## **Scatter Plot**

Scatter plot is a graphical method to visualize the correlation between two variables. The following examples demonstrate how to make a scatter plot for exploring the relation between two variables Weight and Height variables, and also how to set different markers to make scatter plots for different categories (gender) of subjects in the data. The data used for this example is <u>Practice1.rda</u>. This data file contains Weight, Height, and Gender variables.

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	id	Gender	Height	Weight	Exercise	TVhours	cgender		
1	1	0	1.43	42.18	4	1	Female		
2	2	0	1.57	51.62	4	1	Female		
3	3	0	1.65	62.77	0	0	Female		
4	4	1	1.76	83.4	3	1	Male		Ξ
5	5	0	1.57	49.9	1	1	Female		
6	6	0	1.6	50.8	0	0	Female		
7	8	1	1.75	59.9	4	0	Male		
8	9	1	1.68	59.88	4	0	Male		-
9	10	1	1.68	68.95	7	1	Male		
10	11	1	1.65	57.63	1	1	Male		
11	12	0	1.57	48.54	2	1	Female		
12	13	0	1.68	73.94	0	0	Female		
13	14	1	1.85	118.33	2	0	Male		
14	15	1	1.68	45.36	7	0	Male		
15	16	0	1.55	75.3	0	1	Female		_

To **make simple scatterplot**, for exploring relation between Weight and Height variable with R Commander, **Step 1:** click on Graphs and then select Scatterplot.

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📿 Data set: 🗉 Practice	Color palette	et Model: 2 <no active="" model=""></no>		
	Index plot	5 <sup>00</sup>	n L	
Output	Histogram	Submit		
	Density estimate			
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<	Scatterplot			
Messages	Scatterplot matrix	*		
[3] NOTE: The data:	Line graph	and 8 columns.	Â	
	XY conditioning plot			
4	Plot of means		<b>T</b>	
	Strip chart			

**Step 2**: Select a variable (Height) for **x-variable** and select the other variable (Weight) for **y-variable** as shown in the following figure, and then click **Options** tab if you wish to check or uncheck some options. I usually only leave Least-squares line option checked. When done with the selection click OK. R Commander will show the scatterplot in a graphic window.

R Scatterplot		
Data Options		
x-variable (pick one) Exercise Gender Height id Wei	ariable (pick one) ght  ours	
Plot by groups		
Subset expression <all cases="" valid=""></all>		
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🕼 Scatterplot							
Data Options							
Plot Options	Plot Labels and Point	s					
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Jitter y-variable		< >					
Log x-axis	y-axis label	<auto></auto>					
Log y-axis		< >					
Marginal boxplots	Graph title	<auto></auto>					
Least-squares line		< Þ					
Smooth line	Plotting characters	<auto></auto>					
Show spread		10					
50	Point size	1.0					
Span for smooth							
Identify Points	Axis text size	1.0					
Automatically							
Interactively with mouse	Axis-labels text size	1.0					
Do not identify							
Number of points to identify 2 🚔							
🔞 Help 🔥 Reset 🖌 OK 🗱 Cancel 🌈 Apply							

The scatterplot from the steps above will look like the following.



To display scatterplot for different gender using different markers, one can click on **Plot by groups...** button in the **Scatterplot window** and select the gender variable (cgender) in the **Groups** window, and then click **OK** button. The variable listed in the Groups window has to be factor variable, otherwise it won't be shown in the Groups window.

