

# Assessment 2

Name: Le Thanh Tai

Student ID: s3760615

Lecturer: Tom Huynh

## I. Introduction

This is the game based on how quick your eyes and also some of your calculations. Basically, you will have to find out the hat with the rabbit out of three hats displayed.

## II. How to play

When you choose to start the game, the game will show which hat has the rabbit at first and then flip the hat. Then, the 3 hats will change positions repeatedly. When the dispositioning stops, you will have to choose the correct hat with the rabbit. The difficulty in this game is based on the speed of the animation, the delay between each swap and the swap difficulty (swap2 or swap 3).

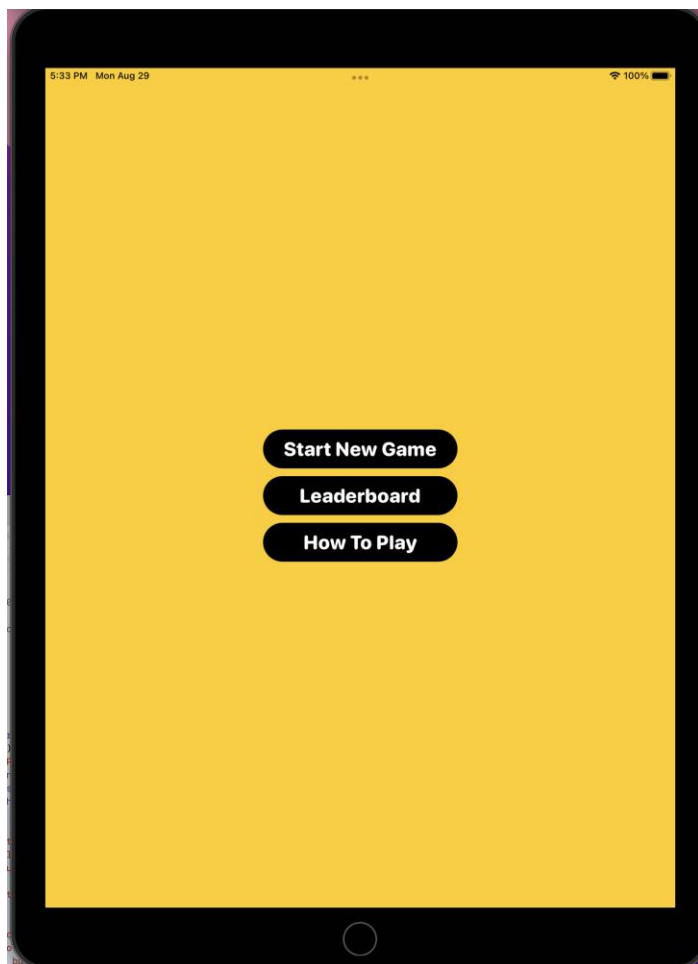
You can change the current difficulty in the settings

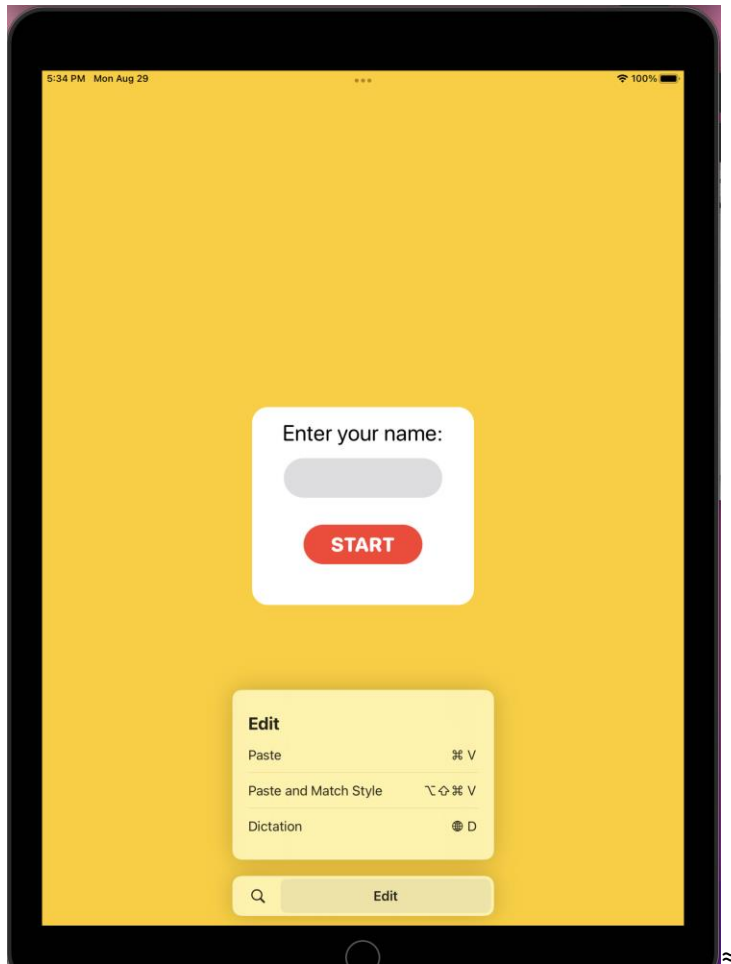
Trick: Basically there are no real tricks to this game, you will need to practice a lot to master this game.

## III. Features

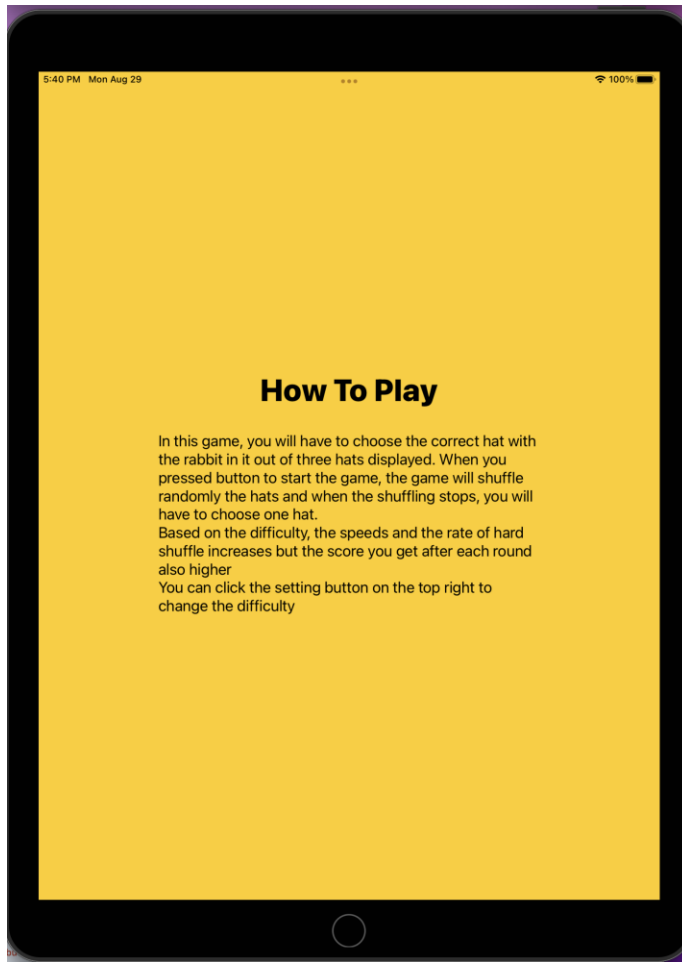
Main Features:

- Menu View





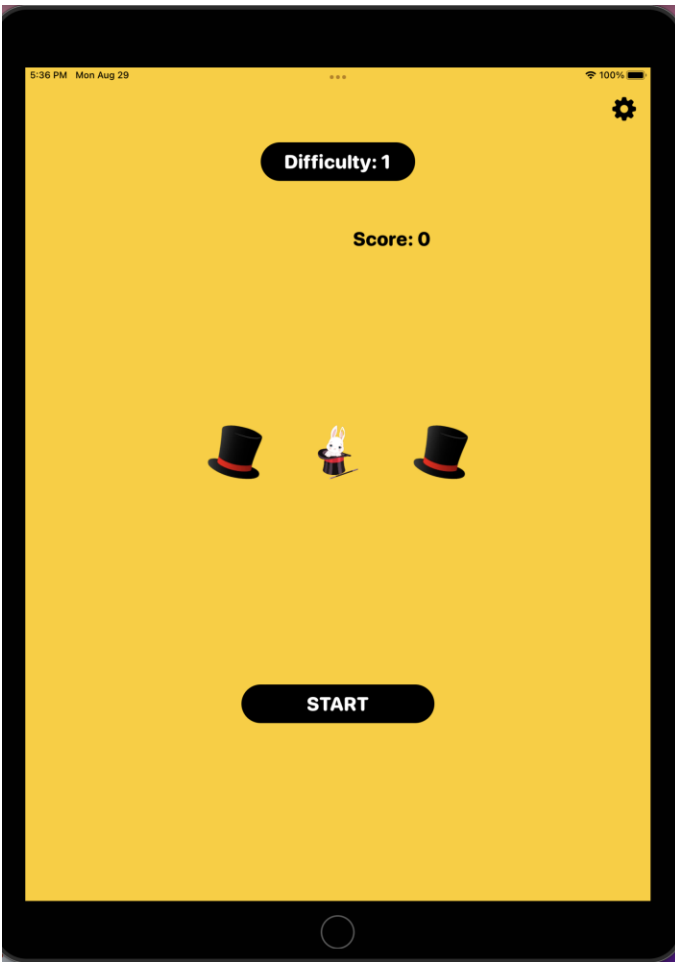
- How to play

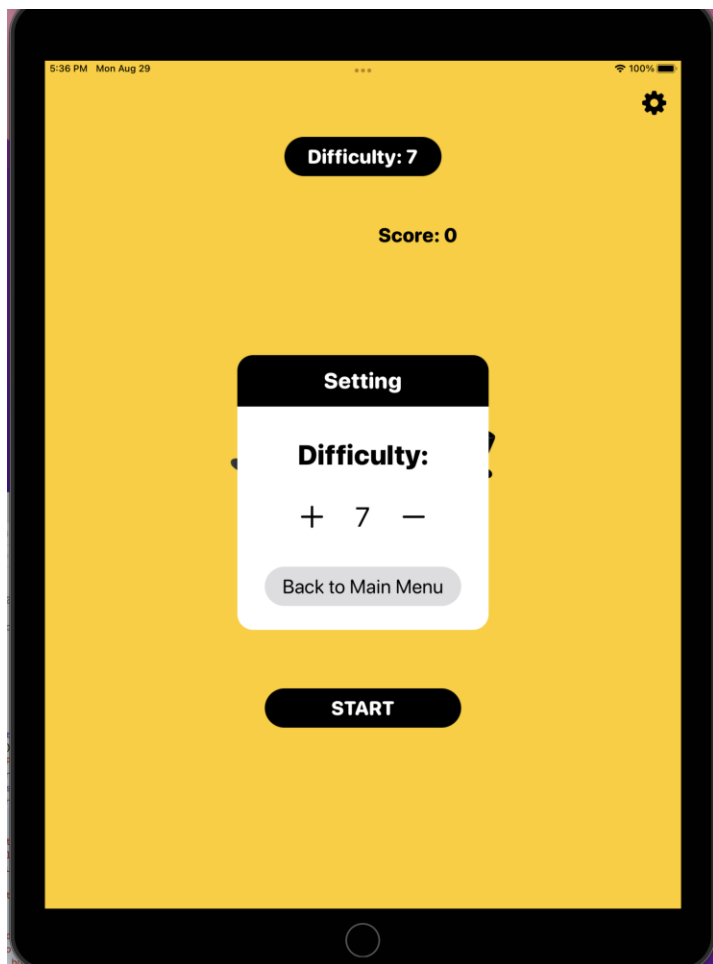


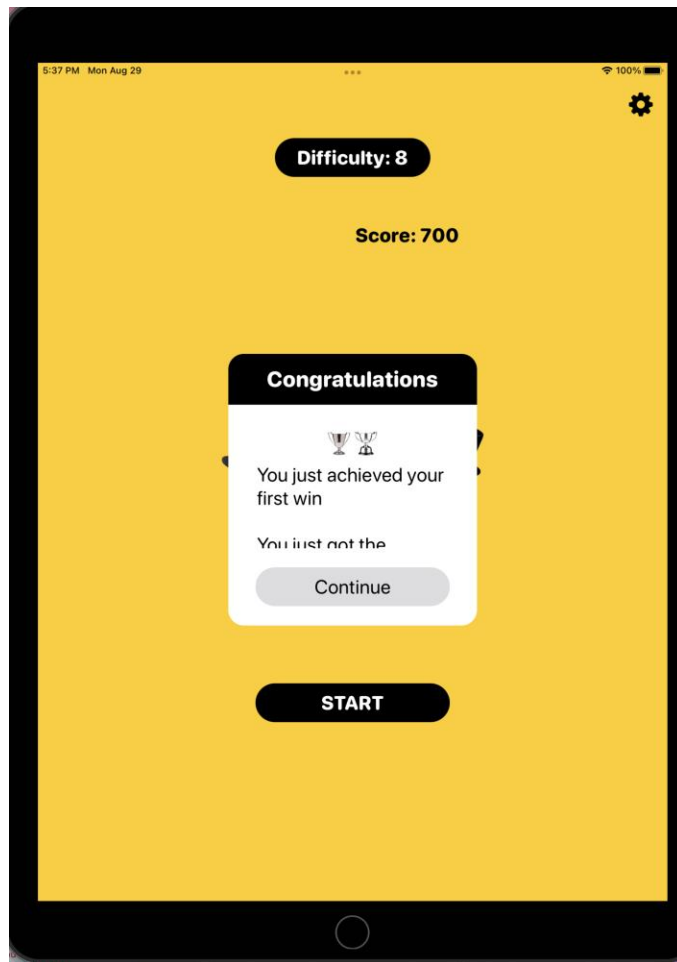
- Game View

There are three hats so there are 6 possibilities so I save the position of each hat in each possibility in a matrix. Then I will check the positions able for swapping each time the hats change position (including swap 2 hat and swap 3 hat. I will add the animation to each hat with parameter like speed and delay time between each sleep. And I can track the correct answer with the current index of the matrix to verify the answer.

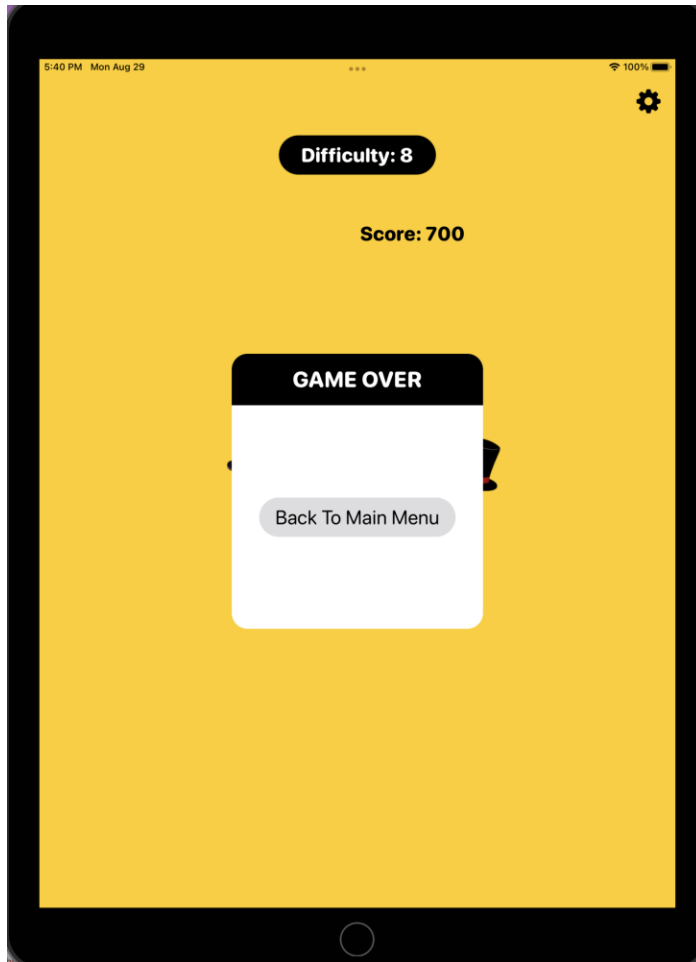
I have open a thread for looping the hat shuffle, else the main thread will be affected by the loop and the UI will be stopped







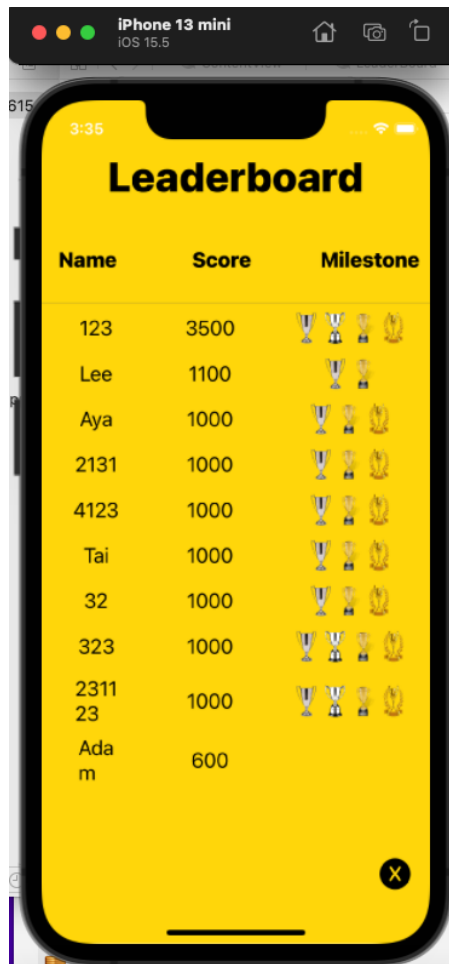




- Leaderboard

To store the leader board, I have an array of struct "Player" stored in UserDefaults. To save or load the array, I will have my struct "Codable" and use JSON decoder/encoder to load/save the data.

For each time the user win a game, the leader board will update including check if the user name existed and if yet compare with the previous score, add new player and sort the array



- Sounds

I have 2 different background songs for main menu and game view and some sound effects during gameplay

- UI display

The UI will fit devices including SE iphone

Extra Features:

- Milestone

I stored a array of boolean for 4 milestones (first win, reaching 5/10 difficulty, reach 1000 points).

When a milestone achieved, a congratulations message will appear with the trophy

- Conitnue

I have a variable of struct "Player" stored in UserDefaults. If the variable is not nil, the continue button will display. When game over or the user chooses to start a new game, the object is removed in UserDefaults

- Name Input

The game will display a Text Field when the player choose to start new game. Also the game will check if the name length is between 2 and 7

- Settings menu

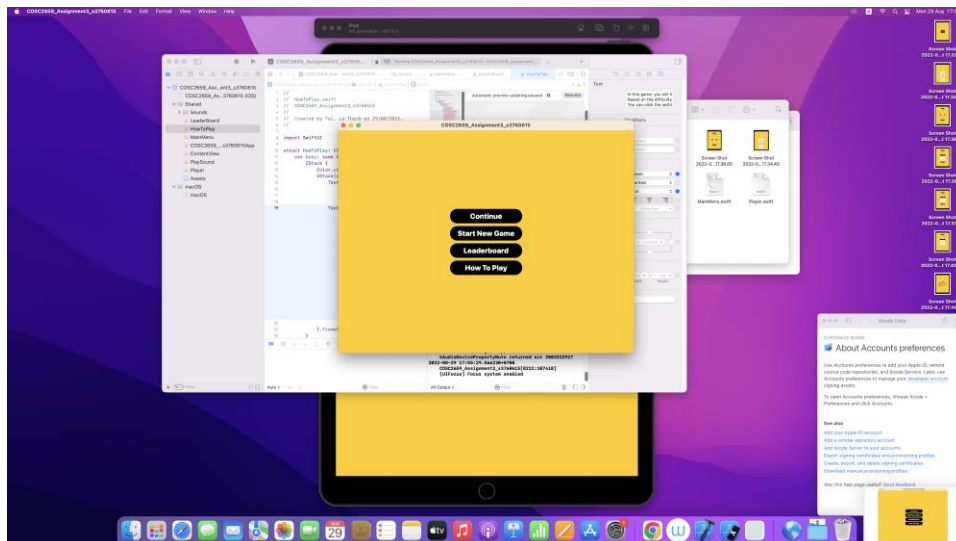
There is a button in the right top of the game view. It will display the State variable of difficulty and plus/minus button to increase or decrease the State variable. The game will check the difficulty is between 0 and 10

- AI Agent

I have switch case the variable difficulty, by each case, the speed of the animation, the delay, the number of shuffles, the rate of swap 2 and swap 3 will be increased.

- Multiplatform

The game is tested on Mac as below, Ipad from the pictures above and no components missing.



- Light and dark mode

The idea to set the background to be suitable for both dark and light mode is to use a color that can be see clearly in the dark but not be too bright in the light, so I use the color that is quite similar to the white color but darker, which is yellow. Also, the hat images I used are black and yellow is the contrast color of black so users can see very clear the objects. Button and text also are black to prove the readability.

#### IV. Video Link

[Screen Recording 2022-08-29 at 18.07.39.mov](#)