

## AF3005 – Group Project

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**Instructor:** Dr. Usama Arshad

**⌚ Group:** max 4

**⌚ Total Marks:** 20

**BSFT – Sec A, B, C**

**Batch:** 22

**Date:** 17-05-25

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### Multi-Themed Financial Machine Learning Applications using Streamlit

#### Objective

The objective of this group project is to collaboratively design and develop a creative, interactive machine learning application using financial datasets. Students will integrate Kragle datasets, fetch data from Yahoo Finance, apply machine learning models, and apply unique visual themes to their parts of the project, creating an engaging multi-themed Streamlit application.

#### Group Structure

- Maximum 4 members per group.
- Each member must implement a separate visual theme for their part of the application.
- The final project must combine all four themes into a single integrated Streamlit app.

#### Relevant Learning Outcomes (LOs)

LO	Description
LO6	Collaborate with teams to complete programming-based financial projects. (PLO 7)
LO8	Demonstrate self-learning skills to enhance programming capabilities for finance. (PLO 8)

#### Project Requirements

##### Welcome page

##### Data Sources:

- Upload financial datasets from Kragle.
- Fetch real-time stock market data using Yahoo Finance API (yfinance library).

##### Machine Learning Models (Each theme must implement one):

- Linear Regression
- Logistic Regression
- K-Means Clustering

##### Python Libraries:

- streamlit, pandas, numpy, scikit-learn, matplotlib, plotly, yfinance

##### Visual Themes (One per member):

- Zombie Theme: dark colors, horror GIFs, eerie fonts

- Futuristic Theme: neon colors, space animations, tech vibes
- Game of Thrones Theme: medieval fonts, fire and ice images
- Gaming Theme: bright colors, pixel art GIFs

### **Expected Deliverables**

- A deployed Streamlit app.
- GitHub repository with all code and a detailed README.md.
- LinkedIn Post by each member which a running demo.

### **Submission Guidelines (as a group)**

1. GitHub Repository
2. Streamlit Share Deployment
3. LinkedIn Post

### **Marks Distribution (Total = 20 Marks)**

Section	Details	Marks
<b>Implementation of Machine Learning Workflow</b>	Correct step-by-step implementation for all four themes	6
<b>Visual Theme Customization</b>	Creative application of color schemes, GIFs, and layouts	4
<b>Interactivity and User Experience</b>	Use of buttons, notifications, graphs, clean navigation	4
<b>Deployment and Professional Submission</b>	GitHub, Streamlit, LinkedIn posts	4
<b>Team Collaboration and Integration</b>	Smooth integration of all themes into one application	2

**Submission Deadline: 17 – 5 - 2025**

*Good Luck! Unleash your creativity, bring financial data to life with your unique themes!*