



## Vidyavardhini's College of Engineering & Technology

### Department of Computer Science and Engineering (Data Science)

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**Aim:** Demonstration of the working of HTC Vive, Google Cardboard, Google Daydream and Samsung gear VR

#### **Theory:**

HTC Vive, Google Cardboard, Google Daydream, and Samsung Gear VR are all virtual reality (VR) platforms that offer unique features and capabilities.

#### **1. HTC Vive:**

HTC Vive is a premium VR system known for its high-quality visuals and immersive experiences. It includes a headset and motion controllers that enable precise tracking of your hand movements. The system uses external base stations for room-scale tracking, allowing users to move freely within a designated play area. It provides a wide range of VR content, from games to educational experiences, making it a popular choice among enthusiasts.

#### **2. Google Cardboard:**

Google Cardboard is an affordable and accessible VR platform. It consists of a simple cardboard viewer that can hold a smartphone. By running compatible apps on a smartphone, users can experience basic VR content. While it lacks the advanced features of high-end VR systems, Google Cardboard serves as an excellent introduction to VR and can be used with a wide range of Android and iOS devices.

#### **3. Google Daydream:**

Google Daydream is an upgraded version of Google Cardboard. It features a more comfortable and higher-quality VR headset that works with Daydream-compatible smartphones. The controller, designed for interaction in VR, provides a more engaging experience. Daydream offers a growing library of apps and games, making it a solid choice for mid-range VR experiences.

#### **4. Samsung Gear VR**

Samsung Gear VR is a collaboration between Samsung and Oculus, offering a VR experience for Samsung smartphone users. The headset connects to a compatible Samsung smartphone, delivering a wide variety of VR content. While it provides a good balance between quality and accessibility, it's important to note that Samsung has discontinued new Gear VR models in favor of other VR endeavors.

Each of these VR platforms has its own strengths and limitations, making them suitable for different types of users and applications. A demonstration of these systems will showcase the diverse experiences they offer and help users understand their respective capabilities and features.



### **Procedure:**

#### **HTC Vive:**

- Set up the HTC Vive base stations in a room with enough space for movement.
- Connect the HTC Vive headset to a powerful PC with the necessary specifications.
- Launch the SteamVR software and ensure the headset is tracked.
- Demonstrate room-scale VR experiences using motion controllers and high-quality visuals.
- Showcase a range of HTC Vive-compatible VR applications and games to highlight its capabilities.

#### **Google Cardboard:**

- Assemble the Google Cardboard viewer.
- Insert a compatible smartphone into the viewer.
- Download and launch a Google Cardboard-compatible app on the smartphone.
- Place the Google Cardboard viewer on the user's head.
- Demonstrate basic VR experiences, such as 360-degree videos, virtual tours, or educational content, using smartphone-based VR.

#### **Google Daydream:**

- Ensure a Daydream-compatible smartphone is available.
- Set up the Daydream headset and controller.
- Download and install Daydream apps and games on the smartphone.
- Launch a Daydream app and demonstrate the use of the Daydream controller for interaction.
- Showcase mid-range VR experiences, such as mobile VR gaming or immersive videos.

#### **Samsung Gear VR:**

- Connect a compatible Samsung smartphone to the Gear VR headset.
- Launch the Oculus app on the smartphone.
- Demonstrate a range of Gear VR content, including Oculus Store apps and 360-degree videos.
- Show how the user can navigate and interact with the Gear VR using the built-in touchpad and buttons on the headset.
- Highlight the portability and convenience of the Samsung Gear VR for mobile VR experiences.



## Results: HTC VIVE



## Google Cardboard





### **Conclusion:**

HTC Vive showcased the epitome of high-end VR with its room-scale tracking, motion controllers, and top-quality visuals. It excels in providing immersive gaming and interactive experiences. Google Cardboard, though basic, demonstrated the affordability and accessibility of VR through a simple smartphone-based setup. It serves as an excellent introduction to VR, making it widely accessible. Google Daydream presented an intermediate option with a more comfortable headset and interactive controller, offering a balanced VR experience suitable for users looking for more engagement. The demonstrations allowed users to grasp the unique strengths and limitations of each VR platform, making informed choices based on their preferences and requirements. It was evident that the world of VR is rich and varied, with options catering to different needs and budgets.