Educational AI Assistant

# Introduction

The Educational AI Assistant is a Python-based project built using Hugging Face Transformers and Gradio. It helps students and teachers by providing detailed concept explanations and automatically generating quizzes.

# Project Setup

1. Install the required libraries:  
 - Transformers  
 - Torch  
 - Gradio  
  
2. Load a pre-trained AI model and tokenizer from Hugging Face.  
3. Define a text generation function to process input prompts and generate responses.

# Features

1. Concept Explanation:  
 - Enter any concept (e.g., 'machine learning' or 'artificial intelligence').  
 - The AI provides a detailed explanation with examples.

2. Quiz Generator:  
 - Enter a topic to generate quiz questions.  
 - Includes multiple-choice, true/false, and short answer questions.  
 - Provides correct answers for evaluation.

# Demo Outputs

The assistant generates explanations and quizzes interactively in Google Colab with Gradio.  
Users can switch between two tabs: Concept Explanation and Quiz Generator.

# Voice-Over Script

Welcome to this demo of the Educational AI Assistant.  
This project is built using Python, Hugging Face Transformers, and Gradio. It helps students and teachers by providing concept explanations and automatically generating quizzes.  
  
First, we install the required libraries — Transformers, Torch, and Gradio. Then, we load a pre-trained AI model from Hugging Face, along with its tokenizer. This model powers our assistant and helps generate responses.  
  
We define a function to handle text generation, where the input prompt is tokenized, passed through the model, and then decoded back into human-readable text.  
  
Next, we create two main features:  
- Concept Explanation: Enter any concept like 'machine learning' or 'artificial intelligence,' and the AI will provide a detailed explanation with examples.  
- Quiz Generator: Enter a topic, and the AI generates quiz questions of different types — multiple choice, true/false, and short answer. At the end, it also provides correct answers for evaluation.  
  
Finally, we design an interactive Gradio interface with two tabs — one for concept explanations and one for quiz generation. This makes it simple for anyone to use without coding knowledge.  
  
And that’s it! The Educational AI Assistant is now live and running in Google Colab, ready to support learning with AI-powered explanations and quizzes.