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# Overview

- What is Virtual Reality?
- History of Virtual Reality.
- Types of Virtual Reality.
- Virtual Reality Hardware.
- Applications of Virtual Reality.
- Future of Virtual Reality.

# INTRODUCTION

## What is Virtual Reality(VR)?

Virtual Reality refers to a high-end user interface that involves real-time simulation and interactions through multiple sensorial channels.

## In other words,

Virtual reality is a computer generated world with which the user can interact

Interaction can vary from looking around to interactively modifying the world.

# History of VR

- 1950s Visionary Cinematographer.
- Morton H Eilig built a single user console called Sensorama.
- This enabled the user watch television in three dimensional ways.



- In **1961**, Philco Corporation engineers developed the first HMD known as the **Head sight.**

- It was in **1965** IVAN SUTHERLAND envisioned what he called the "**Ultimate Display**".
- In **1988**, commercial development of VR began.
- In **1991**, first commercial entertainment VR system "**Virtuality**" was released.

# Types of VR System

1) Immersive Virtual Reality
2) Augmented Virtual Reality
3) Desktop (Window on a World) Virtual Reality
4) Video Mapping Virtual Reality

## 1) IMMERSIVE VR

- It is basically a feeling of involvement of the user in the virtual world .
- The user has no visual contact with the physical word.
- Often equipped with a Head Mounted Display (HMD).
- This unique combinations where the user can immerse as well interact with the simulations is known as Telepresence.

## 2) Augmented VR

- AR integrate the computer-generated virtual objects into the physical world.
- This involves literally augmenting reality with virtual information.

## 3) Desktop VR

- Desktop-based virtual reality involves displaying a 3-dimensional virtual world on a regular desktop display without use of any specialized movement-tracking equipment.
- Modern computer games can be used as an example

## 4) Video Mapping VR

- The user watches a monitor that shows his body's interaction with the world.
- The element of interaction depends on a number of factors  like speed, range and mapping.


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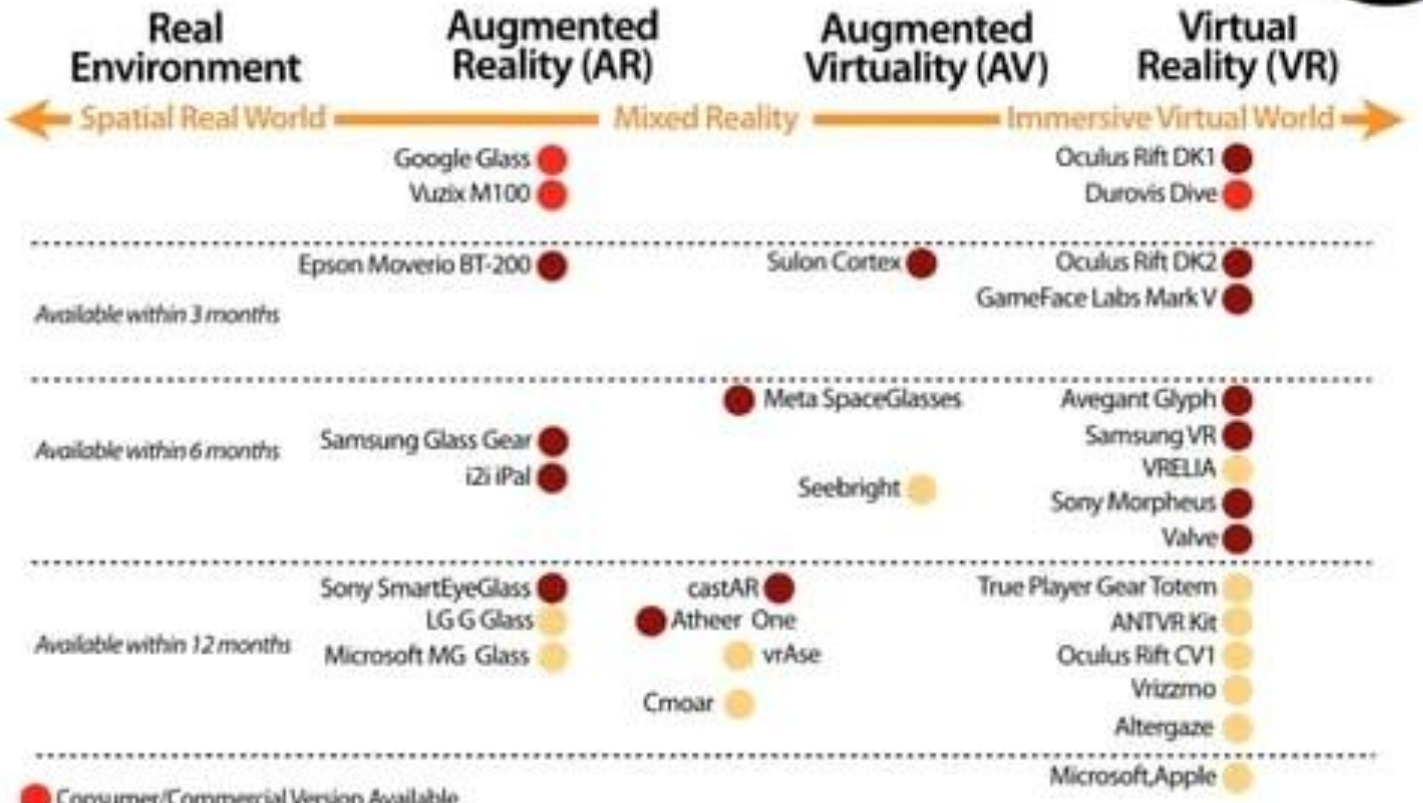
# Augmented Reality v.s. Virtual Reality

VR technologies completely immerse a user inside a synthetic environment. While immersed, the user cannot see the real world around him.

In contrast, AR allows the user to see the real world, with virtual objects superimposed upon or composited with the real world.

# Augmented & Virtual Reality Device Spectrum






KZERO WORLDWIDE

- DATA GLOVE


- STEREOSCOPIC DISPLAYS

## VR Simulators


Oculus Rift S (2022)

# Handheld: Google CardBoard

# Applications of VR

## E-Commerce And Business:

- Virtual reality is being used in a number of ways by the business community which include:
- Virtual tours of a business environment.
- Training of new employees.
- A 360 view of a product.

# Training :

- Virtual reality environments have been used for training simulators.
- Examples include flight simulators, battlefield simulators for soldiers, paratrooping.



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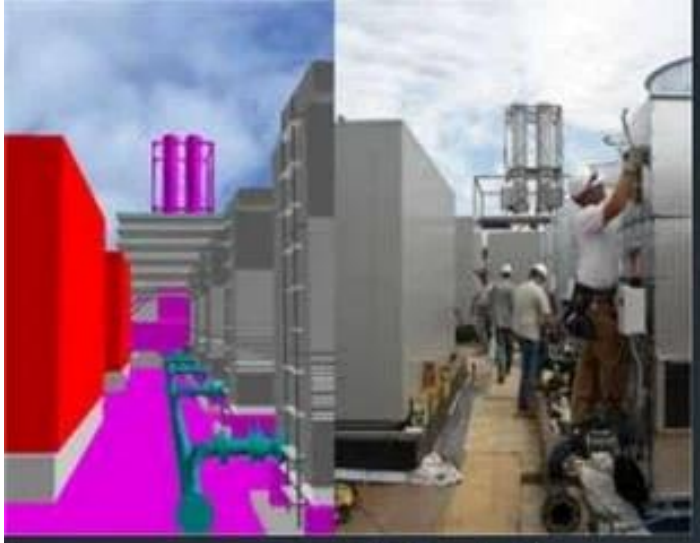
## Engineering and Design

- VR is widely used in engineering and designing process.
- It gives better understanding of the design and facilitates changes wherever necessary
- It helps to reduce the time and cost factor.

Examples: Building construction, car designing railway construction…



# Medicine

- Healthcare is one of the biggest adopters of virtual reality which encompasses surgery simulation, phobia treatment, robotic surgery and skills training.
- VR finds its application nursing, dentistry, autism, health issues and for the disabled.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# Entertainment

- The entertainment industry is one of the most enthusiastic advocates of virtual reality, most noticeably in games and virtual worlds.

- Virtual Museum, e.g. interactive exhibitions
- Gaming
- Film and theaters
- Virtual theme parks


VIVE

# Future of VR

- **1999-** 10% of the world's computing power was non-human.
- **2029-** 99% of the world's computing capacity will be non-human.
- And it is estimated that by 2037 we will be having a computer powerful enough to run immersive VR programs.


THE VERGE

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THANK YOU