Lab Assignment 4

Directions: Below there is an example problem solved and explained. After the example there is an exercise that needs to be completed using SPSS. Make sure that you print out and label your SPSS output. You may cut and paste the output into a word document if you prefer, but make sure that every question answered includes the relevant SPSS output.

Before we begin the example, we should open SPSS.

Open SPSS by going to:

Start → *all programs* → *SPSS for Windows* →*SPSS 15.0 for Windows*. After opening SPSS you will see a pop up box which will ask you, "What would you like to do?" Click Cancel.

At the bottom of the screen, you will see two tabs: Data View and Variable View.

Click the 'Variable View' Tab

Congratulations! You are now ready to begin using SPSS.

Example: Use SPSS to fit the LSR line and then test the model's usefulness.

The following data is from the 2002 baseball season. The 14 teams are from the American League. Use batting average as the independent variable:

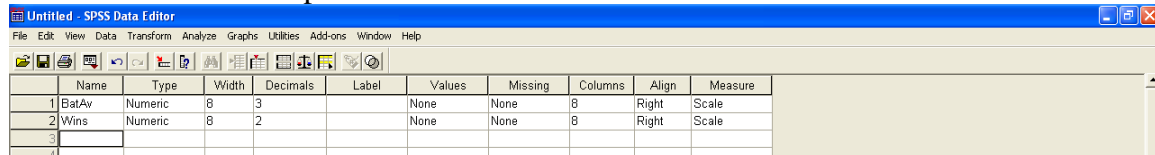| Team	Games Won	Batting Average
NY	103	0.275
Tor	78	0.261
Bal	67	0.246
Bos	93	0.277
TB	55	0.253
Cle	74	0.249
Det	55	0.248
Chi	81	0.268
KC	62	0.256
Min	94	0.272
Ana	99	0.282
Tex	72	0.269
Sea	93	0.275
Okl	103	0.261

Step 1: Under the 'Variable View' tab in SPSS, we need to enter a name for two variables. In the first row we will enter the name 'BatAv' and in the second row we will enter the name 'Wins.'

Step 2: After entering each name we can press the tab key. In this box next to each name select 'Numeric' (since our data is numerical in nature).
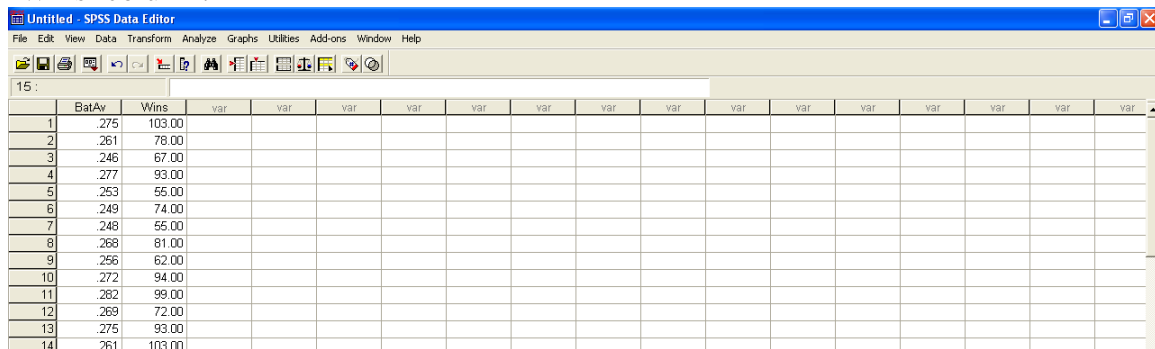
Step 3: By hitting tab again you have the option of selecting the width of your data values (If you have very long numbers you may need to increase the width). If you press tab again, you can specify the number of decimal places in your data values. Note 'BatAv' should have 3 decimal places.
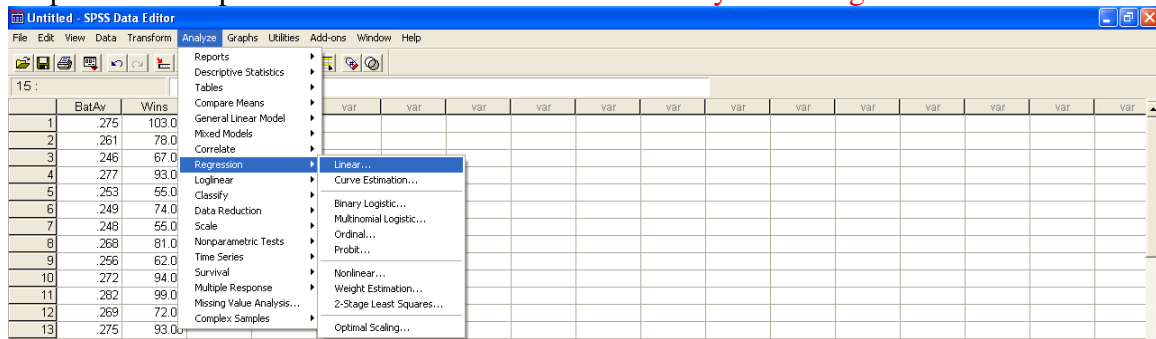

Step 4: Click the 'Data View' tab. The first column should be labeled 'BatAv' and the second should be labeled 'Wins'

Step 5: Enter your batting averages into the 'BatAv' column and your wins into the 'Wins' column.
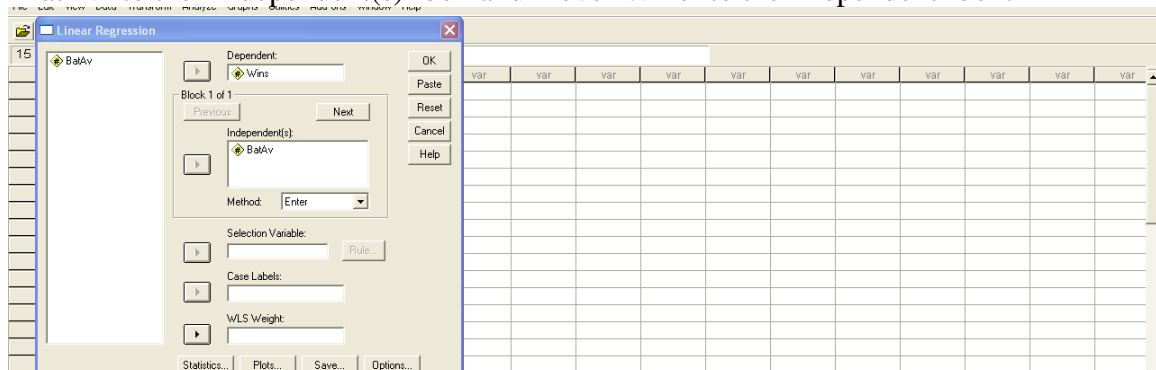

Step 6: At the top of the 'Data View' screen click Analyze → Regression → Linear

Step 7: After clicking 'Linear' from step 6 above, a box appears. Move your variable 'BatAv' to the 'Independent(s)' box and move 'Wins' to the 'Dependent' box.

Step 8: Click Ok

Let's see what we have here:
This first box gives the r and r-squared values for the model.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780(a)	.609	.576	11.12440

a Predictors: (Constant), BatAv

This ANOVA below allow us see if our model is significant, and our coefficients box below that gives us our LSR slope and intercept estimates. Our model, $\hat{y} = -214.3 + 1118.4X$, is significant since the p-value (Sig.) < alpha.

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2310.187	1	2310.187	18.668	.001[a]
	Residual	1485.027	12	123.752		
	Total	3795.214	13			

a. Predictors: (Constant), BatAv

b. Dependent Variable: Wins

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-214.302	68.329		-3.136	.009
	BatAv	1118.425	258.857	.780	4.321	.001

a. Dependent Variable: Wins

Exercise: Use the data on horses from E3 practice problems pg 19 number 11.104 p.650, and use SPSS to fit the LSR line and then test the model's usefulness.