Trading Case Assessment

Introduction

In this assessment, you need to analyze the case and build your solution per requirements using given data.

Ground Rules

- You are free to choose the technical stack in your solution.
- You need to finish it by yourself, while doing research on Intranet or using assistant tool is allowed.

Case: MTM Valuation

MTM(market-to-market) valuation is a methodology to evaluate latest market value of cargo/payment in commodity trading. Following formula is used in evaluation of MTM value of our Iron Ore cargo:

> MTM Value = (Base Index Price x Fe Adjustment Ratio + Cost) x Discount x Quantity
>
> - Base Index Price is provided from market (e.g. Bloomberg), you should look up price via matching both Index Name and Tenor. Please notice that the Tenor information from market may not always representing last calendar day of month (while it should be in contract information), and the price will be fixed to the figure in last day if it's a past tenor.
> - Fe Adjustment Ratio refers to adjustment to base index price as ferrous in iron ore is not always precise as standarized product. There will be no Fe adjustment if contract indicates `NoAdj`, otherwise it will be *Typical Fe/62*.
> - Quantity refers to quantity of this batch of cargo in Dry Measure Ton (DMT). If unit in contracts indicate Wet Measure Ton (WMT), you should refer Mositure to get DMT from WMT x (1-Moisture)

Every day, commercial team need to a report of MTM value so that they know how much they earned/lost in previous day. You are requested to build this report for them.

Given Dataset

You will receive following datasets in an Excel:

- Price: including market prices of those indexs everyday
- Contracts: including information extracted from contracts which is needed in MTM valuation calculation (e.g. Base Index Name, Tenor, Typical Fe, Cost, Discount, Quantity, Unit, Moisture, etc.)

TODO

You need to code up a solution based on case and given dataset above. The solution should be able to generate MTM valuation report accurately and as close to deployable version as possible.

Items to submit

1. Your source code for solution.

2. A example report based on given dataset. You are free to add any additional mock data which may show your mindset on test driven development.
3. If you use any GenAI helping you in this assessment, please attach an appendix document indicating the product and all the prompt you use.