3. WRITTEN RESPONSES

3 a.

3.a.i.

The purpose of the program is for entertainment. It can also be used to make a decision.

3.a.ii.

The program prompts the user to input one of three options: Rock, Paper, or Scissors. The computer will also pick one of these three options. Depending on the relationship between the user input and the computer input, the resulting output will be one of three messages: “You Win…”, “You Lose!”, or “It’s a draw”. The user is then given the choice to play again.

3.a.iii.

The user input is either Rock, Paper, or Scissors, and the output is either “You Win…”, “You Lose!”, or “It’s a draw”.

3 b.

3.b.i.

```
RPS = ["Rock", "Paper", "Scissors"]
```

3.b.ii.

```
if yourPlay == "Rock" and cpuPlay ==
"Scissors":
    print("You Win... \n")
elif yourPlay == "Rock" and cpuPlay ==
"Paper":
    print("You Lose! \n")
elif yourPlay == "Paper" and cpuPlay ==
"Scissors":
    print("You Lose! \n")
elif yourPlay == "Paper" and cpuPlay ==
"Rock":
    print("You Win... \n")
elif yourPlay == "Scissors" and cpuPlay ==
"Rock":
    print("You Lose! \n")
elif yourPlay == "Scissors" and cpuPlay ==
"Paper":
    print("You Win... \n")
elif yourPlay == cpuPlay:
    print("It's a draw \n")
```

3.b.iii.

The name of the variable representing the list is RPS.

3.b.iv.

The data contained in the list are the potential options that the computer can select as its input. The computer will then randomly select one of the three items within the list as its input. The computer's input is then saved in a variable called cpuPlay. The program then puts both the user input and computer input through a series of If and Else-if statements to result in one of three possible outputs.

3.b.v.

The list allows for the computer to select its input by randomly selecting one of the items within list RPS. For the program to function without the use of list RPS, we would need to have each potential computer input correspond to a number. The program would then pick a random number between 1 and 4 exclusive. Depending on the number, the program would have functionally chosen one of the three potential computer inputs.

3 c.

3.c.i.

```
5  def rpsGame(yourPlay):
6      RPS = ["Rock", "Paper", "Scissors"]
7      #potential options that the cpu can pick from
8      cpuPlay = random.choice(RPS)
9      #computer choice
10     print("Computer chooses:", cpuPlay)
11     #displays computer choices
12     if yourPlay == "Rock" and cpuPlay == "Scissors":
13         print("You Win... \n")
14     elif yourPlay == "Rock" and cpuPlay == "Paper":
15         print("You Lose! \n")
16     elif yourPlay == "Paper" and cpuPlay == "Scissors":
17         print("You Lose! \n")
18     elif yourPlay == "Paper" and cpuPlay == "Rock":
19         print("You Win... \n")
20     elif yourPlay == "Scissors" and cpuPlay == "Rock":
21         print("You Lose! \n")
22     elif yourPlay == "Scissors" and cpuPlay == "Paper":
23         print("You Win... \n")
24     elif yourPlay == cpuPlay:
25         print("It's a draw \n")
26         #determines the result of the interaction between your input
   and the computers input
27     replay = input("Do you want to play again? Yes or No: ")
28     if replay == "Yes":
29         yourPlay = input("Pick one: Rock, Paper, or Scissors: ")
30         rpsGame(yourPlay)
31     else:
32         print("Goodbye")
```

3.c.ii.

```
45  rpsGame(yourPlay)
```

3.c.iii.

The function rpsGame allows for the program to execute smoothly.The users input is saved as the variable yourPlay. This variable is used as the parameter for the function rpsGame. The parameter passes through the series of If, Else if statements and results in a different output depending on both the user's input and the computer's input.

3.c.iv.

There is a list, list RPS, with the three potential options that the computer can choose from: Rock, Paper, and Scissors. The computer picks randomly between the items of the list, and saves the selected item in variable cpuPlay. The computer displays the computer's choice, and determines the output by putting the users and computers inputs through a series of If, Else if statements. The computer prints the results of the If, Else if statements. The user is offered to play again. If the user inputs “Yes”, the function is called again. If the user inputs “No”, then the computer prints “Goodbye”.

3 d.

3.d.i.

First call:

For test run 1, When yourPlay was passed through the function, yourPlay had the value of “Rock”. When going through the If, Else if statements, The computer input was “Paper”.

Second call:

For test run 2, When yourPlay was passed through the function, yourPlay had the value of “Paper”. When going through the If, Else if statements, The computer input was “Rock”.

3 d.ii.

Condition(s) tested by first call:

The computer checked to see if the user's input was equal to “Rock” and if the computer's input was “Paper”.

Condition(s) tested by second call:

The computer checked to see if the user's input was equal to “Paper” and if the computer's input was “Rock”.

3.d.iii.

Results of the first call:

When it found that this statement was true, it displayed “You Lose!”

Results of the second call:

When it found that this statement was true, it displayed “You Win…”