Python Programming Assignment # 1

Instructions

For each of the following problems, create a flowchart and write an error free efficient Python program. Each flowchart and program should be submitted in a separate word document and Python file respectively that follows a particular naming convention. (E.g. The flowchart for Question 1 should be in pdf file Assign1Answer1.pdf and Python program should be in .py file with name Assign1Answer1.py. The flowchart for Question 2 should be in pdf file Assign1Answer2.pdf and Python program should be in .py file with name Assign1Answer2.py. The program should execute properly either in PyCharm or in Jupyter Notebook)

Submit your assignment by Monday 17 September 2018 EoD.

Problems

Problem 1: (3 points)

Take a number as input from a user. Depending on whether the number is even or odd, print out an appropriate message to the user. Hint: how does an even / odd number react differently when divided by 2?

Problem 2: (3 points)

Take a list, say for example this one:

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a = [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]
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Write a program that asks the user for a number and return a list that contains only elements from the original list a that are smaller than that number given by the user.

Problem 3: (3 points)

Create a program that asks the user for a number and then prints out a list of all the divisors of that number. (If you don't know what a divisor is, it is a number that divides evenly into another number. For example, 13 is a divisor of 26 because 26 / 13 has no remainder.)

Problem 4: (3 points)

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. E.g. abcba, abcddcba)

Problem 5: (3 points)

Write a program that prints first 10 prime numbers. (Prime number is a whole number greater than 1 whose only factors are 1 and itself. A factor is a whole numbers that can be divided evenly into another number. The first few prime numbers are 2, 3, 5, 7, 11, 13, 17, 19, 23 and 29.)