ICDT 1201Y

COMPUTER PROGRAMMING

LABSHEET 2 : Algorithms and Flowcharts

Activity 1. For each of the following scenarios,

a) **Write the pseudocode.**
b) **Draw a flowchart to represent the algorithm.**

Scenario 1:
Gavin wants to calculate the area of his rectangular garden. He can tell you the length and width of the garden and wants to know the area to buy enough grass seeds.

Scenario 2:
Zarine is writing a program to help her younger brother identify if a number is even or odd for his math homework.

Scenario 3:
Somveer has been punished by his teacher and as punishment, he has been asked to calculate the sum of the first 100 natural numbers within 10 minutes. He has asked you to help him write a program that will do this automatically.

Scenario 4:
Alfred enjoys sleeping and has recently been gifted a smartwatch for Christmas 2023, which keeps track of his sleep duration on a daily basis. Following the first full month of wearing his smartwatch, he wants to know on which date he slept the least.

Scenario 5:
Rikki is a very competitive student and he wants to create a program to calculate student grades based on their scores. The grading criteria are as follows: A for scores 90 and above, B for scores 80-89, C for scores 70-79, D for scores 60-69, and F for scores below 60.

Activity 2. For each of the scenarios in Activity 1, try to write the corresponding python codes. The aim is not to necessarily get them right (this is just an exploratory exercise at the moment and will be explained during future lectures).