GRANDMA – Grading And Management System

**Essential Functions and Features**

1. Users and Roles

Purpose: To create a user and give it its authority and roles

Key functions:

1. registerUser(username, password, role)

Details: This function takes in a name and a password and registers the person into the database with their role. It uses a createStudentProfile(data) or createTeacherProfile(data) function.

1. login(username, password)

Details: Retrieves the user and generates a session if the password is the same as the stored one.

1. assignRole(userId, role)

Details: Changes and sets the roles (student, teacher, admin)

1. Student and Teacher Management

Purpose: To access, store, and update information about the user

Key functions:

1. createStudentProfile(data)

Details: Collects info about the student and adds a Student object in the database and assigns a user ID.

1. createTeacherProfile(data)

Details: Collects info about the teacher and adds a Teacher object in the database and assigns a user ID.

1. updateProfile (userId, updatedData)

Details: Changes the user’s data

1. Course and Class Management

Purpose: Handle the courses and the teachers and students involved

Key functions:

1. createCourse(courseData)

Details: Creates a Course object with the appropriate data. Also creates a unique ID for the course.

1. assignTeacherToCourse(coursed, teacherId)

Details: Link a teacher to a course.

1. enrollStudentInCourse(coursed, studentId)

Details: Add a student to a course.

1. removeStudentFromCourse(coursed, studentId)

Details: Remove a student from a course.

1. Assignment and Grading System

Purpose: Give teachers the ability to assign work, receive work, and assign grades.

Key functions:

1. createAssignment(coursed, assignmentData)

Details: Creates an Assignment object in a course with information for the student. Also creates an assignment Id to help identify the assignment.

1. submitAssignment (studentId, assignmentId, file)

Details: For the student to insert a file and submit assignment.

1. gradeAssignment(assignmentId, studentId, grade)

Details: Allows the teacher to grade the assignment that the student submitted.

1. getGradesForStudent(studentID)

Details: Returns the grades the student has received for all their courses.

1. Grade Calculation and Reporting

Purpose: Calculate the students’ grades and generate report cards

Key functions:

1. calculateFinalGrade(studentId, courseId)

Details: Returns the final grades for a student in a course. Apply the different percents of assignments (e.g., exams 40%, homework, 20%).

1. generateReportCard(studentId)

Details: Uses the calculateFinalGrade(studentId, courseId) and returns a list that can be formatted into a printable or downloadable report with all a student’s final grades for their courses.

1. Administrative Tools

Purpose: Tools to help admins manage the system

1. backupDatabase()

Details: Saves a copy of all the system data in case of a crash or corruption.

1. restoreDatabase(backupFile)

Details: Reloads the backup.

1. setGradingScale(scaleData)

Details: Modifies a list with the different thresholds (e.g., A = 90-100, b + 80 – 89)

1. Audit and Logging

Purpose: Tracks activities for security purposes

1. logUserAction(userId, actionType, timestamp)

Details: Tracks the user’s action. Stores this in a log file or table.

1. getAuditLog(userId)

Details: Allows the admin to see the audit logs with the user’s activity.