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| **Object Oriented Programming Lab 08** | | | |
| **Course Code:** | COMP-112L | **Class** | CS (B) |
| **Lab Engineer** | Laiba Khalid | **Semester** | 2nd |
| **Lab Title** | C++ Classes | **Section** | - |
| **Name** |  | **Reg no.** |  |
| **Content Covered** | Inheritance | | |
| **Instructions:**  • Submit the file with your names following your registration numbers like AI001\_Name.  • Submit soft copy of the report before deadline. Marks will be deducted for late submissions. | | | |

**Lab Tasks**

**Real-Life Case Scenario:**

**Student Management System:**

You are developing a **Student Management System** for a university. The system must store student details, including **name, roll number, and GPA**. To ensure data security, the roll number and GPA must be private and should only be accessed or modified using getter and setter methods.

Task:

1. Create a Student class with the following attributes:
   * Private: rollNumber (integer), gpa (double)
   * Public: name (string)
2. Implement the following functions:
   * Setters:
     + setRollNumber(int) → Assigns roll number (must be a positive value).
     + setGPA(double) → Assigns GPA (must be between 0.0 and 4.0).
   * Getters:
     + getRollNumber() → Returns roll number.
     + getGPA() → Returns GPA.
   * Other Functions:
     + displayStudentDetails() → Prints student details.
3. In the main function, create a Student object, set values using setters, and display details using the displayStudentDetails() function.