/* Working with a dataset in the SAS Help which contains blood pressure measurements for males and females. Let's read it and save it locally on our own systems */

Data heart;
   set sashelp.heart;
Run;

/* Run a Proc CONTENTS to get a sense of what information can be found in this dataset */

Proc contents data=heart;
Run;

/* Since ODS graphics may be on by default Let's turn it off to see what the Proc TTEST gives us without graphics */

ods graphics off;

/* Let's run a Ttest to see whether there are differences between males and females for the diastolic measure of BP */

Proc ttest data=heart;
   class sex;
   var diastolic;
Run;

/* Now let's turn on the ODS graphics */
ods graphics on;

/* Rerun the Ttest procedure - making no changes to the code */

Proc ttest data=heart;
   class sex;
   var diastolic;
Run;

/* Using the DATA Step to create a subset dataset with only Males */

Data male_data;
   set heart;
   if sex = "Male";
Run;

/* Using Proc Freq to double check our subset dataset */

Proc freq data=male_data;
   tables sex;
Run;

/* Using Proc SQL to create a subset dataset with only Males */

Proc sql;
   create table male_data as
   select * from sashelp.heart
   where sex = "Male";
Quit;
Run;

/* Creating a Histogram */
Proc sgplot data=male_data;
  histogram diastolic / transparency= 0.7 binwidth=2;
  histogram systolic / transparency= 0.5 binwidth=2;
  yaxis grid;
  xaxis display=(nolabel);
Run;

/* Creating a Scatterplot with an Ellipse */
Proc sgplot data=male_data;
  scatter x=diastolic y=systolic;
  ellipse x=diastolic y=systolic;
  keylegend / location=inside position=topleft;
run;