

# CHECK MY GRADE APP

## FUNTIONALITY

The "Check My Grade App" is a console-based application designed to manage student grades and related academic information.

Here's a summary of its functionality:

### Core Functionality:

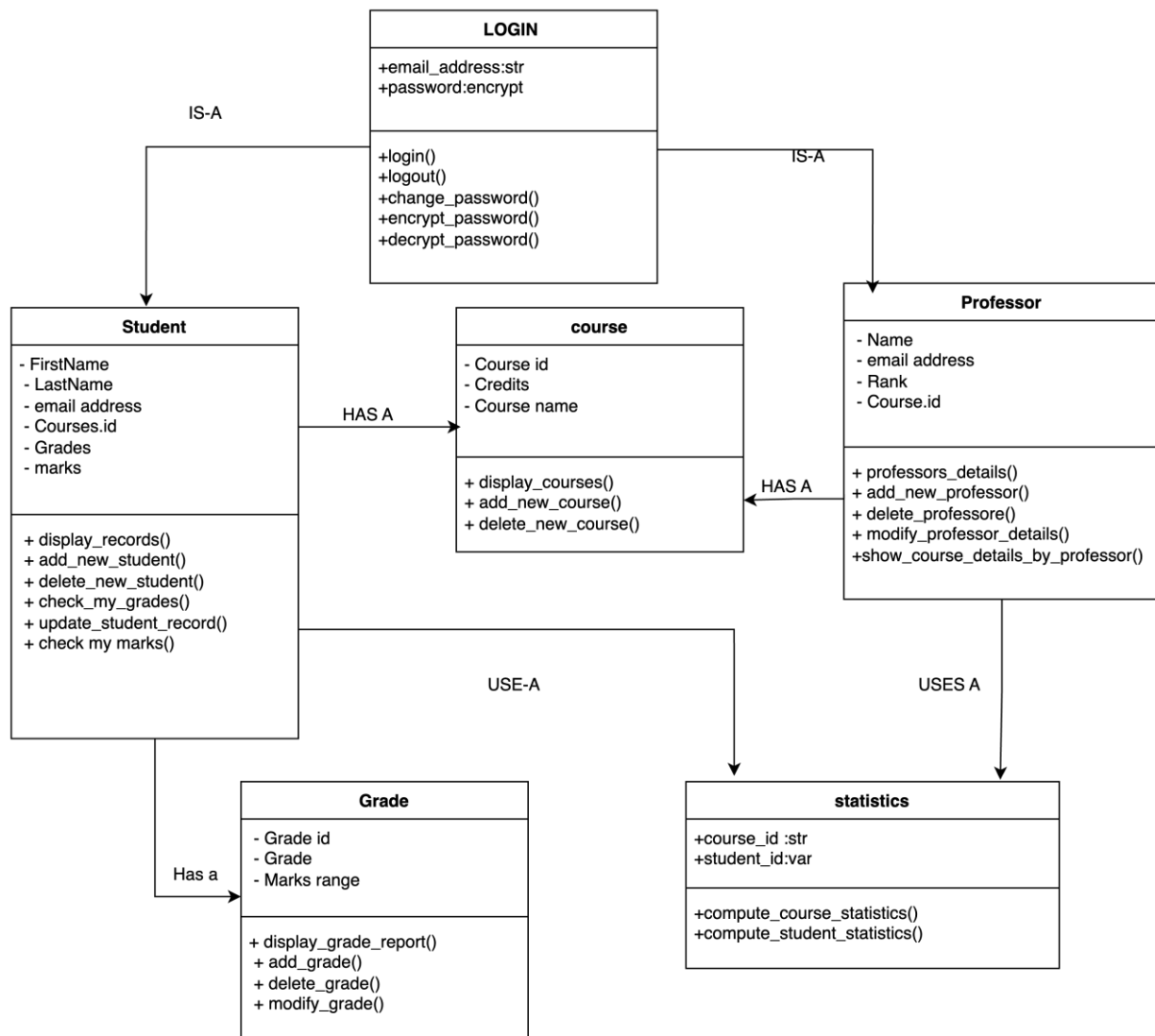
- **User Authentication:**
  - Users can create accounts (signup) with different roles: student, professor, or admin.
  - Users can log in with their credentials.
  - Passwords are encrypted for storage.
- **Role-Based Access:**
  - The application provides different functionalities based on the user's role.
    - **Admin:**
      - Adds and manages student, professor, course, and grade data.
      - Deletes student, professor, course, and grade data.
      - Generates student scores.
    - **Student:**
      - Views their own and other students' details.
      - Searches for students.
      - Views course details.
      - Views grade details.
      - Generates student reports.
      - Can view course information.
    - **Professor:**
      - Views professor details.
      - Search for professors.
      - Views course details.
      - Views grade details.
      - Generates professor reports.
      - Can update course information.
      - Can view course information.
- **Data Management:**
  - Data is stored and retrieved from CSV files.

- The application manages students, professor, course, and grade information.
- **Reporting and Statistics:**
  - Generates reports for students, professors, and courses.
  - Computes statistical data (mean, median, mode, standard deviation) for student scores and course grades.
- **Grade Computation:**
  - Compute grades based on marks and predefined grade ranges.
- **Search Functionality:**
  - Allows searching for students, professors, and courses.

In essence, the app provides a basic system for:

- Managing student and professor information.
- Tracking student grades and course data.
- Generating reports and statistical summaries.
- User authentication and role-based access.

**CLASS DIAGRAM:**



- **Classes:** The diagram represents the five main classes identified in the design of the "CheckMyGrade" application: Student, Course, Professor, Grades, and LoginUser.
- **Attributes:** Each class has specific data members (attributes) that define the information stored within that class. For example, the student class has attributes like FirstName, LastName, email address, etc.
- **Methods:** Each class also has member functions (methods) that define the actions that can be performed on the objects of that class. For example, the student class has methods like `display_records()`, `add_new_student()`, `delete_new_student()`, etc.