Medical Drug Information Retrieval Tool

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Project Overview

•**Objectives:** The tool aims to provide users with access to comprehensive information about medical drugs, including competitor drugs and the latest news.

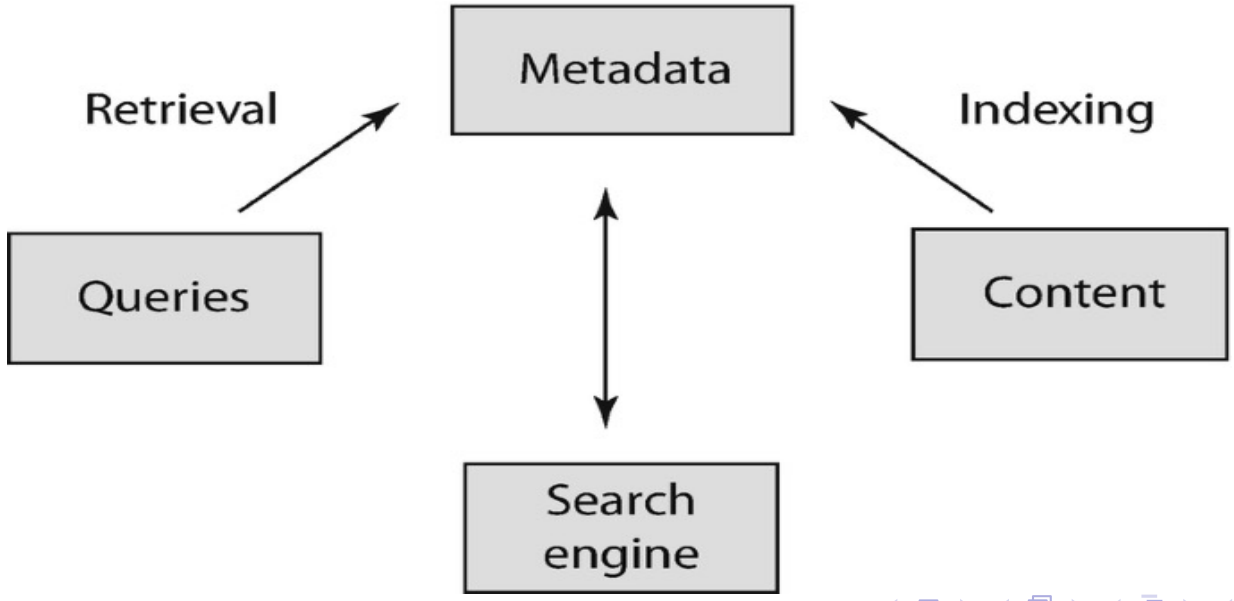
•**Scope:** The tool will include features such as querying drug information, searching for related news articles, and summarizing the retrieved information.

•**Key Features:** User-friendly interface, API integration, information indexing, summarization with LLM.

Proposed Architecture

•**High-Level Architecture:** The architecture diagram illustrates the components of the tool and their interactions, including the UI, API integration layer, information indexing component, and summarization with LLM module.

•**Technology Stack:** JavaScript, Node.js for backend development, Hugging Face Transformers library for natural language processing, and News-API for accessing medical news articles.



Technology Stack

- **Frontend:** HTML, CSS, JavaScript
- **Backend:** Node.js, Express.js
- **Libraries:** Axios, Hugging Face Transformers
- **APIs:** News-API

User Interface (UI) Design

- **Description:** Simple, user-friendly UI with input field for queries and search button.

API Integration

- **Integration:** Utilize News-API for searching medical news articles.
- **Transformation Logic:** Convert natural language queries into effective search queries for the API.

Information Indexing and Filtering

- **Indexing Mechanism:** Organize search results based on relevance.
- **Filtering Logic:** Exclude irrelevant information from search results.

Summarization with LLM

- **Integration:** Use Hugging Face Transformers for summarization.
- **GPT Model:** Pre-trained model for generating summaries.

Implementation Strategy:

1. **UI Design and Implementation:** Develop frontend components.
2. **API Integration:** Integrate NewsAPI for news search.
3. **Information Indexing:** Design indexing mechanism.
4. **Summarization Integration:** Implement summarization with LLM.
5. **Testing and Debugging:** Ensure functionality and resolve issues.
6. **Deployment:** Deploy the tool for user testing.

Innovative Features

- **Data Visualization:** Interactive charts for displaying drug information.
- **Personalized Recommendations:** AI-driven recommendations based on user queries.

User Experience Journey

- **User Interaction:** Enter query → Click search button → View summarized results.
- **Feedback Loop:** Gather user feedback for continuous improvement.

Challenges and Future Enhancement

- **Challenge:** Handling large volumes of data.
- **Solution:** Implement pagination and caching mechanisms.

Future Enhancements

- **Natural Language Understanding:** Improve query understanding capabilities.
- **Multi-Language Support:** Extend support for multiple languages.

Challenges and Future Enhancement

- **GitHub Repository:** Evidinno-Assessment Repository [https://github.com/tanveermemon92/Evidinno-Assessment.git]

- **Code Access:** The entire codebase, including frontend and backend components, is available in the repository.
- **Implementation Details:** Detailed README file provides instructions for installation, usage, and technology stack used.
- **Executable Prototype:** Clone the repository and follow the instructions to run the prototype locally.