

Mini project: Snake and ladder game

Name: Sakshi maheshkumar Jadhav

Roll no: COA47

Code:

```
import random

class SnakeAndLadder:

    def __init__(self, player_names):

        self.board_size = 100

        self.snakes = {16: 6, 47: 26, 49: 11, 56: 53, 62: 19, 64: 60, 87: 24, 93: 73, 95: 75, 98: 78}

        self.ladders = {1: 38, 4: 14, 9: 31, 21: 42, 28: 84, 36: 44, 51: 67, 71: 91, 80: 100}

        self.players = {name: 0 for name in player_names}

        self.turn_order = list(self.players.keys())

        self.winner = None

    def roll_dice(self):

        return random.randint(1, 6)

    def move_player(self, player):

        roll = self.roll_dice()

        print(f"{player} rolled a {roll}")

        new_position = self.players[player] + roll

        if new_position > self.board_size:

            print(f"{player} cannot move, position exceeds {self.board_size}.")

            return

        self.players[player] = new_position

        print(f"{player} moved to position {self.players[player]}")

        self.check_snakes_and_ladders(player)
```

```

def check_snakes_and_ladders(self, player):
    if self.players[player] in self.snakes:
        print(f"Oops! {player} got bitten by a snake and moved back to {self.snakes[self.players[player]]}")
        self.players[player] = self.snakes[self.players[player]]
    elif self.players[player] in self.ladders:
        print(f"Yay! {player} climbed a ladder and moved up to {self.ladders[self.players[player]]}")
        self.players[player] = self.ladders[self.players[player]]

```

```

def play_turn(self):
    for player in self.turn_order:
        if self.winner:
            break
        self.move_player(player)
        if self.players[player] == self.board_size:
            self.winner = player
            print(f"{player} wins the game!")
            break

```

```

def start_game(self):
    print("Game started!")
    while not self.winner:
        self.play_turn()

```

```

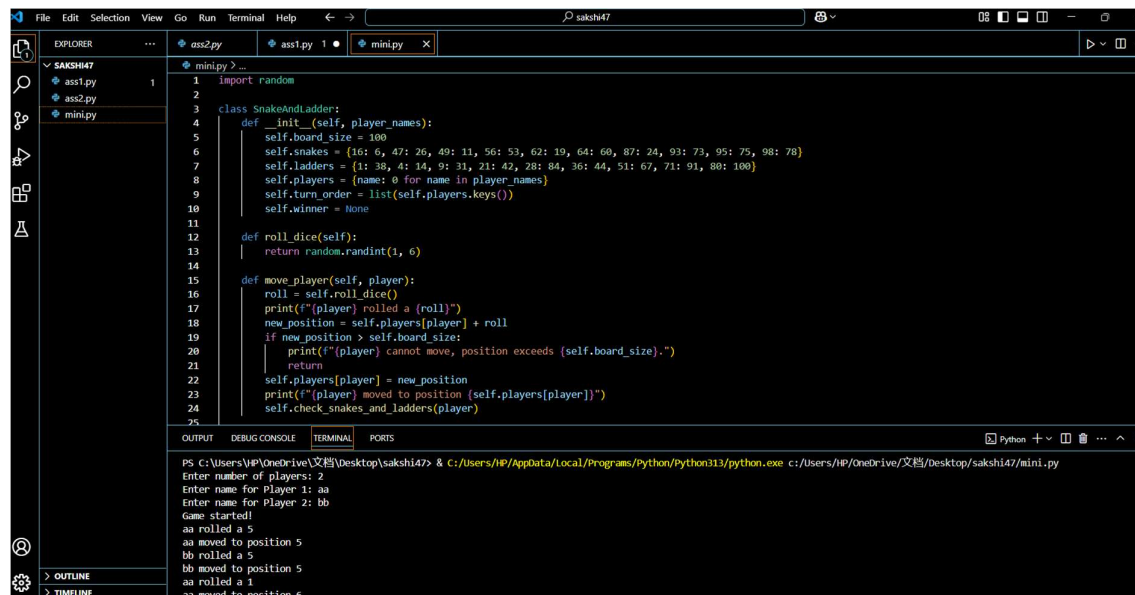
if __name__ == "__main__":
    num_players = int(input("Enter number of players: "))
    player_names = [input(f"Enter name for Player {i+1}: ") for i in range(num_players)]

```

```
game = SnakeAndLadder(player_names)
```

```
game.start_game()
```

Output:



The screenshot shows a Python IDE with a file explorer on the left containing 'ass1.py', 'ass2.py', and 'mini.py'. The main editor displays the code for 'mini.py', which implements a SnakeAndLadder game. The code includes a class definition with methods for initialization, dice rolling, and player movement. The output window at the bottom shows the execution of the program, where two players, 'aa' and 'bb', take turns rolling a dice and moving their pieces on a board of size 100. The game starts with player 'aa' rolling a 5 and moving to position 5, followed by player 'bb' rolling a 5 and moving to position 5, and then player 'aa' rolling a 1 and moving to position 6.

```
1 import random
2
3 class SnakeAndLadder:
4     def __init__(self, player_names):
5         self.board_size = 100
6         self.snakes = {16: 6, 47: 26, 49: 11, 56: 53, 62: 19, 64: 60, 87: 24, 93: 73, 95: 75, 98: 78}
7         self.ladders = {1: 38, 4: 14, 9: 31, 21: 42, 28: 84, 36: 44, 51: 67, 71: 91, 88: 100}
8         self.players = {name: 0 for name in player_names}
9         self.turn_order = list(self.players.keys())
10        self.winner = None
11
12    def roll_dice(self):
13        return random.randint(1, 6)
14
15    def move_player(self, player):
16        roll = self.roll_dice()
17        print(f"{player} rolled a {roll}")
18        new_position = self.players[player] + roll
19        if new_position > self.board_size:
20            print(f"{player} cannot move, position exceeds {self.board_size}.")
21            return
22        self.players[player] = new_position
23        print(f"{player} moved to position {self.players[player]}")
24        self.check_snakes_and_ladders(player)
25
```

OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + -

```
PS C:\Users\HP\OneDrive\文档\Desktop\sakshi47> & C:\Users\HP\AppData\Local\Programs\Python\Python313\python.exe c:\Users\HP\OneDrive\文档\Desktop\sakshi47\mini.py
Enter number of players: 2
Enter name for Player 1: aa
Enter name for Player 2: bb
Game started!
aa rolled a 5
aa moved to position 5
bb rolled a 5
bb moved to position 5
aa rolled a 1
aa moved to position 6
```