**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:** Numpy Ndarray provides a lot of convenient and optimized methods for performing several mathematical operations on vectors.

Pandas Dataframe is an in-memory 2-dimensional tabular representation of data. In simpler words, it can be seen as a spreadsheet having rows and columns.

Conversion : Dataframe=pandas.DataFrame(array)

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

import datetime as dt

import matplotlib.pyplot as plt

from matplotlib import style

import pandas as pd

import pandas\_datareader.data as web

style.use('ggplot')

start = dt.datetime(2015, 1, 1)

end = dt.datetime.now()

df = web.DataReader("TSLA", 'morningstar', start, end)

df.reset\_index(inplace=True)

df.set\_index("Date", inplace=True)

df = df.drop("Symbol", axis=1)

print(df.head())

O/P:

Close High Low Open Volume

Date

2015-01-01 222.41 222.41 222.4100 222.41 0

2015-01-02 219.31 223.25 213.2600 222.63 4764443

2015-01-05 210.09 216.50 207.1626 214.50 5368477

2015-01-06 211.28 214.20 204.2100 210.06 6261936

2015-01-07 210.95 214.78 209.7800 213.40 2968390

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

**Ans:**  The four types that are most common are—line chart, bar chart, point and figure chart and candlestick chart.

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

**Ans:** Legend will help comparison between different stocks, so will be essential on a stock market chart

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

**Ans:** We can use start and end parameters for that. In start we write the date from where we are starting and at the end we write the end date. SO within this span we can restrict the duration. Also we can use the parameters like periods for how much times we need the duration and we can also use the frequency parameter.

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

**Ans:** The 180-day moving average is represented as a line on charts and represents the average price over the past 180 days. The moving average can give traders a sense regarding whether the trend is up or down, while also identifying potential support or resistance areas.

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

Ans: Unlike explicit imports that throw an error at application startup, indirect imports in Python throw them when they are actually used. Excessively permissive except clauses can hide them and result in unexpected behavior.

**PySocks** is an optional dependency that is only imported and used if you use a **SOCKS** proxy in a request.