

To start the **AI-Driven Code Reviewer** project, we will require a few essential tools and technologies.

1. Model Requirement

For this project, we will use a prompt-based AI language model. We are not planning to train a model from scratch. Instead, we will rely on an existing AI model and control its behavior using well-defined prompts. The model should be capable of understanding Python code and generating feedback such as error detection, coding style analysis, and optimization suggestions.

2. Python Requirement

We will use Python as the primary programming language for implementing this project. Python will be used to accept student code input, parse the code using Abstract Syntax Tree (AST), generate prompts for the AI model, and process the AI-generated responses. Python will also manage the overall workflow and database connectivity.

3. SQL Requirement

For data storage, we will use an SQL database, preferably SQLite, since it is lightweight and easy to set up. SQL will be used to store code submissions, AI-generated feedback, and submission timestamps. This will help us maintain a history of submissions and track feedback efficiently.

4. Tools and Platform

For development and testing, VS Code. Google Colab allows us to run Python code online without installing additional software. For AI analysis, we will integrate a GPT-based API or use a simulated prompt-based model during development.

5. System Requirement

The project does not require high-end hardware. We will only need a basic system with internet access. Since the project is lightweight and prompt-based, it can be executed smoothly on standard systems.