GAME250: Technical Game Development (Spring 2023)

Lab 06

Objectives

By the end of this lab, you'll be able to:

- Use nested loops
- Populate and modify arrays

Mission Brief

Let's create the foundations of a card game! We'll be using a standard 52-card deck of playing cards. Learn more about the deck here: https://en.wikipedia.org/wiki/Standard_52-card_deck

Instructions

Create a new Third Person game with no Starter Content.

Table

First, create a blueprint for the table on which the card game will be played. You will need to add the following components:

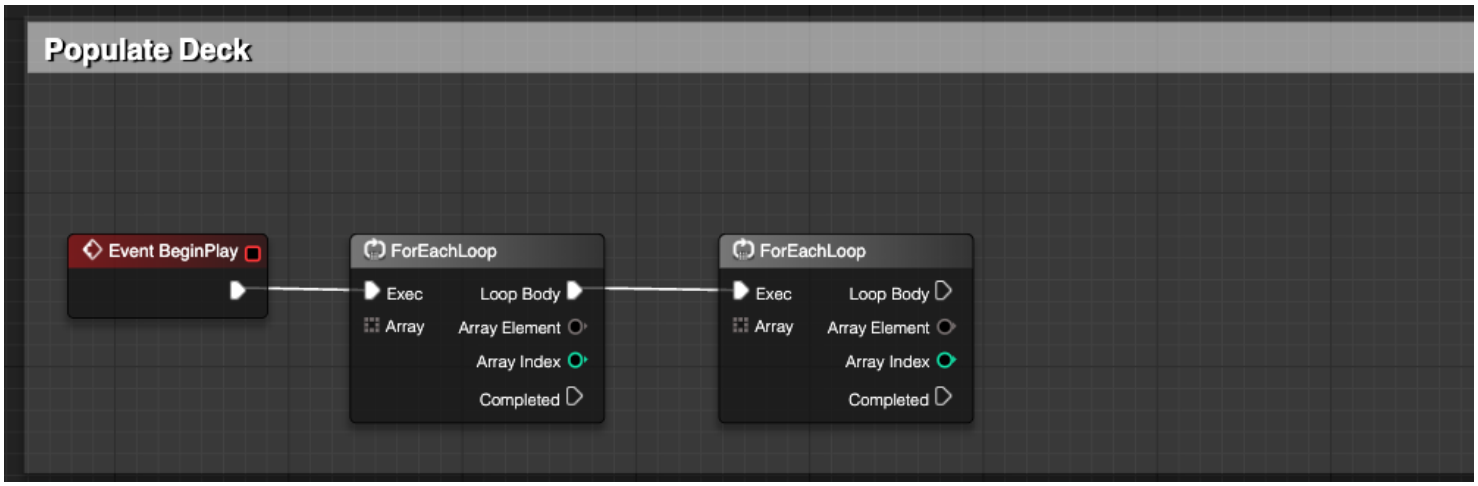
- Table Top (Cylinder)
- Leg (Cylinder)
- Hint Text (Text Render)
- Interact Collision (Collision Box)

The table will also contain the deck of cards, which means you will need to create the following variables:

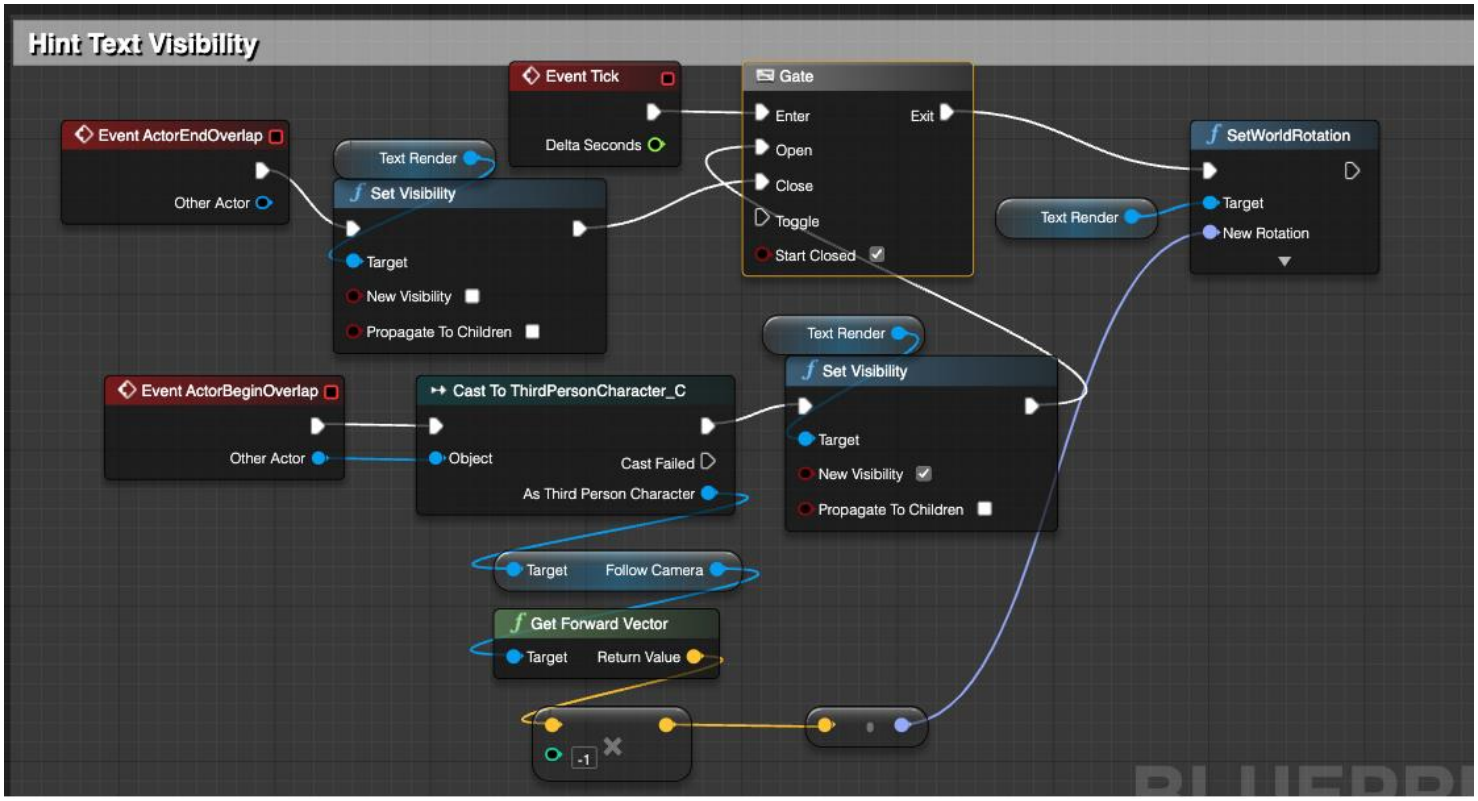
- Card Suits (Array of Strings; contains ♥, ♠, ♦, ♣)
- Card Values (Array of Strings; contains A for Ace, 2, 3, ..., T for Ten, Q for Queen, K for King)
- Deck (Array of Strings; empty for now)

The table's event graph will contain two main functionalities:

- Populate the Deck variable
    - You will need to use a nested For Each Loop (a For Each Loop within another For Each Loop, which has a multiplicative effect!) to make every combination of card suits and values.



- Make Hint Text (Press E to Draw Card) follow the camera (provided below)



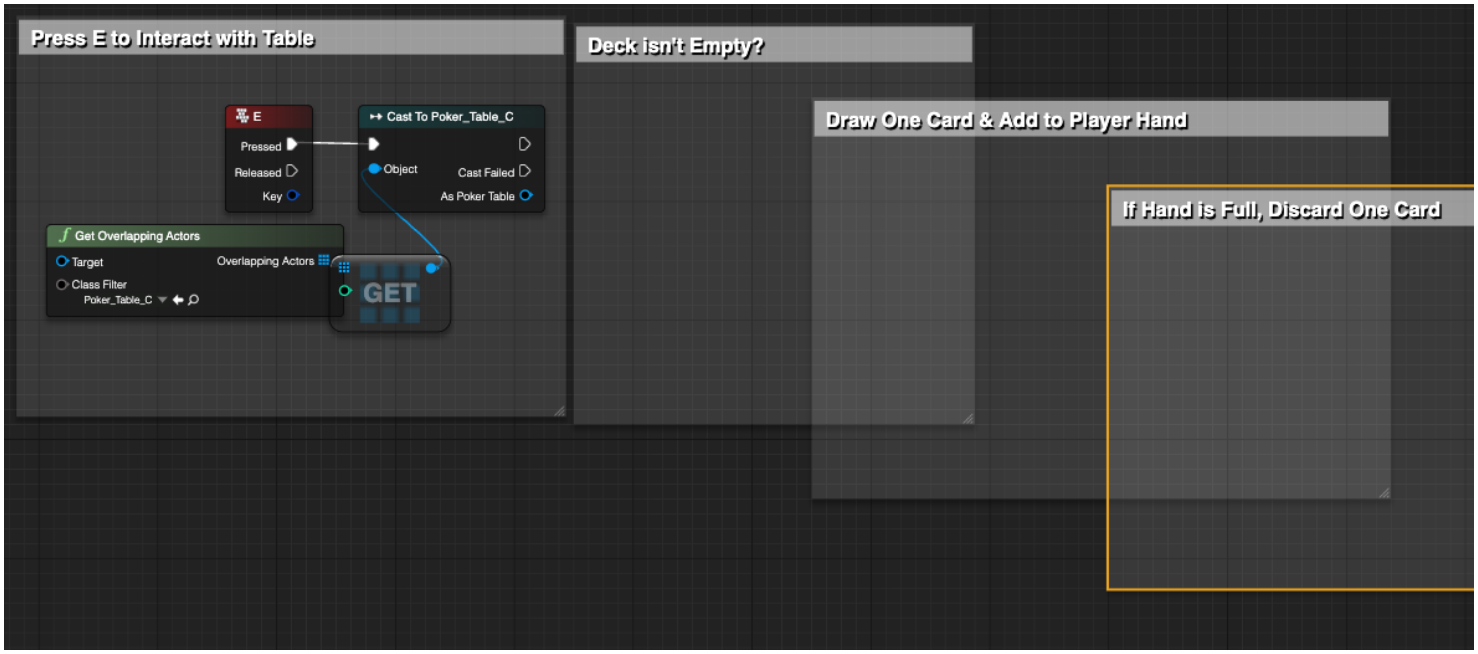
Third Person Character

The player character must keep track of the cards that they are holding, so the following variables are needed:

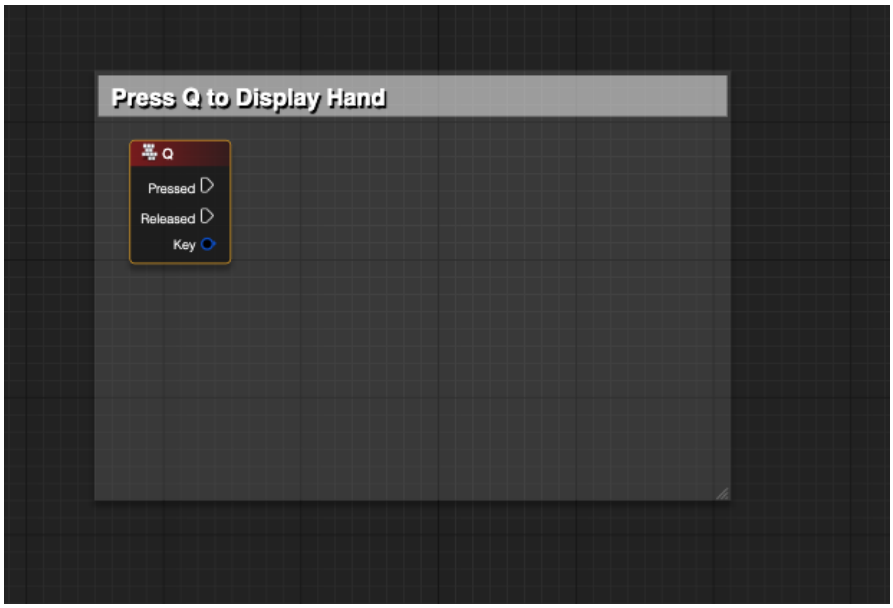
- Player Hand (Array of Strings; empty for now but will contain elements like "8♦", "T♣", "A♥")
- Max Hand (Integer; 5)

The character will have two main functionalities, one for each button:

- Press E to interact with the table (complete the given blueprint template)



- Press Q to display the current hand on the screen using PrintString



In-Lab Submission

Take screenshot(s) of the Third Person Character blueprint, Poker Table blueprint, and the viewport when drawing cards, when the deck runs out of cards, and when the player's hand is shown. Submit the screenshot(s) to Canvas before the deadline.

Lab Instructions

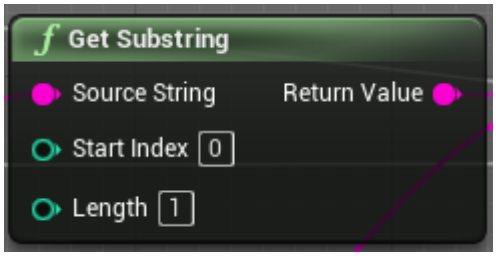
When the player presses Q, print the hand (as you did in In-Lab 6) and also print the poker hand the player is holding. You can find a list of poker hands here: https://en.wikipedia.org/wiki/List_of_poker_hands

For full credit, your game must be able to check the following hands:

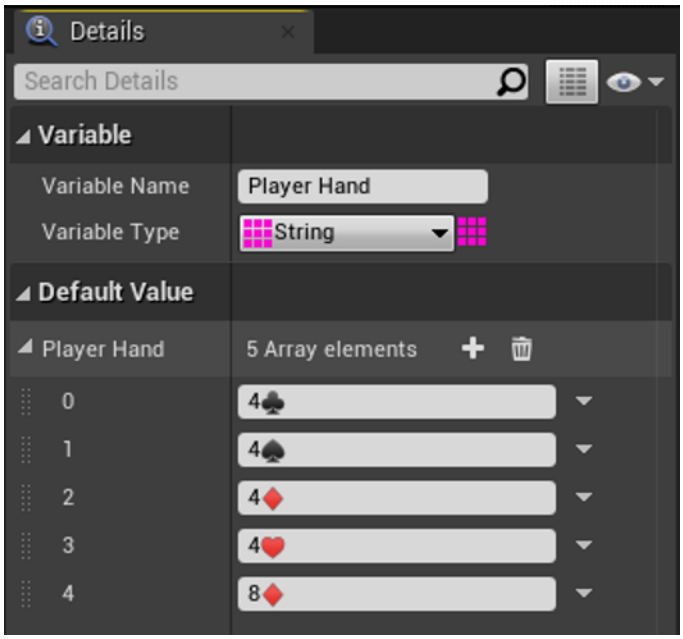
- One pair
- Three of a kind
- Four of a kind

Hints:

- Your player hand contain strings with two characters: the value (8) and the suit (♦) to make a card (8♦). To grab just the value of that card, use the Get Substring node, which treats a string like an array of characters:
    - Source String (the card string like 8♦)
    - Start index (first index is 0)
    - Length (1 if you just want the card value)



- Drawing a four of a kind is rare. Instead of trying to get lucky, you may initialize the Player Hand array with a four of a kind then press Q as soon as the game starts.



- You may create additional variables to keep track of how many cards of the same value you have.
- You may sort the hand when drawing a card to make it easier to check for straights.

Submission

Take screenshot(s) of the Third Person Character blueprint, and any other blueprints you modify. Take screenshot(s) of the viewport when showing the player's hand with one pair, three of a kind, and four of a kind. Submit the screenshot(s) to Canvas before the deadline.