COSC - Research Wing

Problem List-1

All the programs should be solved in Python3

1. Write a program that asks the user how many Fibonacci numbers to generate and then generates them ?(Hint: The Fibonacci sequence is a sequence of numbers where the next number in the sequence is the sum of the previous two numbers in the sequence. The sequence looks like this: 1, 1, 2, 3, 5, 8, 13)

2. Make a two-player Rock-Paper-Scissors game. (Hint: Ask for player plays (using input), compare them, print out a message of congratulations to the winner, and ask if the players want to start a new game)

Remember the rules:

Rock beats scissors
Scissors beats paper
Paper beats rock

3. Ask the user for a string and print out whether this string is a palindrome or not. (A palindrome is a string that reads the same forwards and backwards.)
note: use only loops, not inbuilt functions.

4. Write a Python program to count the number of characters (character frequency) in a string.

5. Write a Python function that takes a list of words and returns the length of the longest one.

6. Write a Python function to find the Max of three numbers.

7. Write a program which will find all such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200 (both included).
The numbers obtained should be printed in a comma-separated sequence on a single line.

Hints:

Consider use range(#begin, #end) method

8. Define a class named Shape and its subclass Square. The Square class has an init function which takes a length as argument. Both classes have a area function which can print the area of the shape where Shape's area is 0 by default.

Hints:

To override a method in super class, we can define a method with the same name in the super class.