

**Final Requirement in ITEP 308 – System Integration and Architecture I First  
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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.

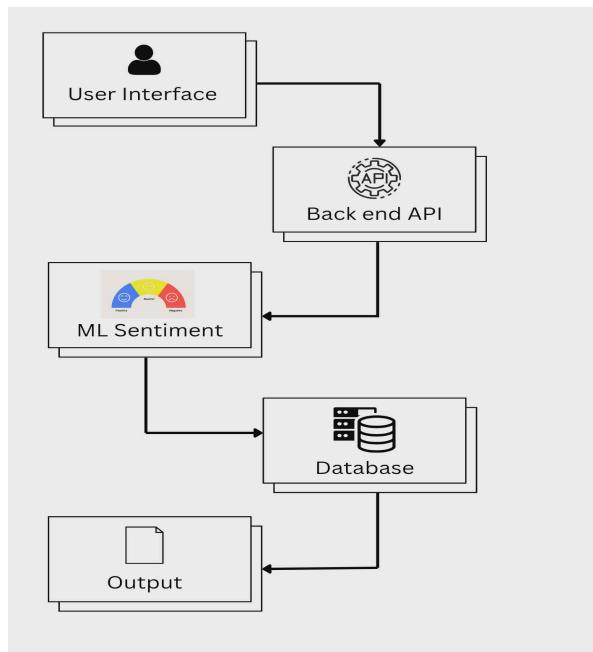
**Playback:** What feedback you gathered and how you improved the design

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

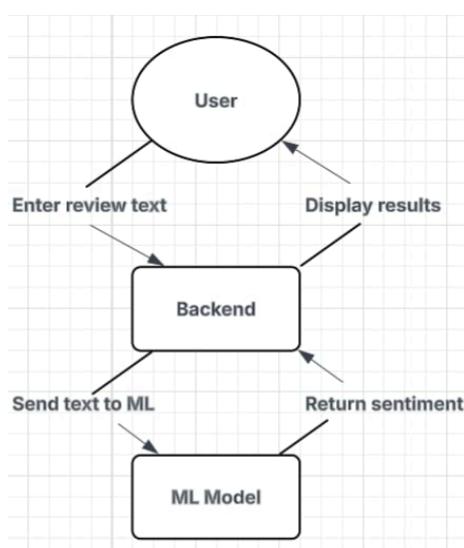
### Architecture Diagram (Text)

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

The image shows two side-by-side screenshots of a web application titled "Analyze a Customer Review".

**Screenshot 1 (Left):** A black arrow points to the "Customer Review" input field, which contains the text "It's good". This field is highlighted with a red rectangle.

**Screenshot 2 (Right):** The same input field now contains the text "It's good". Below the input field, the "Analyze Sentiment" button is highlighted with a red rectangle.

Both screenshots include a green header bar with the text "REVIEWMOOD" and a sub-header "Analyze a Customer Review". Below the header, there is a text input area for "Customer Review" containing the text "It's good". To the right of the input area are three buttons: "Positive: 1", "Neutral: 0", and "Negative: 0". Below the input area are two buttons: "Analyze Sentiment" and "Clear". Underneath the input area is a "Load Sample" button. At the bottom, there is a section titled "Analysis Results" showing a "Positive" sentiment with "Strength: Slightly Positive". It also includes a "Highlighted review" section with links for "positive" and "negative" words, and a note about highlighting including negations like "not good".

The image shows two side-by-side screenshots of a web application titled "Analyze a Customer Review".

**Screenshot 1 (Left):** The "Customer Review" input field contains the text "It's good". The "Analyze Sentiment" button below it is highlighted with a red rectangle.

**Screenshot 2 (Right):** The "Customer Review" input field still contains "It's good". The "Analysis Results" section at the bottom has been expanded, showing a detailed breakdown of the analysis. The "AI advice for seller" section is visible on the right, suggesting a response like "thank you" to express appreciation for the customer's feedback.

Both screenshots include a green header bar with the text "REVIEWMOOD" and a sub-header "Analyze a Customer Review". Below the header, there is a text input area for "Customer Review" containing the text "It's good". To the right of the input area are three buttons: "Positive: 1", "Neutral: 0", and "Negative: 0". Below the input area are two buttons: "Analyze Sentiment" and "Clear". Underneath the input area is a "Load Sample" button. At the bottom, there is a section titled "Analysis Results" showing a "Positive" sentiment with "Strength: Slightly Positive". It also includes a "Highlighted review" section with links for "positive" and "negative" words, and a note about highlighting including negations like "not good".