

Assignment – 1

CS-662: Mobile Virtual Reality and Artificial Intelligence

Fall 2024

Instructions to submit the assignment:

This is a group assignment. Each group can have up to 6 students only. Please mention all team member names and roll numbers on your solution. Please submit a single solution per group in pdf format with still photos of your game for different question and their parts. Also, please provide a link to the zipped project folder for Q1, Q2, and Q3 via a Google drive link.

Submission Deadline: Submit before 11:59 PM on 26th August 2024.

Question 1: Please do the following in Unity 3D:

[2 marks]

- Add a transparent sheet above a plane next to a cube and ensure it does not interfere with the physics of the cubes. The transparent sheet should be semi-transparent ($\alpha < 0.5$).
- Place a directional light in the scene such that it casts shadows of the cubes on the plane.
- Ensure that the particle system effects you create in the scene also cast shadows on the plane.
- Provide a brief explanation of how you set up the transparency, lighting, and shadow casting for the cubes and particle system in Unity.

Question 2: Please do the following in Unity 3D:

[2 marks]

- Take a cube and a plane and put the cube on the plane.
- Please give an appropriate color to the cube (yellow) and the plane (green).
- Now, please convert the cube into 5 cubes on the plane, where each cube is placed at a random location in the plane.
- Now, raise these cubes to a height above the plane and apply physics such that all 5 cubes fall on the plane upon running the game.

Question 3: Please do the following in Unity 3D:

[4 marks]

- a. Take a cube and a plane and put the cube on the plane. Please give an appropriate color to the cube (yellow) and the plane (green).
- b. Now, make the cube move on the plane such that by pressing the left or right key, the cube rotates anti-clockwise or clockwise respectively. Furthermore, upon clicking the forward key the cube moves forward in the facing direction.
- c. Now, enable the cube to jump once upon space bar press so that the user can also make it jump by pressing the space bar.

Question 4: Please explain the history of VR technology from 1935 onwards till now briefly (~ 500 words) **[2 marks]**