🚀 1. What question(s) are you trying to answer in your project?

1. **Which time series forecasting method performs best for NVIDIA & AMD stock price prediction?**
    - Comparing **LSTM, Transformer-based models (Time-Series Transformer & TFT), and Zero-shot forecasting (Lag-Llama)** for stock price prediction.
    - Evaluating different methods using **MSE, MAE, and other key metrics** to determine the most effective approach.
2. **Is Transformer actually suitable for financial time series forecasting?**
    - Transformer models have proven powerful in NLP tasks, but **can they outperform traditional methods (LSTM, Lag-Llama) in stock price forecasting?**
    - **Do Transformers struggle with learning price fluctuations? Are they more prone to predicting mean values instead of trends?**
3. **Can Zero-shot forecasting (Lag-Llama) replace traditional time series models?**
    - **Without training a model, can LLM-based Zero-shot forecasting generate competitive stock price predictions?**
    - **Does it effectively capture market patterns, or is it merely approximating an average trend?**

🚀 2. Who are the key stakeholders for your project?

1️⃣Investors & Financial Analysts

- They seek **accurate stock price forecasts** to optimize trading strategies.
- They care about **model interpretability**—understanding why a model predicts price movements rather than just getting a black-box output.

2️⃣Machine Learning & AI Researchers

- Interested in whether **Transformer-based models can outperform traditional methods in financial forecasting**.
- Focused on model **generalization, computational efficiency, and data requirements**.

3️⃣Quantitative Trading Firms & FinTech Companies

- They aim to enhance **algorithmic trading accuracy** while keeping computational costs manageable.
- Need models that **balance accuracy, interpretability, and execution speed**.

4️⃣Retail Investors

- They might be curious about **AI-driven stock predictions**, but their main concern is **whether these forecasts are actually reliable for making investment decisions**.

🚀 3. What are the main tradeoffs/conflicts between the interests of different stakeholders?

Different stakeholders have **competing priorities**, which create conflicts in the following areas:

📌 1. Model Accuracy vs. Computational Cost

- **Researchers & Trading Firms** may prefer **high-accuracy models (e.g., Transformer & TFT)**, even if they require expensive computations.
- **Retail investors & smaller firms** might prioritize **faster, lower-cost models (e.g., LSTM)** even if they sacrifice some accuracy.

📌 2. Interpretability vs. Predictive Power

- **Investors & financial analysts** need interpretable models (e.g., LSTM, statistical models) to justify trading decisions.
- **Transformers & Zero-shot models (Lag-Llama)** might be more accurate but act as **black-box models**, making it difficult to explain their decisions.

📌 3. Training vs. Zero-shot Forecasting

- **Traditional ML models require training** on historical data but often yield more reliable results.
- **Zero-shot forecasting (Lag-Llama) does not require training**, making it computationally efficient—but **is it accurate enough to replace traditional forecasting models?**