



NexoSphere

*Stock Market Data
Aggregation and
Sentiment Analysis Tool*

[Link to Video Recording](#)

COEN 6313 PROJECT PRESENTATION GROUP - #G15

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OUTLINE

- Problem Statement
- Solution as a Service
- Related Applications
 - Technical Choices
- Project Management

PROBLEM STATEMENT

- Financial market participants struggle to efficiently access and analyze fragmented stock market data.
- Investors lack tools to quickly gauge market sentiment from vast amounts of financial news.



Service 1:

Stock Market Data Aggregation & Combination

Problem statement

- From individual investors to large institutions, face **significant challenges** in accessing, integrating, and analyzing **comprehensive** stock market data from **multiple sources**.
- This **fragmentation** leads to **inefficiencies**, potential **inaccuracies**, and missed **opportunities** in investment decision-making.

Our solution

- Retrieving **real-time** stock market data from **multiple** sources or **custom API integration**.
- **Aggregation**: collecting, combining, and summarizing data from multiple sources into a unified, more comprehensive dataset.
- **Centralize diverse** stock market data and offer users a **single point of access** to a wide range of stock market information.

Benefits to users

- Saving users the time and effort of manually collecting and combining data from multiple sources.
 - Assisting users in preserving data integrity and having reliable consistent data.

Service 2:

Financial News Summarization & Sentiment Analysis

Problem statement

- Investors are overwhelmed by **lengthy reports and news articles** about their stocks.
- It's **time-consuming** to comprehend articles in real time, making it **harder to stay informed** about updates in stocks.

Our solution

- Retrieving **real-time company news and reports** from external APIs.
- Using pre-trained AI model (T5) to quickly distill lengthy reports into **concise summaries**.
- Performing **sentiment analysis** on the summarized content, using pre-trained AI model (FinBERT).

Benefits to users

- Helping users instantly understand market trends or stock performance at a glance.
- Helping users make quicker, more informed decisions without having to read through entire articles.

APPLICATIONS & FUTUTRE DEVELOPMENTS

1 Additional AI Models for other Industries

- Fine-tuning models for industries like commodities, tech, or healthcare to investors make better decisions based on sector-specific trends.

2 Stock Trading Bots

- Automatically buy and sell stocks based on aggregated financial data and news sentiment.

3 Integrating with Portfolio Management

- Deliver tailored insights and customized alerts based on users' specific stock portfolios.

POTENTIAL USERS:

- Investors, Financial Analysts, Algorithmic Traders, Fintech Startups...etc.

TECHNOLOGY CHOICES

- **Cloud Platform:** Azure
- **NoSQL Database:** Azure Cosmos DB
- **AI Model Hosting:** Azure Machine Learning Studio & Hugging Face
- **Programming Language:** Python 3.10



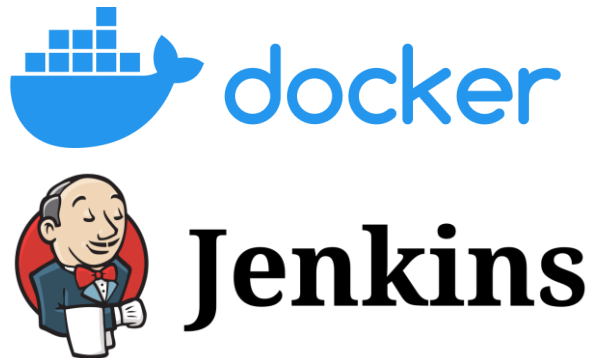
Hugging Face



python™

PROJECT DEVELOPMENT & MANAGEMENT

- **API Design & Documentation:** OpenAPI 3.1.0 & SwaggerHub
- **SCM:** Git & GitHub
- **CI/CD:** Docker & Jenkins
- **Project Management:** Jira (*Agile Methodology*)



THANK YOU

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