Programming Task: Custom Chatbot Interface for PubMed Queries

Objective:

Build a custom chatbot interface that performs requests to the PubMed public database. The chatbot should allow users to query PubMed for research articles and return summarized or key information (e.g., titles, authors, abstracts).

Requirements:

1. **Chatbot Interface:**
   - Design a basic interface (can be web-based, CLI, or standalone application).
   - The chatbot should take user input in natural language (e.g., "Find articles about COVID-19 vaccine efficacy").
   - Output results in a user-friendly format.
2. **PubMed Integration:**
   - Use PubMed's public API to fetch data.
   - Handle query construction, API requests, and response parsing.
3. **Features:**
   - Allow users to specify:
     - Keywords (e.g., "cancer treatment").
     - Time range (e.g., "2021-2023").
     - Other optional filters (e.g., author name or journal).
   - Return a list of articles, including:
     - Title.
     - Authors.
     - Abstract (or first few lines if it's too long).
   - Allow users to fetch details for specific articles (e.g., by selecting an article from the list).
4. **Documentation:**
   - Provide a short README file with:
     - Instructions to run the application.
     - Example queries.
     - Any setup requirements.
5. **Code Quality:**
   - Ensure clean, modular, and well-commented code.
   - Use Git to showcase the development process.

Bonus (Optional):

- Include basic conversational AI capabilities (e.g., clarifying user intent or refining queries).
- Add a feature to summarize abstracts using an AI model or API.
- Host the chatbot on a public server for live testing.

Deliverables:

- Source code (GitHub/Bitbucket link preferred).
- README file with instructions.
- If applicable, a hosted demo link.

Evaluation Criteria:

1. Functionality: Does the chatbot work as specified?
2. Code Quality: Is the code clean, modular, and maintainable?
3. Creativity: Have you added any additional features or enhancements?
4. Usability: Is the chatbot user-friendly and intuitive?

Submission Deadline:

- Submit your solution by **26th Nov 2026 (midnight local time)**.
- Late submissions will not be considered.

Follow-Up:

Top-performing candidates will be invited for an interview to discuss their implementation, design decisions, and problem-solving approach.