Stock Movement Prediction Using Machine Learning and Streamlit

This project aims to predict stock price movements based on news headlines using a machine learning model deployed with Streamlit. We trained a Logistic Regression model on a dataset of 1000 labeled financial news headlines, each indicating whether the stock price moved up or down. The text data was converted into numerical features using CountVectorizer, and the dataset was split 80-20 for training and testing.

The model achieved an accuracy of approximately 85% on the test data, which is promising given the straightforward approach. Users can interact with the model through a simple web app by running streamlit run app.py. The app allows entering any news headline, and on clicking "Predict," it outputs whether the stock is likely to go up or down based on the headline.

Typical examples include positive news like "Company reports record profits" resulting in an upward prediction, while negative news such as "Major layoffs announced" predict a downward trend. Although the model performs well, it is trained on a limited dataset with basic text features. Incorporating advanced NLP techniques could improve accuracy in future versions.

Overall, this project demonstrates a clear, practical application of machine learning to support stock market decision-making by analyzing financial news headlines in real time.

Sample Headlines Used for Testing

Positive Headlines:

- Company reports record-breaking profits
- New product launch exceeds expectations
- CEO announces global expansion plans
- Strong earnings report boosts investor confidence
- Strategic partnership increases market share
- Tech stock surges after software upgrade
- Biotech firm sees success with clinical trials
- Retail giant announces holiday discounts
- Automaker sees increased demand for EVs
- Government incentives boost company performance

Negative Headlines:

- Company faces legal action over faulty products
- Disappointing earnings report shocks investors
- Layoffs announced amid financial struggle
- Data breach exposes millions of customer records
- CEO resigns amid controversy
- Product recall hurts brand reputation
- Tech firm loses major client contract
- Company under investigation for fraud
- Natural disaster disrupts production

- Negative analyst rating leads to stock drop

Result of web Pages :
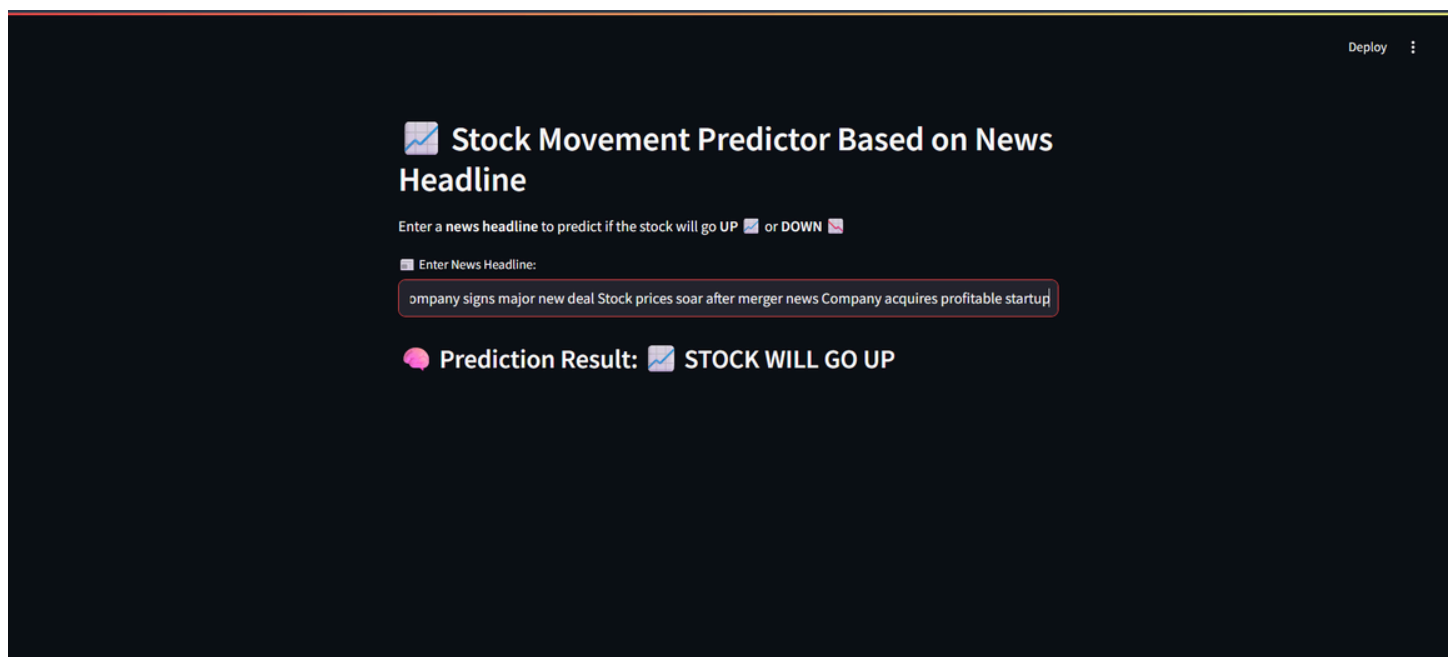
and for upthe stock i use

Company launches revolutionary product

Strong quarterly earnings reported

Company signs major new deal

Stock prices soar after merger news

Company acquires profitable startup

for down the stock i use these headline:

CEO accused of fraud

Company faces huge losses this quarter

Massive layoff announced

Company sued over data breach

Declares bankruptcy after debt crisis

📈 **Stock Movement Predictor Based on News Headline**

Enter a **news headline** to predict if the stock will go **UP** 📈 or **DOWN** 📉

🖼 Enter News Headline:

quarter Massive layoff announced Company sued over data breach Declares bankruptcy after debt crisis

🧠 **Prediction Result:** 📉 **STOCK WILL GO DOWN**