

Task 1: I have retail sales monthly for North Carolina and have used that dataset for a long time. In anticipation of your class, I contacted the department of revenue to get a few more years of data. They sent me an EXCEL file that I have to deal with so I will ask you to face that same challenge. On the web page <http://www4.stat.ncsu.edu/~dickey/Analytics/data/>) you will find an EXCEL file "Monthly Sales and Use Tax Data YTD2007"

(A) After viewing the file in EXCEL, import it into SAS.

(B) Clean up the file and reshape it so that there is one record (row) for each month and create a proper date to go with it.

Notice how the January numbers are higher than December - how can that possibly be? The answer is that these are tax records and the date is the date that the businesses filed their reports and paid their taxes on what had happened the PRECEDING month. Adjust the date so that it is the date of the month in which the sales actually occurred. Also express the sales in millions of dollars. These are the characteristics of the data set I already have.

(C) Print out the data with a format like Jan97 on the date variable. This is page 1 of your report. I just want to see SALES and DATE sorted in time order.

(D) Plot the data with PROC GPLOT or SGPLOT. Since this is your first try at this, here is the code (which you may want to play around with after you finish this task). The first graph from here is page 2 of your report.

Lessons from the graphs and output (you can pencil it in somewhere on your report or add a page).

(i) What happens to titles 2 through 4 when you replace the first TITLE statement?

(ii) What is the difference between double quotes and single quotes when a macro variable is involved?

```
GOPTIONS RESET=ALL;
* set all graphics options to their defaults *;
AXIS1 LABEL=(ANGLE=90 FONT=CENTB H=1.2) OFFSET=(4,4);
AXIS2 OFFSET=(5,5) MINOR=NONE;
PROC SORT DATA=NEW; BY DATE;
TITLE "NORTH CAROLINA";
TITLE2 "SUPPLEMENTAL RETAIL SALES";
TITLE3 "PROGRAM RUN ON &SYSDATE";
TITLE4 'PROGRAM RUN ON &SYSDATE';
PROC GPLOT DATA=NEW;
PLOT SALES*DATE / VAXIS=AXIS1 HAXIS=AXIS2;
SYMBOL1 V=NONE I=JOIN C=RED; RUN;
PROC GPLOT DATA=NEW;
TITLE "NEW TITLE";
PLOT (SALES SALES)*DATE/VAXIS=AXIS1 HAXIS=AXIS2 OVERLAY;
SYMBOL2 V=NONE I=SMOOTH40 C=GREEN; RUN;
```

(E) On the homework page there is also a program NCretail.sas that you should run to get my original data on monthly sales.

Merge the new data in with this older retail data and plot sales*date for the complete dataset. Use any options that you find useful in PROC GPLOT.

This graph is page 3, the final page of your report.

Capturing a graph:

Suppose you have a graph you like that someone is forcing you to put in

as page 3 of some report. To get the graph out into a form that you can include in a document, you can

(a) Go to the graphics window and view it

(b) Select File-> Export as, then pick the format you want and the location for saving when prompted.