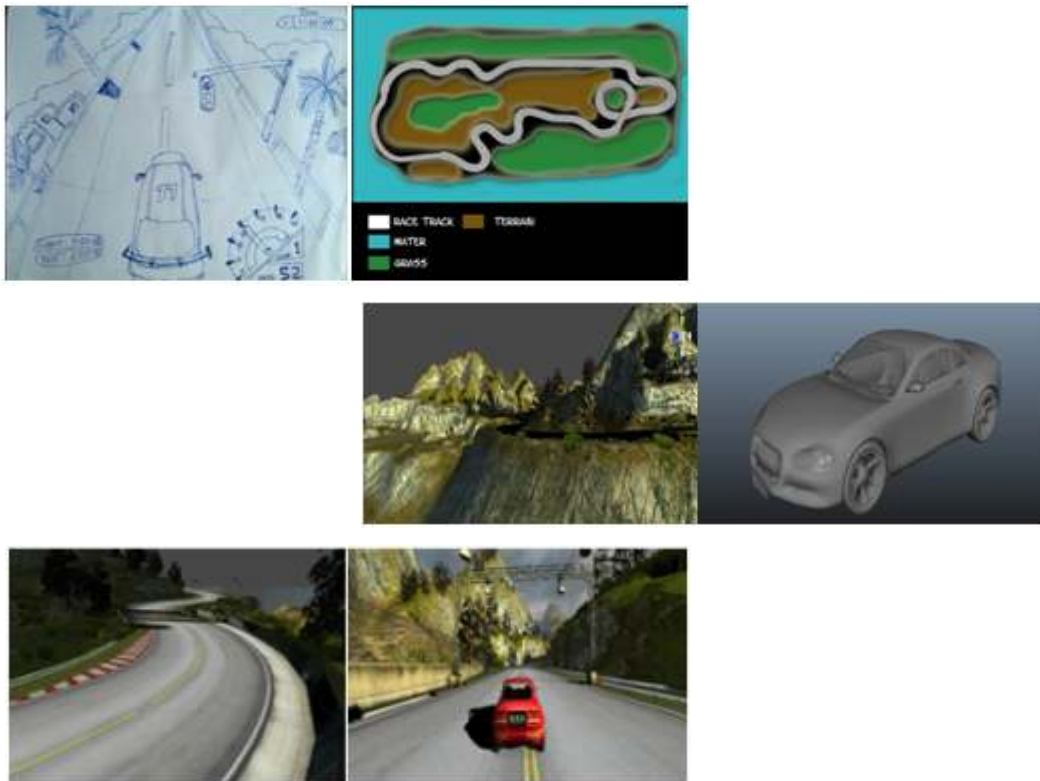


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|-------------------|--|--|--|
| <b>GP1007</b>     | <b>Design and Development of an Immersive Car Racing PC Game</b> |  |  |
| <b>Group</b>      | <b>1. A. Dinesh Prasanna</b>                                     |  |  |
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Immersion has always played an important role in the success of computer games. Immersive Virtual Reality (IVR) is expected to be the next stage in terms of enhancing the immersion level in computer games. Racing genre is one of the most played genres in computer games. Integrating IVR with the help of VR devices like Head Mounted Display, tracking devices, haptic devices etc. into racing genre can certainly enhance the overall player experience.

The group project was carried out to design and develop an immersive car racing PC game OutRun. It is a time based racing game which takes place on a mountain region. The player is allowed to choose among the devices such as a keyboard, joystick and gaming wheel as controlling device prior to starting of the game. The player has to complete the entire lap before the time runs out; this determines the win or loss in the game. The car physics is implemented to demonstrate vehicle dynamics. The main challenges in the game are steep curves, time and lens flare that affects the player's vision. HMD and steering wheel are integrated with the game to enhance player experience. The game is developed using Unity game engine.

This game can be further improved by integrating tracking devices for head and hand movements. AI (Artificial Intelligence) cars, game levels with increasing difficulty curve with distinct challenges can be added to the game to make it more challenging. The game can also be ported to mobile platforms such as android, iOS and windows.



**Design and development stages of PC game “OutRun”**