Aayush Shah

19BCE245

25 November 2020

CARD GAME
DATA STRUCTRE AND ALGORITHM

Definitions

A game of cards is played between 4 players. One by one cards out of 52 gets distributed to the each player. Card distribution is random Each player takes card one by one and arrange them sequentially in the hand. Even if we see after 5 cards, sequence can be observed. Once the game starts, a single card is taken out from the sequence. However if we see them again on hand, they maintain ascending or descending sequence. In order to keep cards sequentially in data which particular mechanism can be helpful and how. Implement the given model.
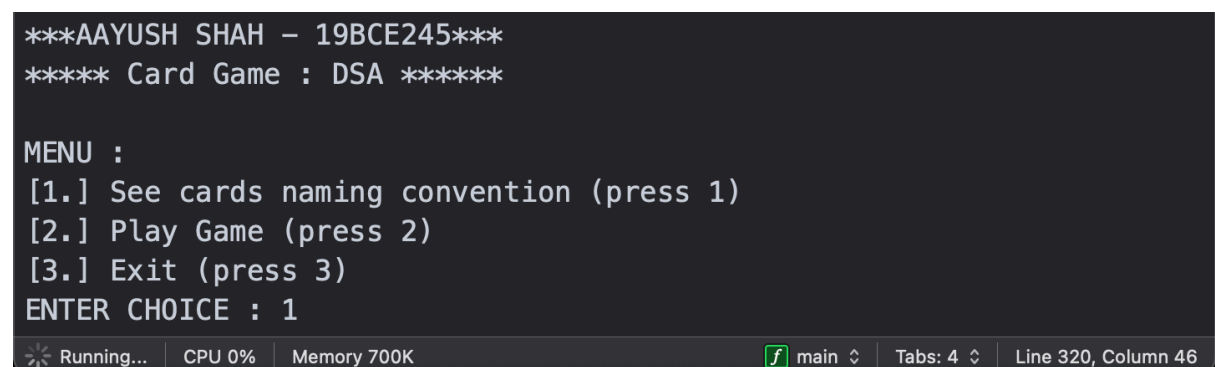
File Purpose :

I have made a program for game of cards to show the function of Binary search tree in which I used the concept of AVL tree specifically. It includes the concept which are related with AVL tree like insertion and deletion which includes the important functionalities of AVL tree : Rotations.

Output ScreenShots :

```
***AAYUSH SHAH — 19BCE245***
***** Card Game : DSA ******

MENU :
[1.] See cards naming convention (press 1)
[2.] Play Game (press 2)
[3.] Exit (press 3)
ENTER CHOICE : 1
```
Running... | CPU 0% | Memory 700K   ƒ main ⬍ | Tabs: 4 ⬍ | Line 320, Column 46

```
ENTER CHOICE : 1
Card No.:  1    Ace   of Speads   suit.
Card No.:  2      2 of Speads   suit.
Card No.:  3      3 of Speads   suit.
Card No.:  4      4 of Speads   suit.
Card No.:  5      5 of Speads   suit.
Card No.:  6      6 of Speads   suit.
Card No.:  7      7 of Speads   suit.
Card No.:  8      8 of Speads   suit.
Card No.:  9      9 of Speads   suit.
Card No.: 10     10 of Speads   suit.
Card No.: 11    Jack  of Speads   suit.
Card No.: 12    Queen of Speads   suit.
Card No.: 13    King  of Speads   suit.
Card No.: 14    Ace   of Hearts   suit.
Card No.: 15      2 of Hearts   suit.
Card No.: 16      3 of Hearts   suit.
Card No.: 17      4 of Hearts   suit.
Card No.: 18      5 of Hearts   suit.
Card No.: 19      6 of Hearts   suit.
Card No.: 20      7 of Hearts   suit.
Card No.: 21      8 of Hearts   suit.
Card No.: 22      9 of Hearts   suit.
Card No.: 23     10 of Hearts   suit.
Card No.: 24    Jack  of Hearts   suit.
Card No.: 25    Queen of Hearts   suit.
Card No.: 26    King  of Hearts   suit.
Card No.: 27    Ace   of Clubs   suit.
Card No.: 28      2 of Clubs   suit.
Card No.: 29      3 of Clubs   suit.
Card No.: 30      4 of Clubs   suit.
```

```
Card No.: 31        5 of Clubs    suit.
Card No.: 32        6 of Clubs    suit.
Card No.: 33        7 of Clubs    suit.
Card No.: 34        8 of Clubs    suit.
Card No.: 35        9 of Clubs    suit.
Card No.: 36       10 of Clubs    suit.
Card No.: 37    Jack  of Clubs    suit.
Card No.: 38    Queen of Clubs    suit.
Card No.: 39    King  of Clubs    suit.
Card No.: 40    Ace   of Diamonds suit.
Card No.: 41        2 of Diamonds suit.
Card No.: 42        3 of Diamonds suit.
Card No.: 43        4 of Diamonds suit.
Card No.: 44        5 of Diamonds suit.
Card No.: 45        6 of Diamonds suit.
Card No.: 46        7 of Diamonds suit.
Card No.: 47        8 of Diamonds suit.
Card No.: 48        9 of Diamonds suit.
Card No.: 49       10 of Diamonds suit.
Card No.: 50    Jack  of Diamonds suit.
Card No.: 51    Queen of Diamonds suit.
Card No.: 52    King  of Diamonds suit.

MENU :
[1.] See cards naming convention (press 1)
[2.] Play Game (press 2)
[3.] Exit (press 3)
ENTER CHOICE :
2
Alloted decks at starting :
Player 1 : 1 5 7 9 11 13 21 27 32 35 39 41 52
```

```
ENTER CHOICE :
2
Alloted decks at starting :
Player 1 : 1 5 7 9 11 13 21 27 32 35 39 41 52
Player 2 : 4 10 12 14 15 26 31 33 34 40 43 44 51
Player 3 : 3 6 8 16 18 20 24 25 28 29 38 46 50
Player 4 : 2 17 19 22 23 30 36 37 42 45 47 48 49

After round 1
Player 1 : 1 5 7 9 11 13 27 32 35 39 41 52
Player 2 : 4 10 12 14 15 26 31 34 40 43 44 51
Player 3 : 3 6 8 16 18 24 25 28 29 38 46 50
Player 4 : 2 17 19 22 23 30 36 37 45 47 48 49

After round 2
Player 1 : 1 5 7 9 11 13 32 35 39 41 52
Player 2 : 4 10 12 14 15 26 31 40 43 44 51
Player 3 : 3 6 8 16 18 25 28 29 38 46 50
Player 4 : 2 17 19 22 30 36 37 45 47 48 49

After round 3
Player 1 : 1 5 7 9 11 13 35 39 41 52
Player 2 : 4 10 12 14 15 26 31 43 44 51
Player 3 : 3 6 8 16 18 28 29 38 46 50
Player 4 : 2 17 19 22 36 37 45 47 48 49

After round 4
Player 1 : 1 5 7 9 11 13 39 41 52
Player 2 : 4 10 12 14 15 26 31 44 51
Player 3 : 3 6 8 16 18 29 38 46 50
Player 4 : 2 17 19 22 37 45 47 48 49
```

```
After round 5
Player 1 : 1 5 7 9 11 13 41 52
Player 2 : 4 10 12 15 26 31 44 51
Player 3 : 3 6 8 16 18 38 46 50
Player 4 : 2 17 19 22 45 47 48 49

After round 6
Player 1 : 1 5 9 11 13 41 52
Player 2 : 4 10 12 26 31 44 51
Player 3 : 3 6 8 16 18 46 50
Player 4 : 2 17 19 22 47 48 49

After round 7
Player 1 : 1 5 11 13 41 52
Player 2 : 4 10 12 31 44 51
Player 3 : 3 6 8 18 46 50
Player 4 : 2 17 19 22 48 49

After round 8
Player 1 : 1 5 13 41 52
Player 2 : 4 10 12 44 51
Player 3 : 3 6 8 46 50
Player 4 : 2 17 19 48 49

After round 9
Player 1 : 1 5 41 52
Player 2 : 4 10 12 51
Player 3 : 3 6 8 50
Player 4 : 2 17 19 49

After round 10
```

```
After round 10
Player 1 : 1 5 52
Player 2 : 4 12 51
Player 3 : 3 8 50
Player 4 : 2 19 49

After round 11
Player 1 : 1 52
Player 2 : 4 51
Player 3 : 3 50
Player 4 : 2 49

After round 12
Player 1 : 1
Player 2 : 4
Player 3 : 3
Player 4 : 2
Game ended :)

MENU :
[1.] See cards naming convention (press 1)
[2.] Play Game (press 2)
[3.] Exit (press 3)
ENTER CHOICE : 3
*** THANK YOU ***
```

Run Succeeded | Time 34 ms | Peak Memory 758K | *f* main ◇ | Tabs: 4 ◇ | Line 320, Column 46