UNIT 3
Software Engineering
Project
Bowling Alley VR Project

TEAM 10

Github Repository: https://github.com/prakharshivam1997/SE_project3.git
Date of submission: 23/04/2022

Contributions:

Name	Roll Number	Hours	Role
Sarthak Verma	2021201002	24	• VR Mockup Screens • Created scenes in Unity for the main menu and the play area • Fine tuned physics and object placements • Fine tuned timings when pins are supposed to be reset to initial state • Testing • Set up the VR rig in Unity
Ashutosh	2021201085	22	• Created Scripts For Score Calculation. • Written Logic for giving players 10 Frames and 2 balls in each frame • Designed and created Scoreboard • VR Mockup Screens • Documentation
Anchal Jakhmola	2021201051	22	• Top scores of last 10 games • Added Sound effect and exit game after 10 frames.

			• VR Mockup Screens • Testing
Prakhar Tripathi	2020201052	20	• Created scripts for main menu scene.Linked buttons to start and end the game. • Designed main menu • Documentation • VR Mockup Screens • Testing
Pawan Patidar	2020201031	16	• VR Mockup Screens • Sequence Diagram • Documentation • Asset preparation • Play scene fine tuning

Overview:

Description

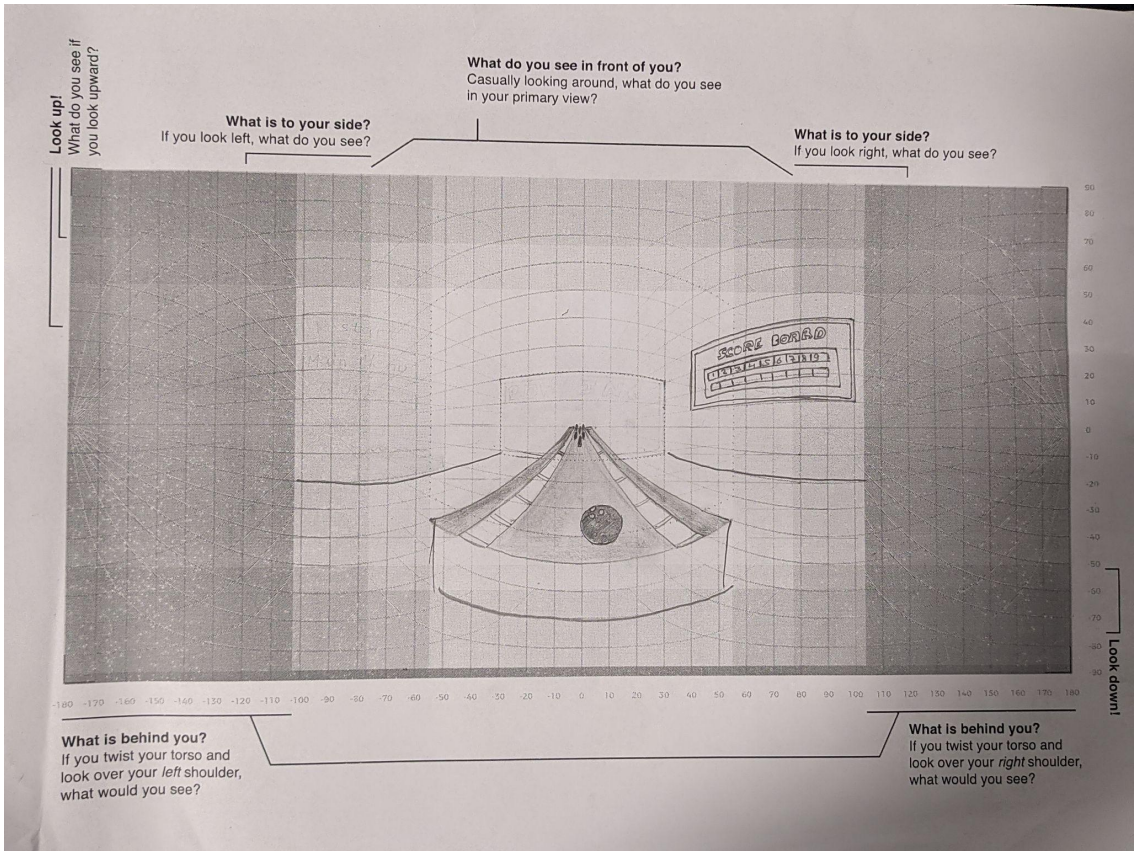
The bowling alley project implements the bowling game program in Virtual Reality using Unity.

Features

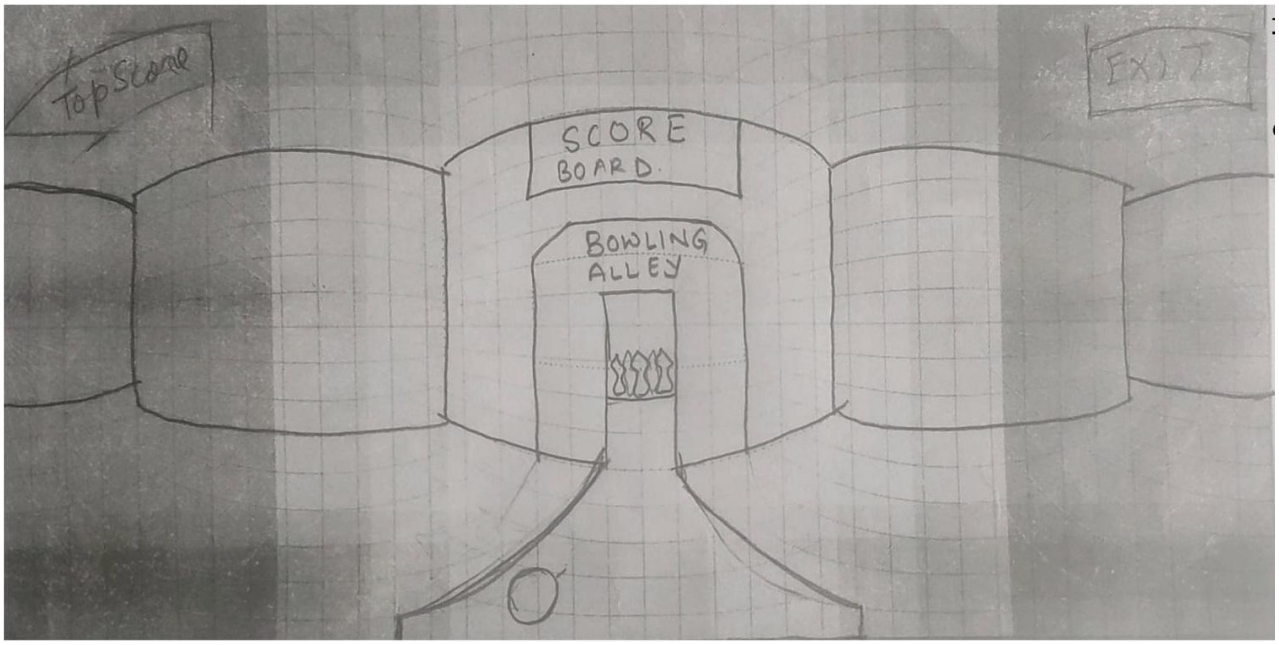
1. Player can start a new VR game
2. Player can view the highest scores of the past 10 games
3. Player can view the highest score
4. From the main menu, the player can start a new game, view the scores or exit from the game
5. In one round, the player can bowl a maximum of 10 times
6. After the player bowls, the current score count is incremented based on the number of pins dropped
7. The score in each round of the game can be seen on the play scene.
8. The bowling ball can be controlled using the A (move left), D (move right), and F (launches the ball).

VR Mockup Sketches:

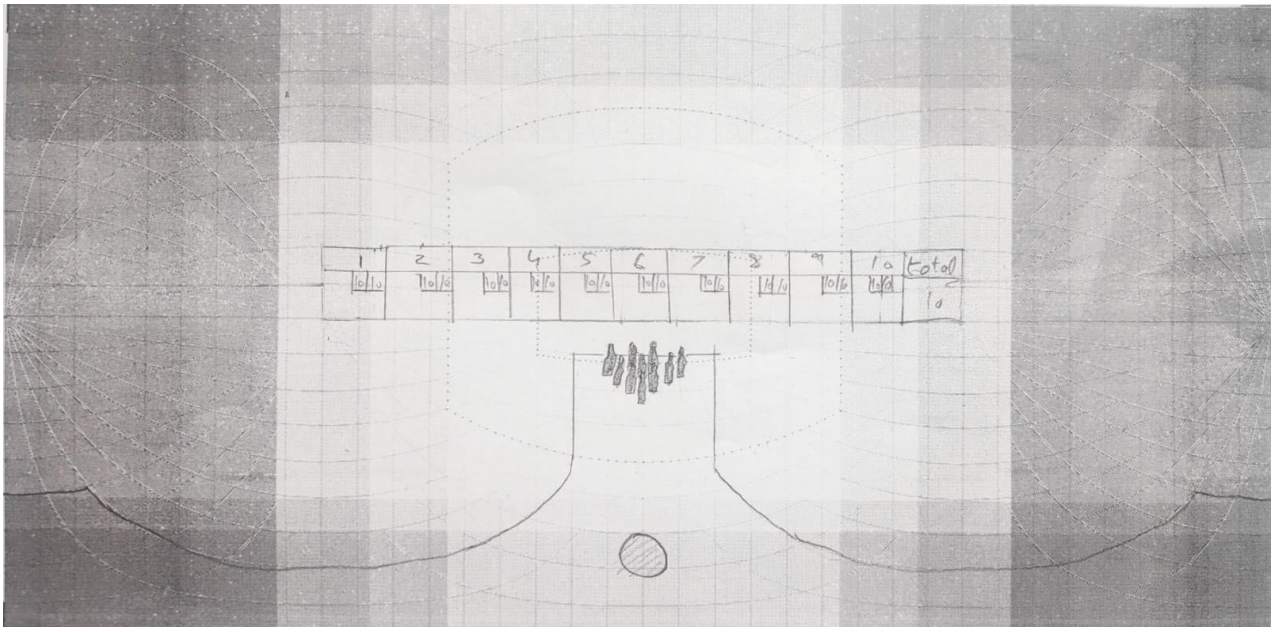
Ashutosh's Sketch:



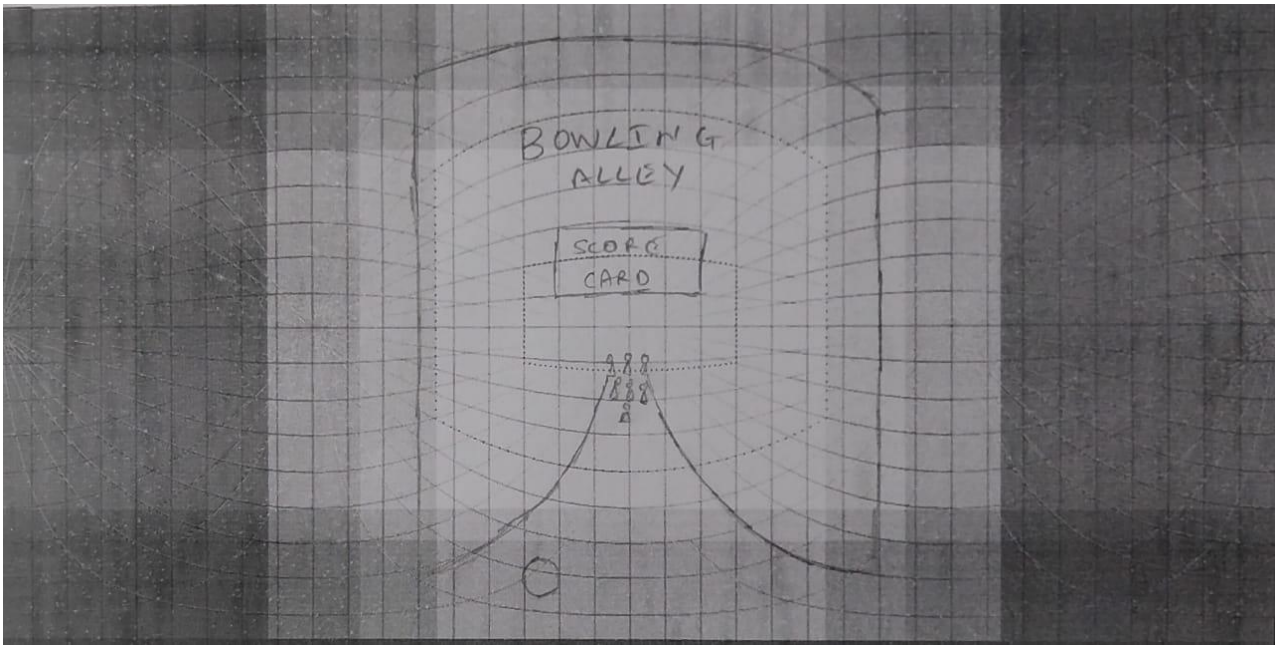
Prakhar's Sketch



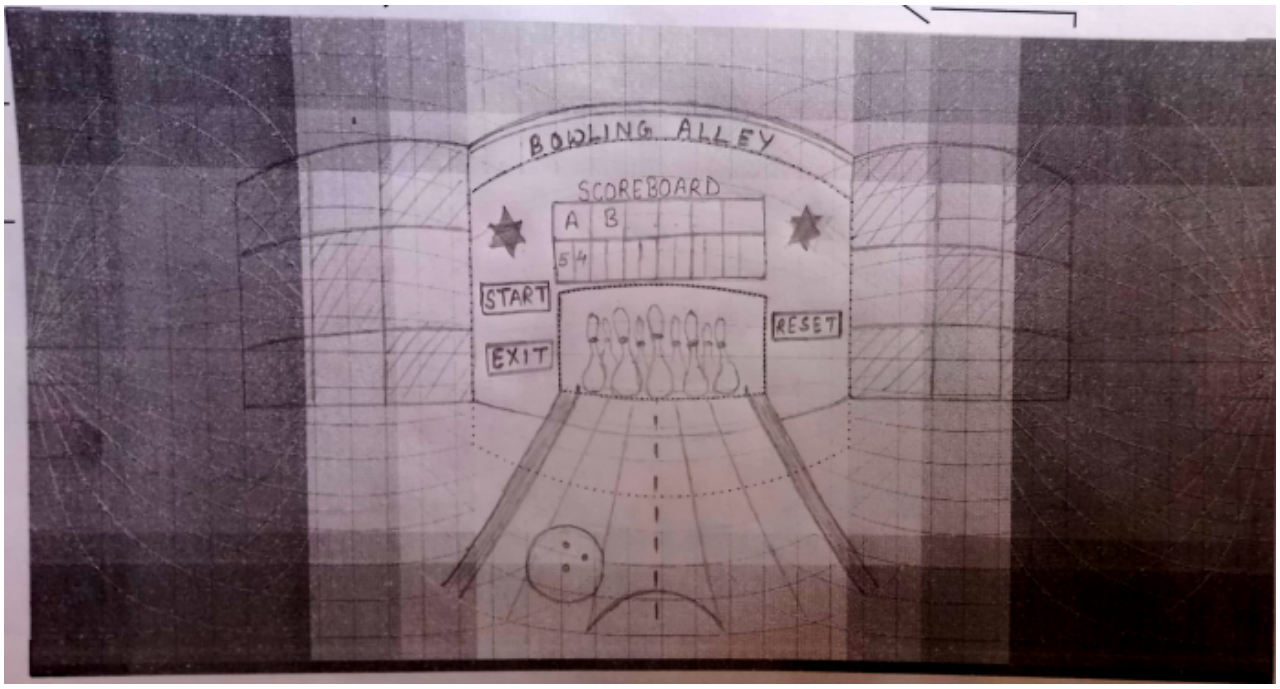
Sarthak's Sketch



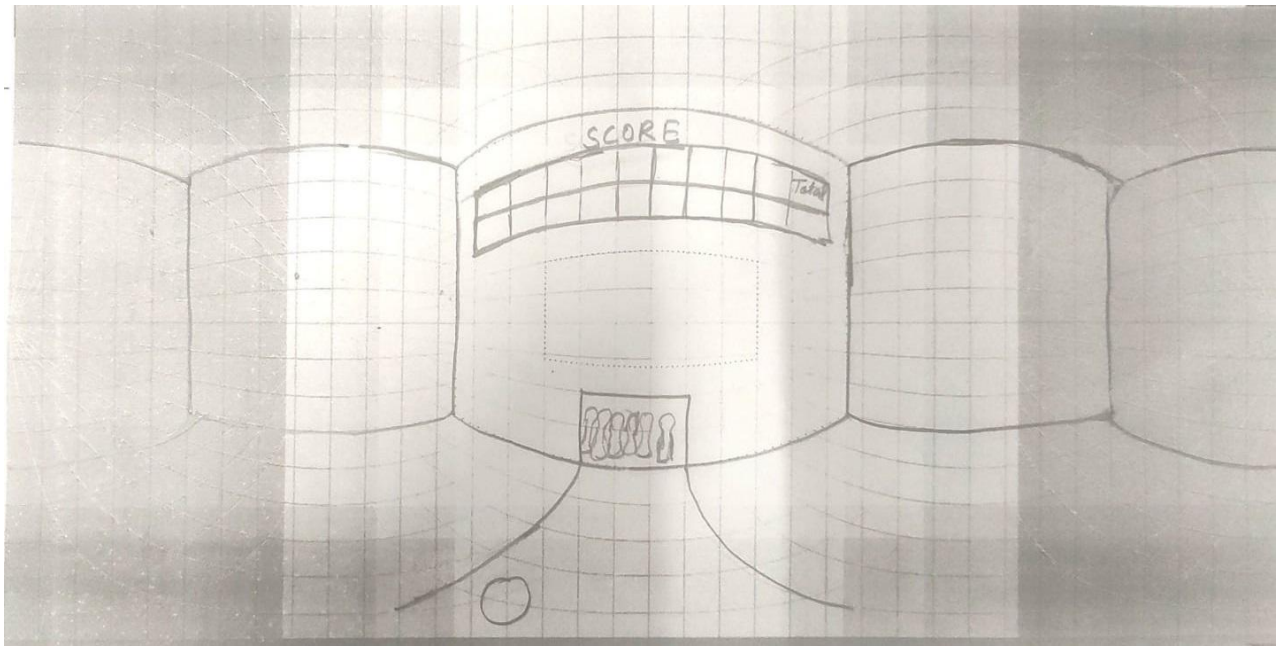
Pawan's Sketch



Anchal's Sketch



Final Sketch

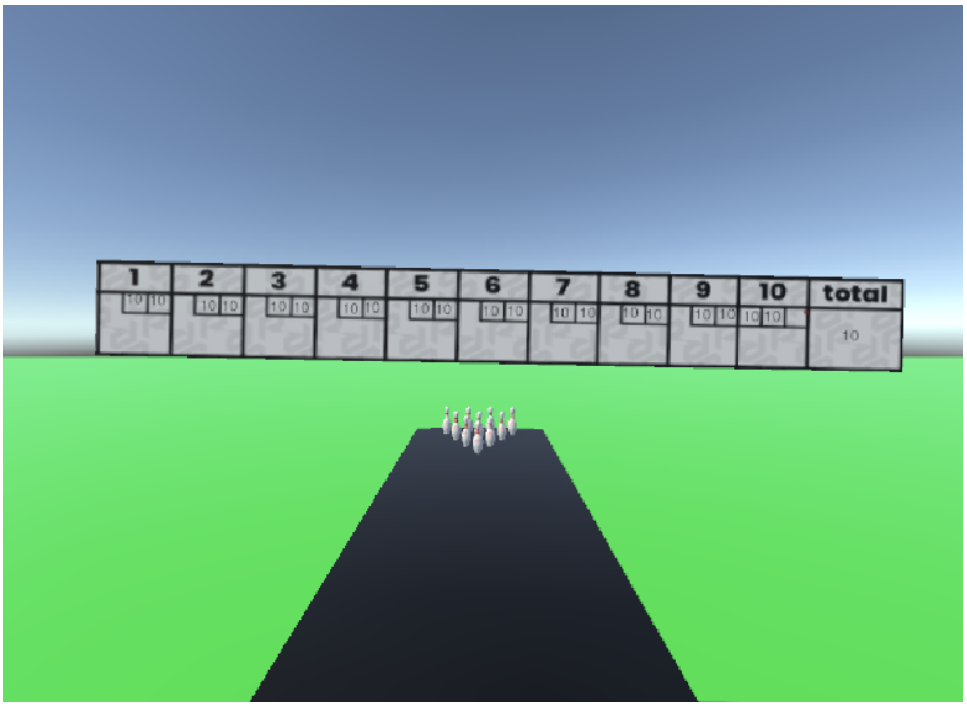


Scenes in Game

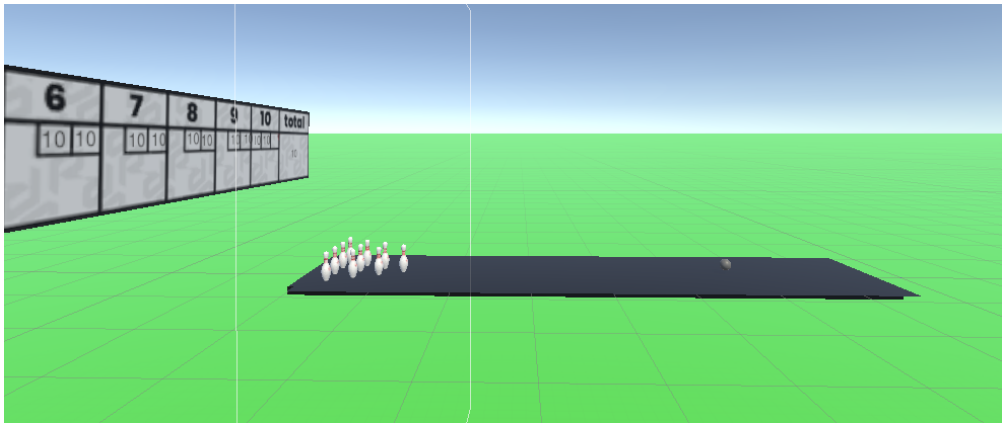
a) Main Menu : Main Menu consists of three options:

- Start: To enter on Play Scene
- Exit: To exit the game
- TopScore: To display scores of last 10 games in descending order

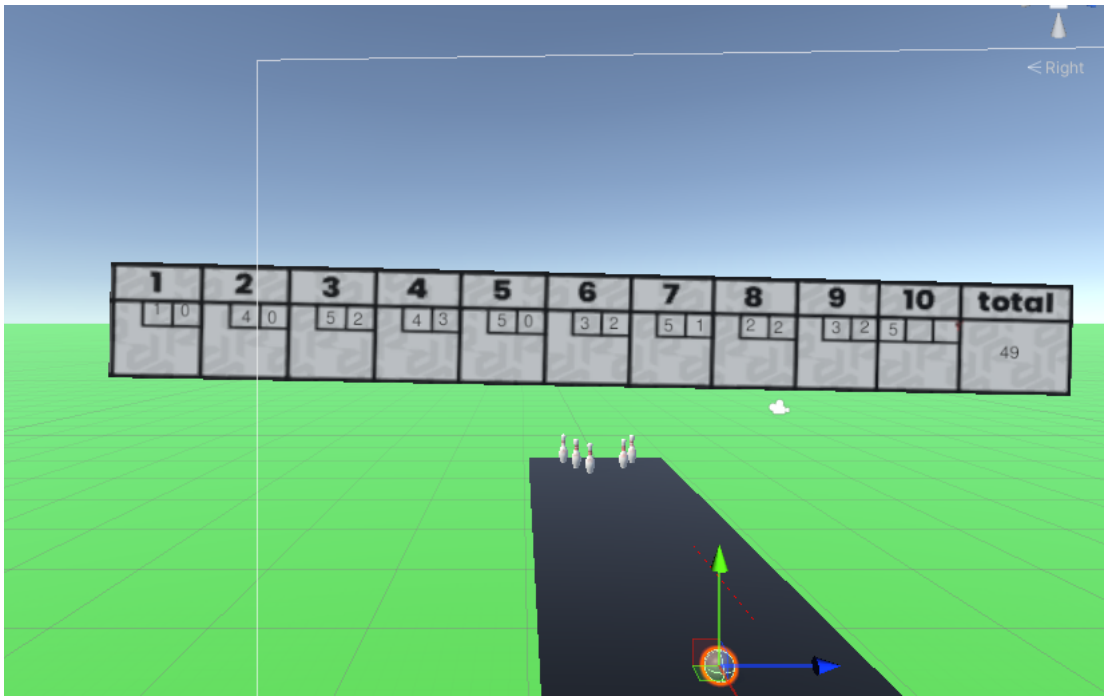
b) Bowling Alley Scene (Front View): On clicking Start, Bowling alley scene/ Play Scene Will be displayed as shown in image below. There will be a striking sound on ball hitting the pins or in case of a gutter.



c) Bowling Alley Scene (Left View)

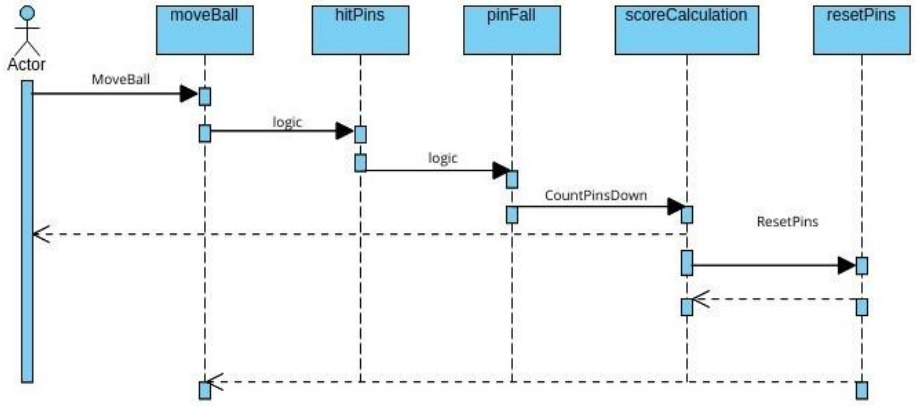


d) **Bowling Alley Scoreboard** - The scoreboard shows the score of all the rounds that have been played till now. The total score is the cumulative score.



Flow of Events Table:

Sequence Diagram



Miscellaneous:

Meeting minutes:

Meeting 1(11/04/22)
The main aspects of the project were discussed and how to proceed. Team members were tasked with creating VR mockup sketches. Further it was discussed how the unity environment will be setup.

Meeting 2 (15/04/22)
The VR sketches were discussed and a final sketch was chosen to be implemented on the unity. It was decided to create Main menu scene and a PlayArea scene. The tasks were divided among memebers.

Meeting 3 (18/04/22)
The progress in the project was noted. The play area scene was completed.The challenges in the projects and their solutions were discussed. There was problem in the physics of ball throwing, its solution was discussed.

Meeting 4(20/04/22)
The progress in project was noted. The bowling scene was completed including the scripts. Testing was done in the VR headset and problems were noted. Main menu design was completed in unity

Meeting 5 (22/04/22)

The main menu scene was completed and scripts were added in it. The script to find top 10 scores was added. The final testing of the project was done. Sound effect was added.

Meeting 6 (23/04/22)

Documentation was done and report was created. Group members added their roles and contribution. Sequence diagram was created.

Effort planning:

It was decided to divide the whole project into two scenes namely Main menu scene and play area scene. The play area scene was supposed to contain the bowling alley where the game was to be played. The play area scene also contained the score-board which showed the score after the pins fell after hitting the ball. The main menu scene was supposed to contain the start,exit and top scores button.

The major effort areas were

1) Designing play area and main menu scene.
2) Adding script in both of these scenes.
3) Fine tuning the mechanics of the ball in the bowling alley.
4) Writing logic for the score calculation according to the pins that fell from ball in that round.
5) Writing logic to complete the game after 10 rounds.
6) Adding sound effects
7) Showing the top scores in the main menu
8) Creating sequence diagram.
9) Documentation