AI-Powered Teaching Assistant

Problem Statement

Online education often suffers from a lack of engagement and interaction compared to in-person learning environments. Teachers and students face challenges such as the difficulty of accessing concise and comprehensive lecture notes and a streamlined method to review and assess their understanding.

Solution Overview

Build an AI powered bot which can automate lecture note-taking and quiz generation to enhance the online learning experience. This bot will transcribe audio lectures, generate structured notes, and create quizzes to assess student comprehension.

Key Features

Lecture Notes Generation

Converts audio recordings into detailed, structured lecture notes using speech-to-text technology. Notes will include key topics and timestamps linked to the lesson plan.

- **Input**: Audio recording of the lecture and the lesson plan.
- **Process**: Analyse the transcription to identify key topics based on the lesson plan and discussion cues.
- **Technology**: Use AI-powered speech-to-text services such as OpenAI Whisper or Deepgram to transcribe lectures with high accuracy.
- **Output**: A structured document containing summaries of discussed topics with associated timestamps.

Quiz Generation

Analyses lecture content to generate multiple-choice questions that assess key concepts covered in the lecture.

- **Input**: Audio recording of the lecture.
- **Process**: Analyse the lecture content to generate questions that cover key concepts and discussions.
- **Output**: A set of multiple-choice questions that can be used as a quiz to asses the understanding of students.

Youtube Integration (optional)

- It should be able to generate notes for youtube videos.

Technical Requirements

- **LLM Integration**: Integration with any large language model.

- **Speech to Text translation:** OpenAI Whisper or Deepgram.
- **Third party Integration (Optional):** Youtube videos.

Deliverables

- A web app deployed on a public URL to interact with the Teaching Assistant.
- A public Github repo.

Submission Guidelines

All project components must be submitted through a designated submission portal. Form link will be shared by our team. Submissions must include the following:

- **Deployment link**: Provide a public URL to the deployed web application/other deliverables.
- **Documentation**: A comprehensive README file that includes:
    - Project overview and architecture.
    - Setup and installation instructions.
    - Usage guide with examples.
    - API documentation, if applicable.
    - This is NOT applicable for the AI film category.
- **Demonstration Video**:
    - A video (maximum 8 minutes) demonstrating the functionality of the tool. Start off by demoing the tool. You must breakdown your entire tech-stack/process and explain what is going on under the hood. Further, mention the workflow of the team; who did what, roles, etc.
- **GitHub Repository (Source code)**:
    - Provide a link to the public GitHub repository containing the project. Ensure the repository has a clear commit history and appropriate documentation for each part of the project.