ANALYSIS FOR CHATBOT SYSTEM IN E-COMMERCE WEB

1 Requirements analysis

1.1 Stakeholders

Stakeholder	Description
Users	End users who will interact with the system to check the shipping status of their orders.
Developers	The technical team that designs, builds, and maintains the system.
LLM system	Response to User anwer with specific context

1.2 Requirement

1.2.1 Functional requirements

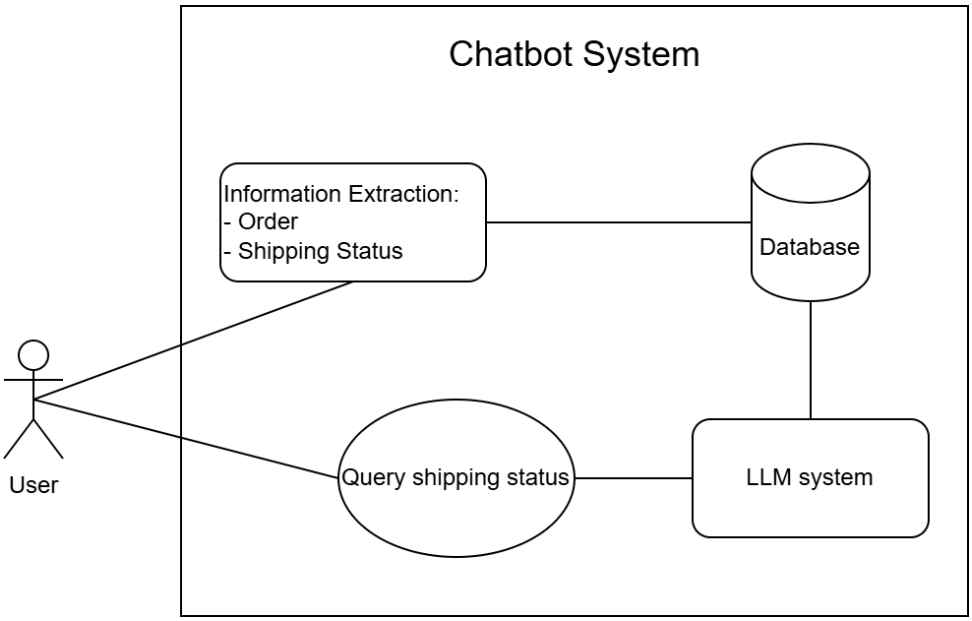
	User Story	Requirement	Details
1	As an user, I want chat with chatbot to know the shipping status of my order.	Query shipping status	When an user order something and they ask the chatbot about he/she order, the chatbot will response about the shipping status of he/she order.

1.2.2 Non-Functional requirements

	User Story	Requirement	Details
1	As an user, I want the chatbot can anwer correct to my question	Response correctly.	Chatbot must have enough data and good template prompt to answer correctly to what user want.

1.3 Requirement Specification

1.3.1 UML Use Case Diagram



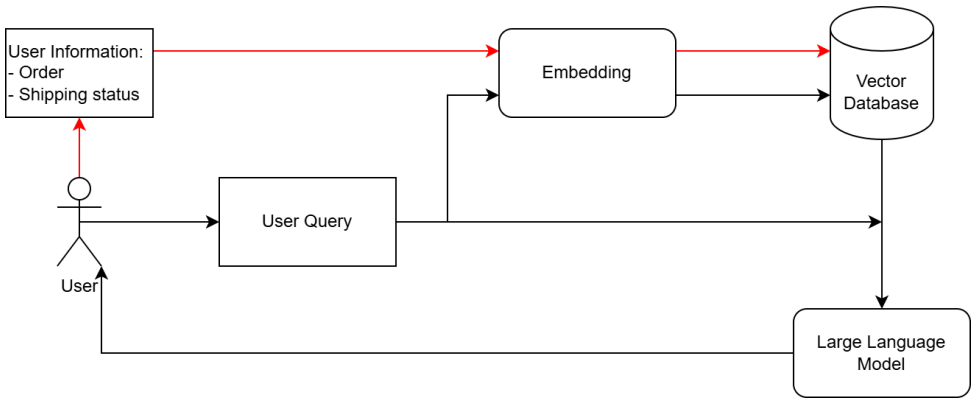
1.3.2 Use Case description

Use Case	**Query shipping status**
Brief Description	As an user, I want chat with chatbot to know the shipping status of my order.
Main Flow	1. Type query about shipping status in the chat box 2. Send the query 3. Chatbox answer the query
Pre-condition	User must login to their e-commerce web account
Special requirements	Answer of chatbot must be correct with the user information, and the response must be quick

2 System Design

2.1 Architecture design

Use RAG architecture. Here are the Dataflow diagram:



2.2 Database Design

- Use Vector Database to store information of user's order and order's shipping status
- Flow:
  1. Extraction information of user, include: order and shipping status of each order
  2. Embedding extraction information from user
  3. Save embedding vector to Vector Database

2.3 Flow Description

- Input: User query about shipping status of user's order
- Flow:
  1. Embedding user query
  2. Query the embedded query in vector database =¿ metadata
  3. Combine query and metada with prompt template
  4. Send to LLM Model
- Output: Response from LLM Model

2.4 LLM Model

Use LLM Model GPT4, with prompt template: "You are a very smart chatbot, you will help user answer question about their order shipping status. Here are metadata of shipping status {}. And the query of user is {}. Just provide answer do not explain anything."