A2 Analysis

After preparing the data in `sp500_2023_2024.csv`, carry out the following analysis:

1. Calculate simple weekly returns for each ticker in the full dataset using the following formula.

$$R_{\text{weekly}} = \frac{P_t - P_{t-1}}{P_{t-1}}$$

where:

$$R_{\text{weekly}} = \text{Simple weekly return}$$

$$P_t = \text{Closing price at the end of the current week}$$

$$P_{t-1} = \text{Closing price at the end of the previous week}$$

2. Categorise your data into decile groups based on simple weekly returns, labelled 0%, 10%, 20%, ...
   Do not remove zero returns from the data

3. Display a table showing the top ticker (the ticker with the highest weekly return) in each decile group.

4. Select the top ticker from the 60% decile group.
   Use this ticker for the rest of the assignment, including in Part III.

5. Plot the autocorrelation function for this ticker's entire set of weekly returns.

HINT. `summarise` provides a number of **Useful functions** that can support you with answering some of the questions above.