

Programming Fundamentals LAB – Spring 2022
(BS-IT-F21 Morning)

Lab # 2

Instructions:

- **Attempt the following tasks exactly in the given order.**
- **Indent** your pseudo-code properly.
- Use meaningful variable names. Use the **camelCase** notation to name variables.
- Use meaningful prompt lines/labels for all input/output that is performed by your algorithms.

You are required to write the **C program** for each of the following tasks:

Task # 1

Design an algorithm that asks the user to enter a 3-digit positive integer. Then, the algorithm should calculate and display the sum of the digits of that integer. For example, if the user enters 786, then your algorithm should display 21 on the screen.

Enter a 3-digit positive integer:786

The sum of the digits is: 21

Task # 2

Design an algorithm that asks the user to enter a 3-digit positive integer, and stores its reverse in another variable, and then, displays both integers on screen.

Sample Run:

Enter a 3-digit positive integer:123

Its reverse is: 321

Task # 3

Write a program that converts seconds to minutes and seconds.

Sample Run:

Enter seconds: 125

Its equivalence to

Minutes: 2

Seconds: 5

Task # 4

Design an algorithm that asks the user to enter the first number of a series and the difference between the numbers, and then display the first five numbers of the series. The sample run is shown below.

Enter the first number of series: 7

The difference in consecutive numbers: 3

The First 5 numbers of the series are: 7, 10, 13, 16, 19

Task # 5

Design an algorithm that asks the user to enter a character and then display the next five consecutive characters. The sample run is shown below.

Enter a character: D

The next five characters are: E, F, G, H, I

Task # 6

Design an algorithm that takes two integers from the user, displays them on screen, **swaps** them, and again displays them on screen.

Sample Run:

Enter First integers: 23

Enter second integers: 99

After Swap

Enter First integers: 99

Enter second integers: 23

Task # 7

Suppose a retail business sells an item that is regularly priced at \$ 59.95, and its planning to have a sale where the item's prices will be reduced by 20 percent. Now write a program that calculates the sale price of an item. A sample run of the program is shown below

Regular price: \$ 59.95

Discount amount: \$ 11.99

Sale price: \$ 47.96

Task # 8

Write a program that calculate the diameter, area, and circumference of a circle. Sample Run of the program is given below:

Please enter the radius of the circle: 5

The diameter of the circle is:10

The area of the circle is: 78.5

The circumference of the circle is: 31.4

Friday, August 26, 2022.