

# Lab 8

July 15, 2024

## 1 Lab 8

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## 2 Exercise 1:

Obtain from Yahoo Finance historical data from a stock of your choosing. Use the option to download a .csv file.

```
[ ]: file = r'COP3035/Labs/%Misc/SCHD.csv'
```

## 3 Exercise 2:

Implement a function to upload data from the .csv file storing in a list of dictionaries for each date using the following format for each line: See example:

```
[ ]: file = r'../%Misc/SCHD.csv'

def readData(file):

    dataEntries = []

    with open(file) as file:
        headers = file.readline().strip().split(',')

        for line in file:
            lineData = line.strip().split(',')
            dataDict = {}

            for i in range(len(headers)):
                dataDict[headers[i]] = lineData[i]

            dataEntries.append(dataDict)

    return dataEntries

print(readData(file))
```

```
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```

## 4 Exercise 3:

Implement a function that clean the data by converting string values to their appropriate numeric types.

```
[ ]: data = readData(file)

def cleanData(data):

    for entry in data:
        for point in entry:
            if isinstance(entry[point], str) and '2023-' not in entry[point]
            and '2024-' not in entry[point]:
                entry[point] = float(entry[point])

    return data

print(cleanData(data))
```

```
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```

## 5 Exercise 4:

Implement a function that calculates the daily change and percentage change for each stock entry.

```

[ ]: cleanedData = cleanData(data)

def calcChange(clean):

```

```

dates = []
opens = []
closes = []

for entry in clean:
    dates.append(entry['Date'])
    opens.append(entry['Open'])
    closes.append(entry['Close'])

dailyChanges = []
dailyPercent = []
for i in range(len(closes)):
    change = closes[i] - opens[i]
    dailyChanges.append(change)

    percentChange = (change / opens[i]) * 100
    dailyPercent.append(percentChange)

changes = []
for j in range(len(dailyChanges)):
    changeDict = { 'Date' : dates[j],
                  'Change': dailyChanges[j],
                  'Percent': dailyPercent[j]}
    changes.append(changeDict)

return changes

print(calcChange(cleanedData))

```

```

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## 6 Exercise 5:

Implement a function that calculates the average trading volume of the stock.

```
[ ]: def calcAvgVol(clean):
    total = 0
    count = 0

    for entry in clean:
```

```
    for point in entry:
        if point == 'Volume':
            total += entry[point]
            count += 1

    return total/count

calcAvgVol(cleanedData)
```

```
[ ]: 473109.0136054422
```