

COS30018 – Option C: Task 1 Report

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1. Environment Setup

I created a Python virtual environment in my project directory using the command `python -m venv venv`. This ensured isolation from global packages. Both v0.1 and P1 projects were tested inside this environment.

*****Requirements File*****

A requirements.txt file was prepared containing the following libraries:

- numpy
- pandas
- matplotlib
- scikit-learn
- tensorflow
- keras
- yfinance
- h5py

2. Testing Code Bases

*****Testing v0.1*****

I downloaded v0.1 (stock-prediction.py) from Canvas and ran it inside the environment. After resolving minor deprecation issues, the model trained and generated graphs. The predictions were basic but demonstrated LSTM on time-series data.

*****Testing P1 (GitHub Repo)*****

I cloned the P1 repository from GitHub and tested it. The code was cleaner, modular, and ran successfully in the same environment. Predictions were more consistent and matched the real stock trends better.

3. Comparison: v0.1 vs P1

- v0.1: Single-file, basic tutorial code with outdated imports.
- P1: Modular functions, scaling, flexible splits, easier to extend.
- v0.1 predictions were less aligned; P1 predictions tracked the trends better.

4. Understanding of v0.1

v0.1 was adapted from a YouTube tutorial. It lacked modularity, had hardcoded parameters, and weak error handling. Still, it served as a learning base for understanding how LSTMs can be applied for stock prediction.

5. Conclusion

I successfully set up the environment, tested both codebases, and confirmed that P1 outperforms v0.1. This task provided the foundation for improving the stock prediction project.

Appendix

Screenshots included in the submission: - Requirements installation - v0.1 training console output - P1 training console output - Prediction graphs