Models & Tools Used in Grammar Scorer Project

This project uses a combination of speech recognition and grammar correction tools. Here's a list of the models and libraries involved:

🎙️ 1. Google Web Speech API

- Type: Pre-trained online speech-to-text model
- Purpose: Converts spoken audio into written text.
- How it works: It sends the audio to Google's servers and returns the recognized words.
- Note: Requires internet connection. Works best with clear pronunciation and minimal background noise.

📘 2. LanguageTool

- Library: language_tool_python
- Type: Rule-based grammar and spelling correction engine
- Purpose: Detects grammar, punctuation, and spelling mistakes in English text.
- How it works: It checks the sentence using a huge set of grammar rules and suggests corrections.

🐍 3. Python Libraries

- speech_recognition: Helps record and convert speech to text.
- pandas: Used to store the final data (transcriptions and grammar corrections) in a CSV file.
- concurrent.futures (ProcessPoolExecutor): Makes the program faster by processing multiple audio files at the same time.
- logging: Helps track errors and info messages during processing.
- os: Used for navigating folders and files.