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 multidimensional homogeneous array of fixed-size elements.and It provides fast and efficient mathematical operations on large, homogeneous datasets.NumPy arrays are commonly used for numerical computations, scientific computing, and data manipulation.

A Pandas DataFrame is a two-dimensional labeled data structure with columns of potentially different types.It organizes data in a tabular form with row and column labels, similar to a table or a spreadsheet.DataFrames can handle missing data, heterogeneous data types, and can perform advanced indexing and slicing operations.

numpy\_array = np.array([[23, 22], [123,34]])

dataframe = pd.DataFrame(numpy\_array)

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

Invalid Ticker Symbol: Users might enter an invalid or nonexistent stock ticker symbol. It could be a typo, an unknown symbol, or a symbol for a different financial instrument. To handle this, you can implement validation by checking the entered symbol against a reliable source, such as a financial data provider or an official stock exchange API. If the symbol is invalid, you can provide an error message to the user and prompt them to enter a valid symbol

it's important to implement robust input validation, handle potential errors or inconsistencies, and provide clear feedback to the user when dealing with stock ticker symbol input. This ensures a better user experience and reduces the risk of incorrect or unreliable data processing.

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

Line chart, candlestick chart, bar chart, bollinger pattern, moving average, weighted average.

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

It is essential to print a legend on a stock market chart to provide clarity and context to the information presented in the chart. A legend serves as a key that explains the various elements, colors, and patterns used in the chart, making it easier for viewers to interpret the data accurately.

Interpretation of Data: A stock market chart can contain multiple lines, bars, or other graphical elements representing different data points or indicators. Without a legend, it would be challenging for viewers to understand the meaning of each element and how to interpret the data correctly. The legend provides a clear explanation of what each component represents, such as stock prices, volume, moving averages, or other technical indicators.

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

Data slicing, Number of rows, Rolling windows.

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

A 180-day moving average, also known as a 180-day simple moving average (SMA), is a technical analysis indicator used to smooth out fluctuations and identify trends in time series data. It calculates the average value of a variable, such as a stock price or an index, over the past 180 trading days.

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

"Indirect" importing typically refers to importing modules or packages using a string variable that contains the name of the module or package. This technique allows you to dynamically import modules based on runtime conditions or user input. However, it's important to note that Python does not have a built-in mechanism for indirect importing.