**Explanation:**

Mateusz Kus for a course - Object Oriented Programming – McMaster Univeristy

This is a program to play the game: Rock Paper Scissors Spock Lizard

Rules of the game are:

- Spock beats scissors and rock, but loses to paper and lizard.

- Lizard beats Spock and paper, but loses to rock and scissors.

- Rock beats scissors and lizard, but loses to paper and Spock.

- Paper beats rock and Spock, but loses to scissors and lizard.

- Scissors beats paper and lizard, but loses to rock and Spock.

The program has two players and each of them produce a random outcome, i.e., Rock, paper, scissor, spock, or lizard.

Random number generator will select options:

1 - Spock

2 - Lizard

3 - Rock

4 - Paper

5 - Scissors

Based on each player’s outcome, winner is determined.

Score is displayer after each round, and summed up to show the total score after few rounds of the game. Game can be replayed as many times as user wants.

Program is constructed as follows:

**CODE:**

#importing random to be able to use in the function select\_random\_value()

import random

#naming variables and assigning names

ROCK = 'Rock'

PAPER = 'Paper'

SPOCK = 'Spock'

SCISSORS = 'Scissors'

LIZARD = 'Lizard'

#setting zero scores for the start of the game

player1\_score = 0

player2\_score = 0

#main function that runs other functions

def main():

'''

Main function of the game that starts all the other functions.

Returns

-------

None.

'''

#declaring global variables for score counting in local scope

global player1\_score

global player2\_score

#randomly selecting values for the game (Rock, Paper, etc.) for each player

player1 = select\_random\_value()

player2 = select\_random\_value()

#printing randomly selected values on the screen

print('\nPlayer one selected: ' + player1[1])

print('Player two selected: ' + player2[1])

#selecting the winner based on the selection and adding points to each players score

winner = selecting\_winner(player1[1], player2[1])

#new scores for each player

player1\_score = winner[0]

player2\_score = winner[1]

#printing current score on the screen

print(f'\nCurrent score is\n---------------------------\nPlayer 1: {winner[0]}\nPlayer 2: {winner[1]}')

# asking player to play again or not. If yes selected, game will restart, otherwise it will say thanks and exit.

play\_again(input('Press \'y\' and ENTER if you want to play again, otherwise just press ENTER: '))

#function to select random value and assign text

def select\_random\_value():

'''

Random selection of option from 6 possibilities for each player in the game.

Returns

-------

random\_value : int

description : str

'''

description = ''

random\_value = random.randint(1, 5)

if random\_value == 1:

description = SPOCK

if random\_value == 2:

description = LIZARD

if random\_value == 3:

description = ROCK

if random\_value == 4:

description = PAPER

if random\_value == 5:

description = SCISSORS

return random\_value, description

#function that decides who wins and prints output

def selecting\_winner(player1\_selection, player2\_selection):

'''

Parameters

----------

Each player's random selection is the input (as string) from available options (Rock, Paper, etc....)

player1\_selection : str

player2\_selection : str

Returns

-------

Returns the results of another function that calculate scores and adds it to total score (increment\_counter())

'''

#declaring global variables for score in the local scope.

global player1\_score

global player2\_score

#option for draw if both players selected same option

if player1\_selection == player2\_selection:

print('It is a draw')

#Options for selecting winner

# SPOCK for player 1

#win

if player1\_selection == SPOCK and (player2\_selection == SCISSORS or player2\_selection == ROCK):

print('Player 1 wins')

return increment\_counter(1, player1\_score, player2\_score)

#loss

if player1\_selection == SPOCK and (player2\_selection == PAPER or player2\_selection == LIZARD):

print('Player 2 wins')

return increment\_counter(2, player1\_score, player2\_score)

# LIZARD for player 1

#win

if player1\_selection == LIZARD and (player2\_selection == SPOCK or player2\_selection == PAPER):

print('Player 1 wins')

return increment\_counter(1, player1\_score, player2\_score)

#loss

if player1\_selection == LIZARD and (player2\_selection == ROCK or player2\_selection == SCISSORS):

print('Player 2 wins')

return increment\_counter(2, player1\_score, player2\_score)

# ROCK for player 1

#win

if player1\_selection == ROCK and (player2\_selection == SCISSORS or player2\_selection == LIZARD):

print('Player 1 wins')

return increment\_counter(1, player1\_score, player2\_score)

#loss

if player1\_selection == ROCK and (player2\_selection == PAPER or player2\_selection == SPOCK):

print('Player 2 wins')

return increment\_counter(2, player1\_score, player2\_score)

# PAPER for player 1

#win

if player1\_selection == PAPER and (player2\_selection == ROCK or player2\_selection == SPOCK):

print('Player 1 wins')

return increment\_counter(1, player1\_score, player2\_score)

#loss

if player1\_selection == PAPER and (player2\_selection == SCISSORS or player2\_selection == LIZARD):

print('Player 2 wins')

return increment\_counter(2, player1\_score, player2\_score)

# SCISSORS for player 1

#win

if player1\_selection == SCISSORS and (player2\_selection == PAPER or player2\_selection == LIZARD):

print('Player 1 wins')

return increment\_counter(1, player1\_score, player2\_score)

#loss

if player1\_selection == SCISSORS and (player2\_selection == ROCK or player2\_selection == SPOCK):

print('Player 2 wins')

return increment\_counter(2, player1\_score, player2\_score)

#in case there is a draw, calling other function to count scores

return increment\_counter(0, player1\_score, player2\_score)

#increment counter function to count score of each player based on round results

def increment\_counter(winner, player1\_current\_score, player2\_current\_score):

'''

Parameters

----------

winner : int

supply number of the winner 1 for player 1 and 2 for player 2, 0 if this is a draw

player1\_current\_score : float

supply current score for player 1

player2\_current\_score : float

supply current score for player 2

Returns

-------

player1\_new\_score : float

returns new score of player 1

player2\_new\_score : float

returns new score of player 2

'''

#if player one wins

if winner == 1:

player1\_new\_score = player1\_current\_score + 1

player2\_new\_score = player2\_current\_score

#if player two wins

elif winner == 2:

player1\_new\_score = player1\_current\_score

player2\_new\_score = player2\_current\_score + 1

#if it is a draw

else:

player1\_new\_score = player1\_current\_score + 0.5

player2\_new\_score = player2\_current\_score + 0.5

#new scores for each player after the round

return player1\_new\_score, player2\_new\_score

#function the alows to restart the game

def play\_again(decision):

'''

Parameters

----------

decision : str

Returns

-------

None.

'''

if decision == 'y':

main()

else:

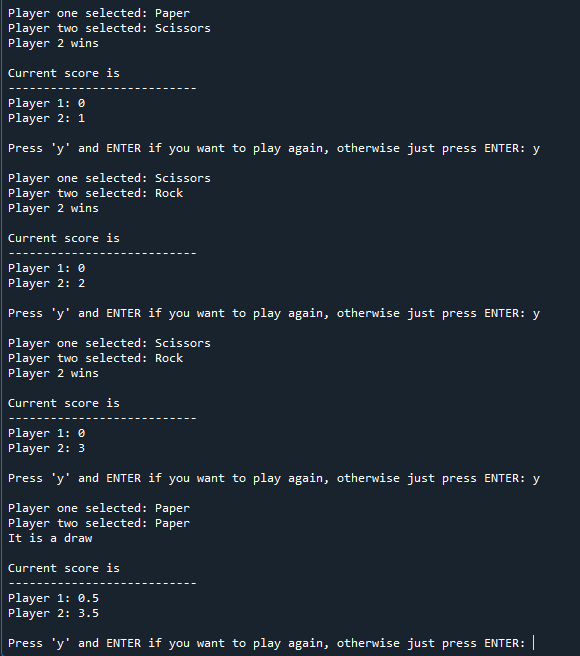
print('--------------------------------------\nThank you for playing, see you next time')

# Calling main function

main()

**OUTPUT**

**Starting the game:**

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**Continuing the game and then finishing**

