Course Name : O Level(B4-Ist sem.)　　　　　Subject : ITT&NB
Topic : Virtual Reality, Artificial Intelligence　　　Date　 : 10-06-20

　　　and Blockchain Technology

Virtual Reality(VR)

Virtual Reality (VR) is the use of computer technology to create the effect of a 3D (3-Dimensional) environment containing 3D objects which have a strong sense of physical presence with respect to the user. In virtual reality, user has a virtual environment to interact with three-dimensional things in the place of pictures or movies. Control and interaction with the environment is done by direct manipulation of objects in the real world.

Key Elements of Virtual Reality (VR):

1. **3D Virtual World**

 In 3D world user would find the three dimensions length, breadth and height mentioned on X, Y and Z axis respectively, by using special type of Glass called 3D Glasses.

2. **Immersion**

Immersion in VR technology is defined as "Imagination of physical presence in virtual world". Immersion into virtual reality is belief of being physically present in a non-physical world. This directly affects the user's mind.

3. **Sensory Feedback**

It is defined as *"real feel of any object in virtual world"*. The user feels the virtual environment by the physical sense which signals the brain in believing that the event happening here are not create artificially but are actually happening. It can achieve by:

Smell & Taste, Seats & Motion, Skin as Input, Touching real things, Remote Views etc.

4. **Interactivity**

The element of interaction is of most importance to make the user really feel free to get involved with the virtual environment. The user can wear a Head Mounted Display (HMD) and watch a pre recorded movie where user can have the sensation of air blowing his hair. Nowadays new technological advancements researches and developments have reached the sensory outputs of the user to a different level. The element of interaction depends on a number of factors again, given below:

- Speed
- Range
- Mapping

Artificial Intelligence(AI)

Artificial Intelligence is a program that behaves (externally) like humans. It operates (internally) the way humans do. It is software that gathers information about the environment and takes action based on that information. AI is used in many areas such as in robot, a web shopping program, a smart factory, a traffic control system, Games. etc.

AI uses algorithms written in computer programs (software) to execute tasks which require intelligence of humans. Several social networking companies such as Facebook, LinkedIn and Twitter have started using artificial intelligence techniques to enhance deep learning capabilities. The use of artificial intelligence is *"New Innovation"* in several connected fields. Now a days, medical sciences have also start using AI technologies in diagnosis and even in surgeries.

Social & Mobile

With the help of AI, mobile makes our Social life easy and comfortable. There are so many number of mobile App's that could manage a lot of things for daily life. Most of the people use this type of Social media app which can help them according to their uses.
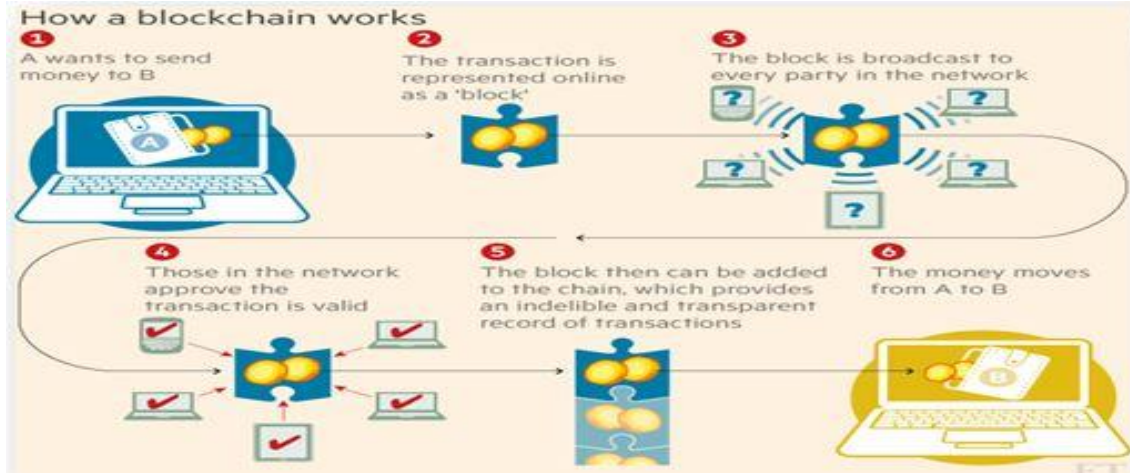
Some examples are given below:

- Google Assistance App

- Speech Recognition

- Google map Navigation

- Face Recognition

- Advertisement

- Evolution of Chatbots

Blockchain Technology

Blockchain is a successful technology that updates work nature of most industries in future. Blockchain is a distributed database existing on multiple computers at the same time. A Blockchain, originally **chain of block** that contains the list of records, called blocks, which are connected together using **cryptography.** It is constantly growing as new sets of recordings, or 'blocks', are added to it. Each block contains a timestamp and a link to the previous block, so they actually form a chain. The database is not managed by any particular body; instead, everyone in the network gets a copy of the whole database. Old blocks are preserved forever

and new blocks are added to the ledger irreversibly, making it impossible to manipulate by faking documents, transactions and other information.

Working of Blockchain

How a blockchain works

① A wants to send money to B

② The transaction is represented online as a 'block'

③ The block is broadcast to every party in the network

④ Those in the network approve the transaction is valid

⑤ The block then can be added to the chain, which provides an indelible and transparent record of transactions

⑥ The money moves from A to B

Exercise:

1. Write short notes on followings:
   a. **Virtual Reality (VR)**
   b. Artificial Intelligence
   c. Blockchain Technology