

Entering Data in SPSS Statistics

The "one person, one row" Rule

SPSS Statistics sets out its data in a spreadsheet-like manner. The principle behind entering data in almost all cases in SPSS Statistics is to enter each unique case on a new row. A case is the "object" which you are measuring in some way. Usually, a case is an individual, but it can also be a commercial product or a biological cell (or something else entirely). For the purposes of this explanation, we shall assume that a case is an individual. Therefore, when entering data into SPSS Statistics you must put one person's data on one row only. If you find that you have an individual's data on more than one row then you have made a mistake. Equally, if a row contains more than one person's data, you have also made a mistake.

We shall now look at the three most common tasks you face when entering data into SPSS Statistics, plus two more advanced setups:

- [Entering variables](#) (e.g., height, weight).
- [Defining separate groups](#) (between-subject factors) (e.g., gender, level of education).
- [Entering repeated measures](#) (within-subjects factors) (e.g., time course).
- [Multiple separate groups](#) (e.g., gender and level of education).
- [Separate groups and repeated measures](#) (e.g., gender and time course).

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Entering Variables

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If you do not have repeated measures, SPSS Statistics treats each column as a separate variable. Thus, each variable goes in a separate column. For example, if we had measured the height and weight of a group of individuals, the data in SPSS Statistics would look like the following:

	Subject	Height	Weight	var	var
1	1.00	1.78	78.00		
2	2.00	1.82	92.00		
3	3.00	1.65	81.00		
4	4.00	1.55	56.00		
5	5.00	1.92	92.00		
6	6.00	1.78	77.00		
7	7.00	1.75	75.00		
8					
9					

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The **Subject** column has been added so that it is clear that each individual is placed on a separate row. However, SPSS Statistics does not need you to enter this column, and it is mostly for you to be able to better visualize your data. So, even if we ignored the **Subject** column, we can see that one individual was 1.55 m tall and weighed 56 kg, looking at the **Height** and **Weight** columns, respectively. How to label variable columns is in our [Working with Variables](#) guide. To add more variables, simply add more columns - one column per variable. The only variation to this is discussed [later](#) in this guide when we have to enter repeated measures.

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Defining Separate Groups

Separate groups are more commonly called between-subjects factors or independent groups. They are groups where the individuals in each group are unique (i.e., no person is in more than one group). In this sense, you could call the groups "mutually-exclusive". A common example is when differentiating between gender. You want to label some of your individuals as female and others as male. To identify which subjects were males and which were females, you need to create a "grouping variable" in SPSS Statistics. This is a separate column that includes information on which group a subject belongs to. We do this by labelling our groups numerically. For example, we label "males" as "1" and "females" as "2". By using the [value](#) attribute we can label these numbers as representing males and females, respectively. An example is shown below:

	Subject	Gender	Height	Weight
1	1.00	1.00	1.78	78.00
2	2.00	1.00	1.82	92.00
3	3.00	1.00	1.65	81.00
4	4.00	2.00	1.55	56.00
5	5.00	2.00	1.92	92.00
6	6.00	2.00	1.78	77.00
7	7.00	2.00	1.75	75.00
8				

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Looking at the columns on the left we can see that we have created a "grouping variable" called "Gender" that has two categories: "1" and "2". Because we labelled the numbers using the value attribute we can use the Value Label Button to switch to the text version of the "grouping variable" categories. In this example, we can see that "1" and "2" are replaced by "Male" and "Female", respectively. How to do this is explained in our guide on [Working with Variables](#). You do not need to add text labels – SPSS Statistics will work fine without them – but it can provide extra clarity when analysing your data (especially as text labels are often used in the output instead of the numbers – this helps greatly). We can see in this example that the first three subjects were males and the last four subjects were females. What if you have more than two categories of your "grouping variable"? Simple, just add more numbers with, we recommend, corresponding text labels.

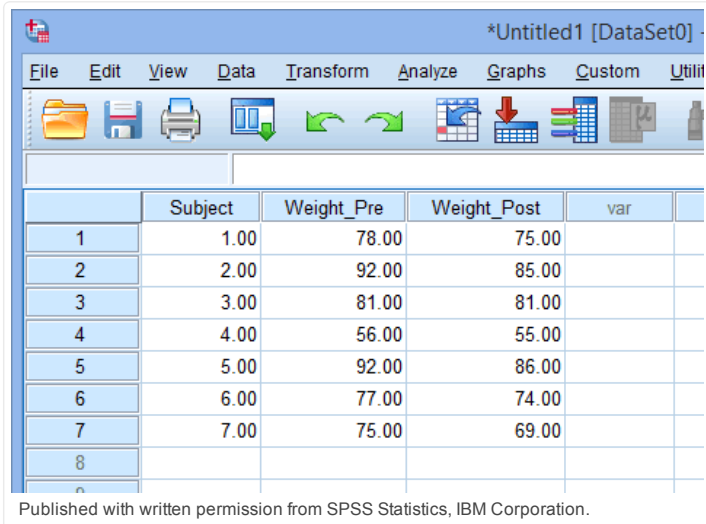
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Entering Repeated Measures

Repeated measures, also called within-subject factors or related groups, are variables that are measured on more than one occasion. This can occur when you have measured the same subject for the same variable at more than one time point or under more than one condition. For example, you measured body weight at the beginning and end of a weight-loss programme. To enter this into SPSS Statistics, you must ignore the "one-variable-one-column" rule and put each time point or condition in a new column as follows:



The screenshot shows the SPSS Statistics interface with a data entry window titled '*Untitled1 [DataSet0]'. The menu bar includes File, Edit, View, Data, Transform, Analyze, Graphs, Custom, and Utilities. The toolbar contains icons for file operations, navigation, and data management. The data table has the following structure:

	Subject	Weight_Pre	Weight_Post	var
1	1.00	78.00	75.00	
2	2.00	92.00	85.00	
3	3.00	81.00	81.00	
4	4.00	56.00	55.00	
5	5.00	92.00	86.00	
6	6.00	77.00	74.00	
7	7.00	75.00	69.00	
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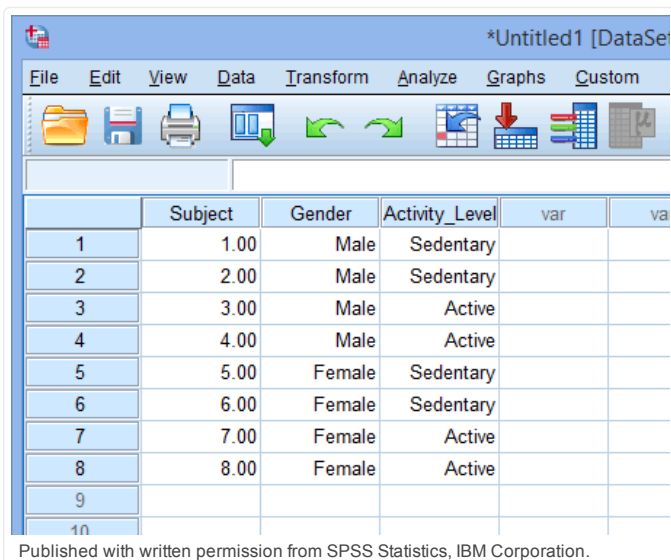
Here, we have labelled their weight at the beginning of the weight-loss programme as "**Weight_Pre**" and their weight after the weight-loss programme as "**Weight_Post**". It does not matter what you call these "related" columns (you could have called them weight1 and weight2, for example), as long as the columns make sense to you. If you have a lot of time points and/or conditions, labelling the variables logically is important because otherwise it can become very confusing determining which variable is which. This is important as SPSS Statistics cannot tell the difference between columns that contain different variables and columns that contain a repeated variable. Therefore, it cannot help you.

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Multiple Separating Groups

Sometimes, such as when running a two-way ANOVA or when entering in your whole study data, you need to separate your subjects twice (i.e., on two separate variables). For example, you need to separate subjects by their gender (male/female) and their physical activity level (sedentary/active). This will require two columns that act as "grouping variables", as shown below:



The screenshot shows the SPSS Statistics interface with a data entry window titled '*Untitled1 [DataSet0]'. The menu bar includes File, Edit, View, Data, Transform, Analyze, Graphs, and Custom. The toolbar contains icons for file operations, navigation, and data management. The data table has the following structure:

	Subject	Gender	Activity_Level	var	va
1	1.00	Male	Sedentary		
2	2.00	Male	Sedentary		
3	3.00	Male	Active		
4	4.00	Male	Active		
5	5.00	Female	Sedentary		
6	6.00	Female	Sedentary		
7	7.00	Female	Active		
8	8.00	Female	Active		
9					
10					

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Here, we can see that, for example, Subject 1 was male and sedentary, and Subject 7 was female and active. Notice that we are using the text labels as described earlier in this guide for added clarity.

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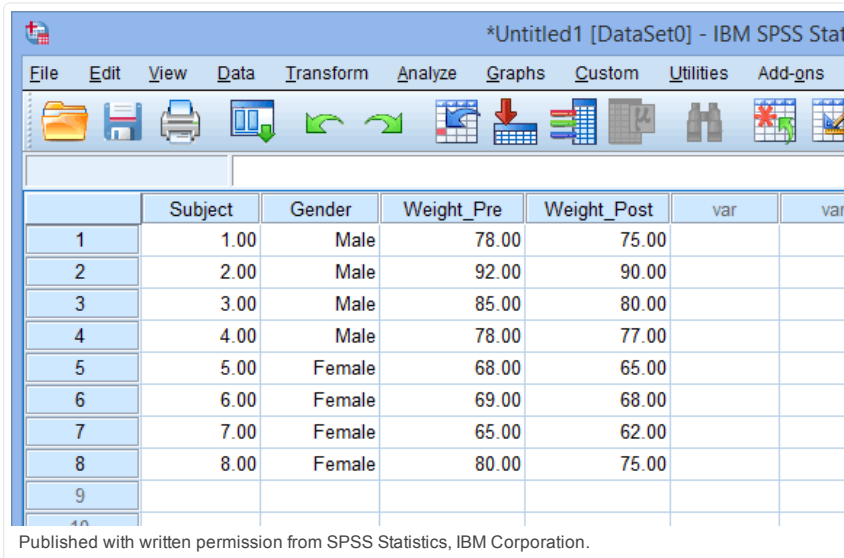
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Mixing Separate Groups and Repeated Measures

Sometimes, we have separated subjects into groups and then measured them repeatedly on the same dependent variable. Such data might be analysed using a mixed ANOVA. If we had males and females undertake a weight-loss programme and we weighted them pre- and post-intervention, we would have the following setup in SPSS Statistics:



The screenshot shows the IBM SPSS Statistics software interface. The title bar reads '*Untitled1 [DataSet0] - IBM SPSS Statistics'. The menu bar includes File, Edit, View, Data, Transform, Analyze, Graphs, Custom, Utilities, and Add-ons. Below the menu bar is a toolbar with various icons for file operations and data manipulation. The main window displays a data table with the following columns: Subject, Gender, Weight_Pre, Weight_Post, var, and var. The data is as follows:

	Subject	Gender	Weight_Pre	Weight_Post	var	var
1	1.00	Male	78.00	75.00		
2	2.00	Male	92.00	90.00		
3	3.00	Male	85.00	80.00		
4	4.00	Male	78.00	77.00		
5	5.00	Female	68.00	65.00		
6	6.00	Female	69.00	68.00		
7	7.00	Female	65.00	62.00		
8	8.00	Female	80.00	75.00		
9						

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To generate this type of setup, simply used the rules you have learnt in this guide under the [Defining Separate Groups](#) and [Entering Repeated Measures](#) sections.

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