Spot Exercise for Expt. No. 1 – Algorithms / Flowchart

An engineering laboratory wants to monitor an experimental machine for N operating cycles. During every cycle, the operator enters the machine's temperature and vibration level. A cycle is classified as:

- Safe – temperature and vibration are both within limits.
- Temperature Alert – temperature exceeds its limit.
- Vibration Alert – vibration exceeds its limit.
- Critical – both temperature and vibration exceed their limits.

Develop an algorithm and flowchart that processes all N cycles and produces the number of cycles in each category.

Spot Exercise for Expt. No. 6 – Defining and Using Arrays

A faculty member wants to develop a simple program to maintain the marks obtained by a student in N assessment tests conducted during a semester. The value of N is entered by the user. The program must store the marks because the faculty member wants to review the complete assessment history after all marks have been entered. Design and implement a C program using a **one-dimensional array** that:

1. Declares an array capable of storing N assessment marks.
2. Accepts the marks for all assessments.
3. Displays each assessment number along with the corresponding mark.
4. Calculates the total marks.
5. Calculates the average mark.
6. Displays the deviation of each assessment mark from the calculated average.