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?

Ans: - A NumPy array is a multi-dimensional data structure in Python that can store objects of similar data types. It is mutable and is useful for performing mathematical operations on vectors. On the other hand, a Pandas DataFrame is a two-dimensional, mutable, tabular data structure that can store objects of different data types. It has labeled axes in the form of rows and columns and is useful for data pre-processing. To convert between the two, you can use the pd.DataFrame() function to convert a NumPy array to a DataFrame, and the .values attribute or np.array() function to convert a DataFrame to a NumPy array.

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

Ans: -When a user enters a stock-ticker symbol, several issues can arise. The symbol might be incorrect, non-existent, or not recognized by the data source. The data for the symbol might be unavailable or incomplete. In such cases, error handling mechanisms are used to catch exceptions and provide appropriate feedback to the user. This can include validating the input, using try/except blocks to catch errors, and providing informative error messages.

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

Ans: -Various plotting techniques are used to produce a stock-market chart. These include line charts, bar charts, candlestick charts, and OHLC (Open-High-Low-Close) charts. Each of these charts provides a visual representation of stock prices over time, allowing traders and investors to analyze price trends and patterns.

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

Ans: -Printing a legend on a stock market chart is essential for several reasons. It helps identify different data series or categories in the chart, making it easier to understand. It provides context to the data being displayed, enhancing the readability of the chart. Without a legend, it would be difficult to interpret the chart, especially when multiple data series are being plotted.

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

Ans: - To limit the length of a pandas DataFrame to less than a year, you can filter the DataFrame based on the date. If the DataFrame is indexed by date, you can use date-based indexing to select rows corresponding to a specific year. Alternatively, you can use the. tail(n) function to select the last n rows.

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

Ans: - A 180-day moving average is a type of moving average where the average price of a stock is calculated over the past 180 days. It is a trend-following indicator, helping to smooth out price fluctuations and identify overall price trends. If the stock’s price is above the 180-day moving average, it is considered to be in an uptrend, and if it’s below, it’s considered to be in a downtrend.

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

Ans: -Indirect importing in Python refers to a situation where a module is imported within another module, and then that module is imported into a third module. This can lead to circular imports, which are generally considered a bad practice and can cause issues with code execution. It’s recommended to refactor the code to avoid such situations. However, in some cases, indirect importing can be useful for structuring code and managing dependencies.