

Flask UI Workflow

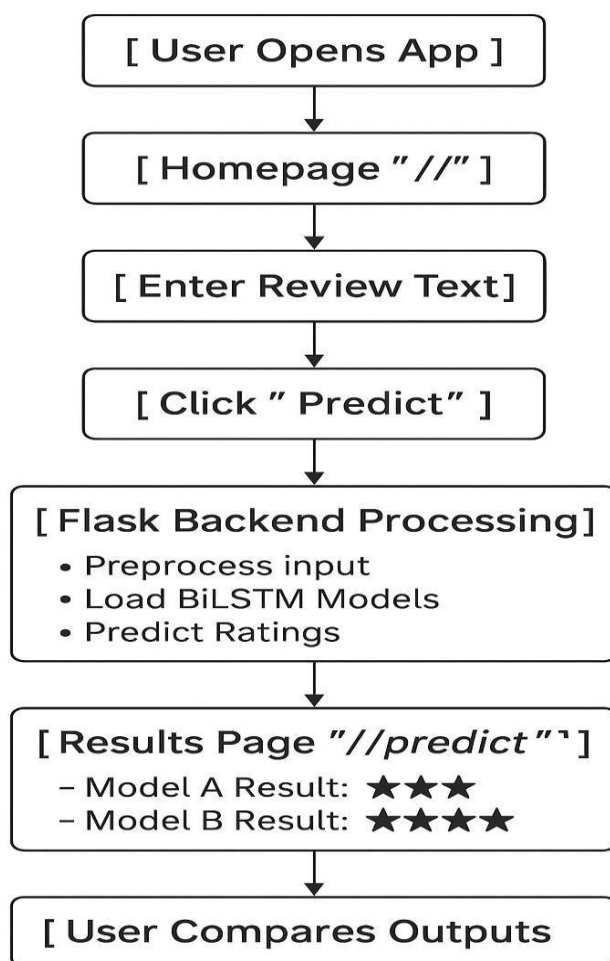
Overview

This Flask web application allows users to input a product or service review and compare the predictions of two deep learning models (BiLSTM).

- **Model A** → trained on imbalanced dataset
- **Model B** → trained on balanced dataset

The app provides side-by-side results, both in numerical rating (1–5) and star visualization.

Workflow diagram



User Interface Flow

Homepage (/)

- **Input Form:**

- Text area → "Enter a product/service review" ◦ Submit button → "Predict"

Prediction Page (/predict)

- **Two Columns for Comparison:**

- **Model A** (Imbalanced)
 - ▢ Predicted Rating (1–5)
 - ▢ Star Display (☆☆) ◦ **Model B** (Balanced)
 - ▢ Predicted Rating (1–5)
 - ▢ Star Display (☆)

Backend Workflow

1. Receive Input (via Flask form POST request)
2. Preprocess Review Text (tokenization, padding, etc.)
3. Load Models (model_A.h5, model_B.h5)
4. Generate Predictions (numerical rating)
5. Convert Labels to Stars
6. Return Result to UI

Error Handling

Empty Input → warning:

"⚠ Please enter a review before predicting."

Missing Model Files → error:

"Model not found. Please check model_A.h5 and model_B.h5."