

FT5010 - Mid-Term Project Guidelines

Tool: Google Colab

Submission: One PDF and Two separate Python notebooks

{Example PDF: GroupX_MidTerm_Report.pdf}

{Example Notebook 1: GroupX_MidTerm_Strategy_1.ipynb}

{Example Notebook 2: GroupX_MidTerm_Strategy_2.ipynb}

{Example Folder: IS4226_GroupX_MidTerm_Sub}

Until now, we have learned the basics of financial markets, the different approaches, technical analysis, and the development of backtesters. The main objective of this mid-term project is to ensure that you have understood the basics and can apply the learnings in developing such backtesters. You should develop these backtesters as well as be able to interpret the results. Below is what you need to do in the group.

1. Make a group of no more than five members.
2. Each individual is to devise a strategy/observation of what he/she thinks might work. This can be based on technical or fundamental ideas.
3. Discuss the strategies in the group and identify the best two ideas.
 - a. By doing this, a great idea may be dropped off, but that's okay, as the objective is not to develop a great idea but to learn the development and interpretation process.
4. Develop backtesters for these strategies and test the strategy on in-sample data.
 - a. To keep things simple, all groups will test their strategy on a portfolio of MAANG stocks from 01/01/2015 to 31/12/2019 on daily frequency data. Remember to test on a portfolio.
 - b. Please note that this time, you need to do just **in-sample testing** and report what different variations you have tried.
5. Prepare a notebook with significant markups, and please explain your code through comments. Please also describe the idea/strategy in the notebook at the start. The more understandable your notebook, the better it will be.
6. Report **Strategy Risk, Returns, and performance metrics** for MAANG stocks portfolio. Visualizations are optional but will be a bonus if you do that.
7. Report the interpretations and why there are similarities or differences between 2 strategies.
8. Discuss the Challenges and Opportunities of your strategy that will make it better in the future.

Submission Deadline: 16 March 2024 23:59

Presentation: (19 March 2024) Lecture 9. Present one strategy (the best one) in **less than 15 minutes (strict)** to the class. The presentation will include your strategy description, the logic of your strategy, indicators used, results, visuals, and challenges & opportunities. You can add any item as needed depending on time constraints.

Grading Rubrics:

Item	Requirements
Strategy Description (15) (report)	The strategy is described clearly (for example, what it is and which category it falls), and the originality/reference has been discussed. The finalization of the strategy in the group has been discussed.
Backtesting(25) (notebook)	In-sample testing is done. The dates and stocks are as per the requirements. The logic is entirely correct and free of testing errors. Tested on a portfolio of MAANG stocks. Multiple variations of the strategy parameters have been tried and compiled for the selection.
Notebook Clarity(10) (notebook)	The flow of codes is logical, there are adequate comments to make the code readable and understandable. The results are clearly explained.
Reporting(20) (report)	Submission files are named as per requirement. The folder contains one pdf and two notebooks. The report contains the description and results (risk, returns, and performance metrics). A clear presentation of differences/similarities between the two strategies is mentioned. Challenges and opportunities have been discussed.
Presentation (30) (in class)	An organized presentation on strategy description, results, challenges, and opportunities. It should be within 10 minutes. Any number of speakers can present, but it should be well prepared without interruptions.
Bonus -Visualisations (5*)	The report/notebooks contain images/visuals of strategy description/results, etc., that help to understand the strategies better.