

## ASSIGNMENT: CHATBOT WITH SENTIMENT ANALYSIS

### Objective

Develop a chatbot that conducts a conversation with a user and performs sentiment analysis. Tier 1 implementation is mandatory. Tier 2 implementation earns additional credit.

### Tier 1 – Mandatory Requirement

#### Conversation-Level Sentiment Analysis

- Build a chatbot that maintains full conversation history.
- At the end of the interaction, generate sentiment analysis for the entire conversation.
- The output must clearly indicate the overall emotional direction based on the full exchange.

### Tier 2 – Additional Credit

#### Statement-Level Sentiment Analysis

- Perform sentiment evaluation for every user message individually.
- Display each message alongside its sentiment output.
- Optional enhancement for additional credit: summarise trend or shift in mood across the conversation.

### Technical Guidelines

- Python is preferred.
- Chatbot response logic is flexible.
- Code structure must be modular and production-minded.

### Submission Requirements

Submit a Git repository containing:

1. Source Code
2. README including:
  - How to run
  - Chosen technologies
  - Explanation of sentiment logic
  - Status of Tier 2 implementation
3. Tests if implemented

(Optional for bonus credit)

- Highlights of innovations, additional features, enhancements

### Example Format

User: "Your service disappoints me"

→ Sentiment: Negative

Chatbot: "I'll make sure your concern is addressed."

User: "Last experience was better"

→ Sentiment: Positive

### Final Output:

Overall conversation sentiment: Negative – general dissatisfaction