STT 811

Homework 7

Due April 14, at 11:59:59 pm

1. This problem will use the Today data in the Weekly dataset.
   a. Convert the data into a time series (pay attention to the frequency)
   b. Create an ARIMA model for the data.
   c. What is the MAPE?
   d. Recreate the fitted values using algebraic operations on the historical values and the parameters
   e. The error in (c) is a 1-step ahead error. Use algebraic operations to create 2-step-ahead fitted values. What is the 2-step-ahead error?

2. For the gas data in the oil-gas dataset
   a. Create an ARIMA model for the gas data
   b. Plot the ccf for the oil vs. gas data relationship
   c. Create an ARIMAX model matching the ARIMA form of (a) and the best lag(s) in (b). (Note: lag 0 is not allowed!!!!). Calculate the error of this model.