Q1. What is the distinction between a numpy array and a pandas data frame? Is there a way to convert between the two if there is?

A numpy array is a multi-dimensional array object in Python, while a pandas DataFrame is a two-dimensional data structure. Numpy arrays are primarily used for numerical computations, while pandas DataFrames offer more functionality for data manipulation and analysis. Yes, you can convert a numpy array to a pandas DataFrame using the DataFrame constructor, and vice versa using the `values` attribute of the DataFrame.

Q2. What can go wrong when a user enters a stock ticker symbol, and how do you handle it?

When a user enters a stock ticker symbol, potential issues include invalid or non-existent symbols, typos, formatting errors, and case sensitivity. To handle these, you can implement validation checks, such as verifying the symbol against a list of valid symbols or using APIs to validate existence. Additionally, you can provide error handling mechanisms to notify users of any issues.

Q3. Identify some of the plotting techniques used to produce a stock market chart.

Some common plotting techniques for stock market charts include line plots, candlestick charts, bar charts, and area plots. These techniques allow visual representation of stock prices, volume, moving averages, and other indicators.

Q4. Why is it essential to print a legend on a stock market chart?

Printing a legend on a stock market chart is essential because it provides a key to interpreting the plotted elements. The legend helps users understand the meaning of different colors, symbols, or line styles used in the chart, making it easier to interpret the data.

Q5. What is the best way to limit the length of a pandas DataFrame to less than a year?

To limit the length of a pandas DataFrame to less than a year, you can use filtering techniques. You can add a condition to filter rows based on a specific date range using comparison operators, such as greater than or less than, combined with the appropriate date values.

Q6. What is the definition of a 180-day moving average?

A 180-day moving average is a calculation that smooths out price data by taking the average of the closing prices over the past 180 days. It is commonly used in technical analysis to identify trends and potential support or resistance levels in financial markets.

Q7. Did the chapter's final example use "indirect" importing? If so, how do you do it?

Yes, the chapter's final example used "indirect" importing. In Python, you can perform indirect importing by importing a module using the `importlib` module and the `import_module` function. This allows you to dynamically import modules based on runtime conditions or user inputs.