Chapter 4: Roshambo (Rock, Paper, Scissors)

Time required: 180 minutes

- Comment each line of code as shown in the tutorials and other code examples.
- Follow all directions carefully and accurately.
- Think of the directions as minimum requirements.

Pseudocode

1. Write pseudocode or TODO for the exercise
2. Submit with the assignment

General Requirements

Rock, paper, scissors, also known as roshambo, is a simple child's game that is frequently used to settle disputes.

In the game, a rock breaks the scissors, the scissors cut the paper, and the paper covers the rock. Each option is equally likely to prevail over another. If the players choose the same object a draw is declared, and the game is repeated until someone prevails.

This program will be the first AI program you will write. The computer will perform the part of the AI by picking a random move each time.

Decision Matrix for Rock Paper Scissors

Follow the decision matrix from left to right. The decision statements will be nested per row.

Player's choice	**Computer's choice**	**Outcome**
Rock	Rock	Tie
	Paper	Computer wins because paper covers rock
	Scissors	Player wins because rock breaks scissors

Paper	Rock	Player wins because paper covers rock
	Paper	Tie
	Scissors	Computer wins because scissors cut paper
Scissors	Rock	Computer wins because rock breaks scissors
	Paper	Player wins because scissors cut paper
	Scissors	Tie

Program Requirements

1. Create a Python program named **roshambo.py**
2. The table above gives the shape of a nested if structure to make decisions in this game.
3. Ask the user for his or her name. Use their name while the game is playing.
4. The human selects whether to play rock, paper, or scissors or exit the program by using the keyboard.
5. Computer chooses a rock, paper, or scissors randomly.

Output

1. The program will display the winner of each roshambo round along with the running score.
2. At the conclusion of the game, the computer will display the overall winner and the final score.

Starter TODO

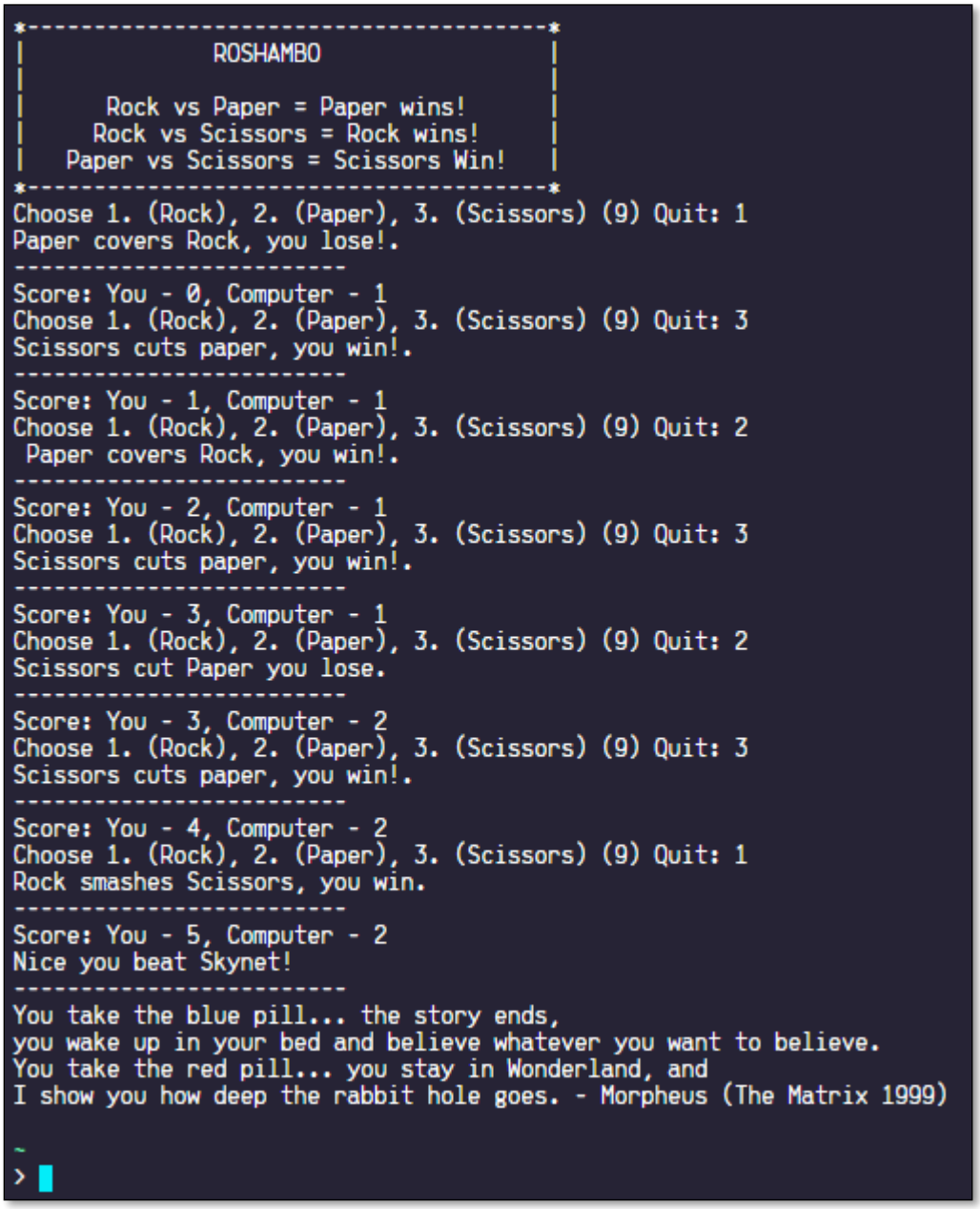
```
from random import randint
# TODO: Get the user's name

# TODO: while loop

# TODO: Get integer input from user 1. Rock 2. Paper 3. Scissors
user_choice = int(input("Choose 1. (Rock), 2. (Paper), 3. (Scissor)s: "))
```

```
# TODO: Computer use randint to get a random integer from 1-3 inclusive
computer_choice = randint(1, 3)

# TODO: If the user typed 1
if user_choice == 1:
    # TODO: The computer picked 1 or
    if computer_choice == 1:
        print("You both chose Rock - you tied.")

    # TODO: If the computer picked 2
    elif computer_choice == 2:
        print("You chose rock, computer chose paper \nYou lose, the computer
overlord wins!!!! ")

    # TODO: The computer picked 3
    elif computer_choice == 3:
        print("You chose rock, computer chose scissors \nYou win!!!! ")

# TODO: The user typed 2 or
# elif user_choice == 2:

    # TODO: The computer picked 1 or

    # TODO: The computer picked 2 or

    # TODO: The computer picked 3

# TODO: The user typed 3

    # TODO: The computer picked 1 or

    # TODO: The computer picked 2 or

    # TODO: The computer picked 3



# Output
```

Example run:

```
+---------------------------------------+
|   How to play Roshambo:               |
|                                       |
|   Rock vs Paper -> Paper wins         |
|   Rock vs Scissors -> Rock wins       |
|   Paper vs Scissors -> Scissors wins  |
+---------------------------------------+

Enter choice
 1. Rock
 2. Paper
 3. Scissors
 9. Exit
User turn: 1
User choice is: Rock

Computer turn . . . .
Computer choice is: Scissors

Rock v/s Scissors
Human wins!

Human:  1 Computer:  0
Enter choice
 1. Rock
 2. Paper
 3. Scissors
 9. Exit
User turn: 2
User choice is: Paper

Computer turn . . . .
Computer choice is: Paper

Paper v/s Paper
It's a tie!

Human:  1 Computer:  0
Enter choice
 1. Rock
 2. Paper
 3. Scissors
 9. Exit
User turn: 9
Exiting the game . . .

Thanks for playing ;
```

Student example run:



Going Further with Challenges

The following are challenges, they are not required for the assignment

1. Display randomly chosen taunts when the computer wins.
2. Change the game to Rock, Lizard, Spock, or another combination.

Assignment Submission

1. Attach the pseudocode.
2. Attach the program files.
3. Attach screenshots showing the successful operation of the program.
4. Submit in Blackboard.