Graded Problem Set: Investment and Portfolio Management

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```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import statsmodels.api as sm
```

Let's begin the analysis by looking at the structure of the dataset.

```
stock_prices = pd.read_excel('Problem set data.xls', sheet_name='Stock Prices')
```

```
stock_prices.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 216 entries, 0 to 215
Data columns (total 6 columns):
 #   Column         Non-Null Count  Dtype
---  ------         --------------  -----
 0   Date           216 non-null    object
 1   Ticker         216 non-null    object
 2   Company Name   216 non-null    object
 3   Close Price    216 non-null    float64
 4   High Price     216 non-null    float64
 5   Low Price      216 non-null    float64
dtypes: float64(3), object(3)
memory usage: 10.3+ KB
```

```
stock_prices.describe(include='object')
```

Table 1: Quick information about the string columns in the stock_prices table.

	Date	Ticker	Company Name
count	216	216	216
unique	72	3	3
top	2019-01	AAPL	APPLE INC
freq	3	72	72

```
stock_prices.describe(include='number')
```

Table 2: Quick information about the numerical columns in the stock_prices table.

	Close Price	High Price	Low Price
count	216.000000	216.000000	216.000000
mean	608.299352	645.881990	563.092460
std	1032.094012	1100.958804	959.739325
min	6.070000	7.000000	5.480000
25%	102.882500	107.327500	95.775000
50%	160.395000	166.989950	144.275000
75%	230.000000	237.295000	212.937500
max	3507.070000	3773.078200	3306.980000

```
mkt_index = pd.read_excel('Problem set data.xls', sheet_name='Market Index')
```

```
mkt_index.info()
```

```
mkt_index.describe(include='object')
```

```
mkt_index.describe(include='number')
```

```
rf_rate = pd.read_excel('Problem set data.xls', sheet_name='Risk Free Rate')
```

```
rf_rate.info()
```

```
rf_rate.describe(include='object')
```

```
rf_rate.describe(include='number')
```