**ArticleIQ Project Documentation**

**Title:** ArticleIQ - Smart News Research Assistant

**Introduction**

The ArticleIQ is a Smart News Research Assistant application powered by OpenAI GPT-3. It's designed to find answers to user queries based on the content of provided articles. The application is built using the Streamlit framework and Langchain library.

**Installation**

Before running the application, ensure that all required libraries are installed. These can be installed using pip:

pip install streamlit pickle dotenv langchain

**File Structure**

The main script is main.py, which contains all the code for the application.

**How to Use**

When the application is run, a Streamlit interface is displayed in the web browser. The user can enter up to 3 URLs of online articles in the sidebar. After entering the URLs, the user can click the "Activate ArticleIQ" button to start the data processing.

Once the data is processed, the user can type their question in the 'Question:' input field. The application will then find the most relevant answer from the content of the provided articles.

**Detailed Code Explanation**

The script starts by importing the necessary modules and initializing the Streamlit interface.

The user is then prompted to enter up to 3 articles URLs. Once the "Activate ArticleIQ" button is clicked, the following steps are taken:

The URLs are loaded using the **UnstructuredURLLoader** class from the Langchain library.

The loaded data is split into chunks using the **RecursiveCharacterTextSplitter** class. This helps in handling large amounts of text.

Each chunk is then embedded using the **OpenAIEmbeddings** class and saved into a FAISS index using the FAISS class.

The FAISS index is then saved to a pickle file **'FAISS\_Vector\_Data.pkl'** for later use.

After the user enters a question, the application checks if the pickle file exists. If it does, it loads the FAISS index from the file and creates a retrieval chain using the **RetrievalQAWithSourcesChain** class. This chain is used to find the most relevant answer to the user's question from the article content.

The answer is then displayed on the interface along with the sources from where the information was retrieved.

**Conclusion**

The ArticleIQ project is a powerful tool for performing research based on online articles. It leverages the power of OpenAI GPT-3 to find precise answers to user queries. Despite its simplicity, it can be a very useful tool for journalists, researchers etc…