# Project Plan: AI-Powered Prediction Tool

(A grade predictor-style application in a non-education sector)

Each team member will take on a specialised role to ensure efficient workflow and task division:

### Project Manager & UI/UX Lead [Ajay & Zach]

* Builds the GUI
* Designs the UI in JavaFX
* Assists in debugging and refining app logic.

### AI Developer [Yu]

* Integrates the model into the Java application.
* Quality Assurance & Documentation
* Documents project requirements, user guides, and API usage.

### Backend Developer [Herro]

* Sets up data storage (database or file-based system).
* Connects the GUI to the backend.
* Manages user input processing and retrieval.
* Implements APIs and data handling functions.
* Implements user authentication (login/signup).

### Frontend Developer [Ajay and Zach]

* Ensures smooth UI interaction.
* Manages user experience and usability testing.
* Creates test cases and ensures functionality works as expected.
* Assists in debugging and refining app logic.

## **Development Timeline & Checkpoints**

### **Phase 1: Planning & Setup**

* Define the project scope, sector, and key functionalities.
* Finalize tech stack (Java, JavaFX, ML library, database).
* Assign team roles and set up Git repository & task tracker.
* Research dataset sources & gather initial data for testing.

### **Phase 2: Core System Development**

#### Backend & Database Setup

* Design database schema for storing user data & predictions.
* Implement authentication system (sign-up/sign-in).
* Build basic backend structure with data handling functions.

#### Frontend UI Prototyping

* Create wireframes/mock-ups for the JavaFX UI.
* Develop basic navigation flow (home screen, input forms, results display).
* Connect UI elements to backend functions.

#### Model Integration & API Handling

* Embed trained AI model into the Java application.
* Ensure real-time prediction functionality works properly.
* Test input-output flow between frontend, backend, and AI model.

### **Phase 3: Refinement & Testing**

#### UI/UX Enhancements & Feature Testing

* Improve UI elements for better user experience.
* Implement data visualization (graphs, insights).
* Conduct internal testing on core functionality.

#### Security & Performance Optimization

* Optimize database queries
* Add input validation & error handling.
* Conduct stress testing on the system.

#### Bug Fixes & Final Touches

* Fix major and minor bugs.
* Final testing with dummy users for feedback.
* Finalize documentation & user guide.

### **Phase 4: Deployment & Presentation**

* Prepare the final demo and documentation.
* Final testing before submission.
* Conduct a team presentation & discuss project learnings.

### **Tools & Technologies**

* **Programming Language:** Java
* **Frontend:** JavaFX
* **Backend:** Java with database integration, SQLite
* **Version Control:** GitHub
* **Task Management:** GitHub Projects
* **Communication:** Discord, Instagram

# Project windows

* + Login/Signup
  + Home page
  + Edit units
  + All units
  + Predict Grade Page
  + User profile page
  + Settings