**IST-691-DEEP LEARNING IN PRACTICE.**

Dear Professor,

Please follow the steps below to access and review the project files in the correct order:

**1. Start with the Project Proposal**

* **File:** DL Project Proposal\_Group5 (1).pdf
* **Action:**  
  Begin by reviewing this PDF.  
  It introduces the project idea, explains why deep learning (CNN-LSTM) is used for portfolio optimization, discusses the Alpha Vantage dataset, and outlines early goals.

**2. Review the Final Project Report**

* **File:** IST691\_Deep\_learning\_Report.docx
* **Action:**  
  This Word document provides a detailed final report, including:
  + Project overview
  + Data exploration
  + Model architecture (CNN-LSTM)
  + Results and graphs (Actual vs Predicted prices, Candlestick charts)
  + Challenges and conclusions.

**3. Explore the Deep Learning Model Code**

* **File:** deepLEARNING\_project.ipynb
* **Action:**  
  This Jupyter Notebook contains the full Python code:
  + Data preprocessing
  + CNN-LSTM model building
  + Training, testing, and evaluation
  + Visualization of results (line charts, candlestick charts)

You can run this notebook in JupyterLab, Google Colab, or VSCode with Python extensions.

**4. Review the Saved Model Files**

These are **trained deep learning model files** stored for future use:

| **File** | **Purpose** |
| --- | --- |
| improved\_lstm\_attention\_model.h5 | H5 format model checkpoint (Keras model file). |
| improved\_lstm\_attention\_model.keras | New Keras v3 format saved model. |
| lstm\_stock\_model.keras | Another saved Keras model for stock price prediction. |
| scaler.pkl | Pickled scaler object used to normalize input features during model training. |

**Software Requirements**

| **Purpose** | **Software/Library Needed** |
| --- | --- |
| Reading Reports (.pdf, .docx) | Microsoft Word, Google Docs, or PDF Reader |
| Running Notebooks (.ipynb) | Python 3.8+ with Jupyter Notebook or Google Colab |
| Loading Models (.h5, .keras, .pkl) | TensorFlow/Keras 2.8+, scikit-learn |

**Python Packages Needed:**

* tensorflow (for CNN-LSTM model building)
* keras
* numpy
* pandas
* matplotlib
* seaborn
* sklearn
* plotly (for candlestick chart visualization)

Install all packages easily using:

pip install tensorflow keras pandas numpy matplotlib seaborn scikit-learn plotly

**Final Access Summary**

1. **Start** with the Project Proposal (DL Project Proposal\_Group5 (1).pdf).
2. **Read** the Final Report (IST691\_Deep\_learning\_Report.docx).
3. **Explore** the code in deepLEARNING\_project.ipynb.

**THANKYOU!**