

EduTutor AI - Documentation

EduTutor AI is an educational assistant built using Hugging Face's Transformers and Gradio. It provides two main functionalities: 1. Concept Explanation: Explains educational concepts in detail with examples. 2. Quiz Generator: Generates quiz questions on a given topic with answers. The application leverages the `ibm-granite/granite-3.2-2b-instruct` model for natural language processing.

Dependencies

The project requires the following Python libraries: - transformers - torch - gradio

Model and Tokenizer

The application loads the `ibm-granite/granite-3.2-2b-instruct` model and tokenizer. The tokenizer ensures padding, while the model is configured to use GPU (float16) if available, otherwise CPU (float32).

Function: generate_response

This function takes a prompt and generates a text response from the model. - Parameters: - prompt (str): Input text for the model. - max_length (int): Maximum length of the response (default 512). - Returns: Generated response string.

Function: concept_explanation

This function generates a detailed explanation of a given concept with examples. It internally calls `generate_response` with a specific instruction prompt.

Function: quiz_generator

This function generates 5 quiz questions of varying types (multiple choice, true/false, short answer) for a given concept. It also provides the answers in a separate ANSWERS section.

Gradio Interface

The application provides a Gradio interface with two tabs: 1. Concept Explanation - Takes a concept as input and provides a detailed explanation. 2. Quiz Generator - Takes a topic as input and generates quiz questions with answers. The app is launched with sharing enabled (`app.launch(share=True)`).