

In Homework 5, you were asked to come up with a final $ARIMA(p, d, q)$ model for each of the following data sets:

- **ibm**: daily closing IBM stock prices (dates not given)
- **internet**: number of users logged on to an Internet server each minute (dates/times not given)
- **gasprices**: average price (US dollars per gallon) for regular gasoline in the United States; there are $n = 145$ weekly observations collected from 1/5/2009 to 10/10/2011 (**Source**: Rajon Coles, Fall 2011).

Remembering your final choice for each data set, calculate MMSE forecasts and prediction intervals for future values. I will let you decide “how far out” in time to forecast. For each data set, display the forecasts and prediction bands visually like I do in the notes.

- Do the forecasts follow the pattern as you would expect from your final model choice?
- From a practical point of view, explain how the MMSE forecasts might be used.

Remember that R automates the entire MMSE forecasting process.

Note: This assignment will serve as “extra credit.” I will count this as 30 points and add these points to your homework points. Remember that you will also be making MMSE forecasts for your project as well, so this assignment will be good practice.