Inspiring Excellence

Course Title: Programming Language I

Course Code: CSE 110

Assignment no: 1

Attention

Students must ensure that they have collected the lab login credentials (it is not the G-suite account) before attending the lab to access the lab computers. The login information was sent to students' USIS-registered email addresses. If not found, students should request login information by emailing support@bracu.ac.bd or visiting University Building # 2, Level 18.

Before getting started…

Since all the lab tasks require students to write codes in Python to solve the problems, students must ensure that a proper Python environment and IDE (e.g. Jupyter Notebook) are set up or have a stable internet connection to use Google Colaboratory - an online Notebook-style IDE for writing Python codes.

Jupyter Notebook:

Tutorial: https://www.youtube.com/watch?v=_GQd1jwH0A4

Download Link: https://www.anaconda.com/products/distribution

Google Colaboratory:

Link: https://colab.research.google.com/

Slack: https://join.slack.com/t/cse110summer2023/signup

buX:
https://bux-home.bracu.ac.bd/courses/course-v1:buX+CSE110+2023_Summer/about

Task 1

Write a Python program that prints "hello world" in a console.

Sample Input	Sample Output
	hello world

Task 2

Write a Python program that prints the summation of 54 and 56. The program must use Python operators and numbers but not use any variables.

Sample Input	Sample Output
	110

Task 3

Write a Python program that assigns the values "Summer" and 2023 to variables `season` and `year` respectively. Then, print the values of both variables in separate lines.

Sample Input	Sample Output
	Summer 2023

Task 4

Write a Python program that reads the user's name and prints it back as shown in the examples below.

Sample Input	Sample Output
John	Your name is John
Albert	Your name is Albert

Task 5

Write a Python program that reads two integers M and N respectively and finds the value of M^N (or M^N) and prints the value exactly as shown in the examples below. Your code should work correctly for any other sample inputs.

Sample Input	Sample Output
2 3	2^3: 8
10 3	10^3: 1000

Task 6

A sailor has a boat known as Téssares Boat, which has four corners. The boat is capable of carrying goods of any weight as long as there is equal distribution of loads on each corner of the boat - the center area has been occupied by the engine. The sailor needs your help to know the maximum amount of weight he can carry in each shipment.

Write a Python program that reads the total weight of the shipment and prints the maximum load (or weight) the boat can take from the given shipment. We can assume that the weight of each good is exactly 1 unit, therefore, the weight of 5 units means there are 5 (loose) items in the shipment.

Sample Input	Sample Output
9	8
11	8
23	20

Task 7

Write a Python program that reads 3 integers **A**, **B**, and **C** respectively, and then reads a floating point number **D**. After reading, the program should print the result (as int) using the given formula below.

Formula110: $A^C + B * A - \frac{D}{3}$

Sample Input	Sample Output
2 6 8 1.3	267
9 100 1 3.7	907
88 22 1 3.3	2022

Task 8

Write a python program that takes an integer from the user which represents the number of chocolates that he/she has. He/She decided to distribute the chocolates equally among 3 friends, keeping the remaining chocolates for him/herself. Find out the number of chocolates each friend will receive and the number of chocolates that will be remaining.

Sample Input 1:

50

Sample Output 1:

Each friend will receive 16 chocolates

The number of remaining chocolates is 2

Sample Input 2:

90

Sample Output 2:

Each friend will receive 30 chocolates

The number of remaining chocolates is 0

Optional (9 - 11) [Ungraded]

These tasks are just for practice. No marks will be deducted for not completing them and no bonus marks will be given for solving them. Just try and practice these problems.

Task 9

Write a Python program that reads two values M and N from the user respectively and prints the result by joining (concatenating) them in a bottom-up approach as shown in the following example.

Sample Input	Sample Output
5 2	25
Hello World	WorldHello
Python 3	3Python

Task 10

Write a Python program that takes an integer, a float, and another integer number as input from the user and prints the result as shown below. At first, add the first integer number to the float and then concatenate the third input integer number.

Sample Input	Sample Output
3 11.57 7	The inputs: 3, 11.57, 7 The result is 14.577
33 1.9 753	The inputs: 33, 1.9, 753 The result is 34.9753

Task 11

Write a Python program that reads an integer and prints "**True**" if the number is even, otherwise, "**False**". [Need concept of branching/conditional statements/if-else statements to solve this. These topics may not have been discussed in class yet. Try to solve it if you can.]

Sample Input	Sample Output
7	False
0	True
-11	False
-26	True

Next lab
Branching