Glossary of Key Terms: Financial Portfolio Analysis

📈 Stock Market Terms

- **Stock**: A type of security that signifies ownership in a corporation.
- **Ticker Symbol**: Abbreviated symbol used to uniquely identify a publicly traded company.
- **S&P500**: A market index tracking 500 of the largest U.S. publicly traded companies.

⚖️ Price Terminology

- **Close Price**: The final price at which a stock is traded on a given trading day.
- **Open Price**: The price at which a stock first trades when the market opens.
- **High / Low**: Highest and lowest trading prices for a stock on a particular day.
- **Volume**: Number of shares traded during a given time period.

📊 Return Metrics

- **Daily Return**: Percentage change in the stock price from one day to the next.
- Formula: $\text{Return}_t = \frac{P_t - P_{t-1}}{P_{t-1}}$
- **Cumulative Return**: Total return over a period of time, assuming reinvestment.
- Formula: $(1 + r_1)(1 + r_2)...(1 + r_n) - 1$
- **Annualized Return**: Average yearly return, accounting for compounding.
- Formula: $\text{Avg Daily Return} \times 252$

🔬 Risk Metrics

- **Volatility**: A statistical measure of the dispersion of returns (usually standard deviation).
- Higher volatility = higher risk.
- **Annualized Risk**: Yearly version of volatility.
- Formula: $\text{StdDev of Returns} \times \sqrt{252}$

🧱 Risk-Adjusted Metrics

- **Sharpe Ratio**: Measures return adjusted for risk.
- Formula: $\frac{R_a - R_f}{\sigma}$, where R_a is asset return, R_f is risk-free rate.

📊 Data Processing & Analysis Terms

- **Normalized Price**: A price series adjusted so that all stocks start at 1 for comparison.

- Formula: $\frac{P_t}{P_0}$
- **Relative Price (vs S&P500)**: Stock price divided by the corresponding S&P500 price.
- Shows performance against the market.
- **Correlation Matrix**: A table showing correlation coefficients between variables (values from -1 to 1).
- **Histogram**: Bar plot showing the distribution of a variable (e.g., returns).

✏️Modeling & Structuring Terms

- **Sector**: A group of related industries (e.g., Tech, Healthcare).
- **Diversification**: Investment strategy to spread risk across multiple assets.
- **Aggressive Portfolio**: High-risk, high-reward; suitable for risk-tolerant investors.
- **Conservative Portfolio**: Low-risk, stable-return; suitable for risk-averse investors.

📦File & Code Specific Terms

- `preprocess_all()` : Loads, cleans, and filters the stock data.
- `generate_visualizations()` : Generates multiple graphs and statistics.
- `cumulative_returns.csv` : File containing cumulative return values for all stocks.
- `volatility_ranking.csv` : File ranking stocks by standard deviation of returns.
- `correlation_matrix.csv` : File storing correlation coefficients between all stock returns.

Use this glossary to confidently explain any term or concept during your interview.