Exercise: evaluating forecast accuracy

Earlham College
BUS 323 - Fall 2025 - Labadie

In this activity, you will practice producing forecasts using datasets in the `fpp3` package and evaluating forecast accuracy based on forecast errors. Please turn in your code with answers in comments, or a document with your answers and plots (Word doc or a PDF generated from Markdown, for example).

1. We will use the `tourism` dataset, which contains quarterly visitor nights (in thousands) from 1998 to 2017 for 76 regions of Australia.

    (a) Extract data from the Gold Coast region using `filter()` and aggregate total overnight trips (sum over `Purpose`) using `summarise()`. Call this new dataset `gc_tourism`.

    (b) Using `slice()` or `filter()`, create three training sets for this data excluding the last 1, 2 and 3 years. For example, `gc_train_1 <- gc_tourism |> slice(1:(n()-4))`.

    (c) Compute one year of forecasts for each training set using the seasonal naïve (`SNAIVE()`) method. Call these `gc_fc_1`, `gc_fc_2` and `gc_fc_3`, respectively.

    (d) Use `accuracy()` to compare the test set forecast accuracy using MAPE. Comment on these.