News Sentiment Analysis Tool

- Analyze Perception from Online News
- Presented by: Mandar Kishore More
- Course: DLBDSME01

Project Objective

- Goal:
- Develop a tool that fetches recent news articles for a company and classifies their sentiment.

- Use Case:
- Marketing uses this tool to track how the company is perceived.

Chosen Technologies

- Languages & Frameworks:
  - - Python
  - - Streamlit
  - - NewsAPI
  - - NLTK (VADER)
  - - HuggingFace Transformers (BERT)
  - - Pandas

System Architecture

- Shared the image in file

Preprocessing

- Steps:
- - Lowercase conversion
- - Remove punctuation
- - Remove stopwords
- - Normalize text

- Reason:
- Improves model consistency and accuracy.

Sentiment Models

- Model
  - VADER
  - Roberta
  - FinBert
  - Zero-shot
  - Textblob

Sample Output

- Screenshot suggestions:
- - Streamlit interface with input
- - Results table with sentiments
- - Bar chart of sentiment counts

- Shared screenshot in different pdf

Validation & Evaluation

- Methods:
- - Manual validation
- - VADER vs BERT vs FINBERT vs ZERO-SHOT vs TEXTBLOB output comparison
- - Error inspection

- Planned Improvements:
- - Labeling UI
- - Performance tracking

Reflection & Iteration

- Challenges:
- - Ambiguous headlines
- - API limits
- - Model disagreements

- Solutions:
- - Preprocessing
- - Two model toggle
- - Article limit

Next Steps & Conclusion

- Next Steps:
- - Add feedback loop
- - Support multiple news APIs
- - Cloud deployment

- Conclusion:
- Tool meets requirements with live crawling, dual-model sentiment analysis, and UI.