PYTHON ROCK PAPER SCISSOR GAME MANUAL

Introduction:

This manual is intended to serve people of all backgrounds and knowledge in Python programming. The purpose of this manual is to provide step by step instructions to code and run a simple python program, involving the rock paper scissors game. Each section of instructions is numerically numbered {1, 2, 3, …} and followed by a smaller subset of directions {*i, ii, iii, …*}. In this program, users will be competing against the computer in rock paper scissors. Before attempting to code this program, review and understand the basic rules of the game.

- Rocks beat scissors.
- Scissors beat papers.
- Papers beat rocks.

Required Materials:

1. Functionable Windows/MAC operating system
2. Python programming language (latest version 3.12)
3. Python IDE (PyCharm)

Instructions:

Downloading Python IDE and Language

1. Visit https://www.python.org/downloads/
   i. If MAC operating system:
      a. Click macOS
      b. Under Python 3.12.0 - Oct. 2, 2023, download macOS 64-bit universal2 installer
      c. Proceed by pressing continue and agree to finish installing Python
   ii. If Windows operating system:
      a. Click Windows
      b. Under Python 3.12.0 - Oct. 2, 2023, download Windows installer (ARM64)
      c. Proceed by pressing continue and agree to finish installing Python
2. Visit https://www.jetbrains.com/pycharm/download/

> > *i.* If MAC operating system:
> >
> > > a. Click macOS
> > > b. Scroll down to PyCharm Community Edition, download .dmg (Apple Silicon)
> > > c. Proceed by pressing continue and agree to finish installing PyCharm
> >
> > *ii.* If Windows operating system:
> >
> > > a. Click Windows
> > > b. Scroll down to PyCharm Community Edition, download .exe (ARM64)
> > > c. Proceed by pressing continue and agree to finish installing PyCharm

Creating Python File

1. Open PyCharm application
2. Click on "New Project"
3. Edit project name to "rpsGame"
4. Make sure Python version is Python 3.12.0
5. In the rpsGame folder, create new "Python File" and name it "game"
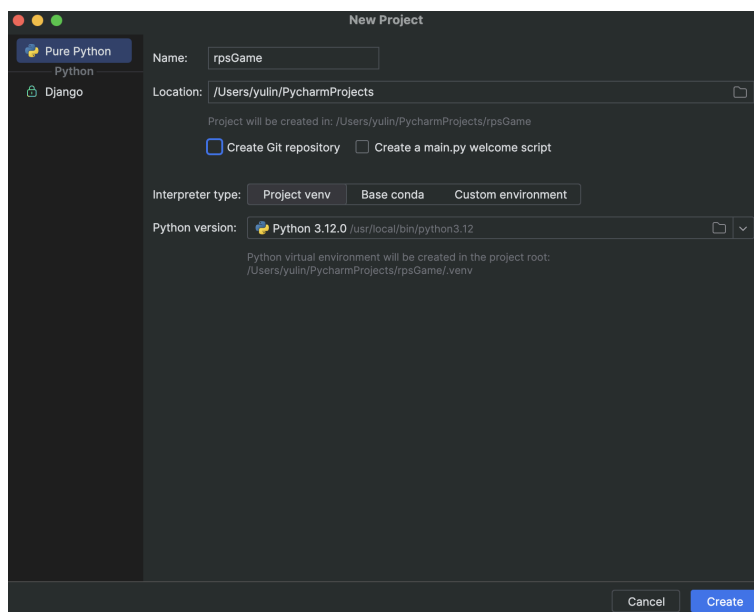6. Begin coding in this Python file

Figure 1: Creating the project with the game name and downloaded python version

Writing Python Code

1. Import module into Python
   - *i.* Type "import random" {Random module implements pseudo-random number generator for various distributions}
2. Create a list variable named "options", by using the square bracket [ ], and assign the items "rock", "paper", "scissor" to it {Include quotations " " when naming items and separate with commas}
3. Create a variable named "user_input" and utilize the input() function and insert "Choose rock, paper, or scissor: " {Include quotations for strings}
4. Create a variable named "computer_input" and utilize random.choice() function and insert options variable
5. Use the print() function and type "You choose: ", user_input {Separate string with variable by using a comma}
6. Use the print() function and type "Computer chose: ", computer_input {Separate string with variable by using a comma}
7. Create conditional test cases for the possibilities of results, by using the conditional statements: if, elif, and else
   - **i.** If user_input == computer_input:
     - print("Tie")
   - **ii.** Elif user_input == "rock" and computer_input == "scissor":
     - print("You win")
   - **iii.** Elif user_input == "paper" and computer_input == "rock":
     - print("You win")
   - **iv.** Elif user_input == "scissor" and computer_input == "paper":
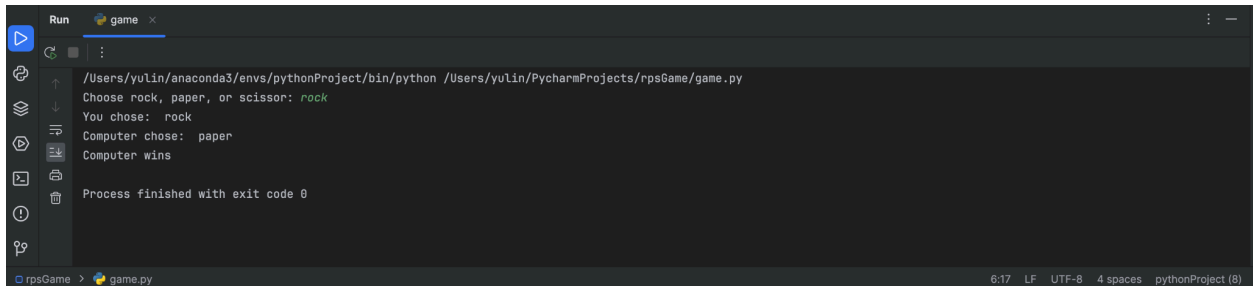   - print("You win")
   - **v.** Else:
     - print("Computer wins")

```python
if user_input == computer_input:
    print("Tie")
elif user_input == "rock" and computer_input == "scissor":
    print("You win")
elif user_input == "paper" and computer_input == "rock":
    print("You win")
elif user_input == "scissor" and computer_input == "paper":
    print("You win")
else:
    print("Computer wins")
```

Figure 2: Reference to what the conditional test cases should look like

Running Python File

1. Click on the green play button on the top right corner, next to "Current File"
2. Enter rock, paper, or scissor in the terminal

Figure 3: Running the file and testing the game

Conclusion:

You have now successfully compiled and ran the rock paper scissor game in Python. Compete against the computer and witness who will win, Machine or You. In order to play again, rerun the python file for a rematch.