

Texas Hold'em poker game

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Background

Texas Hold'em poker is a game module for people who want to play it with bot players and place bets. This is a final project of UCI I&CS 33. The GUI part is mainly programmed by Zhengyang Zhuang. Smart bot and README is mainly made by Shunwen Luo.

Maintainer

This project is made by **Zhengyang Zhuang** (ID:69637621) and **Shunwen Luo** (ID:29916314).

Usage

Use command to start the program.

```
python Final_project_Shunwen_Luo_Zhengyang_Zhuang.py
```

Enter the number of bot gamers to play this game with you. Then click start to continue.

```
{number of bot players}
```

Note: {number of bot players} should be an int and must be less than 6 and greater than 0.

Then it will ask for fold or bet. Enter 1 will choose fold and enter 2 will choose bet.

```
1
```

If user chooses 1, all will proceed on their own until the game ends. Click confirm to continue.

```
2
```

If user chooses 2, user needs to enter a number of money to bet. Click confirm to continue.

```
{number of money}
```

Note: {number of money} needs to be specified by user and it should be an int.

This question of whether to fold or bet will last three times. After three times, the game will end and the player will be asked to continue or exit. Enter 1 will choose continue and enter 2 will choose exit. Click confirm to continue.

1

If user chooses 1, the game will restart, but the players' money will remain as them was at the end of the previous game. Players with less than or equal to 0 money will be eliminated.

2

If user chooses 2, the game ends.

Property

Smartbot

Smart bot is controlled by three methods of **class player** and it will be used to determine how much money bot players will bet.

First bet

In the first bet, the method will be used is **smartBet1**. If two cards which are distributed to bot has same number, continue number or same suit, they will bet 2 dollars. The others are bet 1 dollar.

Second bet

In the second bet, the method will be used is **smartBet2**. The first person's bet will be determined by its rank. If its rank is in range of 0 to 2, it will bet 3 dollars; If its rank is in range of 3 to 5, it will bet 2 dollars; If its rank is in range of 6 to 9, it will bet 1 dollar.

After that, the others' bet will determined by the max bet in the cartable. If the max bet is 3 dollars and its rank is lower than 2, they will bet 1 dollar. If the max bet is 2 dollars and its rank is lower than 5, they will bet 1 dollar, too.

Third bet

In the third bet, the method will be used is **smartBet3**.

If the bot's rank is 9, it will fold immediately.

After that, it will calculate the probability of other bots' winning. It randomly takes two cards from the pile, excluding itself and the public card, and combines them with the public card. It will count the best rank after each random draw to calculate its win rate.

If the probability is more than 50%, it will only bet 1 dollar. If the probability is less than 50%, it will follow the second bet's rule to bet.