**PubMed Article Summarization with Streamlit**

This project utilizes Streamlit to create a web application for summarizing PubMed articles. Users can input text or upload articles, and the application provides a concise summary using rule-based summarization techniques.

**Data Preprocessing**

The application performs basic text preprocessing on the input text:

1. **Lowercasing:** Converts all characters to lowercase.
2. **Alphanumeric filtering:** Removes non-alphanumeric characters except spaces.
3. **Stop word removal:** Eliminates common English stop words using NLTK.
4. **Lemmatization:** Reduces words to their base form using WordNetLemmatizer from NLTK.

**Streamlit Application**

The Streamlit app offers the following functionalities:

* **Title:** "PubMed Article Summarization"
* **Text Input:** Users can paste PubMed article text in a text area.
* **Summarization Button:** Clicking the "Summarize" button triggers the summarization process.(Not working)
* **Summary Display:** The application displays the original article text alongside the generated summary.(not WOrking)
* **About Section:** The sidebar provides a short description of the app's purpose.

**Code Breakdown**

The core functionalities are implemented in streamlit\_app.py:

* **Imports:**
  + streamlit as st: Enables Streamlit app development.
  + WordNetLemmatizer and stopwords from nltk: Used for text preprocessing.
  + pipeline from transformers: Provides access to the summarization pipeline.
* **preprocess\_text function:** Performs the text cleaning steps mentioned earlier.
* **Streamlit App Definition:**
  + Sets the app title.
  + Creates a text area for user input.
  + Defines a button for triggering summarization.
  + Within the button click event:
    - Preprocesses the user input text.
    - Creates a summarization pipeline.
    - Generates a summary with a maximum length of 1 sentence and truncation.
    - Displays the original text and the summary.
  + Creates an "About" section in the sidebar.

**Running the Application**

1. **Install dependencies:** Run pip install streamlit nltk transformers in your terminal.
2. **Download NLTK resources:** Use python -m nltk.downloader all to download necessary NLTK resources (may require additional steps depending on your environment).
3. **Run the app:** Execute streamlit run streamlit\_app.py in your terminal.
4. **Access the app:** A web interface should open in your default browser at http://localhost:8501 by default.