Problem Statement: University Attendance Calculator

Objective

Develop a command-line application to help university students track their attendance for two types of courses: **Theory** and **Lab**. The application should calculate their current attendance percentage and advise them on how many classes they can afford to miss or must attend to meet the university's 75% attendance requirement.

Background

A university has a strict policy requiring students to maintain at least **75% attendance** in every course to be eligible to sit for the final examinations. Students often struggle to keep track of their attendance and are unsure how many classes they can skip without falling below the requirement, or how many they need to attend to compensate for a shortfall.

The university offers two kinds of courses:

1. **Theory Classes**: Standard one-hour lectures.

2. **Lab Classes**: Practical sessions where one lab session is equivalent to two theory class hours.

Functional Requirements

1. **Calculator Selection**:

   o   On startup, the program must prompt the user to choose between the "Theory Calculator" and the "Lab Calculator."

2. **Theory Attendance Calculator**:

   o   **Input**:

      ▪   The total number of theory classes conducted so far.

      ▪   The number of theory classes the student has attended.

   o   **Processing**:

      ▪   Calculate the student's current attendance percentage.

      ▪   If the attendance is **75% or above**, calculate the number of upcoming classes the student can skip while still maintaining at least 75% attendance. The formula is: Skippable Classes = floor((4 * Attended) / 3) - Total.

      ▪   If the attendance is **below 75%**, calculate the number of consecutive classes the student must attend to reach the 75% mark. The formula is: Classes Needed = (3 * Total) - (4 * Attended).

   o   **Output**:

      ▪   Display the current attendance percentage.

      ▪   Display a message indicating either the number of classes they can skip or the number of classes they need to attend.

3. **Lab Attendance Calculator**:

- o **Input**:

  - The total number of theory-equivalent hours for the lab course (e.g., if 10 labs of 2 hours each were conducted, the input would be 20).

  - The number of theory-equivalent hours the student attended.

- o **Processing**:

  - Convert the theory-equivalent hours into the number of labs by dividing by 2 (Total Labs = Total Hours / 2).

  - Perform the same attendance calculations as the theory calculator, but based on the number of labs instead of classes.

- o **Output**:

  - Display the current lab attendance percentage.

  - Display a message indicating either the number of labs they can skip or the number of labs they need to attend.

4. **Error Handling**:

  - o The application must handle invalid inputs gracefully. This includes:

    - Non-numeric inputs.

    - Negative numbers for totals or attended classes.

    - Attended classes/hours being greater than the total classes/hours.

    - For the lab calculator, inputs that are not even numbers.

  - o In case of an error, display a clear and informative error message to the user.