Practical Work 3

Loops (for, while, repeat)

Exercise 1:

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:

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

Exercise 3:

Write the C program that asks the user to guess a number. The user can make suggestions until he comes up with the right number or when he exceeds 5 attempts. Moreover, for each attempt, the algorithm guides the user whether the suggested number is bigger or lower than the number to guess.

Exercise 4:

Write the C program that prints N levels of Floyd triangle, defined as:
1
01
101
0101
10101