BYTE QUEST

Vasavi College Of Engineering

Department of Computer Science and Engineering

Contents:

Byte Quest is the article published by the CSE department of Vasavi College of Engineering regarding the latest innovative technologies and software that have been emerged in the competitive world. The motto of this article is to update the people regarding the improvement in technology. The article is designed by the active participation of students under the guidance of faculty coordinators.

Good, bad or indifferent if you are   not investing in new technology, you are going to be left behind.

-Philip Green

Once a new technology rolls over you, if you're not part of the steamroller, you're part of the road.

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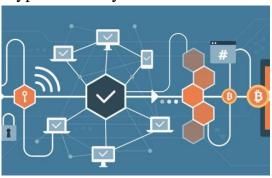| STUDENT COORDINATORS		
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BLOCKCHAIN OVERVIEW

Many of us know that Blockchain is a topic that is hot at the moment. Consider yourself (a "node") have a file of transactions on a computer(a "ledger"). Two government accountants (let's call them "miners") have the same file on theirs (so it's "distributed"). As you make a transaction, your computer sends an E-mail to each accountant to inform them. Each accountant rushes to be the first to check whether you can afford it. The first to check and validate hits "REPLY ALL", attaching their logic for

verifying the transaction. If the other accountant agrees, everyone updates their file. This concept is enabled by Blockchain technology. The original Blockchain is open-source technology which offers an alternative to the traditional intermediary for transfers of the crypto-currency Bitcoin.

The intermediary is replaced by the collective verification of the ecosystem offering a huge degree of traceability, security and speed.

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ANALYSIS OF ALGORITHMS

Time complexity is the number of operations an algorithm performs to complete its task. The algorithm that performs the task in the smallest number of operations is considered the most efficient one in terms of the time complexity.The most famous algorithms include divide and conquer, greedy, dynamic programming, back tracking, branch and bound, etc.
1. Binary Search: O(log n)
2. Quick Sort: O(n * log n)
3. Travelling salesman : O(n!)
For example, if we have 4 billion elements to search for, then, in its worst case, linear search will take 4 billion operations to complete its task. Binary search will complete this task in just 32 operations. That's a big difference. Now let's assume that if one operation takes 1 ms for completion, then binary search will take only 32 ms whereas linear search will take 4 billion ms (that is approx. 46 days). That's a significant difference. This is the reason why studying time complexity becomes important when it comes to such a big amount of data.

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VIRTUAL REALITY

Virtual reality (VR) is a simulated experience that can be similar to or completely different from the real world. Users immerse and interact with 3D environment created. Users can handle virtual objects by hand gestures. This ability makes VR interactive. It allows stereoscopic (3 dimensional) view.

Communication can be human-human communication, human-environment communication, or human-computer communication. The first two have been developed over a long history of interaction. It is desirable to provide human-friendly environment around computers. The goal of VR is to provide a virtual environment where we can interact with computer just as we do in the real world, by talking to a virtual human, writing, drawing. Sound plays a key role in virtual experience. In VR image's motion is controlled by the real human's emotion. The user wears shutter glasses and has sensors on face, hands, and body to detect motion. On the basis of the movement information, the images of virtual object are deformed and displayed to match the viewer's perspective. In VR a user can enter the virtual space, walk through it, and grasp a virtual object by means of hand gesture, even feeling its heft. This is called force feedback. In virtual world, even a collision can be detected.

When technologies of the lenticular screen and holography have been developed enough, viewers should be able to have a stereoscopic view with the naked eye. This involves detecting the viewer's viewpoint via a sensor attached near the viewer's eye, adjusting the object's display. Object handling with hand gesture is accomplished by means of a data glove with sensor, that detects hand shape and hand motion. In this way a user experiences virtual world. Applications of VR include entertainment and education.

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