Practical Work 2

Conditional statements (if..else, switch)

Exercise 1:

1. Write the C program that reads a number and displays either it is an odd or even one.
2. Write the C program that reads three numbers, then it displays their maximum.
3. Write the C program that calculates the ideal weight based on the height of the person entered in centimeters using the following formula:

   Ideal Weight (IW) = (height in cm - 100) - (height cm - 150)/f,
   where f = 4 for males, f = 2.5 for females.

Exercise 2:

Write the C program that solves the second order equation, $aX^2+bX+c = 0$; where a, b, and c are numbers given by the user.

Exercise 3:

Write the C program that:

a. Asks the user if he wants to calculate the area of a circle, a square, or a rectangle
b. Allows the user to corresponding input data
c. Displays the result.

Practical Work 3

Loops (for, while, repeat)

Exercise 1: (for loop)

1. Write the C program that asks for a number N, and calculates the sum of the integers up to this number.
2. Write the C program that asks for a number N, then calculates the N^{th} term U_N of the Fibonacci sequence given by the recurrence relation:

   $U_1=1$

   $U_2=1$

   $U_N=U_N\text{-}1 + U_{N-2}$ (where N>2).

Exercise 2: (while loop)

Write the C program that asks the user to enter a sequence of positive numbers, it computes their sum, when the user enters a negative number, the algorithm stops, with a limit of 10 consecutive entered numbers.

Exercise 3: (do .. while loop)

Write the C program that asks the user to enter a number, until the entered number is bigger to 10 or is odd. The user has a finite number of attempts (N=10).

Exercise 4: (nested loop)

Write the C program that prints N levels of Floyd triangle, defined as:

1
01
101
0101
10101