DSCI-560 Assignment 3
Stock Price Analysis & Algorithmic Trading - Part 1

Team Formation

Team name: HealthEdBot
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https://github.com/DSCI560

Minutes of the offline meeting on January 26

Participants: project team members
Conference topic: Database installation
We carefully read the lab instructions and carefully summarized the required steps.
Install the Apache web server and configure the firewall to allow access.
Install the MySQL server and configure security settings.
Install PHP and phpMyAdmin to ensure that you can manage the MySQL database through the web interface.
We have read and supplemented the corresponding knowledge to avoid problems that may arise during the installation process.

Minutes of the online meeting on January 27

Participants: project team members
Conference topic: Database installation2
Review the installation steps on Day 1 and resolve any problems and errors you may encounter during the installation process. Because the computers of the three of us are different. Two of them are Apple and one is DELL. Apple's chips include M2 and Intel. We need to ensure that all software and services are running properly, including Apache, MySQL and phpMyAdmin. However we failed.

Minutes of the offline meeting on January 28

Participants: project team members
Conference topic: Database installation3
We begin to analyze possible reasons for installation failure and make a summary.
Missing dependencies: Some packages may require other packages as dependencies. If these dependencies are not installed correctly, the installation of the main package may fail.
Insufficient storage space: The installation process requires sufficient disk space. If there is insufficient space, the installation may be interrupted.
Network issues: When downloading packages from the repository, network connection issues may cause the download to fail.
Firewall settings: Even if Apache is installed, a misconfigured firewall may block

external access to the web server.
MySQL security configuration: The mysql_secure_installation script is used to improve the security of MySQL. However, if not operated properly, you may accidentally set an overly complex password or misconfigure certain security options, making it difficult to remember or manage.
PHP integration with web servers: PHP needs to be configured correctly to work with Apache, and incorrect configuration may cause PHP scripts to fail to execute.
Access permissions: During installation or configuration, incorrect file permission settings may prevent the web server from accessing certain necessary files or directories.
Execute permissions: Some installation scripts may require execute permissions to run. Without the appropriate permissions, the installation process may fail.
Software version conflict: The installed version of a software package may be incompatible with other packages already on the system.
Operating system compatibility: Some packages may not be fully compatible with specific versions of operating systems.
pMyAdmin configuration issues Database connection: phpMyAdmin needs to be configured correctly to connect to the MySQL database. An incorrect database username, password, or host address may cause the connection to fail.
Security configuration: Incorrectly configuring the security settings of phpMyAdmin may expose the database to security risks, such as using default passwords, not enabling HTTPS, etc.
We summarized the above possible situations and tried to analyze and solve them one by one. Finally, we succeeded.

Minutes of the online meeting on January 29
Participants: project team members
Conference topic: Installing required Python libraries and ideating code
Install mysql-connector-python, pandas, numpy, yfinance and other libraries through pip. Test whether the library installation is successful to ensure that these libraries can be used smoothly in subsequent script development.
We read the steps of Data Collection/Storage and Data Preprocessing of lab3. Begin discussing how to code and what problems there may be in coding. The part that we think is more difficult is that we need to connect to the database for coding, and we have no relevant experience in this part. After reading github, we were very familiar with how to code and the work became smoother.

Minutes of the online meeting on January 30
Participants: project team members
Conference topic: Coding discussions and testing
Use the yfinance API to get real-time stock data and identify companies and industries of interest.
Develop scripts that allow users to create portfolios and define stock lists. Implement

the function of obtaining stock price data in the portfolio based on the input date range. Develop portfolio management scripts to add, delete stocks and display all portfolios. Develop a stock validity verification function to ensure that users can add valid stocks to their portfolios. Discuss and implement strategies for handling missing values, such as forward filling, backward filling, or interpolation. Convert data formats and calculate relevant indicators (such as daily yield, etc.). Finally, we are now conducting experiments on Google colab. The experiment was successful, and then we tried to conduct the experiment on Linux.

Minutes of the offline meeting on January 31

Participants: project team members

Conference topic: Summary review and video recording

The goal of this project is to develop a real-time stock price analysis and algorithmic trading model. The project is divided into two main phases, with the first phase focusing on data collection, storage and pre-processing, preparing for in-depth analysis and implementation of algorithmic trading in the second phase. I think a very important step is database installation and configuration. We have experience in installing databases locally before, but this is the first time to conduct experiments on the operating system. This requires our rich operating system experience and network security experience. However, our team members do not have a computer background before and lack this experience. . However, we still successfully installed the installation and security configuration of the Apache web server and MySQL server, and used the installation of PHP and phpMyAdmin to ensure that the MySQL database can be easily managed through the web interface, simplifying database management work.

The next steps of data analysis are not very difficult. We also explained how to perform data preprocessing in class. The second phase of the outlook will focus on using stored and pre-processed data for in-depth stock price analysis and development of algorithmic trading models. More advanced data analysis and machine learning techniques will be evaluated and implemented to predict stock price movements and automate the execution of trading strategies.

Finally we recorded a video to show our work.

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