**NLP Chatbot**

**1. Problem Statement:**

The project aims to address the challenge of efficiently handling user queries by developing a chatbot that leverages word embeddings. The primary issues include:

- Inefficient handling of user questions.

- Difficulty in finding relevant answers from a knowledge base.

- Limited ability to handle unexpected or diverse user queries.

**2. Business Requirements:**

The success of the project is contingent on meeting the following business requirements:

- Improved User Experience: Enhance the overall user experience by providing accurate and timely responses to user queries.

- Efficient Knowledge Retrieval: Enable the chatbot to retrieve relevant information from a knowledge base efficiently.

- Keyword-Based Question Retrieval: Implement a mechanism for fetching questions based on user-provided keywords.

- Adaptability to Unexpected Questions: Develop the chatbot to handle unexpected or diverse questions effectively.

- Implement a mechanism to capture user questions for which the chatbot cannot provide satisfactory answers. Store unanswered questions in a dedicated database for future analysis and retraining of the chatbot. This feature ensures the continuous learning and enhancement of the chatbot's capabilities. Unanswered questions can be periodically reviewed and used to retrain the chatbot, improving its ability to handle a broader range of user queries over time.

**3. Model Requirements:**

To meet the project goals, the chatbot requires the following model-related specifications:

- Word Embeddings: Utilize word embeddings to understand the semantic context of user queries.

- Question Matching Algorithm: Implement a robust algorithm for finding the nearest question in the knowledge base.

- Handling Unexpected Input: Incorporate a mechanism to handle unexpected or novel user queries gracefully.

**4. Data Requirements:**

The success of the chatbot relies on access to relevant and diverse data sources:

- Knowledge Base: Compile a comprehensive knowledge base containing a variety of questions and answers.

- Keyword Database: Establish a database of keywords associated with each question to facilitate keyword-based question retrieval.