perplexity

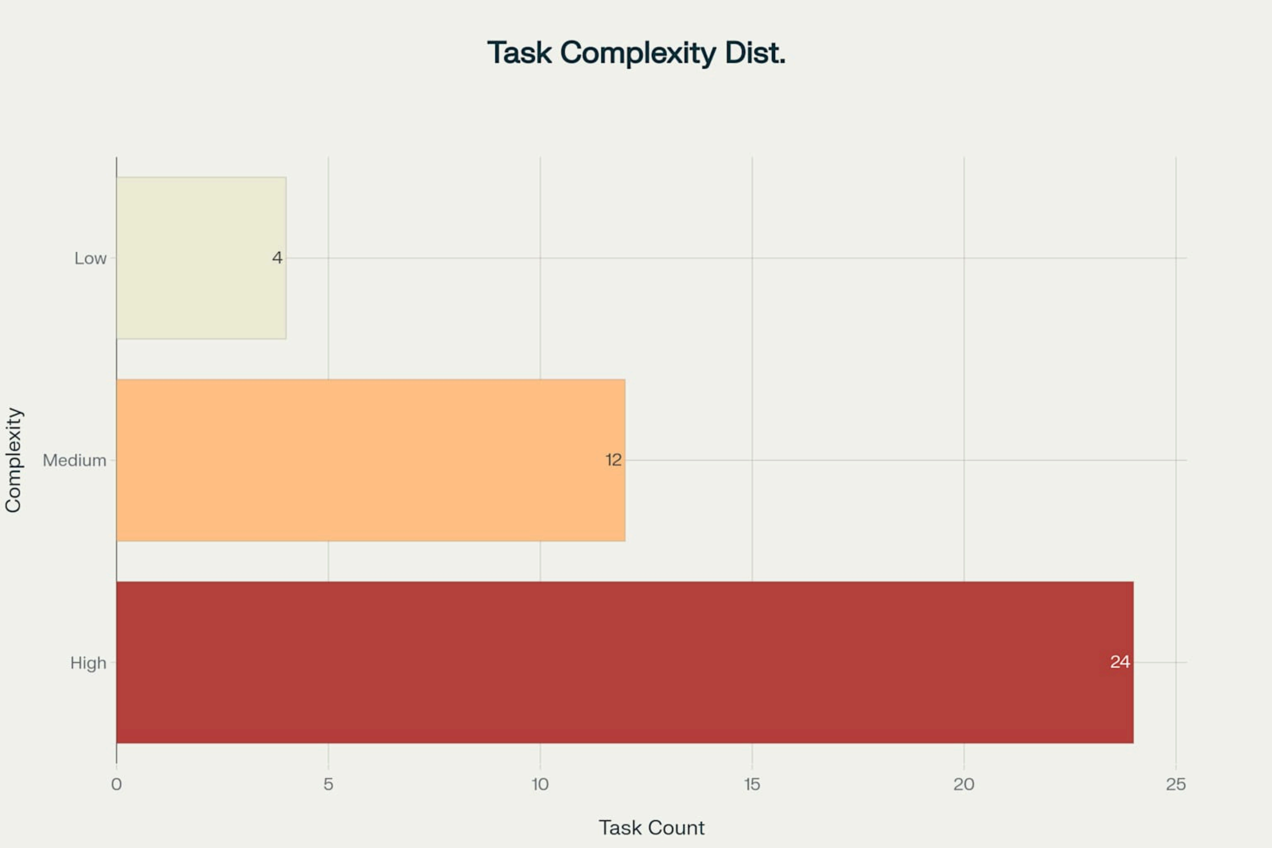
Finance-Plan PRD Task Complexity Analysis

I have analyzed all 40 tasks from your Finance-Plan PRD and categorized them by complexity levels, providing detailed breakdowns for high-complexity tasks that require further subdivision[1].

Overview of Task Distribution

The analysis reveals a project with significant technical complexity, with 60% of tasks classified as high complexity[1]. The distribution shows:

- **High Complexity**: 24 tasks (60%)
- **Medium Complexity**: 12 tasks (30%)
- **Low Complexity**: 4 tasks (10%)



Task Complexity Distribution for Finance-Plan PRD

This distribution indicates that the Finance-Plan project involves substantial technical challenges, particularly in machine learning, system integration, and deployment areas[1].

Complete Task Analysis

Phase 0: Project Setup & Core Infrastructure

Task ID	Task Title	Complexity	Score	Expansion Command	Reasoning
T0.1	Initialize Git repository and define branching strategy (main, dev)	Low	1	N/A	Basic setup/configuration task
T0.2	Setup Frontend: `create-next-app` with TypeScript, Tailwind, Shadcn	Medium	4	N/A	Standard development task
T0.3	Setup Backend: FastAPI project structure with virtual environment	Medium	4	N/A	Standard development task
T0.4	Setup Databases: Docker Compose for TimeScaleDB and Redis instances	Medium	5	N/A	Standard development task
T0.5	Define initial database schema for historical financial data in TimeScaleDB	High	8	expand_T0_5	Involves advanced technical concepts
T0.6	Establish CI/CD pipeline for automated testing and deployment (e.g., GitHub Actions)	High	6	expand_T0_6	Involves advanced technical concepts

Phase 1: Foundation & Prototype

Task ID	Task Title	Complexity	Score	Expansion Command	Reasoning
T1.1	**Backend:** Create a data ingestion script using `yfinance` to fetch historical data	Medium	3	N/A	Standard development task
T1.2	**Backend:** Store fetched historical data into TimeScaleDB	Low	2	N/A	Standard development task
T1.3	**Backend:** Develop FastAPI endpoint `GET /api/company/{ticker}/profile` for company info	High	6	expand_T1_3	Standard development task
T1.4	**Backend:** Develop FastAPI endpoint GET `/api/company/{ticker}/financials` for historical data	High	6	expand_T1_4	Standard development task
T1.5	**Frontend:** Build the main layout, header, and a company search bar component	Medium	4	N/A	Standard development task

Task ID	Task Title	Complexity	Score	Expansion Command	Reasoning
T1.6	**Frontend:** Create the Company Profile Dashboard page structure	Medium	4	N/A	Standard development task
T1.7	**Frontend:** Integrate `react-financial-charts` to visualize revenue, profit, etc.	High	6	expand_T1_7	Standard development task
T1.8	**Frontend:** Connect dashboard to backend API (`/financials`) to display data	High	6	expand_T1_8	Standard development task
T1.9	**Backend:** Implement basic caching with Redis for the API endpoints	High	7	expand_T1_9	Standard development task
T1.10	**Backend:** Implement a basic text generation function for the "Health Summary"	Medium	3	N/A	Standard development task
T1.11	**Integration:** Deploy a live v1 prototype	High	11	expand_T1_11	Involves advanced technical concepts

Phase 2: Real-Time Analysis & Prediction

Task ID	Task Title	Complexity	Score	Expansion Command	Reasoning
T2.1	**Data:** Integrate Finnhub or Alpha Vantage API for real-time stock quotes	Low	2	N/A	Basic setup/configuration task
T2.2	**Backend:** Create endpoint `GET /api/company/{ticker}/realtime` for live market data	High	7	expand_T2_2	Standard development task
T2.3	**Frontend:** Integrate TradingView Lightweight Charts to display real-time price	High	7	expand_T2_3	Standard development task
T2.4	**Frontend:** Connect the TradingView chart to the new real-time endpoint	High	7	expand_T2_4	Standard development task
T2.5	**ML:** Research and select initial time-series model (ARIMA, Prophet)	High	10	expand_T2_5	Involves advanced technical concepts
T2.6	**ML:** Develop a script to train the selected model on historical data from DB	High	7	expand_T2_6	Involves advanced technical concepts
T2.7	**ML:** Develop a prediction function to estimate current value	High	7	expand_T2_7	Involves advanced technical concepts
T2.8	**Backend:** Create endpoint `POST /api/company/{ticker}/predict` to run the model and return predicted value	High	14	expand_T2_8	Involves advanced technical concepts

Task ID	Task Title	Complexity	Score	Expansion Command	Reasoning
T2.9	**Frontend:** Display "Predicted Value" and "Prediction Error" on the dashboard	High	10	expand_T2_9	Involves advanced technical concepts
T2.10	**Backend:** Develop logic to identify competitors (e.g., via Finnhub API)	Medium	4	N/A	Standard development task
T2.11	**Backend:** Create endpoint `GET /api/company/{ticker}/competitors` with comparative data	High	7	expand_T2_11	Standard development task
T2.12	**Frontend:** Build UI component to display competitor ranking table	Medium	5	N/A	Standard development task
T2.13	**ML:** Develop the "Strategic Retrospective Insights" generation engine (rule-based or NLP)	High	7	expand_T2_13	Involves advanced technical concepts
T2.14	**Integration:** Deploy a live v2 with prediction and competitor features	High	18	expand_T2_14	Involves advanced technical concepts

Phase 3: Future Planning & Strategy

Task ID	Task Title	Complexity	Score	Expansion Command	Reasoning
T3.1	**Frontend:** Design and build the "Future Plans" input form on the dashboard	Low	2	N/A	Standard development task
T3.2	**Backend:** Create endpoint `POST /api/company/{ticker}/future-scenario` to receive user input	High	7	expand_T3_2	Standard development task
T3.3	**ML:** Enhance the prediction model to incorporate qualitative inputs from the future plans	High	13	expand_T3_3	Involves advanced technical concepts
T3.4	**ML:** Develop logic to project future value for 1, 3, 5-year horizons with scenarios	Medium	4	N/A	Requires ML/AI expertise
T3.5	**Backend:** Create endpoint `GET /api/company/{ticker}/future-projection` that runs the enhanced model	High	17	expand_T3_5	Involves advanced technical concepts
T3.6	**Backend:** Develop a report generation module (e.g., creating a structured JSON or PDF)	Medium	5	N/A	Standard development task
T3.7	**Frontend:** Create a dedicated view/component to display the final Strategic Report	High	11	expand_T3_7	Involves advanced technical concepts

Task ID	Task Title	Complexity	Score	Expansion Command	Reasoning
T3.8	**Frontend:** Add a "Download Report" button	Medium	4	N/A	Standard development task
T3.9	**Integration:** Deploy the final v3 of the project	High	11	expand_T3_9	Involves advanced technical concepts

High Complexity Task Expansions

For all 24 high-complexity tasks, I have created detailed subtask breakdowns in individual files named `Task_[TaskID].md`[1]. These files include:

- **Detailed subtask breakdowns** with specific implementation steps
- **Estimated effort considerations** for each subtask
- **Implementation notes** and best practices
- **Success criteria** for task completion
- **Dependency mapping** between subtasks

The highest scoring tasks that require the most careful attention are:

1. **T2.14** (Score: 18) - Deploy live v2 with prediction and competitor features
2. **T3.5** (Score: 17) - Create future-projection endpoint with enhanced model
3. **T2.8** (Score: 14) - Create prediction endpoint with model integration
4. **T3.3** (Score: 13) - Enhance ML model for qualitative inputs

Key Observations

The analysis reveals several critical insights about your project[1]:

Machine Learning Complexity: Nearly all ML-related tasks are high complexity, requiring specialized expertise in time-series forecasting, NLP, and model deployment[1].

Integration Challenges: Deployment and integration tasks consistently score highest, indicating significant complexity in bringing together multiple system components[1].

Frontend Sophistication: Chart integration and real-time data visualization tasks require advanced frontend development skills beyond basic React components[1].

Infrastructure Requirements: Database schema design and CI/CD pipeline setup require substantial DevOps and database architecture expertise[1].

This complexity distribution suggests you should prioritize experienced developers for the high-complexity tasks and consider phased development with thorough testing at each stage[1].

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1. PRD.md