Task 2: Stock-Correlation-Matrix-MAH-Scooter-Bajaj-Holdings

Objective:
Read about correlation cofficent Take 2 shares like mah scooter and bajaj holding Find correlation matrix by looking at 5 year data You can see this link and run this program too.

Reference
https://www.google.com/search?q=are+share+correlated+%3F+python&sca_esv=2d9358f74c2c9fcc&rlz=1C5CHFA_enIN1029IN1030&biw=1176&bih=626&sxsrf=AE3TifMy35SFZrHiOxfd3IW_P8hJE3J-kQ%3A1754051903884&ei=P7WMaK3dNYyhnesPlNjl2QE&ved=0ahUKEwjt-JfF0OmOAxWMUGcHHRRsORs4ChDh1QMIEA&uact=5&oq=are+share+correlated+%3F+python&gs_lp=Egxnd3Mtd2l6LXNlcnAiHWFyZSBzaGFyZSBjb3JyZWxhdGVkID8gcHl0aG9uMgUQIRigAUilK1C9BFjEKHAGeAGQAQCYAaYBoAGjDqoBBDAuMTK4AQPIAQD4AQGYAhKgAuoOwgIHECMYsAMYJ8ICChAAGLADGNYEGEfCAgQQIxgnwgIFEAAY7wXCAgQQIRgVmAMAiAYBkAYJkgcENi4xMqAHtCayBwQwLjEyuAfSDsIHBjEuMTIuNcgHKw&sclient=gws-wiz-serp#fpstate=ive&vld=cid:034b4893,vid:O13aUVSs5pQ,st:0

Approach / Solution:
I have written a Python script using yfinance to fetch historical stock prices, and used pandas, numpy, matplotlib, and seaborn to analyze and visualize the data. The program calculates correlation b/w the two stockes by analysing them

- Correlation matrix
- Heatmaps for easy visualization
- Scatter matrix to see relationships
- Rolling 90-day correlation to check how correlation changes over time

Challenges Faced:
faced challenge in getting accurate data. Moreover, It was also important to display the correlation in a proper, visual way.

Resolution:
I added checks to handle missing data and used different types of returns (simple and log returns) to make the analysis more accurate.

Outcome / Result:
The program successfully calculates the correlation between the two stocks (about **0.94 for prices**) and provides clear visual insights through charts and heatmaps. It shows how these 2 stocks are together over the past 5 years.