TWEETS SENTIMENT ANALYSIS LSTM

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Motivation & Problem

- Why this project?

- Understanding public opinion on Twitter is important for brands and social analysis.

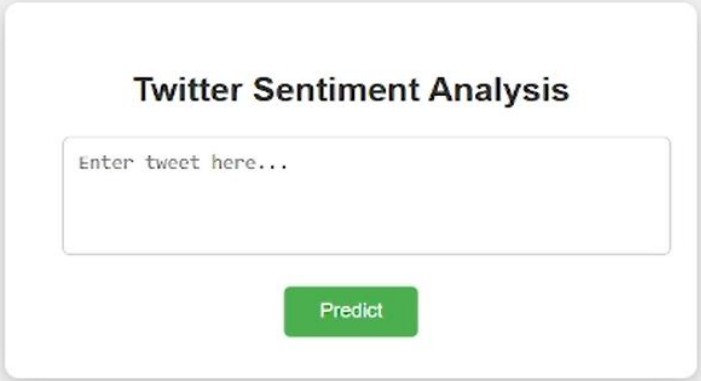
- Problem it solves:

- Manual sentiment labeling is time-consuming.
- This project automates sentiment classification for tweets

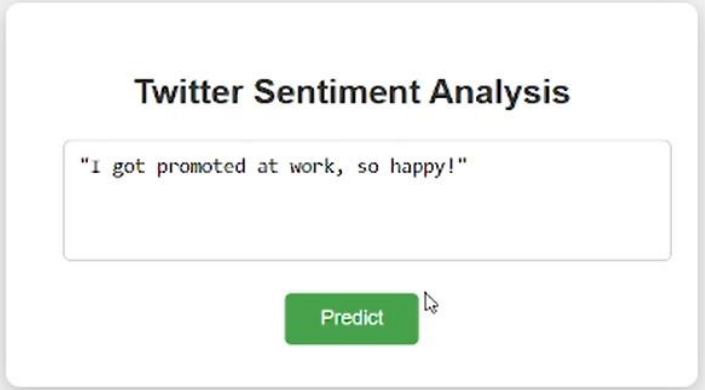
Approach

- Deep Learning Model: Bidirectional LSTM
- Preprocessing: Text cleaning, removing stopwords, URLs, mentions
- Tools & Technologies: Python, TensorFlow/Keras, NLTK, Flask, HTML/CSS

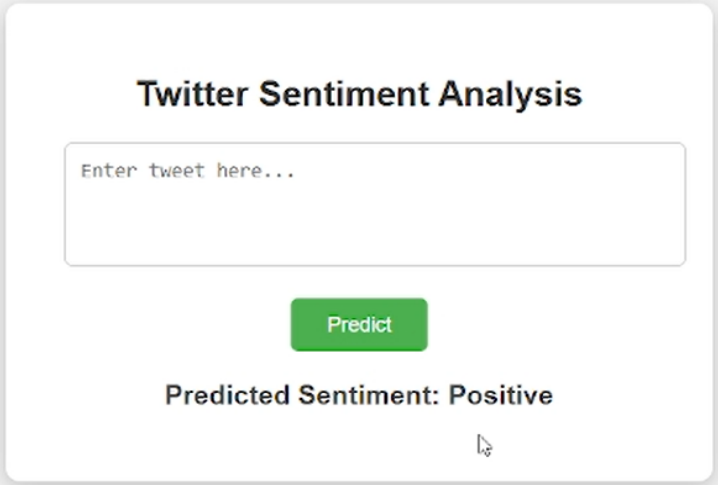
Demo & Results



Demo & Results



Demo & Results



File Structure & Deployment

```
├──── app.py
├──── templates/
│     └──── index.html
├──── static/
│     └──── style.css
├──── models/
│     ├──── BestLstm_Model.h5
│     ├──── tokenizer_acc.pkl
│     └──── label_encoder_acc.pkl
└──── README.md
```

Deployment:

- Run locally with Flask: `python app.py`

CONCLUSION & FUTURE WORK

- Conclusion:
- A simple, interactive web app that classifies tweets accurately.
- Automates sentiment analysis, saving time compared to manual labeling.

Future Work:

- Expand dataset for better accuracy.
- Add more sentiment categories (e.g., sarcasm, mixed emotions).
- Deploy on cloud with live Twitter API integration for real-time analysis.
- Improve frontend with charts or dashboards for sentiment trends.