

ExtraQ - AI powered Quiz Generator Documentation

Project Overview

ExtraQ is a web application designed to assist students who need additional study material by generating quizzes with their answers from PDF documents. The project utilizes the Gemini Pro API for generating quiz questions based on extracted text and allows users to control the number of questions and their difficulty level. It also provides functionality for users to ask specific questions related to the generated quiz for further explanations.

Purpose

This project was designed to help students by providing a tool that generates study quizzes from their study materials. The goal is to offer additional practice and reinforce learning through dynamically generated quizzes tailored to the content of their PDF documents.

Features

1. PDF Text Extraction:

- Utilizes the PyPDF2 library to read and extract text from uploaded PDF files.
- Converts the text into a format suitable for quiz generation.

2. Quiz Generation:

- Uses the Gemini Pro API for generating quiz questions based on extracted text.
- Allows users to specify the number of questions (2, 4, 6, 8, 10) and the difficulty level (easy, medium, hard).
- Generates a formatted quiz with questions and answers.

3. Question and Answer Functionality:

- Users can ask specific questions related to the generated quiz.
- Provides detailed answers based on the content of the generated quiz.

4. User Interface & Deployment:

- Built using Streamlit for a user-friendly interface.
- Deployed on Hugging Face Spaces to make the application accessible to users.

Usage Instructions

1. Upload a PDF:

- Click on the "Upload PDF" button to select and upload your study material.

2. Set Quiz Parameters:

- Choose the desired difficulty level (easy, medium, hard) and the number of questions (2, 4, 6, 8, 10).

3. Generate Quiz:

- Click on the "Generate Quiz" button to create a quiz based on the uploaded PDF and selected parameters.

4. Ask Questions:

- Use the text input field to ask specific questions about the generated quiz. Click "Ask" to receive detailed answers.

5. View Results:

- The generated quiz and answers to your questions will be displayed on the interface.

Future Enhancements

• Enhanced Question Generation:

- Potential to fine-tune the model on many examples of quizzes and exams from each course in each school the university offers. If we don't have accessibility to such data, we can collect all the books first that our ITCS school uses in their courses then generate a question & answer pair data from them, then fine-tune the model to generate questions specific to these books.