**News Analysis**

Project Setup

### Steps to Install and Run the Application

1. Clone the Repository

* https://github.com/alamurusushma/Akaike

2. Install Dependencies in anaconda prompt/ cmd prompt

* pip install -r requirements.txt

3. Run the Application

* python app.py

4. Using the Application in Hugging Face Space

* 1. Open the Gradio interface.
  2. Enter a company name in the provided text box.
  3. Click “Submit” to fetch and analyze news articles.
  4. View sentiment analysis and key topics.
  5. Listen to the generated audio summary.

Model Details

### Summarization Model

Method: Extractive summarization is performed by scraping the first few paragraphs of news articles.

Implementation: Uses `BeautifulSoup` to extract text content from the webpage and concatenate key paragraphs.

### Sentiment Analysis Model

* Library: “TextBlob”.
* Analyzes the polarity of the text (-1 to 1 scale).
* Categorizes sentiment as Positive, Negative, or Neutral.

### Text-to-Speech (TTS) Model

* Library: “gTTS” (Google Text-to-Speech)
* Functionality:

1. Converts extracted text into English speech.
2. Saves the output as an MP3 file for playback.

API Development

### Backend Functionality

The backend is built using Python.  
APIs fetch news articles, process text for summarization and sentiment analysis, and generate speech output.

### Accessing APIs via Postman

**Fetch News and Analysis**

* **Endpoint:** `POST /get\_news`
* Request Body (JSON):

{

"company\_name": "Microsoft"

}

* Response (JSON):

{

"articles": [...],

"comparative\_analysis": [...]

}

 **Retrieve Audio File**

* **Endpoint**: GET /audio
* **Response**: Returns an MP3 file containing the generated speech.

API Usage

### ****Third-Party APIs Used****

1. **Bing News Search**

* **Purpose**: Fetches the latest news articles about the entered company.
* **Integration**: Uses requests to send a search query to Bing and scrapes results with BeautifulSoup.

1. **Google Text-to-Speech (gTTS)**
   * **Purpose**: Converts extracted summaries into Hindi speech.
   * **Integration**: Calls the gTTS library to process text and generate an MP3 file.

Assumptions & Limitations

### ****Assumptions****

* News articles contain meaningful summaries in the first few paragraphs.
* The TextBlob library provides accurate sentiment analysis for short text.
* English is the preferred language for text-to-speech conversion.

### ****Limitations****

* **Scraping Constraints**: Bing News structure may change, breaking the scraper.
* **Sentiment Accuracy**: TextBlob uses a simple lexicon-based approach, which may misinterpret complex sentiments.
* **Audio Length**: Long summaries may lead to lengthy speech output, affecting usability.