

Stock Data Visualizer - Use Case Descriptions

1. Enter Stock Symbol

Actor: User

Description: The user inputs a valid stock symbol (e.g., AAPL, TSLA).

Preconditions: Application is running.

Postconditions: Stock symbol is stored for API request.

Alternate Path: If the symbol is empty or invalid: Show error message. Prompt user to re-enter symbol.

2. Select Chart Type

Actor: User

Description: User selects a preferred chart type (e.g., line, bar, candlestick).

Preconditions: Valid stock symbol entered.

Postconditions: Chart type is stored.

Alternate Path: If the input is not a supported chart type: Display valid options. Prompt user to choose again.

3. Select Time Series Function

Actor: User

Description: User selects the API time series function (TIME_SERIES_DAILY, WEEKLY, or MONTHLY).

Preconditions: Chart type selected.

Postconditions: Function stored for API query.

Alternate Path: If invalid option provided: Notify user of valid choices. Prompt for re-entry.

4. Enter Start Date

Actor: User

Description: User inputs a beginning date in YYYY-MM-DD format.

Preconditions: Time series selected.

Postconditions: Start date stored.

Alternate Path: If invalid or incorrectly formatted: Display format guide. Prompt to re-enter.

5. Enter End Date

Actor: User

Description: User inputs an end date in YYYY-MM-DD format.

Preconditions: Start date entered.

Postconditions: End date stored.

Alternate Path: If format is wrong or missing: Prompt user to correct it.

6. Validate Date Range

Actor: System

Description: System checks that end date is not before the start date.

Preconditions: Both dates entered.

Postconditions: Proceed if valid; otherwise ask for correction.

Alternate Path: If end date < start date: Error message shown. Ask user to correct the range.

7. Generate and Display Chart

Actor: System

Description: Application queries Alpha Vantage API using provided inputs, filters by date, and displays a chart in the default browser.

Preconditions: All inputs validated.

Postconditions: Chart is generated and displayed.

Alternate Path: If API fails or chart can't render: Display error and allow retry.