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**TECHNOLOGY**

**DEPARTMENT : B.TECH(IT)**

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**DATE : 19/09/2025**

**Completed The Project Named As**

**PHASE 1**

**NAME : IBM-MJ-STUDENT GRADING SYSTEM**

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Problem Understanding & Requirements

**Title:Student Greading System**

# Problem Statement

In educational institutions, grading students accurately and efficiently is essential for measuring academic performance and progress. Traditionally, grades are recorded manually using pen and paper or spreadsheets, which is time-consuming and prone to human error.

Teachers often spend excessive time calculating final grades and updating records, leading to delays in result announcements. Furthermore, students and parents have limited access to real-time academic data, causing frustration and communication gaps.

The lack of a centralized, digital grading platform results in:

* + Difficulty in managing large volumes of student data.
  + Inconsistent grade calculations.
  + Delays in grade publication.
  + Limited transparency and communication between teachers, students, and parents.

To overcome these challenges, a **Student Grading System** is required. This system will automate grade entry, calculation, and reporting, provide real-time access to grades, and ensure data integrity and security.

# Users and Stakeholders

## Primary Users

* + **Students**: Need to access their grades and monitor their academic performance to identify areas of improvement.
  + **Teachers**: Require a user-friendly interface to input, update, and calculate grades quickly and accurately.
  + **School Administrators**: Oversee the entire grading process, enforce grading policies, and generate reports for analysis.

## Secondary Users

* + **Parents/Guardians**: Desire to monitor their child’s progress to provide timely support and guidance.
  + **IT Support Team**: Responsible for system maintenance, user support, and data security.

## Stakeholder Interests

**Stakeholder Interest and Role**

Students Transparent, easy access to grades and progress

Teachers Efficient grading tools, reduce manual workload Administrators Accurate, comprehensive reports and analytics

Parents Insight into child’s performance (optional access) IT Team Reliable system uptime, security, and data privacy

# User Stories

## Teachers

* + **Story 1:** As a teacher, I want to securely log into the system to access my class list and grading tools.
  + **Story 2:** As a teacher, I want to input assignment and exam scores for my students to keep records up to date.
  + **Story 3:** As a teacher, I want the system to automatically calculate final grades based on weighted scores so that I can reduce errors.

## Students

* + **Story 4:** As a student, I want to view my grades and overall performance so I can understand my academic standing.
  + **Story 5:** As a student, I want to receive notifications when new grades are posted.

## Administrators

* + **Story 6:** As an administrator, I want to generate reports on student performance by class, grade, or subject to monitor academic trends.
  + **Story 7:** As an administrator, I want to manage user roles and permissions to ensure system security.

## Parents (Optional)

 **Story 8:** As a parent, I want to access my child’s grades to support their learning journey.

# MVP Features

## User Authentication and Role Management

* + Secure login for different user types: students, teachers, administrators, and optionally parents.
  + Role-based access control to limit functionality based on user roles.

## Grade Management

* + Interface for teachers to enter grades for assignments, quizzes, exams, and projects.
  + Automated calculation of weighted final grades based on predefined grading policies.

## Student Dashboard

* + Personalized dashboard showing current grades, class rank, and academic progress.  Access to grade history for each subject.

## Administrative Tools

* + Generate downloadable reports (PDF, Excel) on student performance at class, subject, and school levels.
  + User management for adding, updating, or removing users.

## Notifications

* + Email and in-app notifications to inform students about new grades or updates.

# Wireframes / API Endpoint List

## Wireframes (Descriptions)

**Page Description**

**Login Page** Fields for username and password, with role selection dropdown.

**Teacher Dashboard** List of classes, student roster, and grade entry form.

**Student Dashboard** Displays grades by subject, progress charts, and notifications. **Admin Dashboard** User management, report generation, and system settings.

## API Endpoints

**HTTP**

|  |  |
| --- | --- |
| **Endpoint**  **Method** | **Purpose Access** |
| /api/auth/login POST | Authenticate users and issue tokens All users |

|  |  |
| --- | --- |
| /api/users GET | Retrieve user list Admin |
| /api/grades GET | Teacher,  Fetch grades for a student or class  Student |
| /api/grades POST | Submit or update grades Teacher |
| /api/grades/finalize POST | Calculate final grades based on  Teacher  weights |
| /api/reports GET | Generate performance reports Admin |

**HTTP**

**Endpoint Purpose Access Method**

/api/notifications GET Fetch notifications for users All users

# Acceptance Criteria

* + **Authentication**: All users must securely log in and only access data permitted by their role.
  + **Grade Input**: Teachers can enter, edit, and submit grades without errors.
  + **Grade Calculation**: Final grades are correctly calculated according to weighted criteria.
  + **Student Access**: Students can view up-to-date grades immediately after teachers input data.
  + **Report Generation**: Administrators can generate accurate reports filtered by class, subject, or student.
  + **Notification System**: Students receive notifications when grades are updated.
  + **Security**: Sensitive data is encrypted, and access is restricted to authorized users only.
  + **Usability**: Interfaces are intuitive and responsive across devices (desktop, tablet, mobile).
  + **Performance**: The system can handle simultaneous users without significant delays.