

# AI-Powered Customer Support Chatbot

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## Project Document

### Detailed Write-up of Solution

Our project aims to develop an AI chatbot that can answer common customer queries, reducing the load on human support agents. The chatbot will be integrated into a company's website. It will use natural language processing to understand user questions and provide relevant answers from a knowledge base.

#### Tools & Technologies

- **AI Framework:** Google Dialogflow
- **Programming Language:** Python
- **Website Integration:** HTML, JavaScript
- **Database:** Firebase Firestore (for knowledge base)

#### Logic

1. User types a question into the chatbot.
2. Dialogflow processes the input and identifies the intent.
3. Based on the intent, the chatbot retrieves an answer from the Firestore knowledge base.
4. The answer is displayed to the user.
5. If the chatbot cannot answer, it will offer to connect to a human agent.

#### Challenges Anticipated and Mitigation Strategies

- **Challenge:** Chatbot misinterpreting user questions.
- **Mitigation:** Training with more diverse datasets and implementing fallback intents.
- **Challenge:** Limited knowledge base initially.
- **Mitigation:** Continuous updating of the knowledge base with common customer queries.

#### Timeline or Roadmap for Development

- **Week 1-2:** Dialogflow setup, basic intents, initial knowledge base.
- **Week 3-4:** Website integration, user interface design.
- **Week 5-6:** Testing, refinement, adding more intents.

# System Architecture and Technology Stack

- **Frontend:** HTML/JavaScript for chatbot interface.
- **Backend:** Google Dialogflow for NLU, Firebase Firestore for data storage.

## Data Sources and How Data Privacy is Handled

- **Data Sources:** Customer FAQs, previous chat transcripts (anonymized), product documentation.
- **Data Privacy:** User conversations are not stored unless necessary for debugging and are anonymized. No personal identifiable information is collected by the chatbot.

## Main Features and User Flow

### Features

- Automated answering of common questions.
- Handover to human agent when needed.

### User Flow

1. User clicks on chatbot icon on website.
2. Types a question.
3. Receives an answer or is offered human support.