F2 Fintech Loan Journey

Project: Intelligent Customer Support System

Assign to Tuba (ML Developer)

Objective:

Develop an intelligent customer support system for F2 Fintech that utilizes natural language processing (NLP) and machine learning to efficiently handle customer queries and provide personalized assistance.

Features:

1. **Query Classification:**
    - Implement NLP algorithms to classify customer queries into predefined categories such as loans, insurance, etc.
    - Use data structures like decision trees or support vector machines for efficient classification.

2. **Sentiment Analysis:**
    - Develop algorithms to analyze the sentiment of customer queries and feedback.
    - Utilize data structures for sentiment lexicons and analysis of text data.

3. **Knowledge Base Management:**
    - Create a knowledge base containing frequently asked questions (FAQs), product information, and troubleshooting guides.
    - Use data structures like hash maps or inverted indices for efficient storage and retrieval of information.

4. **Chatbot Development:**
    - Design a conversational chatbot to interact with customers and provide instant responses to queries.

- Implement algorithms for natural language understanding (NLU) and generation (NLG) using techniques like sequence-to-sequence models or transformers.

5. **Personalization:**
    - Customize responses based on customer profiles, transaction history, and previous interactions.
    - Develop algorithms to track user preferences and adapt responses accordingly.

6. **Escalation Management:**
    - Implement algorithms to identify queries that require human intervention and escalate them to human agents.
    - Use data structures for managing ticket queues and prioritizing escalations.

Technologies:

- Programming Languages: Python (for NLP and machine learning), JavaScript (for frontend).
- Data Structures: Hash Maps, Trees, Graphs, Priority Queues, etc.
- Algorithms: NLP algorithms (text classification, sentiment analysis, named entity recognition), Machine Learning (classification, clustering), etc.

Frameworks and Tools: NLTK, spaCy, TensorFlow/Keras (for NLP), Django/Flask (for backend), React/Vue.js (for frontend).