

DATASET DETAILS

DATA SOURCES USED IN MARKETPULSE PROJECT

The dataset for this project is collected from multiple public APIs depending on the selected dashboard section in the Streamlit application. Each API provides real-time and historical financial data that is used for AI-based prediction (via LSTM) and sentiment analysis (via TextBlob).

1 TIINGO API → STOCK MARKET DATA

- Endpoint: https://api.tiingo.com/tiingo/daily/{ticker_symbol}/prices
- Authentication: Requires API Key (tiingo_api_key)
- Used In: "Stock" section
- Purpose: Fetches daily stock prices (Open, High, Low, Close, Volume, Date)
- Example Symbols: AAPL, TSLA, MSFT, etc.

Explanation:

Tiingo provides high-quality stock data used to train and test the LSTM model for predicting the next day's closing price.

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2 YAHOO FINANCE (yfinance library) → NIFTY INDEX DATA

- Function Used: `yf.download(index_code, start, end)`
- Used In: "Nifty Index" section
- Purpose: Fetches historical Nifty 50 or Nifty 100 index prices.
- Example Index Codes: ^NSEI (Nifty 50), ^CNX100 (Nifty 100)

Explanation:

Yahoo Finance provides daily index price data for Nifty indices, which are used for trend prediction and model evaluation.

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3 COINGECKO API → CRYPTOCURRENCY DATA

- Endpoint: https://api.coingecko.com/api/v3/coins/{crypto_choice}/market_chart
- Parameters: vs_currency=usd, days=180
- Used In: "Cryptocurrency" section
- Purpose: Fetches price history for cryptocurrencies like Bitcoin or Ethereum.

Explanation:

CoinGecko provides open-access cryptocurrency market data used to train the LSTM model and forecast future crypto prices.

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4 NEWS API → FINANCIAL NEWS & SENTIMENT DATA

- Endpoint: https://newsapi.org/v2/everything?q={query}&apiKey={news_api_key}
- Used In: All sections (Stock, Nifty, Crypto)
- Purpose: Fetches the latest financial or company-related news articles.
- Analysis: Sentiment analysis performed using TextBlob.

Explanation:

News API is used to collect the latest financial headlines. Each article’s text is analyzed with TextBlob to determine whether the sentiment is Positive 🟢, Negative 🔴, or Neutral 🟡.

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✅ SUMMARY TABLE

| Section | Data Source / API | Purpose | |
|----------------|--------------------------|--------------------------------|--|
| ----- | ----- | ----- | |
| 📈 Stock | Tiingo API | Historical stock price data | |
| 🇮🇳 Nifty Index | Yahoo Finance (yfinance) | Index data for Nifty 50/100 | |
| ₿ Crypto | CoinGecko API | Cryptocurrency price data | |
| 📰 News | News API | Latest news and sentiment data | |

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