

## **Final Requirement in ITEP 308 – System Integration and Architecture I First Semester, Academic Year 2025-2026**

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### **ReviewMood**

#### **Introduction:**

**ReviewMood** is a web application that analyzes customer reviews using sentiment analysis. Its goal is to help businesses quickly understand whether customer feedback is positive, neutral, or negative. The system processes customer text reviews, runs them through a machine learning sentiment model, then displays the result to the user. It also shows a simple and clean output so users can instantly see the mood or attitude of customers based on their written feedback.

#### **Problem Definition:**

Businesses receive many customer reviews, but manually checking each review takes time and can lead to missed issues, trends, or complaints. There is no instant way for businesses to see whether overall customer mood is positive or negative.

#### **Purpose of the Application:**

ReviewMood automatically analyzes customer review text using sentiment analysis. It classifies reviews as positive, neutral, or negative, helping businesses understand customer satisfaction quickly and make better decisions.

#### **Design thinking**

**Hills:** What the system enables users to do

Hills	Statement Hills	Success Measure
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1	Users can input customer reviews and instantly see sentiment results.	90% of reviews processed correctly with sentiment accurately identified.
2	Users can track and review mood trends through organized summaries.	Users can generate weekly/monthly trend summaries within 10 seconds, with 95% accuracy.
3	The system simplifies understanding customer satisfaction with clear output.	85% of users report that the output is easy to understand in surveys or feedback forms.

**Sponsor User:** The representative primary user

**Business owners** or **customer service teams** who need fast insights from customer reviews without reading each one manually.

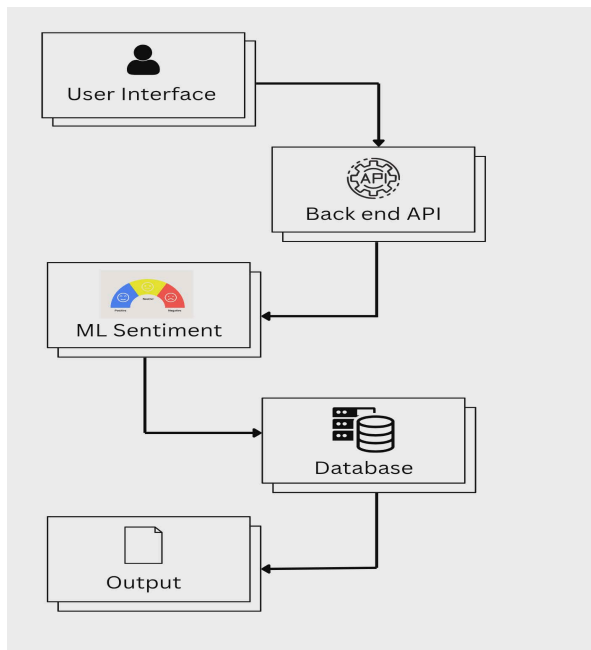
**Playback:** What feedback you gathered and how you improved the design

Problem	Solution
Users wanted faster results	System optimized for quick sentiment output.
Users wanted clearer feedback display	Improved layout and labels.
Users wanted better accuracy sentiment model upgraded for more precise classifications.	sentiment model upgraded for more precise classifications.

## System Architecture

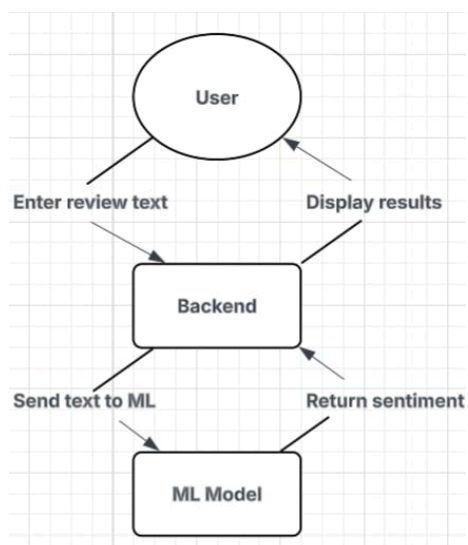
### Architecture Diagram (Text)

User Interface → PHP Backend → ML Sentiment Model → Results Output



### Data Flow

1. User inputs customer review text.
2. The backend sends text to the ML model.
3. ML model returns sentiment classification.
4. Results are displayed to the user.



## **Libraries Used**

**GuzzleHTTP** – HTTP requests

**PSR-7, PSR-17, PSR-18** – HTTP message standards

**Symfony Components** – utility functions

**Ralouphie/getallheaders** – header parsing

**ML Model Integration** ( backend calls this for sentiment prediction)

## **ML Integration**

The ML model performs:

Sentiment classification

Polarity detection (positive, neutral, negative)

Confidence scoring

## **System Demonstration**

### **Key Features**

- Enter a customer review text
- Automatic sentiment analysis
- Quick display of mood result
- Clean and simple output

### **ML Functionality**

- Uses NLP to interpret customer comments
- Analyzes tone, keywords, and context
- Outputs sentiment category and optional score

**Input → Process → Output**

**Input:** Customer types or submits a review

**Process:** System sends it to ML → model analyzes sentiment

**Output:** Displays “Positive,” “Neutral,” or “Negative” with details

**REVIEWMOOD**

### Analyze a Customer Review

Paste a review, detect sentiment, highlight key words, and get an AI-suggested reply.

📄 Trained SVC sentiment model with an estimated accuracy of 85–95% on diverse review datasets.

Session stats (this browser):  
🟢 Positive: 1 🟡 Neutral: 0 🔴 Negative: 0

☒ Customer Review

It's good

**Analyze Sentiment**

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**Analysis Results**

🟢 Positive 🔄 Strength: Slightly Positive

**Highlighted review** positive negative

Important positive and negative words are highlighted, including negations (e.g., "not good").

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**AI advice for seller** Groq - llama-3.3-70b-versatile

This suggestion is generated by Groq AI based on the review text and detected sentiment.

You could respond with a brief "thank you" to express appreciation for the customer's feedback. A possible response might be: "Thank you for taking the time to share your thoughts, we're glad you're satisfied." This acknowledges the customer's positive sentiment and shows that you value their opinion.