Gadet Martin
Hatem Sandra

Pre-report

1. Introduction

Our project focuses on a new Olympic discipline: Baseball, which will be added to the Los Angeles 2028 Olympic Games. The project will work on HTC Vive Cosmos using Unity 2022.

Baseball is an American team sport where two teams compete in a game of 9 rounds. A team is composed of several roles, including a pitcher who throws a ball to a batter who hits the ball with a bat, and 7 other players distributed around the field. Our project is focused on training a batter.

2. Project Goal

The goal of the project is to allow professional batters to train different types of pitcher and different types of throw. This way, the batter can train from home indoors without needing a pitcher or a ball-throwing machine. He can choose the type of pitch he wants and practice hitting the ball continuously in an immersive virtual stadium.

3. Design

The first step was to create the interactive objects, like the bat and ball, along with their physics. Then, we will create the training itself by developing a pitcher who throws the balls, a menu, and a countdown. To enhance the training, we will add different types of throws, balls, and pitchers.

Finally, to make this training immersive, we added decor and sounds. All the 3D models are sourced from Sketchfab, and the sounds were gathered from YouTube and MyInstants.

4. Prototyping

For the prototype we focused on the physics of the different interactive objects. The user can grab the bat and the ball. He can throw the ball in the air to hit it as strong as possible. He can also move using the left joystick and turn around using the right joystick. We imported the ball, the bat and the field from Sketchfab. On the field we added the name of our app. Finally we added an ambient sound and a 3D sound that is triggered when the ball is hit with the bat. The next step will be to create the throwing machine that throws the ball at a certain interval of time.

5. Final version

The player or athlete will take the place of a baseball batter in the middle of a stadium. They will be able to select from a menu the type of throw they want (high ball, fast ball, slow ball, curveball, etc.). Once the throw type is chosen, a timer will start, and once the timer ends, balls will begin to be thrown at regular intervals. If the batter hits the ball then the distance between the player and the ball will be shown on the screen (home run +110m).To make the experience more immersive and realistic, we will integrate more 3D sounds and the hubbub of the audience.

6. Perspective

For a real application of this training, it could be interesting to allow the player to modify the ball parameters themselves to have very precise types of pitches. It might also be useful to upload profiles of known pitchers from opposing teams to practice for specific matches.