Assignment 2

Level 1 Beginner

Beginner means someone who has just gone through an introductory Python course. Expectation is that they can solve some problems with Level 1 or some of Level 2.

Level 2 Intermediate

Intermediate means someone who learned Python and has a relatively strong programming background from before with some knowledge of data structures and functions. Expected to solve Level 1 and Level 2 and some of Level 3

Level 3 Advanced

They should use Python to solve more complex problem using more rich libraries functions and data structures and algorithms. They are expected to solve all problems at Level 1, Level 2 and most of Level 3 (if not all) using several Python standard packages and advanced techniques.

Problems

Problem 1 (Level 1)

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.

Problem 2 (Level 1)

Write a program which accepts a sequence of comma-separated numbers from console and generate a list and a tuple which contains every number.

Suppose the following input is supplied to the program: 34,67,55,33,12,98 Then, the output should be: ['34', '67', '55', '33', '12', '98'] ('34', '67', '55', '33', '12', '98')

Problem 3 (Level 2)

Write a program that calculates and prints the value according to the given formula: Q = Square root of [(2 * C * D)/H] Following are the fixed values of C and H: C is 50. H is 30. D is the variable whose values should be input to your program in a comma-separated sequence.

Example Let us assume the following comma separated input sequence is given to the program: 100,150,180 The output of the program should be: 18,22,24

Hints: If the output received is in decimal form, it should be rounded off to its nearest value (for example, if the output received is 26.0, it should be printed as 26) In case of input data being supplied to the question, it should be assumed to be a console input.

Problem 4 (Level 2)

Write a program that accepts sequence of lines as input and prints the lines after making all characters in the sentence capitalized.

Suppose the following input is supplied to the program: Hello world Practice makes perfect Then, the output should be: HELLO WORLD PRACTICE MAKES PERFECT

Problem 5 (Level 3)

You are given an array of distinct integers number, sorted in ascending order, and an integer target.

Implement a function to search for target within numbers. If it exists, then return its index, otherwise, return -1

Example:

Input: nums = [-1,0,2,4,6,8], target = 4, Output: 3
Input: nums = [-1,0,2,4,6,8], target = 3, Output: -1