MINI PROJECT

ROCK PAPER SCISSOR GAME

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- **PROJECT NAME: ROCK, PAPER, SCISSOR GAME**
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INTRODUCTION:

Welcome to the Rock, Paper, Scissors Game!

In this Classic Game, you will be Playing against the computer. The Rules are Simple:

- Rock crushed Scissors
- Scissors cuts paper
- Paper cover Rock

You will input your choice, and the computer will Randomly Selects its Choice. The winner will be determined based on the rules above.

Let's get started and see if you can beat the computer ! ready? Let's play

CONCEPT USING IN PROJECT:

ROCK PAPER SCISSOR GAME

1. **import**

In Python, the **import** keyword to make code in one module available in another. Imports in python are important for structuring your code effectively. Using imports properly will make you more productive, allowing you to reuse code while keeping your project maintainable.

2. Random module

The Python **Random module** is a built-in module for Generating Random integer in Python. These numbers Occur Randomly and does not follow any rules or Instructions. We can therefore use this module to generate Random numbers, Display a Random item for a list or String, and so on. There are one type of random module

i. Choice () function

3. The Choice () function

The **random.Choice ()** function selects an item from a non-empty series at random. The **random.Choice ()** function takes a sequence (like a list, tuple, or string).

- **Syntax**:

  random. Choice (sequence)

4. **Input()**

The python **input** function is used to derive input from the user. The function reads the line of input, and convert the input into a string, and returns the output.

- **Syntax of the input():**

  Input([prompt])

5. **if – elif Statement**

The if-elif Statement is shortcut of if..else chain While using if-elif statement at The end else block is added which is performed if none of the above if-elif Statement is True.

Syntax of the if-elif :

```
if condition1:
        statement to execute if condition1 is true
elif condition2:
        statement to execute if condition2 is true
else:
    statement to execute if both condition are false
```

6. print()

The **print()** function prints The Specified Message to the Screen, or Other Standard output device. The Message can be converted into a String before Written to the Screen.

- **Syntax of the print():**

print(object(s), Sep = Separator, end = '\n', file=sys.stdout , Flush=False)

7. Logical Operator “and”:

The Logical operator “**and**” is used in both Programming and mathematical logic to combine two or more conditions or statement. When using “and”, all the conditions all the conditions must be true for the entire Expression to be considered true. If any condition is false,

SOURCE CODE:

ROCK PAPER SCISSORS GAME

```
import random
options = ["rock","paper","scissors"]
user =  input("Choose Rock,paper,or scissors:")
computer = random.choice(options)
print("you choice",user)
print("computer choice",computer)
if(user == "rock" and computer == "paper"):
   print("computer is a winner")
elif(user  == "paper" and computer == "rock"):
  print("user is a winner")
elif(user ==  "scissors" and computer ==
"rock"):
```

```
   print("computer is a winner")
elif(user == "rock" and computer ==
"scissors"):
   print ("user is a winner")
elif(user == "scissors" and computer ==
"paper"):
       print("user is a winner")
elif(user == "paper" and computer ==
"scissors"):
       print("computer is a winner")
elif(user == computer):
     print("Draw the match!")
else:
   print("Invalid input! please choose
rock,paper,or scissors.")
```

DESCRIPTION OF SOURCE CODE:

ROCK PAPER SCISSORS PROGRAM

This program is a simple implementation of the classic Game “Rock Paper Scissors.” It Allow a user to play against the Computer. The Game Follows the Standard rules: rock beats scissors, scissors beats paper, and paper beats rock. If both players choose The same option, The Game is a Draw.

Components and Functionally:

1. **Importing required Libraries:**

   The Program begins by importing the random module, which is necessary for the Computer to make a random choice.

2. **Defining the Choices:**

The List Options Contains The possible Choices: “rock”, ”paper”, and ”scissors”.

3. **User input:**

The program prompts the user to **input** Function. The input is then converted to Lowercase to Ensure That the Comparison is case-insensitive.

4. **Computer Choices:**

The Computer Choice is Generated Randomly using The **random.choice()** Function, Which Selects one of the options From the **Options** list.

5. Displaying Choices:

Both the user's and the Computer's Choices are displayed on the Screen.

6. Determining the Winner:

- The Program contains series of conditional statement(if, elif, and else) To determine the Winner:

  - If the user Chooses "rock" and the computer chooses "paper", the Computer wins.
  - If the user Chooses "paper" and the Computer Choose "rock", the user winner.

- If the user Choose “scissors” and the Computer choose “rock”, the Computer winner.
- If the user Choose “rock” and the Computer Choose “Scissors”, The user winner.
- If the user Choose “Scissors “and the Computer Choose “paper”, The user Winner.
- If the user Choose “paper” and The Computer Choose “Scissors”, The Computer winner.
- If both the user and the Computer Choose the same Option, the Game is a Draw.

7. Handling Invalid Input:

An Additional condition checks if the user input is not one of the valid option (“rock”, ”paper”, or scissors”). If the input is invalid, a message is displayed indicating the error.

OUTPUT:

Choose Rock, paper, or scissors: rock

You choice rock

computer choice paper

computer is a winner

CONCLUSION:

This Rock, Paper, Scissors Program is a Simple yet effective way to engage user in a Classic Game against a Computer. It Handles User input Gracefully, Provides clear feedback, and ensures an Enjoyable user Experience Through thoughtful Design and Implementation.