**Artificial Intelligence and Machine Learning (AIML) – Project**

**Project Title**: Chatbot for Task Management and To-Do Lists

**Team Members**:

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**Problem Statement**: In today's fast-paced world, managing tasks efficiently can be challenging. Many individuals struggle to keep track of their to-do lists, prioritize tasks, and set reminders. Traditional task management methods can be cumbersome and often lack real-time adjustments. This necessitates the development of an intelligent chatbot that can help users manage their tasks and to-do lists more effectively. The chatbot will assist users in adding, retrieving, updating, and deleting tasks, as well as setting reminders and priorities. By leveraging AI and NLP, the chatbot will provide a user-friendly interface for efficient task management.

**Dataset**: The dataset for this project consists of user interaction logs and task management queries. Since specific datasets for task management chatbots may not be readily available, the following sources and methods can be used:

1. **Title**: Task Management Conversations  
   **Source**: User Interaction Logs  
   **Description**: This dataset includes logs of user interactions with existing task management systems and chatbots. It captures various user inputs related to task management, such as adding, updating, retrieving, and deleting tasks. The dataset helps in training the chatbot to understand and process common task management queries.  
     
   **Title**: Task Management Queries and Responses  
   **Source**: Synthetic Data Generation  
   **Description**: This dataset consists of synthetic examples of task management queries and the corresponding responses. It includes phrases for task addition, retrieval, updates, deletions, and setting reminders. This dataset is used to train and validate the chatbot’s natural language understanding and response generation capabilities.  
     
   **Algorithm:**
2. **Data Collection and Preprocessing**:
   * **Source**: Collect data from user interaction logs and task management queries.
   * **Format**: Ensure data is in a machine-readable format such as text files or structured CSV files.
   * **Preprocessing**: Clean and preprocess the text data to remove noise and standardize the format.
3. **Intent Recognition**:
   * **Algorithm**: Utilize natural language understanding (NLU) models to recognize user intents such as adding tasks, retrieving tasks, updating tasks, and setting reminders.
   * **Tools**: Use Dialogflow or similar platforms to define intents and train the model with user queries.
4. **Entity Extraction**:
   * **Algorithm**: Extract relevant entities from user inputs, such as task names, due dates, and priorities.
   * **Tools**: Implement named entity recognition (NER) using pre-built libraries or custom models.
5. **Task Management Logic**:
   * **Algorithm**: Implement logic to handle task management operations including adding, retrieving, updating, and deleting tasks.
   * **Tools**: Use Dialogflow's built-in features or custom backend services to manage task data.
6. **Reminder and Notification System**:
   * **Algorithm**: Set up a reminder system that sends notifications based on task deadlines or user preferences.
   * **Tools**: Integrate with notification services or use scheduling libraries.
7. **Real-Time Feedback and Suggestions**:
   * **Algorithm**: Provide instant feedback and suggestions to users based on their interactions and task history.
   * **Tools**: Implement feedback algorithms using machine learning models or rule-based systems.

**Expected Outcomes**:

The expected outcomes of the Chatbot for Task Management and To-Do Lists include significantly improved task organization and enhanced productivity through streamlined management of tasks. Users will benefit from real-time updates and personalized feedback, leading to efficient handling of tasks and timely reminders for deadlines. The chatbot will provide a user-friendly interface that is accessible to individuals with varying technical expertise and offer data-driven insights to optimize task management strategies. Overall, the chatbot will help users stay organized, manage their time effectively, and increase productivity through a personalized and efficient task management system.