

## **Project Title : Securities Investment Manager (SIM)**

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**Category** : Web Application

### **Purpose**

Purpose of Securities Investment Manager (SIM) is to **organise**, **strategize** and **automatize** intraday trading investments in the stock market. Organising will help the users to keep track of their investments, profits, losses and taxes. Strategizing will help the users to choose from well tested strategies and maximize their profits. Automatizing will enable the users to take trading actions according to the selected strategies automatically without keeping their system running and speculating charts for the full day.

### **Scope**

SIM will help traders to organise their trading experience through detailed strategy analysis and regular transaction reports. Making profits and reducing loss beyond these strategies is out of the scope of SIM. Some of the strategies might fail badly during mishaps like market crashes. Traders should refrain from algorithmic trading on such days. Also, SIM is limited to trading in the equity segment of the stock market.

### **Introduction**

Securities Investment Manager is a typical organising software for managing securities in the stock market, mainly dealing with the equity segment. It covers the technical analysis aspect of the stock market for investing in various equity scrips. A user can make independent instances of investment, depending on their investment principle amount, risk factor, strategy, time period for investment etc. Each instance deals with a different set of factors, in order to achieve different targets or goals. A user can select appropriate strategies and the SIM will manage the securities' transactions automatically on a daily basis. It also provides dummy investments, in which a user can test the strategies on the live market, before investing real money.

## Existing System

Most of the present day trading managing softwares uses a basic approach of trading, with very little efficiency.

- These softwares require for the traders to develop the algorithms. Not all investors are technically skilled.
- Require high end equipment to work with these softwares.
- Existing softwares requires costly subscriptions.

## Proposed System

SIM covers the technical analysis aspect of the stock market for investing in various equity scrips. It has the following features.

- **Investment Instance**

Each user account is associated with multiple independent investment instances. Investment instance is like a portfolio with predefined arguments like Initial Investment (I), Leverage on Margin (m), Time for investment (t), Goal or Target (G), Profit % per day per equity (k).

- **Indicators and Candlestick Patterns**

It comes with Real Time stock indicators and candlestick patterns for every equity scrip. Based on indicators and patterns one can develop their own strategies and take trades, or choose one of the programmed trading strategies, to automatically take trades.

- **Multiple intraday strategies**

Apart from providing indicators and patterns, it also provides pre-programmed trading strategies in real time. A user can very easily speculate which strategies are indicating the buy action and which one is indicating the sell action. Afterwards, the user can take trade accordingly. Users may also apply automatic strategy selection for placing automatic trades daily. There are multiple intraday strategies to apply on each investment instance.

- **Buy/Sell Estimation**

Using the pre-programmed trading strategies, our software will generate buy/sell estimation. Using such estimations, users can take manual trades. Though these estimations are not 100% accurate daily, but on a monthly basis, it gives us the desired target profit.

- **Dummy transactions**

The software provides dummy investments, in which a user can test the strategies on the live market, before investing real money. Dummy transactions take place with real tax and brokerage for strategy testing purposes, thus giving the actual profit and loss estimation.

- **Goal metrics**

Goal metrics is basically a status indicating current growth, and the goal that is required to achieve. It provides daily, weekly and monthly target metrics, for analysing investment status regularly.

- **Weekly report**

It also provides automatic weekly report generation for the targets achieved, net profit/loss, stocks transacted, tax deducted, incorrect buy/sell estimates etc. This will help the trader to analyse and choose the appropriate strategies.

## **Advantages**

SIM is having the following advantages.

- **Dummy Transactions**

It will help the trader to test various strategies before investing the real money.

- **Weekly Report**

Regularly generated weekly reports will help the traders to manage their profits, losses, taxes, goals etc.

- **Automated Trading**

Users can choose automatic trading feature, to automatically take actions according to the selected strategy.

- **Minimal Maintenance Charge**

Only API and server cost is required for maintaining the software.

- **Time and Cost saving**

Website is running on the cloud, so it will be fast and cost saving.

## Functional Requirements

Functional requirements of our system are explained below.

- **User Credentials**

Users must have valid User ID and password to login thus creating their individual profiles.

- **Strategy Selection**

Users need to select either one of the listed strategies for the chart's live analysis or manual mode to trade without using the SIM's listed strategy analysis.

- **Trading Style selection**

Users need to toggle between automatic and manual trading style.

- **Hyperparameters**

Each investment instance requires pre-declaration of hyperparameters, which include - Investment amount, target profit % per day per share, number of times buy or sell per day per share, leverage, time of investment, goal or target amount.

## Non-Functional Requirements

Requirements that specify criteria that can be used to judge the operation of a system are called non-functional requirements. Non-functional requirements of our system are mentioned below.

- **Time**

Traders need to spend some time signing up and to choose strategies through which he/she wants to invest.

- **Basic knowledge**

Traders should have a basic knowledge about the strategies before using.

- **Nature of market**

Traders should be familiar with the nature of the market and the factors which affect the rise or fall of stock prices.

## Software Tools

- **Database Server** : MongoDB (mLAB)
- **Client** : Any web browser
- **Development Tools** : Node.js, Express.js, Yahoo Finance API
- **Programming Language** : Javascript

## Deployment

- **Operating System Server** : Linux (AWS or Heroku)

## Hardware Specification (preferred)

- **Processor** : Intel Core i3
- **RAM** : 4GB
- **Hard Disk** : 10 GB