

Data Analyst Intern Assignment

Objective:

To evaluate your ability to analyze financial data, implement a basic trading strategy, and generate insights using Python.

Instructions:

1. Data Collection:

- Using Python, download historical stock price data for the last two years for a chosen stock (TCS, Reliance, etc.). You may use any data source such as Yahoo Finance, Alpha Vantage etc. Ensure that your dataset includes at least daily open, high, low, close prices, and volume.

2. Simple Moving Average (SMA) Strategy:

- Implement a simple trading strategy based on two Simple Moving Averages (SMA):
 - A **short-term SMA** (e.g., 20 days).
 - A **long-term SMA** (e.g., 50 days).
- Define the trading rules:
 - **Buy Signal:** When the short-term SMA crosses above the long-term SMA.
 - **Sell Signal:** When the short-term SMA crosses below the long-term SMA.

3. Backtesting:

- Backtest the strategy on the collected data. Assume an initial capital of ₹1,00,000.
- Track the following metrics:
 - Total Returns
 - Number of Trades
 - Winning Trades (%)
 - Losing Trades (%)
 - Maximum Drawdown

4. Reporting:

- Generate a brief report summarizing the strategy's performance. Include key insights, charts (e.g., stock price with SMAs, equity curve), and any observations about the strategy's effectiveness.

5. Submission:

- Submit your Python code (preferably in a Jupyter Notebook format) along with the report (PDF or included in the Notebook).
- Provide any additional comments or observations that may help us understand your approach.

Note: Share your solution at bttsolutions@gmail.com