Laboratory 02 – 19.10.2021

1) 5pkt. Write a C program to convert specified days into years, weeks and days.
Note: Ignore leap year.

a) Declare a variable that holds the number of days. Initialize it with 1329.
b) Declare a variable that holds the number of years. Assign this variable the value of an expression that calculates a number of years based on the number of days.
c) Declare a variable that holds the number of weeks. Assign this variable the value of an expression that calculates the number of weeks based on the number of days.
d) Calculate the number of days.
e) List the number of years, weeks and days.

Test Data:
Number of days: 1329
Expected Output: Years: 3, Weeks: 33, Days: 3

2) 5pkt. Write a C program to calculate the distance between the two points.

Distance Formula: Given the two points (x_1, y_1) and (x_2, y_2), the distance d between these points is given by the formula:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

a) Declare 4 variables of the appropriate type and then assign them values: x1 = 25, y1 = 15, x2 = 35, y2 = 10.
b) Declare the variable d and assign it a distance value using the formula above.
c) To calculate the square root, call sqrt() from math.h.
d) Print the result on the screen by calling printf() from stdio.h

Test Data:
Input: x1=25, y1=15, x2=35, y2=10
Expected Output: Distance between the said points: 11.180340

3) 5pkt. Write a C program that sums the digits of a three-digit number.
a) Declare an integer variable and assign it any value from 100 to 999.
b) Print the number on the screen.
c) Declare the variable to which you will assign the value of the first digit.
d) Declare the variable to which you will assign the value of the second digit.
e) Declare the variable to which you will assign the value of the third digit.
f) Print first, second and third digits.
g) Calculate and print their sum.

Test Data:
3-digit number = 461

First Digit = 4
Middle Digit = 6
Last Digit = 1

Sum of All 3-Digits = 11

4) 5pkt. Write a C program that swaps two numbers **without** using third variable.

a) Declare two integers x and y and assign them the values 5 and 7, respectively.
b) Print the values of x and y to the screen.
c) Three assignments are required to swap the values of the variables x and y.
The values of variables can be swapped with one addition and two subtractions.
d) Print the values of the variables x and y after the swap..

Test Data:
Before swapping the value of x = 5, y = 7
After swapping the value of x = 7, y = 5

Next lab – if statement