Project Milestones (November 2025 – May 2026)

- **November 2025 – Project Initiation and Requirement Gathering:**
  Define project scope, goals, and success metrics. Begin identifying financial datasets and necessary tools.

- **December 2025 – System Design:**
  Create architecture for the back-testing framework and data flow diagrams. Finalize the programming language(either C++ or Python), libraries, and testing environment.

- **January 2026 – Data Collection and Cleaning:**
  Gather and preprocess historical financial data for testing. Ensure data integrity, handle missing values, and normalize timestamps.

- **February 2026 – Core Back-testing Engine Development:**
  Implement trade simulation logic, order handling, and performance tracking modules. Validate execution logic using sample strategies.

- **March 2026 – Portfolio Optimization Module:**
  Integrate optimization algorithms such as mean-variance analysis or Sharpe ratio maximization to enhance portfolio returns.

- **April 2026 – Testing and Validation:**
  Conduct comprehensive testing, verify accuracy of back-testing results, handle edge cases (gaps, slippage, holidays), and debug performance issues.

- **April 2026 – Final Review and Documentation:**
  Complete final project documentation, prepare presentation materials, finalize codebase, and submit final deliverables.

Table 1. Project Timeline

Milestone	Date Range	Responsibilities	Deliverables
Project Initiation	Nov 2025	Omkar & Jash	Requirements Document
System Design	Dec 2025	Omkar	System Architecture Diagram
Data Collection	Jan 2026	Jash	Cleaned Dataset
Back-testing Engine	Feb 2026	Omkar	Core Simulation Logic
Optimization Module	Mar 2026	Jash & Omkar	Portfolio Optimization Code

Milestone	Date Range	Responsibilities	Deliverables
Testing & Validation	Apr 2026	Jash	Testing Report
Final Review	Apr 2026	Omkar & Jash	Final Report & Presentation

Table 2. Effort Matrix (180 hours total)

Task	Omkar Sontake (hours)	Jash Dedhia (hours)	Total Hours
Define requirements, project plan, and documentation	7	7	14
Data source specification, schema design, and preprocessing	5	13	18
Data import and validation module	5	15	20
Strategy rule interface and signal generation	16	6	22
Execution simulator and trade conversion	11	5	16
Performance metrics (CAGR, Sharpe ratio, etc.)	5	11	16
Visualization and reporting (charts, CSV exports)	4	10	14
Integration of modules and orchestrator testing	11	9	20
Configuration management and CLI implementation	9	3	12
System-level testing and regression validation	7	9	16
Documentation, README, and final presentation prep	11	11	22