

12/2/25

Task:-13:- Finding the winning strategy in a card game.

Aim:- To implement a python program that simulates a card game between two players, and determine the winning strategy using of drawn cards.

Algorithm:-

1. start the program.
2. Create a deck of cards.
3. shuffle the deck randomly.
4. Each player, draws a fixed number of cards.
5. Define the strategy.
6. Compare the chosen cards of both players.
 - If Player 1's card > Player 2's card \rightarrow Player 2 scores.
 - Else if Player 2's card > Player 1's card \rightarrow Player 1 scores.
 - Else \rightarrow Draw.
7. Repeat for all rounds.
8. The player with the highest score wins the game.
9. Display input, output, and final result
10. End the program.

Program :-

import random

suits = ["Hearts", "Diamonds", "Clubs", "Spades"]

values = list(range(1, 11))

deck = [(value, suit) for suit in suits for value in values]

random.shuffle(deck)

Player 1 - hand = deck[:5]

Player 2 - hand = deck[5:10]

Print ("Player 1 Hand:", Player 1 - hand)

Print ("Player 2 Hand:", Player 2 - hand)

def Play_highest_card(hand):

highest = max(hand, key=lambda x: x[1])

hand.remove(highest)

return highest

P1 - score, P2 - score = 0, 0

Print ("In --- Game Rounds ---")

for i in range(5):

P1 - card = Play_highest_card(Player 1 - hand)

P2 - card = Play_highest_card(Player 2 - hand)

Print (f"Round {i+1}: Player 1 -> {P1 - card},

Player 2 -> {P2 - card}")

if P1 - card[0] > P2 - card[0]:

Print ("Winner: Player 1")

P1 - score += 1

Sample input:-

Player 1 Hand: [(1, 3, 'Hearts'), (2, 'clubs'), (10, 'Spades'),
(5, 'Diamonds'), (7, 'clubs')].

Player 2 Hand: [(9, 'Hearts'), (12, 'Diamonds'), (3, 'clubs'),
(11, 'Spades'), (6, 'Hearts')].

Sample output:-

Round 1: Player 1 → (13, 'Hearts'), Player 2 → (12, 'Diamonds')

Winner: Player 1.

Round 2: Player 2 → (10, 'Spades'), Player 2 → (11, 'Spades')

Winner: Player 2.

Round 3: - Player 1 → (7, 'clubs'), Player 2 → (9, 'Hearts')

Winner: Player 2.

Round 4: Player 1 → (5, 'Diamonds'), Player 2 → (6, 'Hearts')

Winner: Player 2

Round 5: Player 1 → (2, 'clubs'), Player 2 → (3, 'clubs')

Winner: Player 2.

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elif P2 - card[0] > P1 - card[0]:
    Print("winner: player 2").
    P2 - score + = 1.
else:
    Print("Result: draw")

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Print("\n --- final Result ---")
Print("Player 1 score:", P1 - score).
Print("Player 2 score:", P2 - score)

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if P1 - score > P2 - score:

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    Print("Player 1 wins the game with winning
    strategy!").

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elif P2 - score > P1 - score:

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    Print("Player 2 wins the game with winning
    strategy!")

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else:

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    Print("The game is a draw!").

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Result: - Thus, the finding winning strategy in a card game is executed successfully.