MOMO TALENTS 2020

Rock Paper Scissors Game

Hoang Thien Nu

Outline

I. Introduction

II. Architecture

III. AI for the game

Introduction

- User enters a name for joining.

- Each user has unique id (maybe same name).

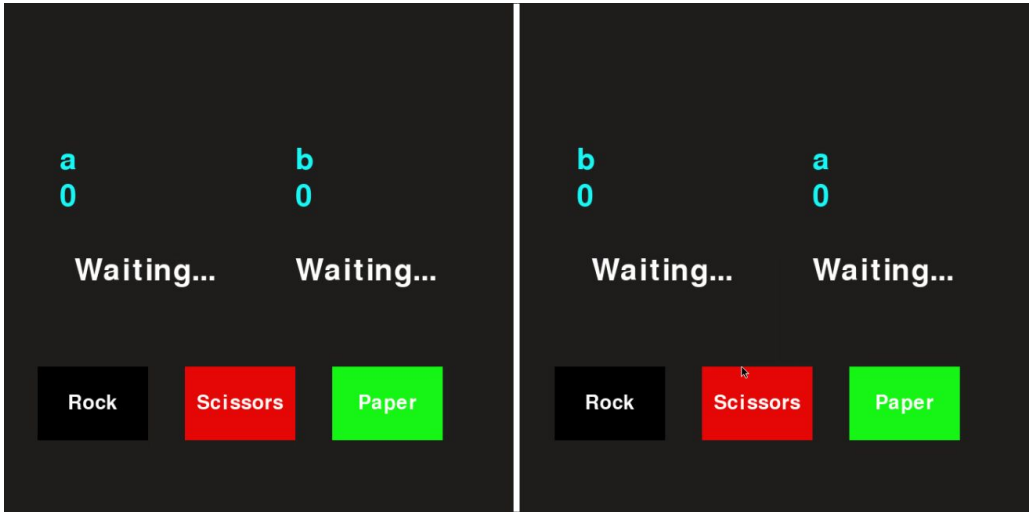
Introduction

- The game matches 2 free players to start the game.

Introduction

- There are 3 rounds in a game. After 3 rounds, person has higher score wins.

- Each user has at most 20 games.



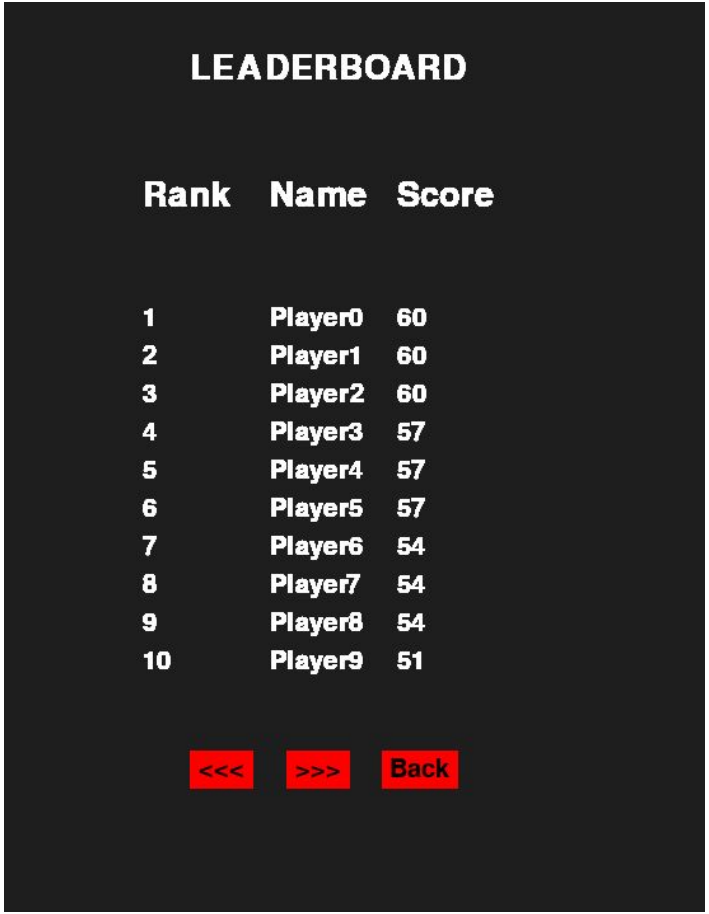
Introduction

Introduction

Introduction

- Show 100 top players

- Each page display 10 players



Architecture

socket.io

Architecture

```python
class Player:
    def __init__(self, id, name):
        self.id = id
        self.name = name
        self.numTurns = 20
        self.totalPoints = 0
        self.gamePoints = 0
        self.status = True
        self.playerWent = False
    def __str__(self):
        return str(self.id) + ' ' + self.name
```

```python
class Game:
    def __init__(self, id, player1, player2 = None):
        self.player1 = player1
        self.player2 = player2
        self.ready = False
        self.id = id
        self.moves = [[], []] #{player1: None, player2: None}
        self.wins = [0,0]
        self.ties = 0
        self.num_players = 1

    #check in server.py
    def addPlayer2(self, player2):…

    def get_player_move(self, p):…

    def finished(self):…

    def get_result(self, p):…

    def play(self, player, move):…

    def connected(self):…

    def bothWent(self):…

    def winner(self):…

    def resetWent(self):…
```

Architecture

Client

- Ask to connect.

- Ask for the game that the client belongs to.

- Wait for user input. And send it to server

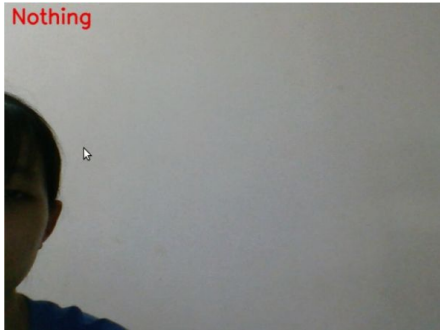
Server

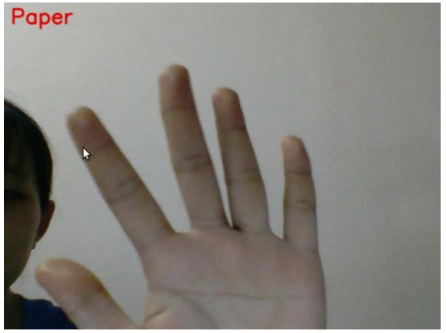
- Open a socket and listen for connecting requests.

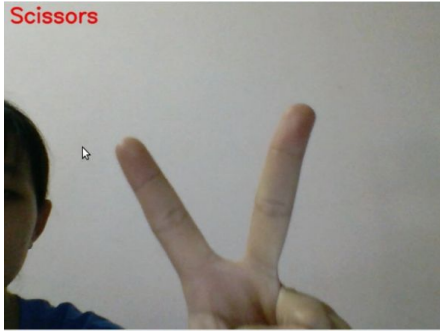
- When there is a new client, server finds a free user in database for matching. If not, the new game is created.

- Recieve user input and update game state

AI for the game







- Derived a model from [Data-Science-Community-SRM]

- The model was based on transfer learning Inception v3 model. The final trained model resulted in an accuracy of 97.05%.

Keras
A deep learning library

OpenCV

You
a
0

Opponent
b
0

Rock

Waiting...

You Won!

You
b
0

Opponent
a
0

Scissors

Rock

You Lost...

DEMO

Thanks for your attention!
Q&A