Project Progress Report

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1 Project Kickoff

Project Title: Quantitative Portfolio Risk Analyzer using MySQL

Goals: This project aims to design and implement a MySQL-based risk management system capable of:

- Tracking a portfolio's daily market value
- Calculating key risk metrics: Beta, Sharpe Ratio, and Value-at-Risk (VaR)
- Analyzing historical performance using financial data
- Demonstrating how database systems support analytical workflows in finance

Scope: The project includes relational database design, data ingestion (ETL pipeline), advanced SQL queries for risk metrics, and final visualizations/reporting.

Deliverables and Milestones:

- Week 1 – Schema design and ER diagram
- Week 2 – SQL implementation and risk metric calculations
- Week 3 – ETL development with CSV/API data
- Week 4 – Final report, presentation, and system demo

Timeline and Datasets: Datasets will be ingested from simulated CSVs or public APIs (e.g., Yahoo Finance). The project runs over 4 weeks with deliverables due weekly.

Readiness and Gaps: As a solo project, I am confident in my ability to deliver all components. My coursework in applied mathematics, physics, and experience with SQL and Python positions me well. No significant skill gaps are anticipated.

2 Team Discussions

Team: This is an individual project.

Core Skills:

- Relational database design (MySQL)
- SQL analytics and data normalization
- Quantitative finance: Beta, VaR, Sharpe Ratio
- Python (for ETL and visualization)

- Strong mathematical/statistical foundation

Responsibilities: All roles — including schema design, SQL programming, ETL scripting, financial modeling, and final reporting — are handled by me.

Programming Languages and Platforms:

- SQL (MySQL)
- Python (Pandas, NumPy)
- Overleaf for documentation
- Git/GitHub for version control

3 Skills and Tools Assessment

Tools and Frameworks:

- MySQL for database design and querying
- Python (Pandas, NumPy, SQLAlchemy)
- Jupyter Notebook
- Overleaf for report writing

External Resources:

- Yahoo Finance or Alpha Vantage for historical price data
- Kaggle and open finance datasets for testing
- Stack Overflow, MySQL docs

Role Clarity: As the sole contributor, I am responsible for all tasks from system design to ETL and final analysis.

4 Submission for This Iteration

Tasks Completed:

- Drafted and submitted final project proposal
- Defined database schema and identified key risk metrics
- Set up initial MySQL database environment

Challenges and Solutions:

- *Challenge:* Selecting an optimal structure for historical price storage
- *Solution:* Designed a 'Prices' table linked via foreign keys to 'Assets' and 'Portfolios', enabling efficient JOIN operations

Data Hosting: Data will be loaded from local CSVs or accessed via APIs (Yahoo Finance). Final sources will be included in the final report.