## Enhancing the Plot

SP4R04d03.sas

1. Create a data table called **Sales** with 12 observations corresponding to a 12-month period. In addition, create a variable called **Revenue**. This variable is randomly generated from a normal distribution with a mean of 10,000 and a standard deviation of 1,000. Create a second variable called **Revenue_2**. This variable is also randomly generated from a normal distribution with a mean of 13,000 and a standard deviation of 500.

```
data sp4r.sales;
   call streaminit(123);
   do month=1 to 12;
      revenue = rand('Normal',10000,1000);
      revenue_2 = rand('Normal',13000,500);
      output;
   end;
run;
```

2. Use PROC SGPLOT to create a series plot with both variables.

   a. Provide the title 'Monthly Sales of Company A and B for 2015', the X-axis label 'Month', the Y-axis label 'Revenue for 2015', a vertical reference line at the 6.5 month mark, and a horizontal reference line at 11,000.

   b. Put your name in the bottom right corner with the INSET statement.

   c. Provide tick marks from 1 to 12 by 1 for the X-axis.

   d. Create the legend labels 'Company A' and 'Company B', with a blue line and a red line to distinguish them. Give each line a dashed pattern.

```
proc sgplot data=sp4r.sales;
   series x=month y=revenue / legendlabel='Company A'
      lineattrs=(color=blue pattern=dash);
   series x=month y=revenue_2 / legendlabel='Company B'
      lineattrs=(color=red pattern=dash);

   title 'Monthly Sales of Company A and B for 2015';
   xaxis label="Month" values=(1 to 12 by 1);
   yaxis label="Revenue for 2015";
   inset "Jordan Bakerman" / position=bottomright;
   refline 6.5 / transparency= 0.5 axis=x;
   refline 11000 / transparency= 0.5;
run;
```
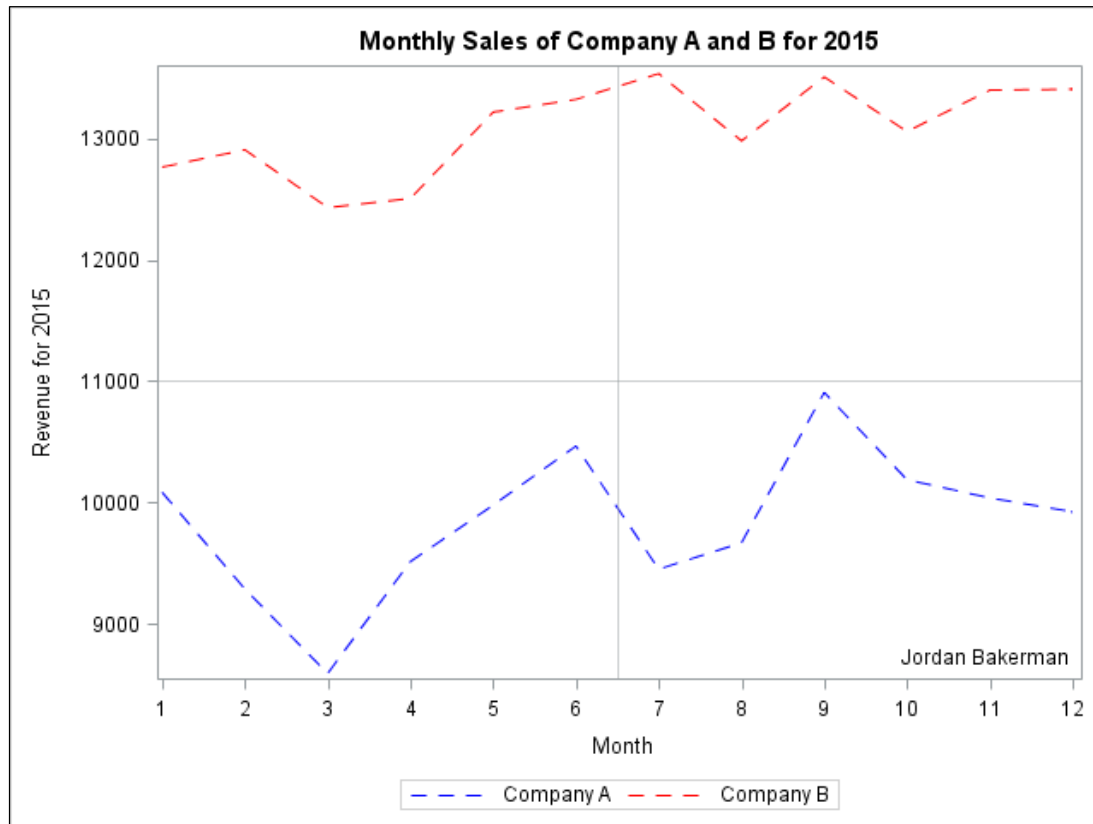
3. Use the **Sales** data table to further enhance the plot from the previous demonstration.

   a. Use the SCATTER statement to add the observations to the plot.

   b. Use the SYMBOL=circlefilled option for the points.

   c. Add the KEYLEGEND statement to avoid multiple legends for both the SCATTER and SERIES statements.

   d. Change the Y-axis limits to 8000 and 14000.

```
proc sgplot data=sp4r.sales;
   series x=month y=revenue / legendlabel='Company A' name='Company A'
      lineattrs=(color=blue pattern=dash);
   scatter x=month y=revenue / markerattrs=(color=blue
      symbol=circlefilled);
   series x=month y=revenue_2 / legendlabel='Company B'
      name='Company B' lineattrs=(color=red pattern=dash);
   scatter x=month y=revenue_2 / markerattrs=(color=red
      symbol=circlefilled);

   title 'Monthly Sales of Company A and B for 2015';
   xaxis label="Month" values=(1 to 12 by 1);
   yaxis label="Revenue for 2015" min=8000 max=14000;
   inset "Jordan Bakerman" / position=bottomright;
   refline 11000 / transparency= 0.5;
   refline 6.5 / transparency= 0.5 axis=x;
   keylegend 'Company A' 'Company B';
```

```
run;
```


Monthly Sales of Company A and B for 2015

Jordan Bakerman

Legend: — — Company A   — — — Company B