**Question 5.1**

Using crime data from the file uscrime.txt (<http://www.statsci.org/data/general/uscrime.txt>, description at <http://www.statsci.org/data/general/uscrime.html>), test to see whether there are any outliers in the last column (number of crimes per 100,000 people). Use the grubbs.test function in the outliers package in R.

**Question 6.1**

Describe a situation or problem from your job, everyday life, current events, etc., for which a Change Detection model would be appropriate. Applying the CUSUM technique, how would you choose the critical value and the threshold?

**Question 6.2**

1. Using July through October daily-high-temperature data for Atlanta for 1996 through 2015, use a CUSUM approach to identify when unofficial summer ends (i.e., when the weather starts cooling off) each year. You can get the data that you need from the file temps.txt or online, for example at <http://www.iweathernet.com/atlanta-weather-records> or <https://www.wunderground.com/history/airport/KFTY/2015/7/1/CustomHistory.html> . You can use R if you’d like, but it’s straightforward enough that an Excel spreadsheet can easily do the job too.
2. Use a CUSUM approach to make a judgment of whether Atlanta’s summer climate has gotten warmer in that time (and if so, when).