1.

A screenshot of a computer screen

AI-generated content may be incorrect.

This is a time-series dataset. The feature in this dataset represents the date and 6 stocks (GOOG, AAPL, AMZN, FB, NFLX, MSFT) with their corresponding closing price in 2018/2019.

2.

A graph of stock market

AI-generated content may be incorrect.

3.

A graph of different colored lines

AI-generated content may be incorrect.

4b. A number on a white background

AI-generated content may be incorrect.

4c.

A chart of different colors

AI-generated content may be incorrect.

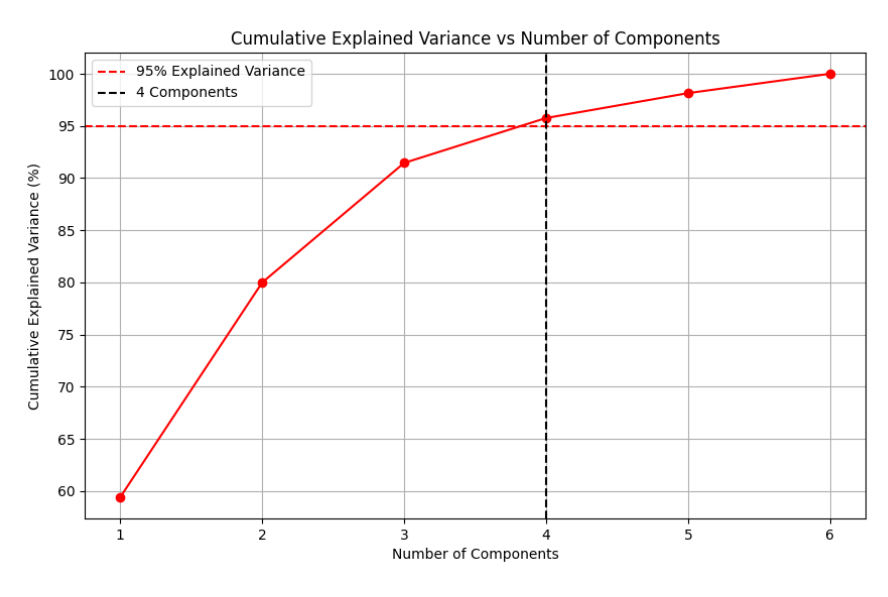
4d.

Two features should be removed. The reason is that when the threshold is 95%, there are two features that have cumulative explained variance ratio that higher than 95% (98.14% and 100%).

A black text on a white background

AI-generated content may be incorrect.

4e.



4f.

A close up of numbers

AI-generated content may be incorrect.

The singular values of the reduced feature space will be smaller compared to the original space because PCA removes low-variance components. The first few singular values remain relatively large, representing the retained variance in the dataset. Since PCA removes near-zero singular values (which contribute to multicollinearity), the condition number of the reduced dataset should be significantly lower, indicating a more numerically stable dataset. This confirms that PCA reduces redundancy and collinearity in the dataset.

4g.

A diagram of a heat map

AI-generated content may be incorrect.

The correlation values appear to be around 0.00, so the principal components are uncorrelated among each other.

4h.

A screenshot of a computer

AI-generated content may be incorrect.

4i.

A graph with colorful lines

AI-generated content may be incorrect.

4j.

A screenshot of a computer screen

AI-generated content may be incorrect.

4k.

A screenshot of a computer screen

AI-generated content may be incorrect.

A screenshot of a computer screen

AI-generated content may be incorrect.