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

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

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.

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. Allow the user to choose how many rounds to play. This sets the points needed to win.
5. The human selects whether to play rock, paper, or scissors by using the keyboard.
6. 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 Pseudocode

```
# Import random module
# Get how many rounds to play from human
# Get 1, 2 or 3 from human (Rock, Paper, Scissors)
# Generate random 1, 2 or 3 for computer turn (Rock, Paper, Scissors)
# Use the decision matrix to develop the decision structure
if human == 1
    human chooses Rock
    if computer == 1:
        computer chooses Rock
            Tie
    elif computer == 2:
        computer chooses Paper
            Computer wins
    elif computer == 3:
        computer chooses Scissors
            human wins

elif human == 2
      If computer == 1
            etc.
```

Example Run

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

How many rounds would you like to play? 1
Enter choice
 1. Rock
 2. Paper
 3. Scissors

User turn: 2
User choice is: Paper

Computer turn . . . .
Computer choice is: Rock

Paper v/s Rock
Human wins!

Human:  1 Computer:  0

Thanks for playing
```

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.