

## 2. AI Intern Project Assignment: Voice Bot Development

### Project Title:

"Building an Intelligent Voice Bot for Customer Interaction"

### Project Objective:

Develop a voice bot capable of handling basic customer queries and interactions, leveraging AI technologies like Natural Language Processing (NLP) and Speech-to-Text/Text-to-Speech systems.

### Key Features:

1. **Speech-to-Text Conversion**
  - Integrate a speech recognition system to transcribe user input into text.
  - Suggested Tools/Platforms: Google Cloud Speech-to-Text API, OpenAI Whisper, or Mozilla DeepSpeech.
2. **Natural Language Understanding**
  - Process the transcribed text to understand user intent.
  - Implement basic intent recognition and entity extraction using frameworks like Rasa, Dialogflow, or Hugging Face Transformers.
3. **Response Generation**
  - Use a rule-based system or a pre-trained language model to generate responses.
  - Suggested Tools: GPT-based API (e.g., OpenAI API) for dynamic responses.
4. **Text-to-Speech Conversion**
  - Convert generated responses into speech for the user.
  - Suggested Tools/Platforms: Google Cloud Text-to-Speech API, Amazon Polly, or Microsoft Azure TTS.
5. **Integration with Backend/Database**
  - Build a connection to a backend system or database to fetch and update information dynamically based on user queries (e.g., retrieving account details or FAQs).
6. **Analytics Dashboard (Optional)**
  - Track and display key metrics like user queries, response times, and error rates for performance improvement.