Report for Team Assignment Group 8

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When we began this assignment, our initial strategy to win was to be as risky as possible. We created multiple functions whose sole purpose was to estimate and return the top 10 most correlated stocks (calculated by taking the average correlation between all pairs of stocks). As learned in class, if the prices move in a similar proportion and the same direction, they have a high correlation. High correlation means less diversification, therefore making a risky portfolio. When faced with the challenge of figuring out what stocks should be weighed the most, we prioritized efficiency over getting the best result. We decided that the top 3 stocks with the highest weekly return should receive the most weighting possible (i.e. 20%), then the 4th stock should receive 10% and the remaining stocks receive 5% each. We looked at weekly returns instead of monthly returns as our code was being run over 5 days.

A problem that we discovered was that we forgot about disregarding stocks from the US side if we chose the Canadian stock and vice versa. This was an oversight caused by the fact that despite numerous tests, we never thought of this case so we didn't realize we had this problem.

Looking back, had we tested this case, we would have seen that it caused a problem as the same stock would have a high correlation on the Canadian and US sides. Because our strategy was to give 20% weighting to the 3 stocks with the highest weekly returns, SHOP.TO and SHOP were both given a weighting of 20%. The same stock was given a 40% weighting in our portfolio. We should have anticipated this trick to adjust our code accordingly.