Market Analysis Deliverable (Part 2)

Inputs

Uses the Part 1 CSVs:

- `analysis/data/SPY.csv`
- `analysis/data/AAPL.csv`

Field used for analysis: **Adj Close**

What was computed

- **Daily returns** for SPY and AAPL using:
  `return_t = (AdjClose_t / AdjClose_{t-1}) - 1`
- **Rolling volatility (20-day)** for both assets using:
  `rolling_std = returns.rolling(20).std()`
  (This is the rolling standard deviation of daily returns over a 20-day window — not annualized.)

Outputs (files generated)

Saved to `analysis/output/`:

- `price_history.png` — price history using **Adj Close** for SPY vs AAPL
- `volatility.png` — **20-day rolling volatility** comparison

How to reproduce

From inside the `analysis/` directory:

```
(venv) kelony@Kelvins-MacBook-Pro analysis % python part2_analysis.py
DONE ✅Part 2 complete
Saved: output/price_history.png
Saved: output/volatility.png

Return stats (daily):
                SPY         AAPL
count  1005.000000  1005.000000
mean      0.000543     0.001187
std       0.014254     0.021146
min      -0.109424    -0.128647
25%      -0.005715    -0.009128
50%       0.000842     0.000988
75%       0.007648     0.012743
max       0.090603     0.119808
```