

IT 166 Lab 7

Please provide solutions to the problems below.

Problem 1

Use a Python loop to compute:

$$1 + 2 - 3 + 4 - 5 + \dots - 99 + 100$$

Problem 2

Define a Python function, named “difference”, which takes a list of numbers as the input. The function computes the difference between two numbers and save all the differences into a difference list. The function returns the list in the end.

Ex.: Suppose the list is [1,2,3,4], the differences are computed as: 2-1,3-2, and 4-3, such that the different list is [1,1,1].

Problem 3

Define a Python function that computes the volume of a sphere, given the sphere’s radius. The formula for calculating the volume of a sphere is given as:

$$\frac{4}{3}\pi r^3$$

The function returns the volume in the end.

Provide a couple of testing examples using the function.

Problem 4

You are given a Python dictionary of people’s names and their ages. Write a Python program that can help you find out who is the oldest and who is the youngest at the same time. (Do not hard-code the solution.)