FRA Project(Milestone-2)

Submission type	:	File Upload
Due Date	:	Jan 16, 11:59 PM
Total Score	:	45
Available from	:	Jan 07, 8:00 AM

Description

Dear Participant,

The FRA Graded assignment is divided into two Milestones of 45 marks each.

Milestone-1 of the FRA project will cover the basic model building for predicting credit risk.

Milestone-2 of the FRA project will cover the model comparison for credit risk and a case study on market risk.

This project contains details for Milestone-2

Credit Risk

Problem Statement

Businesses or companies can fall prey to default if they are not able to keep up their debt obligations. Defaults will lead to a lower credit rating for the company which in turn reduces its chances of getting credit in the future and may have to pay higher interests on existing debts as well as any new obligations. From an investor's point of view, he would want to invest in a company if it is capable of handling its financial obligations, can grow quickly, and is able to manage the growth scale.

A balance sheet is a financial statement of a company that provides a snapshot of what a company owns, owes, and the amount invested by the shareholders. Thus, it is an important tool that helps evaluate the performance of a business.

Data that is available includes information from the financial statement of the companies for the previous year (2015). Also, information about the Networth of the company in the

following year (2016) is provided which can be used to drive the labeled field.

Explanation of data fields available in Data Dictionary, 'Credit Default Data Dictionary.xlsx'

Hints :

Dependent variable - We need to create a default variable which should take the value of 1 when net worth next year is negative & 0 when net worth next year is positive.

Test Train Split - Split the data into Train and Test dataset in a ratio of 67:33 and use random_state =42. Model Building is to be done on Train Dataset and Model Validation is to be done on Test Dataset.
Credit Risk Dataset
Data Dictionary
Market Risk
The dataset contains 6 years of information(weekly stock information) on the stock prices of 10 different Indian Stocks. Calculate the mean and standard deviation on the stock returns and share insights.

Please find attached the files to be referred.

Market Risk Dataset

You are expected to do the Market Risk Analysis using Python.

Please note the following:

- Please avoid sharing code in the business report. There might be a deduction if codes are shared in the report
- Please ensure all the graphs displayed in the report are clearly visible
- The proper interpretation should be provided wherever required
- You have to submit 2 files :
    1. **Business Report:** In this, you need to submit all the answers to all the questions in a sequential manner. It should include a detailed explanation of the approach used, insights, inferences, all outputs of codes like graphs, tables, etc. Your report should not be filled with codes. You will be evaluated based on the business report only. Hence please ensure that your business report is detailed and includes everything apart from code. Please go through the Business Report Do's and Don't
    2. **Jupyter Notebook file**: This is a must and will be used for reference while evaluating.

- Any assignment found copied/ plagiarized with other submissions will not be graded and marked as zero.
- Please ensure timely submission as a post-deadline assignment will not be accepted.

Reflection report

Please reflect on all that you have learned while working on this project. This step is critical in cementing all your concepts and closing the loop. Please write down your thoughts after

completing the project here.

Thanks

Program Office

Scoring guide (Rubric) - FRA Rublic-Part-2

Criteria	Points
1.8 Build a Random Forest Model on Train Dataset. Also showcase your model building approach	4
1.9 Validate the Random Forest Model on test Dataset and state the performance matrices. Also state interpretation from the model	3
1.10 Build a LDA Model on Train Dataset. Also showcase your model building approach	4
1.11 Validate the LDA Model on test Dataset and state the performance matrices. Also state interpretation from the model	3
1.12 Compare the performances of Logistics, Radom Forest and LDA models (include ROC Curve)	4
1.13 State Recommendations from the above models	4
2.1 Draw Stock Price Graph(Stock Price vs Time) for any 2 given stocks with inference	4
2.2 Calculate Returns for all stocks with inference	3
2.3 Calculate Stock Means and Standard Deviation for all stocks with inference	3

Criteria	Points
2.4 Draw a plot of Stock Means vs Standard Deviation and state your inference	4.5
2.5 Conclusion and Recommendations	4
Quality of Business report(Please refer to the Evaluation Guidelines for Business report checklist. Marks in this criteria are at the moderator's discretion) Please go through the Business Report Do's and Don't docuement	4.5
Points	45

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