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PHASE-1

REVOLUTIONIZING CUSTOMER
SUPPORT WITH AN INTELLIGENT
CHATBOX FOR AUTOMATED
ASSISTANCE

1. Problem Statement

The Traditional customer support systems struggle with high volumes , long wait times, and inconsistent service, leading to customer frustration and lost business. The solution is to implement an intelligent chat bots to automate routine customer support task, improving efficiency, reducing wait times, and enhancing overall customer experience by providing instant, accessible, and personalized assistance, Tailoring responses to individual customer needs and references, Seamlessly escalating complex issues to human support.

2. Objectives of the project

1. To provide round-the-clock customer support without human intervention.
2. Offer immediate answer to frequently asked question and common queries
3. Use AI- driven insights to tailor response and recommendations based on user behavior and preference.
4. Automate routine inquiries, freeing human agent to focus on complex issues.
5. Minimize error by providing consistent and accurate information.

3. Scope of the Project

1. Natural Languages Processing (NLP) for understanding Customer queries.
2. Automated response generation based on knowledge base Integration.
3. Escalation to human support agents for complex issues.
4. Integration with CRM systems for seamless customer Interaction.
5. Development of AI powered chatbox.
6. learning and improvement through machine learning Algorithm.

3. Existing System

An intelligent chatbox can be a valuable addition to existing system support, enabling organizations , to provide better, more efficient, and more personalized support to the customer.

1. It can use customer data and behavior to offer personalized recommendations and solutions .
2. It can provide support across various channels, such as website mobile app, social media, and messaging platforms.
3. collect and analyze customer interactions, providing valuable insights to improve support.

5. Proposed System

This proposed system provides a comprehensive solution :

1. NLP Module: Utilizes Natural Language Processing (NLP) to understand customer queries and intent.
2. Knowledge Base: Integrates with existing knowledge bases to provide accurate and up-to-date information.
3. Machine Learning (ML) Module: Employs ML algorithms to learn from customer interactions and improve response accuracy.
4. Escalation Module: Seamlessly escalates complex issues to human support agents.
5. CRM Integration: Integrates with Customer Relationship Management (CRM) systems to access customer data and history.

6. Data Source;

DATASOURCE 1. Automated Ticketing: Chatbots can help manage and prioritize support tickets, ensuring timely responses.

2. FAQs and Knowledge Base: Chatbots can provide instant answers to frequently asked questions and offer access to relevant knowledge base articles.

3. Issue Escalation: Chat bots can identify complex issues and escalate them to human support agents for further assistance.

4. Personalized Support: Chat bots can use customer data and behavior to offer personalized recommendations and solutions.

7 .High level methodology

1. Design conversational flow and user experience.
2. Develop NLP and ML models for intent identification and response generation.
3. Integrate with knowledge base and CRM systems.
4. Implement escalation mechanism.
5. Define project scope and objectives.
6. Conduct stakeholder analysis

8. Tools and Technologies

1. Dialog flow: A Google-owned platform for building conversational interfaces.
 2. Microsoft Chat bot
- 32Framework: A set of tools for building conversational AI solutions.
3. IBM Watson Assistant: A cloud-based AI platform for building conversational interfaces.
 4. ManyChat: A popular platform for building chatbots for messaging platforms.
 5. Cha fuel: A platform for building chatbots for Facebook Messenger.
 - 6.Tars: A conversational AI platform for building chatbots.

9. Team Members and Roles

1. **B. KEERTHANA – Data Collection and Integration:** Responsible for sourcing datasets, connecting APIs, preparing the initial dataset for analysis.
2. **M.KAVIYA – Data Cleaning and EDA:** Cleans and pre-processes data, performs exploratory analysis, and generates initial insights.
3. **R.YAMUNA– Feature Engineering and Modelling:** Works on feature extraction and selection; develops and trains machine learning models.
4. **N.GAYATHRI – Evaluation and Optimization:** Tunes hyper parameters, validates models, and documents performance metrics.
5. **N.ABINAYA– Documentation and Presentation:** Compiles reports, prepares visualizations, and handles presentation and optional deployment.