**Natural language**

**processing Project**

**Part 1**

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# NLP

* **Name: TalkBot**
* **Description:** TalkBot is an interactive conversational agent for real-time processing, allowing users and machines to communicate. Leveraging natural language processing, it comprehends Arabic input, making it an effective language learning and development tool. Users can input text or audio recordings, which the program analyzes, converts to text, processes, and responds in written form and sound, enhancing the learning experience.
* **Scope of the project:**
  1. **Interactive Conversational Agent: TalkBot serves as an interactive System for real-time communication between users and machines.**
  2. **Natural Language Processing (NLP): The core functionality of TalkBot relies on NLP techniques to comprehend and process Arabic input. This includes tasks such as text analysis and speech recognition.**
  3. **Language Learning Tool: TalkBot functions as a language learning and development tool, providing users with opportunities to practice Arabic communication skills. Through interactive conversations, users can improve their vocabulary, grammar, pronunciation, and comprehension.**
  4. **Input Modalities: Users can input text or audio recordings into TalkBot for analysis and processing.**
  5. **Output Modalities: TalkBot responds to user inputs by generating written text and sound.**
* **Outline of the project:**

1. **Collect data, for training and testing purposes.**
2. **Input Module (Voice and Text), Voice and Text Input Handling.**
3. **Regular Expression for Input Processing.**
4. **Text Analysis and Preprocessing.**
5. **NLP Libraries for Arabic language processing.**
6. **Speech Recognition and Synthesis Tools.**