Low Level Design (LLD)

INVESTMENT PREDICTION

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● Document Version Control

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Contents

Abstract

In the era of big data for predicting stock market prices and trends has become even more popular than before. I collected 11 years of GOOGLE's stock data and proposed a comprehensive customization of feature engineering and machine learning-based model for predicting price trend of stock markets. The proposed solution is comprehensive as it includes pre-processing of the stock market dataset, utilization of multiple feature engineering techniques, combined with a customized machine learning based system for stock market price trend prediction. We conducted comprehensive evaluations on frequently used machine learning models and conclude that our proposed solution outperforms due to the comprehensive feature engineering that we built. The system achieves overall high accuracy for stock market trend prediction. With the detailed design and evaluation of prediction term lengths, feature engineering, and data pre-processing methods, this work contributes to the stock analysis research community both in the financial and technical domains.

1.Introduction

1.1   Why this Low-Level Design Document?

The purpose of this Low-Level Design (LLD) Document is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions prior to coding, and can be used as a reference manual for how the modules interact at a high level.

a.   1.2 Scope

The LLD documentation presents the structure of the system, such as the database architecture, application architecture (layers), application flow (Navigation), and technology architecture. The LLD uses non-technical to mildly-technical terms which should be understandable to the administrators of the system. This software system will be a Web application This system will be designed to detect unusual activity ,and fire disasters.

b.   1.3 Constraints

An Investment Prediction Model is to develop a reliable and accurate tool for predicting investment returns, which can help investors make informed decisions about their investments and manage their portfolios more effectively.

c.   1.4 Risks

Document specific risks that have been identified or that should be considered.

d.   1.5 Out of Scope

Delineate specific activities, capabilities, and items that are out of scope for the project.

2.Technical specifications

2.4 Logging

We should be able to log every activity done by the incidents.

- The System identifies at what step logging required
- The System should be able to log each and every system flow.
- Developers can choose logging methods. You can choose database logging/ File logging as well.
- System should not be hung even after using so many loggings. Logging just because we can easily debug issues so logging is mandatory to do.

2.5 Database

System needs to store every request into the database and we need to store it in such a way that it is easy to retrain the model as well.

1. The User chooses the activity dataset.
2. The User gives required information.

3. The system stores each and every data given by the user or received on request to the database. Database you can choose your own choice whether MongoDB/ MySQL.

4.Technology stack

Backend	Python / Machine Learrning
Database	Mongo DB
Deployment	AWS
version control	GitHub

5. Proposed Solution

The solution proposed here an investment Prediction Model is to develop a reliable and accurate tool for predicting investment returns, which can help investors make informed decisions about their investments and manage their portfolios more effectively.

6. Error Handling

Should errors be encountered, an explanation will be displayed as to what went wrong?

An error will be defined as anything that falls outside the normal and intended usage.

7.Key performance indicators (KPI)

- Time and workload reduction using the Investment Prediction.

8. Conclusion

we are predicting the closing stock price of any given organization, we have developed an application for predicting close stock price using LSTM algorithm. We have used datasets belonging to Google, Nifty50, TCS, Infosys and Reliance Stocks and achieved above 93% accuracy for these datasets. In the future, we can extend this application for predicting cryptocurrency trading and also, we can add sentiment analysis for better predictions.