subjects who had never performed GI endoscopy were included. After performing a virtual colonoscopy, they were randomized to a group that received psychomotor training and a control group. Finally, all subjects performed a virtual colonoscopy. The study found that the learning curve for time spent reached a plateau after the second repetition for group 1 ($p < 0.05$), after the fifth repetition for group 2 ($p < 0.05$), and after the seventh repetition for group 3 ($p < 0.05$). Experienced surgeons did not improve their scores for regarding number of balloons punctured or number of wall collisions ($p > 0.05$), indicating the absence of a learning curve for these parameters.

OBJECTIVE OF STUDY

- ❖ To help the medical students to understand the internal organs and medical practice in a better concept.
- ❖ Virtual reality is a technology that can solve these medical difficulties with 3d model and virtual environment.
- ❖ The comparison study about the existing system and the proposed system. The system analysis is essential when the software is interfaced with other elements such as other software's, hardware's, people and other resources.

MATERIAL AND METHOD

The data for this research paper is been collected from secondary data. Secondary data is the information that already exists. For collecting secondary data, the internet, magazines, journals, and books were used.

TOOLS AND TECHNIQUES OF THE STUDY

- What's up with A-Frame, a WebVR framework for building virtual reality experiences
- The first version of A-Frame to make it easier to build VR experiences and make the Web keep pace with the VR industry.
- With the help of a community of hundreds of thousands of developers over the years, we're releasing A-Frame v1.0.0 to support the coming out of the WebXR spec which has been under discussion for the past several years. The upgrade to A-Frame v1 and beyond will become necessary on more and more browsers as they deprecate WebVR and only support the WebXR specification.
- To clear confusion, WebXR refers to both AR and VR support on the Web. To that end, we've included an AR mode out of the box in A-Frame for browsers that support ARCore and ARKit. In production, make sure to use HTTPS for VR and AR support.

maintain WebXR support for A-Frame. And to thank

We'd like to thank in part Google for providing a bit of funding to us at Super medium to help develop and people within Google, Oculus, and importantly the Web community for testing this version for us. We'll continue to provide necessary updates to A-Frame.

3D animation videos in smart classes will be the existing system in this case. The main thing is only, the visual is provided with good 3d models and amazing soundtracks but they don't allow the student to practically operate or experience a models in real world although by improving VR in this concept it will probably increase the visual and experience to the students, that will increase proper understanding and the concept are delivered in real time so this will be helpful for the medical student and one who needs to learn about human organs will have proper understanding and experience the functionality of human organs.

The proposed system uses Virtual reality (VR). These will drastically increase the chance of learning and better understanding of concept in real world.

The system available in online so it can be easily scalable all over the world in the form of WebVR, so that the user can access anywhere in the global and experience VR and 360 view of the model with amazing real texture and animation.

RESULTS AND DISCUSSIONS

Module

1. Login and Registration.
2. 3d modelling and designing.
3. Texturing and Rigging.
4. Importing model in Three.js.
5. User interface.

TEXTURING AND RIGGING

- Texture is added by UV mapping and node editing for realistic texture making and Rigging is done by adding armature in the moving parts of the model and these will help while animating the model in an effective way.
- To look the rendering data in blender cyclic rendering is used and all the changes will be previewed in that rendering.

LOGIN AND REGISTRATION

These modules allow the user to create an account in the system and allow the user to access the system in virtual reality. All these data are saved in the mysql database javascript is used to save the data in the database.



Figure 1: Login

3D MODELLING AND DESIGNING

3d modelling can be done by using a blender and design performed in cycle render which allow the model to add amazing texture in blender.

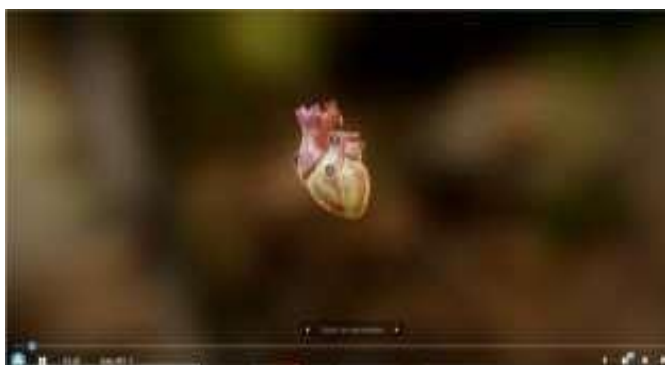


Figure 2: 3d model

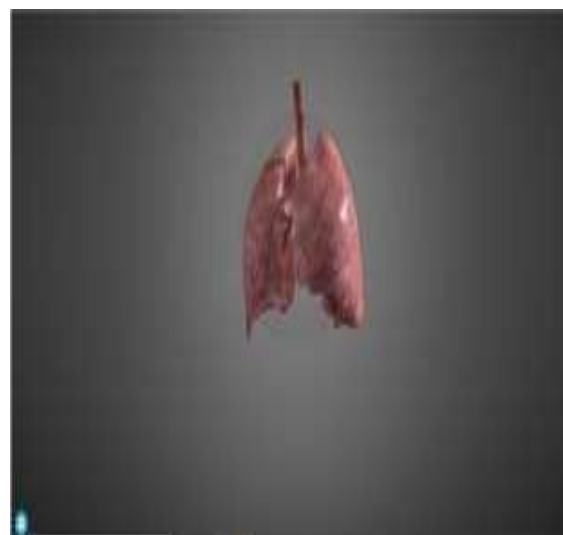


Figure 3: Texturing

IMPORTING THE MODEL IN THREE.JS

The rendered model will be done and exported to json format that can be loader in Three.js .

All the models are loader in three.js and then they can be converted into WebVR.



Figure 4: VR loader

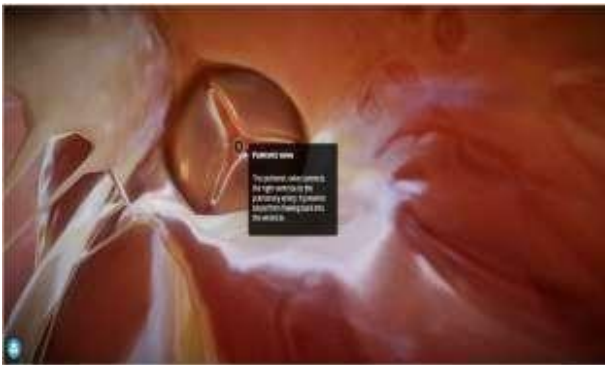


Figure 4.1: VR Environment

USER INTERFACE

The user interface will be comfortable for virtual reality platform.

CONCLUSION

Web VR brought virtual reality to the web, making it easier for anyone to create, enjoy, and share VR experiences. The next phase of this evolution is WebXR, which will combine Web VR and AR into a single API. While the transition is happening our live Web VR experiments will not be accessible, however you can still demo some of the projects in 360. This will surely satisfy the user need of the following needs of the user.

REFERENCES:

1. Andreatta, P. B., et al. (2010). "Virtual reality triage training provides a viable solution for disaster-preparedness." *Acad Emerg Med*.
2. Bartlett, R. D., et al. (2017). "A pilot study to assess the utility of a freely downloadable mobile application simulator for undergraduate clinical skills training: a single-blinded, randomised controlled trial." *BMC Med Educ*.
3. Berman, N. B. and A. R. Artino, Jr. (2018). "Development and initial validation of an online engagement metric using virtual patients." *BMC Med Educ*.
4. Bowyer, M. W., et al. (2010). "Teaching breaking bad news using mixed reality simulation." *J Surg Res*.
5. Cheng, A., et al. (2014). "Technology-enhanced simulation and pediatric education: a meta-analysis." *Pediatrics*.
6. Courteille, O., et al. (2018). "Learning through a virtual patient vs. recorded lecture: a comparison of knowledge retention in a trauma case." *Int J Med Educ*.
7. De Leo, G., et al. (2014). "Measuring sense of presence and user characteristics to predict effective training in an online simulated virtual environment." *Simul Healthc*.
8. Deng, X., et al. (2018). "Effectiveness evaluation of digital virtual simulation application in teaching of gross anatomy." *Ann Anat* 218: 276-282. Ekstrand, C., et al. (2018). "Immersive and interactive virtual reality to improve learning and retention of neuroanatomy in medical students: a randomized controlled study." *CMAJ Open*.
9. Ellington, D. R., et al. (2018). "Female Pelvic Floor Immersive Simulation: A Randomized Trial to Test the Effectiveness of a Virtual Reality Anatomic Model on Resident Knowledge of Female Pelvic Anatomy." *J Minim Invasive Gynecol*.
10. Foo, J. L., et al. (2013). "Evaluating mental workload of two-dimensional and three-dimensional visualization for anatomical structure localization." *J Laparoendosc Adv Surg Tech*.