**Skee Ball**

A skee ball alley that automatically loads 3 balls at a time for the player, up to 9 balls per game. The user plays as if it were a real life skee ball game, rolling balls up the ramp so that they launch into various baskets to score. When all 9 balls have been used, the player can reset the game by pressing a button on the machine.

**Props**

* Skee Ball alley
* Skee Balls

**Interaction Expectations**

The game as a whole is analogous to a real life skee ball game. When balls have been loaded into the alley’s tray, the player can grab the balls with either hand. To play the game, the player takes a ball, and with an underhanded motion, brings their arm from back to front and releases the ball when in the forward position in order to have it roll along the ramp of the alley. If released with enough force, the ball should launch upwards at the end of the ramp and into one of the scoring cups. Once the player has removed 9 balls from the tray, the game will end and they must press the button opposite the tray by intersecting it with one of their hands in order to reset the game.

**Implementation**

For VR controller interactions with the skee balls, the game uses the default interface and code provided with the VR template. The machine itself relies on a number of box colliders to keep track of how many balls have been used in a game and whether the player has scored. Every 1 second, the Check for Reload event will check if there are at least 3 balls loaded into the tray by checking for overlapping actors, if not it will decrement the BallsLoaded variable, which will cause the reload event to act. The Reload event checks if BallsLoaded is < 3 and if the number of balls used in the game is < 9. If so, it will spawn a new skeeball via a trigger volume inside the tray. A section of code adapted from the BP\_ResetPins button is used to check for the player pressing the reset button.

**Testing Guide**

* The machine will automatically load at least 3 skee balls into its tray
* Position oneself centered at the end of the ramp of the alley and facing towards the scoring area at the opposite end
* When ready, reach over and grab a ball out of the tray by bringing your hand near and holding the trigger on the associated controller
  + Either hand will work for this but when oriented correctly, the tray will be on your right
  + You may transfer the ball between your hands at will
* When ready, extend/rotate your arm holding the ball rearwards along your side
* Then, bring your arm forward quickly in an underhanded motion and release the trigger on the controller to let go of the ball, hopefully causing it to roll along the ramp and up into one of the scoring cups
* When the machine has loaded a total of 9 balls into the tray (not necessarily at the same time) it will stop dispensing them, signaling the end of the game
* To reset the game, press the button on the side of the ramp opposite the ball tray by intersecting either hand with the button
  + No pressing of buttons on the controller is necessary

**Chess**

**NOTE: This interaction is incomplete, despite being set up with the Pickup Actor Interface, the associated code, and Simulate Physics being turned on, the chess pieces will not be picked up by the motion controllers for an unknown reason. They do, however, react to being hit by the controllers if the trigger is held down. The reset button also fails to reset the pieces.**

A standard chess set. The user can pick up and place pieces as they would with a real set. There is a button that can be pressed to reset the positions of the pieces.

**Props**

* Chess board
* Full 32 piece chess set

**Interaction Expectations**

The user is able to pick up and place the chess pieces at will with either hand. If the user is familiar with the rules of chess, they may play an actual match. If not, they are free to do as they wish. A button will reset the position of the pieces.

**Implementation**

From the beginplay event, an array of the pieces is created as well as an array of their locations. Code adapted from the BP\_ResetPins button is used to check for interaction with a button which will trigger the Reset Pieces event. The reset pieces event loops through all of the pieces and returns them to their original location.

**Testing Guide**

* Pieces will automatically be places on the board when starting the scene
* It is expected that you are familiar with the rules of chess if you wish to play a proper game
* You may reach out and pick up any piece with either hand
  + Grab a piece using the trigger on the controller associated with the hand you wish to use
  + Release the trigger to drop the piece you are holding
* To reset the game, press the button on the side of the board by intersecting either hand with the button
  + No pressing of buttons on the controller is necessary

**Pool**

**NOTE: This interaction is incomplete. While the cue sticks are able to be interacted with correctly, the billiards suffer from the same issue as the chess pieces and so are unable to be picked up. The reset button also fails to reset the pieces.**

**Props**

* Pool table
* Cue sticks
* Billiards

**Interaction Expectations**

The user can pick up the cue sticks by holding the trigger on either controller. While the intention was for the user to be able to use both hands on a single stick to use it as in real life, I was not able to implement this. Using the cue stick, they can hit the billiards into the pockets on the table. The user also should be able to pick up the billiards using the motion controllers.

**Implementation**

From the beginplay event, an array of the billiards and cue sticks is created as well as an array of their locations. Code adapted from the BP\_ResetPins button is used to check for interaction with a button which will trigger the Reset event. The Reset event loops through all of the pieces and returns them to their original location.

**Testing Guide**

* It is expected that you are familiar with the rules of pool in order to play a proper game
  + If you are not, interact with the cue sticks and billiards as you please
* You may pick up a cue stick from the table using either hand by holding the trigger on the associated controller
  + You may also pick up the billiards in this way
  + Release the trigger to drop the stick
* Using the cue stick you can hit the cue ball into the other billiards in order to knock them into the pockets of the table
* To reset the game, press the button on the side of the table by intersecting either hand with the button
  + No pressing of buttons on the controller is necessary