User Documentation¶

Introduction

Welcome to Snakes and Ladders Dice Game user documentation.

Snakes and Ladders, known originally as **Moksha Patam**, is an ancient Indian board game for two or more players regarded today as a worldwide classic. It is played on a game board with numbered, gridded squares. A number of "ladders" and "snakes" are pictured on the board, each connecting two specific board squares. The object of the game is to navigate one's game piece, according to die rolls, from the start (bottom square) to the finish (top square), helped by climbing ladders but hindered by falling down snakes.

 In the following section you will find the explanation of the features you can expect in this game and rules what will be strictly followed while you are playing.

Features

Snakes and Ladders is an ancient south Asian board game. Which consists 10 X 10 scored gridded board and some snakes and ladders spotted on board. 100 is the maximum and winning score. Once any player get to that score, immediately declared as winner.

Following are the features available in this game:–

- SNAKE: This game is customizable that is, you can choose the number of snakes you want on your board and also customize the position (head and tail of the snake) of the snake according to your convenience.
- LADDER: You can choose the number of ladders as well as the position (start and the end of ladder) of your ladder as per the convenience.
- PLAYERS: This game has two options as of now. You can play 2 players and 4 players game.
- DICE: Has one dice and you can get values ranging from 1–6 depending on your luck!
- NO INFINITE LOOP: As the snakes and ladders are inputted by the user so this game ensures that the user doesn't enter a ladder such that it coincides with the snake (head of snake coinciding with the end of ladder and tail of snake with the start of the ladder) and ends up in infinite loop.

How It Works

❖ **Step 1**: Enter the number of players that is 2 0r 4.
❖ **Step 2**: After entering the number of players you will get a welcome message and rules for playing the game.
❖ **Step 3**: The code will work based on the number of players.
❖ **Step 4**: The snakes and ladders are user inputted and are stored in a dictionary in the form of head as key, tail as the value to that key and similarly for the start and end of the ladder.
❖ **Edge cases handled** – The code will take care of the inputs entered by the user like –
  ▪ For Snake: Tail should be less than the head.
  ▪ Two heads cannot be at the same position.
  ▪ For Ladder: Start should be less than the end.
  ▪ Two starts cannot be at the same position.
  ▪ NO INFINITE LOOP: As the snakes and ladders are inputted by the user so this game ensures that the user doesn't enter a ladder such that it coincides with the snake (head of snake coinciding with the end of ladder and tail of snake with the start of the ladder) and ends up in infinite loop.
  ▪ No. of ladders and snakes will be positive or else prompted.
  ▪ The ladder and snake positions will be in the range(1,100).

❖ **Step 5**: When you hit enter the dice value are shown randomly in the range (1–6) and the value is added to player's current position.

Customized messages pop on your screen when you roll a dice , get bitten by a snake or climb a ladder.

❖ **Step 6**: If the current position of a player reaches the key in the dictionary of snake or ladder, the player automatically moves to its value.
❖ **Step 7**: Check for winner (whether current player scored 100 or not)
❖ **Step 8**: If winner is not found it's next player's turn (will repeat step 5 and step 7)
❖ **Step 9**: If winner found game is over and a message will prompt congratulating the winner.

Play the Game in your computer

Please go to program's root folder and follow the instructions below...

- Make sure you installed python 3 on your computer.

- Run the following command :

```
python Saanp_Seedhi.py
```

- You will be prompted to enter the number of players :

```
$ python Saanp_Seedhi.py
Enter the num of players(2 or 4):
```

- You will have to enter the name of players

```
$ python Saanp_Seedhi.py
Enter the num of players(2 or 4):2
Name of player 1 : Shiva
Name of player 2 : Krishna

Match will be played between:  Shiva and Krishna
```

- You will be welcomed and given instructions :

```
Welcome to Saanp Seedhi.

GAME RULES
    1. When a piece comes on a number which lies on the head of a snake,
       then the piece will land below to the tail of the snake that can
       also be said as an unlucky move.
    2. If somehow the piece falls on the ladder base, it will climb to
       the top of the ladder (which is considered to be a lucky move).
    3. Whereas if a player lands on the tail of the snake or top of a
       ladder, the player will remain in the same spot (same number)
       and will not get affected by any particular rule.
       The players can never move down ladders.
    4. The pieces of different players can overlap each other without
       knocking out anyone.There is no concept of knocking out by
       opponent players in Snakes and Ladders.
    5. To win, the player needs to roll the exact number of die to land
       on the number 100. If they fails to do so, then the player needs
       to roll the die again in the next turn. For eg, if a player is
       on the number 98 and the die roll shows the number 4, then they
       cannot move its piece until they gets a 2 to win or 1 to be on
       99th number.
```

- Enter the number of snakes you want on your board.
- Enter the head and tail of the snake separated by a space.
- Enter the number of ladders you want on your board.
- Enter the start and head of the ladder.
- You will get random customized message on your turn, when bitten by a snake or when you climb a ladder.

```
Shiva: Go on. Press enter to roll dice:

Rolling the dice...
Great.You got a 1
Shiva moving....

Shiva moved from 0  to 1
Krishna: Go on. Press enter to roll dice:

Rolling dice...
Great.You got a 1
Krishna moving....

Krishna moved from 0  to 1
Shiva: Your move. Press enter to roll dice:

Rolling the dice...
Great.You got a 3
Shiva moving....

Shiva moved from 1  to 4

AWESOME :):):):)

Shiva climbed from  4 to 30
Krishna: Your move. Press enter to roll dice:

Rolling dice...
Great.You got a 6
Krishna moving....

Krishna moved from 1  to 7
Shiva: Your move. Press enter to roll dice:

Rolling the dice...
Great.You got a 6
Shiva moving....
```

- Now you are ready to play the game just hit the Enter to roll the dice, trust on your luck and wait to win the game.

```
Rolling the dice...
Great.You got a 3
Shiva moving....
You now need 1  more to win this game. Keep trying.You'll win
Krishna: Let's GO . Press enter to roll dice:

Rolling dice...
Great.You got a 2
Krishna moving....

Krishna moved from 98  to 100


BRAVO!!!!!.

Krishna WON THE GAME.
CONGRATULATIONS Krishna

Thank you for playing the game.
```

❖ EDGE CASES:

```
No. of snakes on your board :3

 Enter Head and Tail separated by a space

 Snake Head and Tail: 99 2

 Snake Head and Tail: 99 3

 Snake already present

 Snake Head and Tail: 56 56

 The tail of snake should be less than head

 Snake Head and Tail: 56 36

 Snake Head and Tail: 56 76

 The tail of snake should be less than head

 Snake Head and Tail: 98 3

 Your Snakes are at :  {99: 2, 56: 36, 98: 3}

 No. of ladders on your board :
```

```
No. of snakes on your board :3

 Enter Head and Tail separated by a space

 Snake Head and Tail: 99 2

 Snake Head and Tail: 99 3

 Snake already present

 Snake Head and Tail: 56 56

 The tail of snake should be less than head

 Snake Head and Tail: 56 36

 Snake Head and Tail: 56 76

 The tail of snake should be less than head

 Snake Head and Tail: 98 3

 Your Snakes are at :  {99: 2, 56: 36, 98: 3}

 No. of ladders on your board :
```

- Hope you like the game.

- Flow Chart➔

START

CHOOSE PLAYER

PLAYER

PLAYER

ROLL DICE

Give dice to next player

MOVE TO ROLL POSITION

Check if landed on snake

YES

Slide down snake

NO

Check if landed on a ladder

YES

Move up ladde

NO

Check if you the last block

YES

You are winner

END