

Adding Variables into Jamovi

This tutorial will show you how to create variables and add data into Jamovi.

Example

Using a simple example, let's imagine that we want to investigate the phenomenon of 'social facilitation'. Our simple hypothesis might be that participants perform better on a simple task when in the presence of others.

To test this hypothesis, we could create two experimental groups:

1. Audience present: participants perform a task while being watched by an audience
2. Audience absent: different participants perform the same task alone.

We could call this variable "audience presence", and it will be our **independent variable**.

We would then need to measure participants' performance in some way.

For this example, let's consider a simple task that involves participants being asked to write down as many words as possible that begin with the letter 'f' in 60 seconds.

The number of words generated would therefore be the **dependent variable**.

The two groups' performance could then be directly compared.

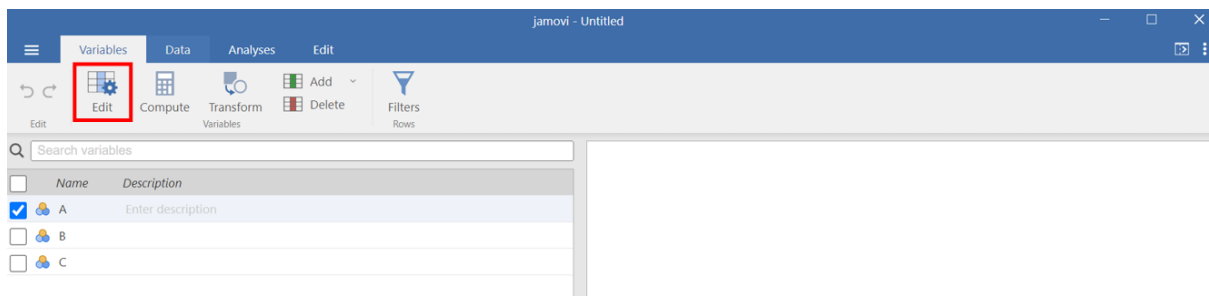
Defining variables

First, let's open Jamovi. Before we add our data, we need to tell Jamovi what information we collected, so we need to define our variables.

To do this, you need to click on **Variables**, which is the first menu on the toolbar at the top of your window.

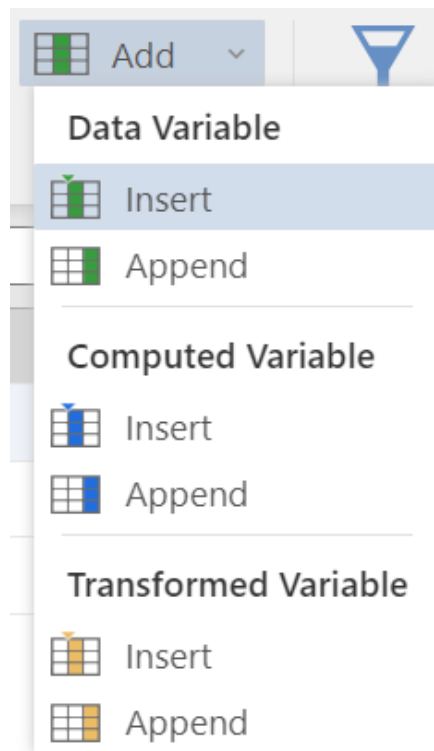


This will take you to your **Variable View**.



Jamovi automatically provides three variables, titled A, B, and C. To edit these variables, you can either double click on a variable or select a variable and click the Edit button (as seen above).

Alternatively, to add a new data variable you can click on the Add button at the top and select "Insert" to insert a data variable between the current variables or "Append" to insert a data variable at the end.



Double-clicking a variable, clicking "Edit", or adding a new variable will all reveal the Data Variable box.

The screenshot shows the 'Edit' window in Jamovi. The 'DATA VARIABLE' section has a title box containing 'A'. Below it is a 'Description' box. The 'Measure type' is set to 'Nominal' with a dropdown arrow. The 'Data type' is set to 'Integer' with a dropdown arrow and '(auto)' next to it. The 'Missing values' field is empty. To the right of these fields is a 'Levels' list box, which is currently empty. There are up and down arrows next to the 'Levels' box, and a plus sign at the bottom right. At the bottom of the window, there is a toggle switch for 'Retain unused levels in analyses' which is currently turned off.

Defining our Independent Variable – “Audience presence”

The first thing we need to do is set up a variable to indicate whether an audience was present or absent. In the Variable View, select the first variable (currently called “A”), and click “Edit”.

The variable is currently called “A”, but we want to replace this with something meaningful. The name you choose will appear at the top of the corresponding data columns in the **Data View** sheet. As such, you don’t want to give your variables long names, as this makes them difficult to read.

For this example, we will call the variable “Audience presence”.

This is a close-up of the 'Edit' window. The 'DATA VARIABLE' section shows the title box with the text 'Audience presence'. Below it is the 'Description' box, which is currently blank.

Under the title box, we have the option to include a description. This can be helpful if you have a large number of similar variables, but for this example we will leave it blank.

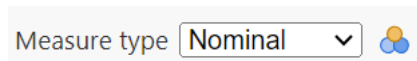
Next, we have **Measure type**.

The Measure column allows us to tell Jamovi what type of variable we are entering data for. You would select:

- **Continuous** if you are entering interval or ratio data (i.e., where the difference between scores on the scale is meaningful and standardised, and intervals across the scale are equal).

- **Ordinal** if you have a categorical variable where the order of the categories matter
- **Nominal** if you have a categorical variable where the order of categories does not matter

In our example, we need to select the "Nominal" option, as we are looking at a categorical variable (audience present vs. audience absent) without obvious ordering.



Next, we have **Data type**. Here, you can change the type of data that is associated with the variable.

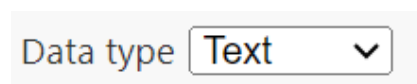
We have three options:

Integer – Integer variables in Jamovi are designed for values that can only be whole numbers. This contrasts with "Decimal" variables, which can include decimal points and fractions. For example, IDs (like a student ID number), or ordinal scales where numbers represent ordered categories (e.g., 1 for "strongly disagree", 2 for "disagree", etc.)

Decimal – represents numerical data with decimal points, indicating the presence of a fractional part. It's used for values that are not whole numbers.

Text – Text variables are often used to represent categories or labels, like names, locations, or descriptions. For example, a variable might hold the names of different cities, or the different responses to a survey question.

For our variable **Audience** we could select Text as our data type. This allows us to write "present" or "absent" to represent each of our conditions when inputting our data.



After you've done this, your Data Variable window should look the same as the image below. Now we need to tell Jamovi what our two conditions are for this variable. You can see a box titled Levels, and a "+" sign to the bottom right-hand side. Click on the "+" sign.

The screenshot shows the 'DATA VARIABLE' dialog box for the variable 'Audience presence'. The 'Measure type' is set to 'Nominal' and the 'Data type' is 'Text'. The 'Levels' list is empty, and a red box highlights a '+' button at the bottom right of the list. The 'Retain unused levels in analyses' toggle is turned off.

DATA VARIABLE

Audience presence

Description

Measure type **Nominal**

Data type **Text**

Missing values

Levels

Retain unused levels in analyses

This will bring up a box asking us to “Enter level value”. This is where we input each of our conditions.

To represent our condition where the task is being completed with an audience present, we want to type **Present** and click “OK”.

The screenshot shows the 'Enter level value' dialog box. The text input field contains the word 'Present'. There are 'OK' and 'Cancel' buttons at the bottom.

Enter level value

Present

OK Cancel

Then, click on the “+” sign again to enter our second condition. This time, we want to represent the condition where the task is being completed without an audience present, so we will type **Absent** and click “OK”.

The screenshot shows the 'Enter level value' dialog box. The text input field contains the word 'Absent'. There are 'OK' and 'Cancel' buttons at the bottom.

Enter level value

Absent

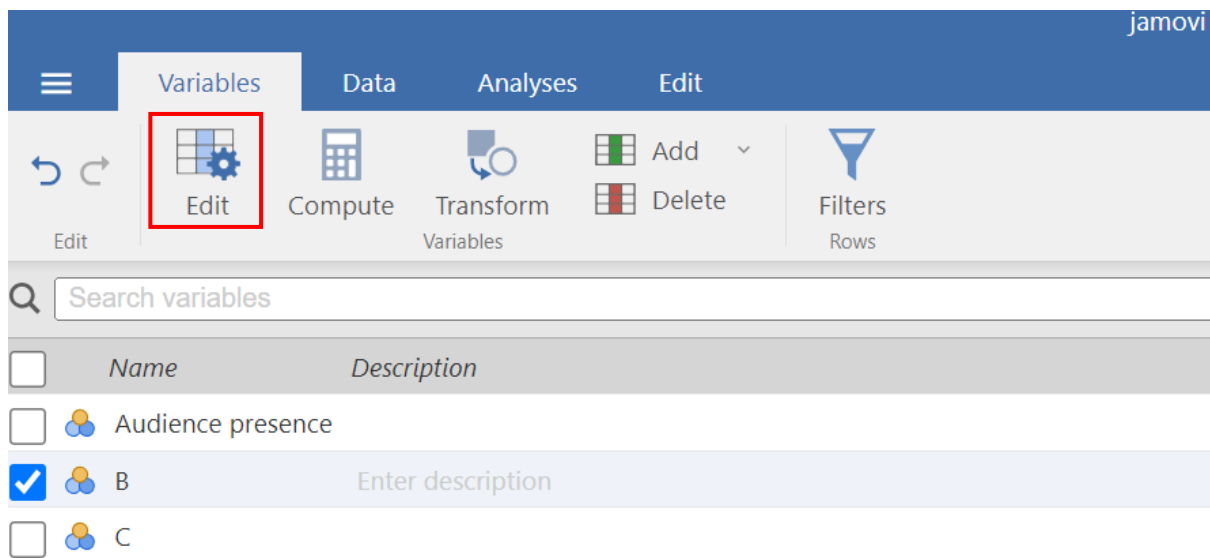
OK Cancel

Defining our Dependent Variable – “Words”

Once we have entered the information for our first variable, we can enter in the details for our other variables.

Let’s move onto our dependent variable, which is the number of words each participant wrote down in 60 seconds.

Either double click on Variable B, or select Variable B and click the Edit button (as seen below).



For the title, we could put “**Words**”.

Under **Measure type**, we would click on “**Continuous**” as the difference between scores on the scale is meaningful and standardised, and intervals across the scale are equal.

For **Data type**, we would select “Integer”, as participant scores will be whole numbers.

We do not need to add any levels for this variable, as it is not categorical.

When you’ve done this, your dependent variable “Words” should look like this:

DATA VARIABLE

Words

Description

Measure type **Continuous** 

Data type **Integer**

Missing values

Levels

↑

↓

+

Retain unused levels in analyses ☐

Defining Demographic Variables

When carrying out research, it's also important to collect demographic information about your participants, especially age and sex. These variables also need to be defined so we can enter the data in our datasheet.

Let's edit the "C" variable and title it "**Sex**".

The **Measure type** would be "**Nominal**" as Sex is categorical.

For **Data type**, we can select text again so we can input our Sex data as words, e.g. Male, Female.

We could define our categories in this variable by clicking the "+" to the bottom-right hand side of the box titled Levels. We would enter "male" for our first category, then click the "+" again to enter "female". When you've done this, your "Sex" variable should look like this:

DATA VARIABLE

Sex

Description

Measure type **Nominal** 

Data type **Text**

Missing values

Levels

↑

↓

+

male

female

Retain unused levels in analyses ☐

Lastly, let's define Age. Insert a new variable and title it "**Age**".

The **Measure type** for Age would be Continuous.

For **Data type** we will select integer, as we usually collect age in whole years (e.g., "23", rather than "23.4").

Your Age variable should look like this:

The screenshot shows the 'DATA VARIABLE' configuration window for a variable named 'Age'. The 'Measure type' is set to 'Continuous' and the 'Data type' is set to 'Integer'. The 'Missing values' field is empty. To the right, there is a 'Levels' section with a list box and up/down arrows. At the bottom, there is a toggle switch for 'Retain unused levels in analyses' which is currently turned off.

Entering data

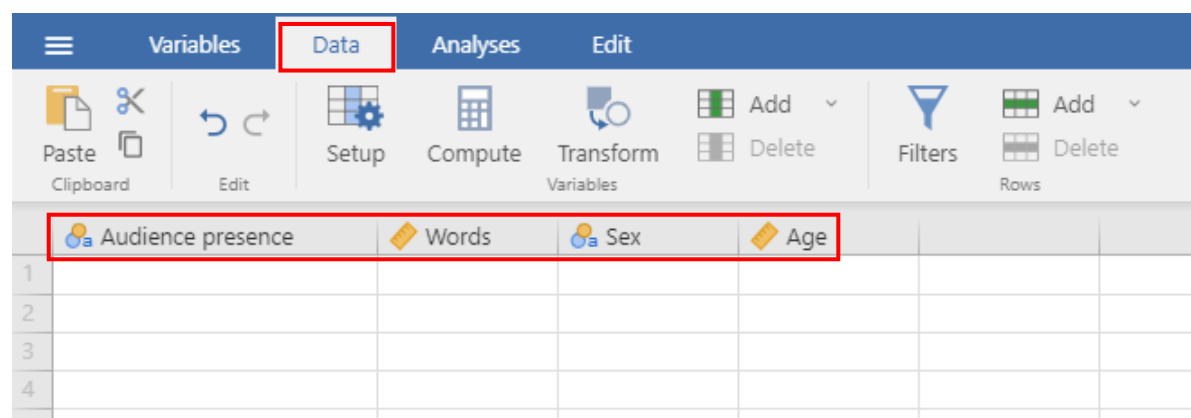
Once you have added all four variables, this is what your Variable window will look like.

The screenshot shows the 'Variable' window with a list of variables. The 'Age' variable is selected, indicated by a blue checkmark in the first column. The 'Description' column for 'Age' contains the text 'Enter description'.

	Name	Description
☐	Audience presence	
☐	Words	
☐	Sex	
☒	Age	Enter description

Now, we can start entering in our actual data. To do this, click on Data, which is the second menu on your toolbar at the top of your window.

This will take you to the Data spreadsheet.



Notice how the headers of the columns have now changed to display the Variable Names. They should now read Audience presence, Words, Sex & Age.

When entering data into Jamovi, it is important to follow this simple rule of thumb:

Each row represents an individual participant, observation or case.

When you enter data, the number of rows should be the same as the number of participants you have. If you find yourself entering data from the same participant on more than one row, or entering data from many participants on only one row, the chances are you are entering it incorrectly.

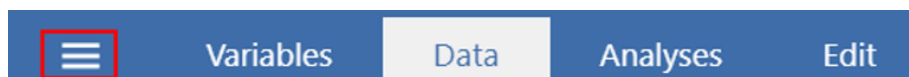
In this case, we need to enter the data in the following way:

- Enter in “present” or “absent” in the Audience column to represent whether the participant completed the task with an audience, or without.
- The numbers entered into the Words column are the number of words participants wrote down.
- Enter “male” or “female” into the Sex column.
- The numbers entered into the Age column are the participants' age in years.

Have a go at entering the data below into your own spreadsheet. Once you're done, it should look like this:

	Variables	Data	Analyses	Edit		
	Paste Clipboard	Edit	Setup	Compute	Transform Variables	Add Delete
					Filters	Add Delete Rows
	Audience presence	Words	Sex	Age		
1	present	12	male	32		
2	present	13	female	20		
3	present	11	male	22		
4	absent	15	female	19		
5	absent	14	male	35		
6	absent	13	female	23		
7						
8						
9						
10						

You have now finished entering your first set of data. Once you have finished creating your data file, you need to save it. To do this, click on the **File menu** (three horizontal lines on the top of the left-hand side of your window).



Then select the Save option or Save As and name your file in the usual way.

Now you have completed the first three tutorials (Getting Started, Menus and Adding Variables), why not explore the program further yourself? Try adding some data and seeing what you can do with the different menu options. You don't need to worry about breaking Jamovi. The worst-case scenario is that you produce some meaningless output, but that's just part of learning how it works.