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?

Ans1- The main distinction between a NumPy array and a Pandas DataFrame lies in their structure and functionality. NumPy arrays are homogeneous, multi-dimensional arrays designed for numerical operations, whereas Pandas DataFrames are two-dimensional, tabular data structures with heterogeneous data types, making them suitable for labeled data manipulation.

To convert a NumPy array to a Pandas DataFrame: Use pd.DataFrame(numpy\_array) to create a DataFrame from a NumPy array.

To convert a Pandas DataFrame to a NumPy array: Use the .values attribute of the DataFrame to retrieve the underlying NumPy array.

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

Ans2- Entering an invalid or non-existent symbol.

Incorrect formatting or case sensitivity.

Connectivity issues when fetching stock data from external sources.

To handle these issues, you can implement error-checking mechanisms, user input validation, and exception handling. Display informative error messages for invalid symbols and handle network errors gracefully.

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

Ans3- Line Charts: Displaying stock prices over time.

Candlestick Charts: Representing open, close, high, and low prices for each time period.

Moving Averages: Showing trends and smoothing price data.

Volume Charts: Displaying trading volumes.

Bollinger Bands: Indicating volatility.

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

Ans4- Printing a legend on a stock market chart is essential because it provides context and labels for different elements on the chart. It helps users understand what each line or symbol represents, such as stock price, moving averages, or other technical indicators. Without a legend, the chart may be confusing, especially when multiple data series or indicators are displayed simultaneously.

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

Ans5- To limit the length of a Pandas DataFrame to less than a year, you can use indexing or filtering based on the date or time column.

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

Ans6- A 180-day moving average is a technical indicator used in stock market analysis. It calculates the average closing price of a stock or market index over the past 180 trading days. It is commonly used to identify long-term trends and smooth out short-term fluctuations in stock prices. Traders and investors use it as a reference point for making decisions, such as identifying potential buy or sell signals based on whether the current price is above or below the moving average.

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

Ans7- The concept of "indirect" importing in Python typically refers to importing modules or objects from one module into another module, creating a form of indirect access. In the context of the chapter's final example, if it uses "indirect" importing, it would involve importing functions or classes from one module into another.

To perform indirect importing, you can use the from module import symbol syntax, where module is the name of the module containing the symbol, and symbol is the specific function, class, or object you want to import.