TP3-Condition 1

Lab's objectives:

- Getting input and display output via **printf** and **scanf**
- Using variables
- Using condition (if, else if, …, else) to control the flow of the program

Deadline: 6 days

Problem1- Write a C program to get a number from a user. The program tells us whether this input number is a positive or a negative number.

INPUT:

Enter a number: -100

OUTPUT:

-100 is a negative number.

Problem2- Write a C program to get a number from a user. The program tells us whether this input number is either one of the following categories below: A) negative and odd numbers, B) negative and even numbers, C) positive and odd numbers, and D) positive and even numbers.

INPUT:

Enter a number: 50

OUTPUT:

It is in the category D because it is a positive number and it is also an even number.

Problem3- Write a C program to ask a user for 7 numbers (7 variables). Find the minimum number and display on screen.

INPUT:

Enter number #1: 2
Enter number #2: 99
Enter number #3: 1
Enter number #4: 2
Enter number #5: 9
Enter number #6: -7
Enter number #7: 5

OUTPUT:

The minimum number is -7.

Problem4- Write a C program to ask a user for 10 numbers (10 variables). What are the max and min numbers among these 10 numbers?

INPUT:

Enter number #1: 10
Enter number #2: 15
Enter number #3: 33
Enter number #4: 5
Enter number #5: 0
Enter number #6: 45
Enter number #7: 2
Enter number #8: 4
Enter number #9: 6
Enter number #10: 8

OUTPUT:

Among these 10 numbers (10, 15, 33, 5, 0, 45, 2, 4, 6, 8), the max is 45 and the min is 0.

Problem5- Write a C program to solve the quadratic equation. $ax^2 + bx + c = 0$.
Ask a user to input the coefficients a, b and c. The program calculates delta and find roots of the equation. Display the result (roots of the equation) on screen.

INPUT:

Input a: 1
Input b: 4
Input c: 3

OUTPUT:

The delta value of this equation equals 4.
So this equation has two roots: $x1 = -1$ and $x2 = -3$

Remark: Make sure you verify the result from the program whether it is correct if we do it manually by hand.

Problem6- Write a C program to tell how much tax a person should pay based on his/her salary and gender. The program ask a user for gender, name, and salary (US dollar). The tax is computed according to the following rules:

-pay tax 10%, for male and his salary is more than 400 USD.
-pay tax 5%, for male and his salary is from 200 USD to 400 USD.
-pay tax 5%, for females and her salary is more than 500 USD.
-pay tax 3%, for females and her salary is from 250 USD to 500 USD.
-Otherwise, no need to pay tax.

INPUT:

Enter gender: F
What is your name?: Sokha
Your salary in USD: 450

Output:

Hi Dara, based on your given information, the tax salary that
You need to pay: 13.5 USD.

Problem7- Write a C program to compute the average score of a student over 3 subjects Math, English and Computer. Then tell which grade this student could get. The grading is based on the following rules:

Average score:	**Grade**
86 - 100	A
81 - 85	B
70 - 80	C
61 - 69	D
50 - 60	E
Below 50	F

INPUT:

Math score: 75.5
English score: 90
Language score: 85.5

Output:

Average score is: 83.66
This student gets grade B.