Software and Embedded System Lab 2 (ELEE08022)

Making Decisions, Selection & Repetition in C language

1. All years that are divisible by 400 or by 4 and not by 100 are leap years. Write a C program which accepts a year as input and displays an appropriate message which informs the user whether or not the year is a leap year.

2. Design, write and test a program which reads in a list of examination marks (one per line) until a mark greater than 100 is entered. Your program should then print out the **total** of the marks entered and the average (arithmetic mean) mark. When that is working, convert it to calculate the *geometric mean*.

3. Making use of a **`switch`** statement (based on the *month*) to write a program to read in a month and day. Your program should then print out an appropriate error message ONLY when an invalid date is input. (Ignore leap years!)

4. A bowling team consists of five players. Each player bowls three games. Write a C program that uses a nested loop to enter each player's individual scores and then computes and displays the average score for each bowler (over their three games) and the average team score (average of bowler's averages!). Assume that each bowler has the following scores:

	Game 1	Game 2	Game 3
1st bowler:	286	252	265
2nd bowler:	212	186	215
3rd bowler:	252	232	216
4th bowler:	192	201	235
5th bowler:	186	236	272

5. Write a program which declares an array named **`slopes`**, with its elements initialised (in the declaration statement) to the following list of values: **`17.24, 25.63, 5.94, 33.92, 3.71, 32.84, 35.93, 18.24, 6.92`**. Your program should search through the array, to find *both* the *maximum* and *minimum* values in the array, and then print those values. Remember to use flowchart or pseudocode to plan the algorithm for your program, along with the variables needed, in your daybook, *before* trying to write any C language code.