**README**

**Sentiment Analysis Dashboard**

This project implements a sentiment analysis dashboard that processes news articles about a selected company, summarizes the content, determines sentiment (positive, negative, or neutral), and provides a Hindi summary with text-to-speech (TTS) output. The application is built using Streamlit and deployed on Hugging Face Spaces.

**Features**

1. **News Extraction:**
	* Fetches the latest news articles related to the selected company using web scraping.
	* Extracts the article title, content, and metadata.
2. **Summarization:**
	* Summarizes each article to a concise text using the Hugging Face Transformer model.
3. **Sentiment Analysis:**
	* Analyzes the sentiment of the summarized content (positive, negative, or neutral).
4. **Text-to-Speech (TTS):**
	* Converts the summarized Hindi text into speech using the gTTS library.
5. **Interactive Dashboard:**
	* Provides a user-friendly interface using Streamlit for input and output visualization.
6. **Customization:**
	* Allows users to select companies from a dropdown and adjust sentiment thresholds.
7. **Deployment:**
	* Hosted on Hugging Face Spaces for accessibility and testing.

**Dependencies**

Below are the required Python libraries:

* **Main Libraries:**
	+ streamlit
	+ streamlit-lottie
	+ requests
	+ beautifulsoup4
	+ pandas
	+ nltk
	+ transformers
	+ gTTS
	+ plotly

**File Structure**

project/

├── app.py # Main application script

├── utils.py # Utility functions for processing, scraping, and summarization

├── api.py # API functions to support modularity

├── requirements.txt # Required Python libraries

├── README.md # Documentation

└── assets/ # Folder for Lottie animations or additional assets

**Setup Instructions**

**1. Clone the Repository**

git clone <repository\_url>

cd project/

**2. Create a Virtual Environment**

python3 -m venv venv

source venv/bin/activate

**3. Install Dependencies**

pip install -r requirements.txt

**4. Download NLTK Resources**

Run the following commands to ensure NLTK dependencies are installed:

import nltk

nltk.download('punkt')

nltk.download('stopwords')

**5. Run the Application**

streamlit run app.py

**6. Deploy to Hugging Face Spaces**

1. Ensure all dependencies are listed in requirements.txt.
2. Push the repository to Hugging Face:
3. git add .
4. git commit -m "Deploy to Hugging Face Spaces"
5. git push

**Usage**

1. Open the application in your browser (local Streamlit server or Hugging Face Spaces).
2. Select a company from the dropdown menu.
3. View extracted articles, summaries, sentiment distribution, and Hindi TTS output.
4. Customize sentiment thresholds and other inputs as needed.

**Troubleshooting**

1. **NLTK Resource Errors:** Ensure required NLTK resources (e.g., punkt) are downloaded.
2. import nltk
3. nltk.download('punkt')
4. **Dependency Issues:** Verify all libraries are installed using:
5. pip install -r requirements.txt
6. **Hugging Face Deployment:** Confirm that all required dependencies are added to requirements.txt. Push to Hugging Face Spaces again.

**Acknowledgments**

* **Streamlit:** For providing an easy-to-use Python framework for building dashboards.
* **Hugging Face:** For the Transformer models used in summarization.
* **NLTK:** For text processing and tokenization.
* **gTTS:** For enabling text-to-speech functionality in Hindi.