Project Design Phase-II
Data Flow Diagram & User Stories

Date	01 November 2023
Team ID	592679
Project Name	Share price estimation of TOP 5 GPU Companies
Maximum Marks	4 Marks

Data Flow Diagrams:

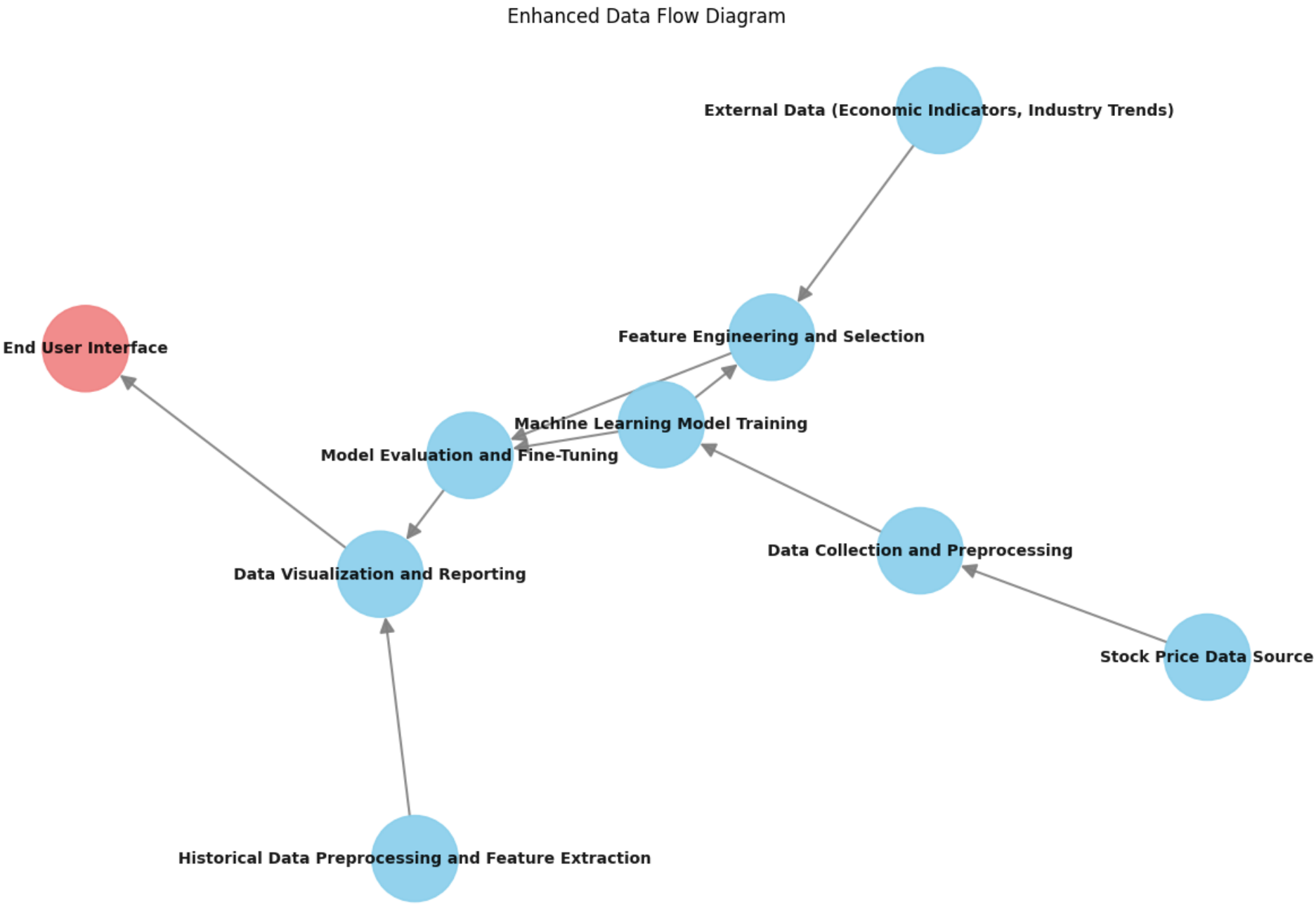
A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

Explanation:

1. **Stock Price Data Source:** The data source for historical stock prices of the top 5 GPU companies.
2. **External Data (Economic Indicators, Industry Trends):** Additional external data sources that might influence stock prices.
3. **Data Collection and Preprocessing:** Collects and preprocesses data from the stock price source and external data.
4. **Feature Engineering and Selection:** Identifies and selects relevant features for training the machine learning model.
5. **Machine Learning Model Training:** Trains a CNN model using historical stock price data and selected features.
6. **Model Evaluation and Fine-Tuning:** Evaluates the trained model's performance and fine-tunes it for better accuracy.
7. **Data Visualization and Reporting:** Visualizes the model's predictions and generates reports based on the evaluated data.
8. **End User Interface:** The final interface where end-users can interact with the system, view visualizations, and receive reports.

This diagram represents the flow of data within the system, from the initial data sources to the end user interface. Keep in mind that this is a simplified representation, and the actual system may involve more detail and complexity based on the specific requirements of your project.

Example Image:

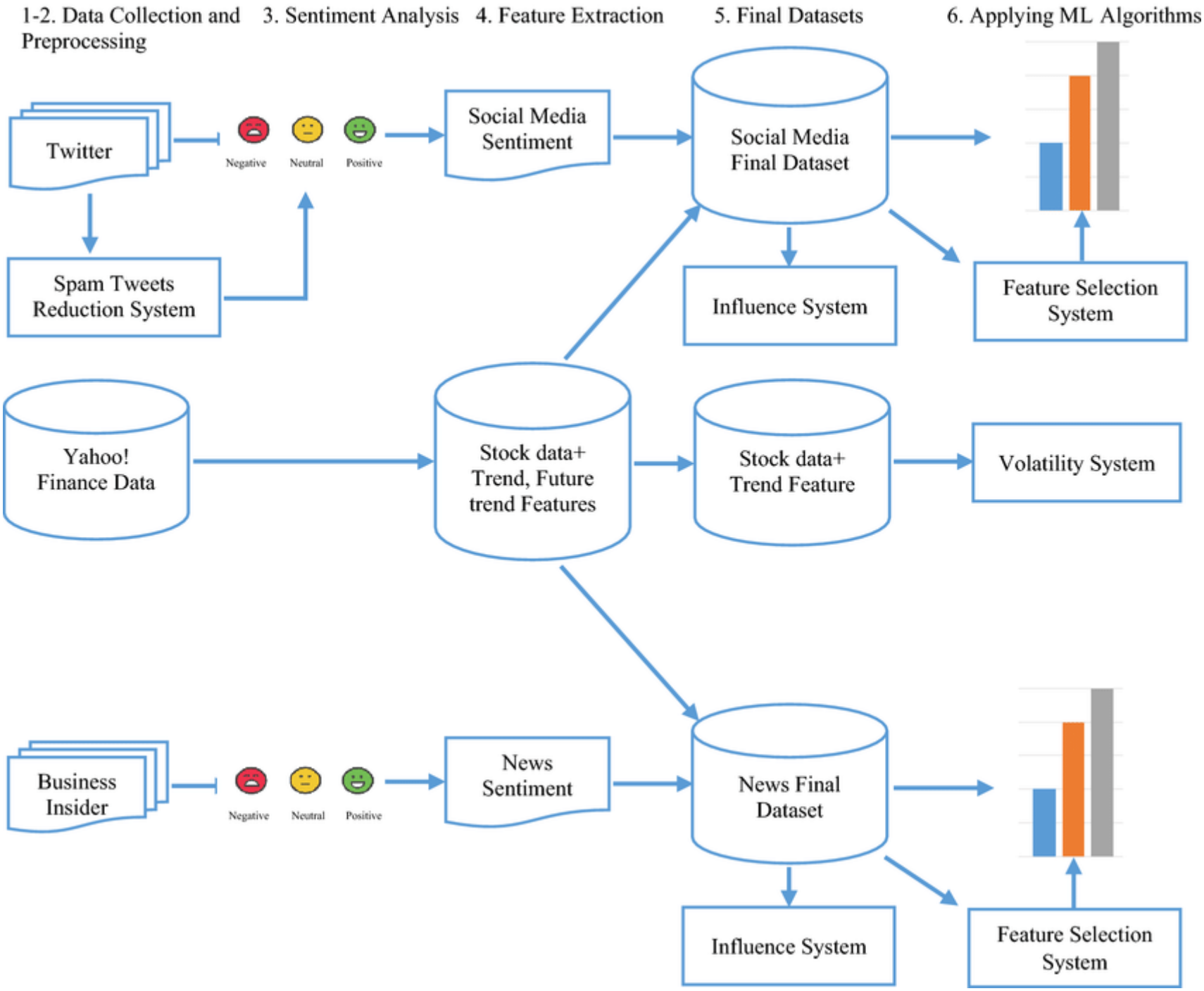


Example Image Code :

```
!pip install networkx matplotlib

import networkx as nx
import matplotlib.pyplot as plt

# Create a directed graph
G = nx.DiGraph()

# Add nodes
nodes = [
    "Stock Price Data Source",
    "Data Collection and Preprocessing",
    "Machine Learning Model Training",
    "External Data (Economic Indicators, Industry Trends)",
    "Feature Engineering and Selection",
    "Model Evaluation and Fine-Tuning",
    "Data Visualization and Reporting",
    "Historical Data Preprocessing and Feature Extraction",
    "End User Interface",
]

G.add_nodes_from(nodes)

# Add edges
edges = [
    ("Stock Price Data Source", "Data Collection and Preprocessing"),
    ("Data Collection and Preprocessing", "Machine Learning Model Training"),
    ("Machine Learning Model Training", "Model Evaluation and Fine-Tuning"),
    ("Model Evaluation and Fine-Tuning", "Data Visualization and Reporting"),
    ("Machine Learning Model Training", "Feature Engineering and Selection"),
    ("Feature Engineering and Selection", "Model Evaluation and Fine-Tuning"),
    ("External Data (Economic Indicators, Industry Trends)", "Feature Engineering and Selection"),
    ("Data Visualization and Reporting", "End User Interface"),
    ("Historical Data Preprocessing and Feature Extraction", "Data Visualization and Reporting"),
]
```

```
G.add_edges_from(edges)

# Draw the graph using the spring layout
pos = nx.spring_layout(G, seed=42)

# Set node colors
node_colors = ["skyblue"] * len(nodes)
node_colors[-1] = "lightcoral"  # End User Interface node color

# Set edge colors
edge_colors = ["gray"] * len(edges)

# Draw the graph with enhanced features
plt.figure(figsize=(12, 8))
nx.draw(
    G,
    pos,
    with_labels=True,
    font_weight='bold',
    node_size=3000,
    node_color=node_colors,
    font_size=10,
    arrowsize=20,
    edge_color=edge_colors,
    width=1.5,
    font_color='black',
    alpha=0.9
)

# Display the graph
plt.title("Enhanced Data Flow Diagram")
plt.show()
```

Data Flow Diagram :


1-2. Data Collection and Preprocessing
3. Sentiment Analysis
4. Feature Extraction
5. Final Datasets
6. Applying ML Algorithms
Twitter
Negative
Neutral
Positive
Social Media Sentiment
Social Media Final Dataset
Spam Tweets Reduction System
Influence System
Feature Selection System
Yahoo! Finance Data
Stock data+ Trend, Future trend Features
Stock data+ Trend Feature
Volatility System
Business Insider
Negative
Neutral
Positive
News Sentiment
News Final Dataset
Influence System
Feature Selection System

User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail		Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard					
Customer (Web user)						
Customer Care Executive						
Administrator						