# **WEEK 7: SELF ASSESSMENT**

Question 1: The purpose of this self-assessment is to implement performance metrics and understand how the given stocks perform with respect to the market, and which of the two stocks is a better investment to make. Follow the steps below, and answer the questions outside the code-block, in the R Markdown File in 1-2 sentences. Knit your code to HTML using R Studio for a more presentable format and submit the HTML file.

Use echo = TRUE while knitting so that the code is seen.

1. Load the ‘*Return\_Dataset.csv’* file into your R Studio and print the first 10 rows. *(1 point)*

Note: The data contains monthly returns of

Risk Free Asset (RF)

Market (Mkt)

United Parcel Service (UPS)

KO (Coca Cola)

**Rubric:**

First 10 rows being printed. *(0.5)*

All 5 columns present *(0.5)*

1. Plot and print the cumulative returns of the returns across time. Eventually, by seeing the graph, do UPS or KO outperform the Market? Explain. *(2 points)*

Note: The graph should include the legend to evidently see comparison.

*Hint: Use POSIXct for converting date into a time-series object.*

**Rubric:**

Graph is present *(0.5)*

Graph contains legend *(0.5)*

X axis is monthly date and Y axis is return *(0.5)*

Explanation *(0.5)*

1. Calculate and print the Sharpe Ratio and Treynor Ratio of UPS and KO. Which of the two is a better investment to make? Explain. (Use the StdDev Sharpe Ratio to compare) *(3 points)*

Note: All the output can be printed on to the console, and the answers to the questions can be written outside the code-block.

**Rubric:**

Sharpe Ratio is correct for both *(0.5 + 0.5)*

Treynor Ratio is correct for both *(0.5 + 0.5)*

Explanation *(1)*

**Question 2:** What are the different types of market efficiency and what does each type signify? *(2 points)*

**Solution**: They types of market efficiency are **weak form, semi-strong form strong form**. *(0.5)*

Weak form: Security prices reflect all information of **past prices and volumes**. *(0.5)*

Semi-strong form: Security prices reflect all **public information**. *(0.5)*

Strong form: security pries reflect **all information – public and private.** *(0.5)*

**Question 3:** Name and briefly explain 4 types of behavioural biases? (1-2 lines) *(2 points)*

**Solution:** The following are 4 types of behavioural biases.

Overconfidence: Tendency to **overestimate one’s own ability**. *(0.5)*

Anchoring: Tendency to act on **a single fact and ignoring more important information**. *(0.5)*

Loss aversion: Tendency of individuals to **avoid regret in their decisions**. *(0.5)*

Recency: Tendency to **overemphasize recent information** in making decisions. *(0.5)*