**Project Proposal: Student Grade Management System**

**Project Overview:**

This **Student Grade Management System** allows educators or administrative staff to manage student information, store grades, and perform basic operations such as calculating averages, finding highest and lowest grades, and updating grades. It uses simple arrays (via vectors) to store and process student data.

**Key Features:**

1. **Add Student**: Allows input of student name, ID, and grades.
2. **View Students**: Displays a list of all students with their grades.
3. **Calculate Average**: Calculates the average grade for a student.
4. **Find Highest Grade**: Finds the highest grade among all students.
5. **Find Lowest Grade**: Finds the lowest grade among all students.
6. **Update Grades**: Allows updating grades for a specific student.

**Technologies:**

* **Language**: C++
* **Data Structure**: Arrays (using vectors in C++ for dynamic storage)
* **Tools**: Any C++ IDE (Visual Studio, Code::Blocks, etc.)

**Target Audience:**

* Educational institutions like schools, colleges, and universities.
* Teachers, professors, and administrative staff.

**How the System Works:**

1. **Add Student**: Users can input a student’s name, ID, and grades. Grades are stored in a vector.
2. **View Students**: View a list of all students with their grades.
3. **Calculate Average**: Input a student ID, and the system calculates their average grade.
4. **Find Highest and Lowest Grade**: The system checks all grades and identifies the highest and lowest.
5. **Update Grades**: Update a student’s grades by entering their ID.

**System Workflow:**

* Users interact with a text-based menu where they can select what action to perform (e.g., add a student, view grades, etc.).

**Possible Extensions:**

1. **Export Data**: Allow exporting student data to a file.
2. **Weighted Grades**: Add an option to give different weight to subjects.
3. **Graphical Interface**: Create a GUI for a more user-friendly experience.

**Timeline:**

| **Task** | **Estimated Time** |
| --- | --- |
| Requirement Analysis & Design | 1 Week |
| Develop Core Features | 2 Weeks |
| Testing & Debugging | 1 Week |
| Documentation & Presentation | 1 Week |
| **Total** | 5 Weeks |

**Conclusion:**

The **Student Grade Management System** is a simple and efficient way for educators to manage student grades. With features like grade calculation and updating, it offers a useful tool for educational staff.

This simplified version gives an overview of the project, its goals, and its basic functionality.