Exercise 12: Functions, Modules and Packages [5/08/2019]

Note:

Write each program in separate python file and also prepare a MS Word document with problem, solution and output.

Save your program files in Z:\Python\Ex12\Prg<no>.py

for Every function, module and package create the docstring and also generate the documentation using pydoc

Functions

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Write a program to find cube of any number using function.

Write a program to find diameter, circumference and area of circle using functions.

Write a program to find maximum and minimum between two numbers using functions.

Write a program to check whether a number is even or odd using functions.

Write a program to check whether a number is prime, Armstrong or perfect number using functions.

Write a program to find all prime numbers between given interval using functions.

Write a program to print all strong numbers between given interval using functions.

Write a program to print all Armstrong numbers between given interval using functions.

Write a program to print all perfect numbers between given interval using functions.

Recursion

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Write a program to find power of any number using recursion.

Write a program to print all natural numbers between 1 to n using recursion.

Write a program to print all even or odd numbers in given range using recursion.

Write a program to find sum of all natural numbers between 1 to n using recursion.

Write a program to find sum of all even or odd numbers in given range using recursion.

Write a program to find reverse of any number using recursion.

Write a program to check whether a number is palindrome or not using recursion.

Write a program to find sum of digits of a given number using recursion.

Write a program to find factorial of any number using recursion.

Write a program to generate nth Fibonacci term using recursion.

Write a program to find GCD (HCF) of two numbers using recursion.

Write a program to find LCM of two numbers using recursion.

Write a program to display all array elements using recursion.

Write a program to find sum of elements of array using recursion.

Write a program to find maximum and minimum elements in array using recursion.

Lambda Functions

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Modules and Packages

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Create a Module which behaves like Math Module. Use this module in a program to invoke few or all of its functions.

Create a Module for all basic String Manipulation Functions. Use this module in a program to invoke few or all of its functions.

Create a module for list, tuple, set and dictionary Operations. Use this module in a program to invoke few or all of its functions.

Create a package consisting of three modules A, B and C which have several functions of your choice into it. Use this package in a program to invoke few or all of its functions.

Create a package as per the following consisting of sub-packages and modules.