

Government Polytechnic Chhatrapati Sambhajinagar

(An Autonomous Institute of Government of Maharashtra)



“PURSUIT FOR EXCELLENCE”

Mini Project

On

“Design a mini – project using all concepts of Python ”

Submitted By

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Guided by

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CERTIFICATE

Rutuja Peherkar has successfully completed mini project work titled “ Design a mini – project using all concepts ” during the academic year 2023-2024 ,in partial fulfillment of Diploma in Computer Engineering of Government Polytechnic ,Chh. Sambhajanagar.

To the best of my knowledge this seminar work has not been submitted elsewhere.

Date : 28/03/2024

Prof. G.U. Jadhav

Project Guide

Prof. Dr. M. A. Ali

H.O.D CO

Prof. Dr. A.M. Jinturkar

Principle of GPCS

Topic :

1. QR Code Generator
2. Games in Python

In this Mini Project, I have used the “ PyCharm Editor ” for creating the project.

1. QR Code Generator :-

The purpose of this project, is to generate a QR Code based on user's information.

I used the following modules :- tkinter, PIL, qrcode, for creating my project of QR Code Generator.

For my project, I mainly used tkinter module. I used tkinter module for creating window. Then, I used qrcode module for creating the QR Code. The PIL module was used for importing image on window.

I used following classes of tkinter module :

- Tk
- Button
- Label
- Entry
- Frame, etc.

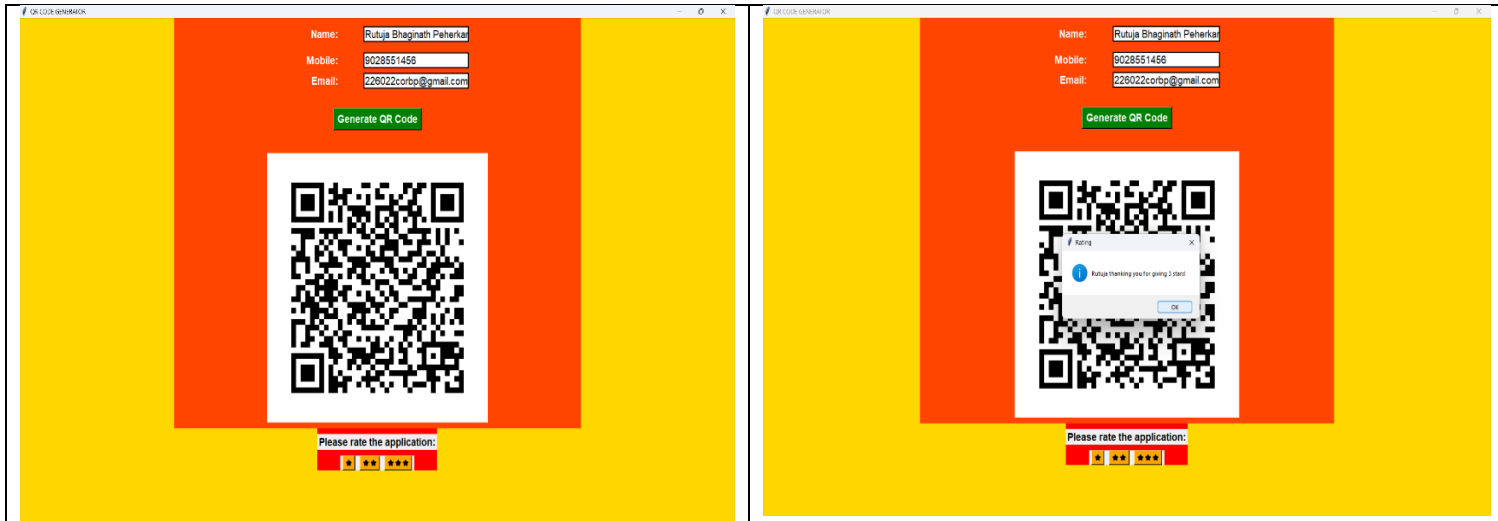
Following are the various methods of the tkinter , which I have made use in my project .

- main loop ()
- grid ()
- pack ()

- Label (), etc.

The output is :





After scanning the QR following details will be generated :

Name : Rutuja Bhaginath Peherkar
 Mobile : 9028551456
 Email : 226022corbp@gmail.com

2. Games in Python :-

Using modules like random, time I have implemented following programs in Python .

Game 1 : Stone Paper Scissor

Here, the game will be played between a person and the computer.

Code :

```
# Stone Paper Game - I.. With BOT.. and count the no. of times
player or bot #wins.
```

```
from random import randint
import time
```

```
bot_wcount = 0
```

```
player_wcount = 0
draws_count = 0
```

```
round = 1
```

```
while round<=5:
```

```
    print("----- Round", round, "-----")
    print("1 - Stone")
    print("2 - Paper")
    print("3 - Scissor")
```

```
    bot = randint(1,3)
```

```
    player = int(input("Select your option : "))
```

```
    print("Bot selects :", bot)
```

```
    print("Player selects :", player)
```

```
    if player==1 and bot==2:
```

```
        print("Bot wins..")
```

```
        bot_wcount = bot_wcount + 1
```

```
    elif player==2 and bot==1:
```

```
        print("Player Wins..")
```

```
        player_wcount = player_wcount + 1
```

```
    elif player==2 and bot==3:
```

```
        print("Bot wins..")
```

```
        bot_wcount = bot_wcount + 1
```

```
    elif player==3 and bot==2:
```

```
        print("Player Wins..")
```

```
        player_wcount = player_wcount + 1
```

```
    elif player==3 and bot==1:
```

```
        print("Bot Wins...")
```

```
        bot_wcount = bot_wcount + 1
```

```
    elif player==1 and bot==3:
```

```
        print("Player Wins..")
```

```
        player_wcount = player_wcount + 1
```

```
    elif player==bot:
```

```
        print("Round Draw..")
```

```
    draws_count = draws_count + 1
    round = round + 1
```

```
time.sleep(3)
print("\nBot wins", bot_wcount, "times")
print("Player wins", player_wcount, "times")
print("Draw", draws_count, "times")
```

Output :

----- Round 1 -----

1 - Stone

2 - Paper

3 - Scissor

Select your option : 1

Bot selects : 3

Player selects : 1

Player Wins..

----- Round 2 -----

1 - Stone

2 - Paper

3 - Scissor

Select your option : 2

Bot selects : 3

Player selects : 2

Bot wins..

----- Round 3 -----

1 - Stone

2 - Paper

3 - Scissor

Select your option : 3

Bot selects : 2

Player selects : 3

Player Wins..

----- Round 4 -----

1 - Stone

2 - Paper

3 - Scissor

Select your option : 1

Bot selects : 1

Player selects : 1

Round Draw..

----- Round 5 -----

1 - Stone

2 - Paper

3 - Scissor

Select your option : 2

Bot selects : 1

Player selects : 2

Player Wins..

Bot wins 1 times

Player wins 3 times

Draw 1 times

Game 2 : Dice Game

Here, game will be played between 2 players and there will be 5 rounds and if player rolls randomly 6, then it's turn will be repeated . And, at last the score of both players will be printed .

Code :

```
p1_sum, p2_sum = 0,0
import random
```

```
round = 1
```

```

while round <=5:
    print("\n-----Round ", round, "-----")
    print("Player - 1, press ENTER to roll the dice", end = "")
    input()
    rolled = random.randint(1,6)
    print("You rolled :", rolled)
    p1_sum += rolled

    if rolled == 6:
        print("Repeat your turn :", end = "")
        continue

    rolled = 6
    while rolled == 6:
        print("\nPlayer - 2, press ENTER to roll the dice ", end = "")
        input()
        rolled = random.randint(1,6)
        print("You rolled :",rolled)
        p2_sum += rolled

    round = round + 1

print("\nScore of Player - 1 is :",p1_sum)
print("Score of Player - 2 is :",p2_sum)

```

Output :

```

-----Round 1 -----
Player - 1, press ENTER to roll the dice
You rolled : 6

```

```

Repeat your turn :
Player - 1, press ENTER to roll the dice
You rolled : 4

```

```

Player - 2, press ENTER to roll the dice

```

You rolled : 2

-----Round 2 -----

Player - 1, press ENTER to roll the dice

You rolled : 5

Player - 2, press ENTER to roll the dice

You rolled : 6

Repeat your turn :

Player - 2, press ENTER to roll the dice

You rolled : 5

-----Round 3 -----

Player - 1, press ENTER to roll the dice

You rolled : 4

Player - 2, press ENTER to roll the dice

You rolled : 5

-----Round 4 -----

Player - 1, press ENTER to roll the dice

You rolled : 5

Player - 2, press ENTER to roll the dice

You rolled : 4

-----Round 5 -----

Player - 1, press ENTER to roll the dice

You rolled : 5

Player - 2, press ENTER to roll the dice

You rolled : 4

Score of Player - 1 is : 29

Score of Player - 2 is : 26

Game 3 : Target – Based Winner

Here, the game will be played between 2 players and a specific target will be provided by user to win the game. The sum of rolled dice will be done of both players, and whosoever accomplishes the target first is winner.

Condition : If sum = 30 and player 1 sum = 27 and in turn if it randomly generates 6 then not to add it in sum but, should be wait till it doesn't actually generates 3 in dice roll.

Code :

```
from random import randint
```

```
target_value = int(input("Enter the target value to win : "))
```

```
p1_sum = 0
```

```
p2_sum = 0
```

```
flag = False
```

```
while True:
```

```
    print("\nPlayer - 1, press ENTER to roll the DICE ", end = "")
```

```
    input()
```

```
    rolled = randint(1,6)
```

```
    print("You rolled --->",rolled)
```

```
    p1_sum = p1_sum + rolled
```

```
    if p1_sum <= target_value:
```

```
        print("Sum is =", p1_sum)
```

```
    else:
```

```
        p1_sum = p1_sum - rolled
```

```
        remain = target_value - p1_sum
```

```
        print("You require =",remain)
```

```

if p1_sum == target_value:
    print("Player - 1 is winner.....")
    break

print("\nPlayer - 2, press ENTER to roll the DICE ", end = "")
input()
rolled = randint(1, 6)
print("You rolled --->", rolled)
p2_sum = p2_sum + rolled

if p2_sum <= target_value:
    print("Sum is =", p2_sum)

else:
    p2_sum = p2_sum - rolled
    remain = target_value - p2_sum
    print("You require =", remain)

if p2_sum == target_value:
    print("Player - 2 is winner.....")
    flag = True

if flag == True:
    break

```

Output :

Enter the target value to win : 30

Player - 1, press ENTER to roll the DICE

You rolled ---> 1

Sum is = 1

Player - 2, press ENTER to roll the DICE

You rolled ---> 3

Sum is = 3

Player - 1, press ENTER to roll the DICE
You rolled ---> 6
Sum is = 7

Player - 2, press ENTER to roll the DICE
You rolled ---> 3
Sum is = 6

Player - 1, press ENTER to roll the DICE
You rolled ---> 3
Sum is = 10

Player - 2, press ENTER to roll the DICE
You rolled ---> 1
Sum is = 7

Player - 1, press ENTER to roll the DICE
You rolled ---> 1
Sum is = 11

Player - 2, press ENTER to roll the DICE
You rolled ---> 1
Sum is = 8

Player - 1, press ENTER to roll the DICE
You rolled ---> 1
Sum is = 12

Player - 2, press ENTER to roll the DICE
You rolled ---> 6
Sum is = 14

Player - 1, press ENTER to roll the DICE
You rolled ---> 6
Sum is = 18

Player - 2, press ENTER to roll the DICE
You rolled ---> 5
Sum is = 19

Player - 1, press ENTER to roll the DICE
You rolled ---> 1
Sum is = 19

Player - 2, press ENTER to roll the DICE
You rolled ---> 5
Sum is = 24

Player - 1, press ENTER to roll the DICE
You rolled ---> 4
Sum is = 23

Player - 2, press ENTER to roll the DICE
You rolled ---> 4
Sum is = 28

Player - 1, press ENTER to roll the DICE
You rolled ---> 2
Sum is = 25

Player - 2, press ENTER to roll the DICE
You rolled ---> 5
You require = 2

Player - 1, press ENTER to roll the DICE
You rolled ---> 6
You require = 5

Player - 2, press ENTER to roll the DICE
You rolled ---> 2
Sum is = 30

Player - 2 is winner.....

Game 4 : Guess the Character Game

Here, game will be played between 2 players. The player has to guess the character between A to Z and if player guesses the correct character , then display winner. And even if the guessing character is Q and if player guesses Q or a letter prior to Q i.e P or a letter next to Q i.e R then also, display winner.

Code :

```
import random
```

```
a = random.randint(65,90)
```

```
fchar = chr(a - 1)
```

```
schar = chr(a + 1)
```

```
a = chr(a)
```

```
while True:
```

```
    print("PLAYER - 1, Guess the character ---> ", end = "")
```

```
    p1 = input()
```

```
    if p1 == a or p1 == fchar or p1 == schar :
```

```
        print("PLAYER - 1 is winner...")
```

```
        print("Character was :",a)
```

```
        print("You guessed :",p1)
```

```
        break
```

```
    print("PLAYER - 2, Guess the character ---> ", end = "")
```

```
    p2 = input()
```

```
    if p2 == a or p2 == fchar or p2 == schar:
```

```
        print("PLAYER - 2 is winner...")
```

```
        print("Character was :", a)
```

```
print("You guessed :", p1)
```

```
print("PLAYER - 3, Guess the character ---> ", end = "")  
p3 = input()  
if p3 == a or p3 == fchar or p3 == schar:  
    print("PLAYER - 3 is winner...")  
    print("Character was :", a)  
    print("You guessed :", p1)
```

Output :

```
PLAYER - 1, Guess the character ---> A  
PLAYER - 2, Guess the character ---> R  
PLAYER - 3, Guess the character ---> W  
PLAYER - 1, Guess the character ---> H  
PLAYER - 1 is winner...  
Character was : I  
You guessed : H
```

Game 5 : Arithmetic Operator Game

Here, the game will be played based on the no. of players given as input. 5 questions will be asked randomly for each player. If player enters correct answer for each question then there will be turn of player 2 . And , if player 1 enters any wrong answer then another question will be asked for it.

And, here the winner will be based on the time required by the players to answer the questions .

Code :

```
import random  
import time
```

```

values = list(range(1,11))
operators = ["+", "-", "*", "/", "//", "<", ">", "==", "!="]
ls = []

print("Enter the number of players you want : ", end = "")
no_of_players = int(input())

i = 1
while i<=no_of_players:
    j = 1
    while j<=5:

        print("Player ", i, ",turn")
        op1 = random.choice(values)
        op2 = random.choice(values)
        opr = random.choice(operators)
        print(op1 , opr , op2)

        print("Enter your answer : ",end = "")
        time1 = time.perf_counter()
        if opr == "/" :
            ans = float(input())
        else:
            ans = int(input())

        ans2 = eval(str(op1) + opr + str(op2))

        if ans2 == True:
            ans2 = 1
        elif ans2 == False:
            ans2 = 0

        if ans2 == ans:
            print("Your answer is correct ")
        else:

```

```
        print("Your answer is wrong. ")
        j = j - 1
        j = j + 1
    time2 = time.perf_counter()
    time3 = time2 - time1
    ls.append(time3)
    i = i + 1
```

```
min_time = min(ls)
win_ind = ls.index(min_time)
```

```
print("Player ", win_ind + 1,"wins . Time taken by Player - 1 is :
",min_time)
```

Output :

Enter the number of players you want : 2

Player 1 ,turn

6 - 10

Enter your answer : -4

Your answer is correct

Player 1 ,turn

5 == 7

Enter your answer : 0

Your answer is correct

Player 1 ,turn

2 + 6

Enter your answer : 8

Your answer is correct

Player 1 ,turn

8 - 8

Enter your answer : 0

Your answer is correct

Player 1 ,turn

10 - 6

Enter your answer : 4

Your answer is correct
Player 2 ,turn
10 != 9
Enter your answer : 1
Your answer is correct
Player 2 ,turn
1 - 8
Enter your answer : -7
Your answer is correct
Player 2 ,turn
4 == 1
Enter your answer : 0
Your answer is correct
Player 2 ,turn
7 > 10
Enter your answer : 0
Your answer is correct
Player 2 ,turn
9 * 2
Enter your answer : 18
Your answer is correct
Player 1 wins . Time taken by Player - 1 is :
2.0080194000620395

CONCLUSION

Hence, in this mini – project I have implemented different modules in Python like tkinter, random, etc. I have designed a QR Code Generator in Python.

Also, I have implemented different games in Python using my knowledge .

