Deciphering Decisions
Assignment 3

Problem Statement

In our recent class on behavioral finance, we explored how human psychology influences trading decisions and how volatility measures can be used to quantify this sentiment. Building on this understanding, **your task is to develop a trading strategy that leverages volatility, a key factor often influenced by market sentiment and behavioral biases.**

Steps to Complete the Assignment

1. **Develop and Code a Volatility-Based Strategy**: Create a trading strategy that makes use of volatility. This could involve using indicators such as Bollinger Bands, Average True Range (ATR), or any other volatility measures. Ensure your strategy is well-documented and the code is clear and efficient.

2. **Test the Strategy on Equity**: Due to the difficulty of obtaining options data, test your strategy on equities. Select a diverse set of equities to ensure your strategy is robust across different market conditions.

3. **Prepare a Comprehensive Report**: Write a detailed report outlining the rationale behind your strategy. Discuss the behavioral finance principles that influenced your strategy design, the volatility measures used, and why you believe your approach will be effective. Highlight any assumptions made and potential limitations of your strategy.

4. **Grading Criteria**: Your grade will be based more on the quality and depth of your report rather than the returns of your strategy. Focus on providing a thorough explanation of your thought process, the behavioral aspects considered, and the technical implementation of your strategy.

5. **VIX Strategy as a Last Resort**: While you may implement the VIX strategy discussed in the session, this should be considered a fallback option. Original strategies that go beyond what was covered in class will receive higher credit.

Guidelines

- Use appropriate libraries and tools (e.g., `yfinance`, `pandas`, `numpy`) to fetch data, calculate volatility measures, and implement your strategy.

- Document your code thoroughly, explaining the rationale behind each step of your implementation.

- Provide clear visualizations (e.g., charts, graphs) to illustrate the performance of your strategy.

- In your report, discuss how behavioral finance principles influenced your strategy, the volatility measures used, and the expected impact of market sentiment on your trading decisions.

Submission

- Submit your code as a Jupyter notebook or Python script.

- **Include a written report** summarizing your methodology, analysis, and conclusions.

- Ensure that all visualizations and tables are properly labeled and referenced in your report.