Rock - Paper - Scissor

March 25, 2024

1 Rock - Paper - Scissor game

```python
[1]: import numpy as np
print('Rock - Paper - Scissor')
user_choice = input('Enter "Rock" or "Paper" or "Scissor": ')
computer_choice = np.random.randint(3)
if(computer_choice == 0):
    computer_choice = 'Rock'
elif(computer_choice == 1):
    computer_choice = 'Paper'
else:
    computer_choice = 'Scissor'
print()
print(f'User choice = {user_choice}')
print(f'Computer choice = {computer_choice}')

if(user_choice == 'Rock' and computer_choice == 'Rock'):
    print('Oops! There is a tie.')
elif(user_choice == 'Rock' and computer_choice == 'Paper'):
    print('Computer won the match!')
elif(user_choice == 'Rock' and computer_choice == 'Scissor'):
    print('User won the match!')
elif(user_choice == 'Paper' and computer_choice == 'Rock'):
    print('User won the match!')
elif(user_choice == 'Paper' and computer_choice == 'Paper'):
    print('Oops! There is a tie.')
elif(user_choice == 'Paper' and computer_choice == 'Scissor'):
    print('Computer won the match!')
elif(user_choice == 'Scissor' and computer_choice == 'Rock'):
    print('Computer won the match!')
elif(user_choice == 'Scissor' and computer_choice == 'Paper'):
    print('User won the match!')
else:
    print('Oops! There is a tie.')
```

```
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Rock
```

```
User choice = Rock
Computer choice = Paper
Computer won the match!
```

[2]:
```python
import numpy as np
print('Rock - Paper - Scissor')
user_choice = input('Enter "Rock" or "Paper" or "Scissor": ')
computer_choice = np.random.randint(3)
if(computer_choice == 0):
    computer_choice = 'Rock'
elif(computer_choice == 1):
    computer_choice = 'Paper'
else:
    computer_choice = 'Scissor'
print()
print(f'User choice = {user_choice}')
print(f'Computer choice = {computer_choice}')

if(user_choice == computer_choice):
    print('Oops! There is a tie.')
elif(user_choice == 'Rock' and computer_choice == 'Paper'):
    print('Computer won the match!')
elif(user_choice == 'Rock' and computer_choice == 'Scissor'):
    print('User won the match!')
elif(user_choice == 'Paper' and computer_choice == 'Rock'):
    print('User won the match!')
elif(user_choice == 'Paper' and computer_choice == 'Scissor'):
    print('Computer won the match!')
elif(user_choice == 'Scissor' and computer_choice == 'Rock'):
    print('Computer won the match!')
else:
    print('User won the match!')
```

```
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Paper

User choice = Paper
Computer choice = Paper
Oops! There is a tie.
```

2 Add replay option

[3]:
```python
playmore = 1
while(playmore):
    import numpy as np
    print('Rock - Paper - Scissor')
    user_choice = input('Enter "Rock" or "Paper" or "Scissor": ')
```

```python
    computer_choice = np.random.randint(3)
    if(computer_choice == 0):
        computer_choice = 'Rock'
    elif(computer_choice == 1):
        computer_choice = 'Paper'
    else:
        computer_choice = 'Scissor'
    print()
    print(f'User choice = {user_choice}')
    print(f'Computer choice = {computer_choice}')

    if(user_choice == computer_choice):
        print('Oops! There is a tie.')
    elif(user_choice == 'Rock' and computer_choice == 'Paper'):
        print('Computer won the match!')
    elif(user_choice == 'Rock' and computer_choice == 'Scissor'):
        print('User won the match!')
    elif(user_choice == 'Paper' and computer_choice == 'Rock'):
        print('User won the match!')
    elif(user_choice == 'Paper' and computer_choice == 'Scissor'):
        print('Computer won the match!')
    elif(user_choice == 'Scissor' and computer_choice == 'Rock'):
        print('Computer won the match!')
    else:
        print('User won the match!')
    print()
    replay_status = input('Do you want to play again? Type "Yes" or "No" - ')
    if(replay_status == 'No'):
        playmore = 0
```

```
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Rock

User choice = Rock
Computer choice = Rock
Oops! There is a tie.

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Scissor

User choice = Scissor
Computer choice = Paper
User won the match!

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Paper
```

```
User choice = Paper
Computer choice = Rock
User won the match!

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Rock

User choice = Rock
Computer choice = Rock
Oops! There is a tie.

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Scissor

User choice = Scissor
Computer choice = Scissor
Oops! There is a tie.

Do you want to play again? Type "Yes" or "No" - No
```

3 Add game play statistics

```python
playmore = 1
matches_played = 0
user_win_count = 0
computer_win_count = 0
tie_count = 0
while(playmore):
    import numpy as np
    print('Rock - Paper - Scissor')
    user_choice = input('Enter "Rock" or "Paper" or "Scissor": ')
    computer_choice = np.random.randint(3)
    if(computer_choice == 0):
        computer_choice = 'Rock'
    elif(computer_choice == 1):
        computer_choice = 'Paper'
    else:
        computer_choice = 'Scissor'
    print()
    print(f'User choice = {user_choice}')
    print(f'Computer choice = {computer_choice}')

    if(user_choice == computer_choice):
        print('Oops! There is a tie.')
```

```python
            tie_count+=1
        elif(user_choice == 'Rock' and computer_choice == 'Paper'):
            print('Computer won the match!')
            computer_win_count+=1
        elif(user_choice == 'Rock' and computer_choice == 'Scissor'):
            print('User won the match!')
            user_win_count+=1
        elif(user_choice == 'Paper' and computer_choice == 'Rock'):
            print('User won the match!')
            user_win_count+=1
        elif(user_choice == 'Paper' and computer_choice == 'Scissor'):
            print('Computer won the match!')
            user_win_count+=1
        elif(user_choice == 'Scissor' and computer_choice == 'Rock'):
            print('Computer won the match!')
            computer_win_count+=1
        else:
            print('User won the match!')
            user_win_count+=1
        print()
        matches_played+=1
        replay_status = input('Do you want to play again? Type "Yes" or "No" - ')
        if(replay_status == 'No'):
            playmore = 0
print()
print(f'Matches played = {matches_played}')
print(f'Number of matches won by user = {user_win_count}')
print(f'Number of matches won by computer = {computer_win_count}')
print(f'Number of match tie = {tie_count}')
```

4   Final Code for Rock - Paper - Scissor game

```python
[4]: playmore = 1
matches_played = 0
user_win_count = 0
computer_win_count = 0
tie_count = 0
while(playmore):
    import numpy as np
    print('Rock - Paper - Scissor')
    user_choice = input('Enter "Rock" or "Paper" or "Scissor": ')
    computer_choice = np.random.randint(3)
    if(computer_choice == 0):
        computer_choice = 'Rock'
    elif(computer_choice == 1):
        computer_choice = 'Paper'
```

```python
        else:
            computer_choice = 'Scissor'
        print()
        print(f'User choice = {user_choice}')
        print(f'Computer choice = {computer_choice}')

        if(user_choice == computer_choice):
            print('Oops! There is a tie.')
            tie_count+=1
        elif((user_choice == 'Rock' and computer_choice == 'Paper') or \
                (user_choice == 'Paper' and computer_choice == 'Scissor') or \
                (user_choice == 'Scissor' and computer_choice == 'Rock')):
            print('Computer won the match!')
            computer_win_count+=1
        else:
            print('User won the match!')
            user_win_count+=1
        print()
        matches_played+=1
        replay_status = input('Do you want to play again? Type "Yes" or "No" - ')
        if(replay_status == 'No'):
            playmore = 0
print()
print(f'Matches played = {matches_played}')
print(f'Number of matches won by user = {user_win_count}')
print(f'Number of matches won by computer = {computer_win_count}')
print(f'Number of match tie = {tie_count}')
```

```
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Rock

User choice = Rock
Computer choice = Paper
Computer won the match!

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Paper

User choice = Paper
Computer choice = Paper
Oops! There is a tie.

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Scissor

User choice = Scissor
```

```
Computer choice = Scissor
Oops! There is a tie.

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Rock

User choice = Rock
Computer choice = Paper
Computer won the match!

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Paper

User choice = Paper
Computer choice = Rock
User won the match!

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Scissor

User choice = Scissor
Computer choice = Scissor
Oops! There is a tie.

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Paper

User choice = Paper
Computer choice = Scissor
Computer won the match!

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Rock

User choice = Rock
Computer choice = Paper
Computer won the match!

Do you want to play again? Type "Yes" or "No" - Yes
Rock - Paper - Scissor
Enter "Rock" or "Paper" or "Scissor": Scissor

User choice = Scissor
```

```
Computer choice = Paper
User won the match!

Do you want to play again? Type "Yes" or "No" - No

Matches played = 9
Number of matches won by user = 2
Number of matches won by computer = 4
Number of match tie = 3
```

5 Check for valid user input

- Scope for improvement: We can check if the user input is valid or not.

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[ ]: