**Title: Roll Dice**

**A Brief Description of Project**:

This Project aims to implement the Throw of dice and gives moves of dice and latest position by user.

**Installation Instructions:**

* Go to browser and Download Python IDLE latest version.
* Go to this link [Download Python | Python.org](https://www.python.org/downloads/).

**Allow Issue Tracker:**

**Function does-**

Random Module:

To use this module first import Random Module from library.

Shuffle ():

Python number method shuffle () randomizes the items of a list in place.

We can import this from random module.

* import random
* i=[[1,6], [3,4], [2,5]]
* random. Shuffle(i)

right roll (): To roll right side

left roll (): To roll left side

up roll (): To roll up side

down roll (): To roll down side

random. Shuffle ()

File Location: -C:\Users\bk21152\Downloads\Roll dice.py

Click:

R -To roll right side

L - To roll left side

U -To roll upside

D -To roll Downside

Q -> to quit

Pick your move:

Pick your move: R  
  
then the position of the dice should change accordingly.

And print the latest position

If user picks other than the options (R, L, U, D) it should prompt ‘INVALID MOVE’

If user picks ‘Q’ it should print all the moves and the latest positions.

->> **algorithm for Rolling Dice**

step 1: First import the random module for shuffling dice and also import the copy.

step 2: Take a list like --[1,2,3,4,5,6] or [[1,6], [3,4], [2,5]]

step 3: Draw a dice and print that dice.

step 4: print the Individual value on dice by using index. [positions: right,left,up,bottom].

step 5: And then Put the dice inside the function.

step 6: Take another function to rotate right and left and up and down and then swap the values for changing the dice positions.

step 7: And then Write a While loop for to pick the particular move.

step 8: And user to ask enter the move.

step 9: Write the if condition to check the particular move or not.

step 10: And then with in the if we called the defined function and also count.

step 11: count the moves.

step 12: Then After pick the move Like quit(q) and its append to the empty list and then print the all moves of dice and latest position by using deep copy.

step 13: Finally, if user Enter any wrong input its break the loop and print the "It is invalid move".

**Code:**

'''This is for rolling dice'''

import random

import copy

i=[[1,6],[3,4],[2,5]]

lst =[]

print('initial values: ',i)

count = 0

def dice(i):

Diagram:

dice(i)

print("\nR-roll right\nL-roll left\nU-roll up\nD-roll down\nQ-quit")

random.shuffle(i)

print(i)

#dice(i)

def right\_roll(right):

right[1][0],right[2][1],right[1][1],right[2][0]=right[2] [0],right[1][0],right[2][1],right[1][1]

dice(right)

print("right")

print(right)

r = copy.deepcopy(right)

lst.append([r,'right'])

def left\_roll(left):

left[1][0],left[2][0],left[1][1],left[2][1]=left[2][1],left[1][0],left[2][0],left[1][1]

dice(left)

print("left")

print(left)

r = copy.deepcopy(left)

lst.append([r,'left'])

def up\_roll(up):

up[0][0],up[1][1],up[1][0],up[0][1]= up[1][0],up[0][0],up[0][1],up[1][1]

dice(up)

print("up")

r = copy.deepcopy(up)

lst.append([r,'up'])

print(up)

def down\_roll(down):

down[1][0],down[0][0],down[0][1],down[1][1]=down[0][0],down[1][1],down[1][0],down[0][1]

dice(down)

print("down")

r = copy.deepcopy(down)

lst.append([r,'down'])

print(down)

while True:

select = ((input('pick your move: ').strip()[0]).upper())

if select == 'R' :

count+=1

right\_roll(i)

elif select == 'L':

count+=1

left\_roll(i)

elif select == 'U':

count+=1

up\_roll(i)

elif select == 'D':

count+=1

down\_roll(i)

elif select == 'F':

count+=1

front\_roll(i)

elif select == 'B':

count+=1

back\_roll(i)

elif select == 'Q':

print(f"The dice rotate the{ count } times ")

print("\*\*\*\*\*\*\*\*\*\*All moves of Dice\*\*\*\*\*\*\*\*\*\*")

for i,j in lst:

print(i)

print("\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_")

dice(i)

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

print(j)

print("this is latest position")

dice(i)

break

else:

print("This is Invalid move \nPlease Enter R/L/U/D to Rotate or Q to Quit.")

Conclusion:

Finally, we print the all moves of dice and latest move according to user requirements.

Presented by Team – 3

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