Brief Description of Forecast Models for Toronto Island Ferry Ticket Counts

- The goal of this project is to build up a few models to forecast daily ticket counts for Toronto Island ferry.
- I am given a set of count data of 10 years, from May 2015 through June 2025. It records redemption count and sales count by day.
- The daily counts vary according to day of week, the weekend pattern is different from the weekday pattern.
- The daily counts still have constant average, and constant spread around the average, and the relationship between past counts and present counts is consistent.
- I split the data into a full training set and a test set.
- For redemption count, I select Holt Winters model from 10 candidate models, comparing the performance metrics from the 10 models. It is better than the given model as it gives more accurate forecasts than the baseline.
- For sales count, I select the ExtraTree model from 24 candidate models, comparing the performance metrics from the 24 models. The ExtraTree model outperformed the rest.
- In order to vividly compare model performance, I create multiple plots for the best model for Redemption Count forecast and Sales Count forecast respectively.