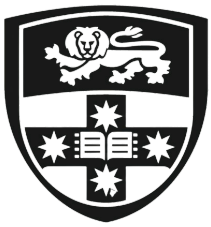
# Using `flexplot` to model plots in Jamovi

A video cheatsheet



THE UNIVERSITY OF
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## About

This cheatsheet provides a quick reference for using the `flexplot` Module in Jamovi to create plots by specifying a formula. Depending on the variable types and the specified formula, `flexplot` can generate a variety of plot types, including scatter plots, and box plots, automatically.

#### Assumed knowledge

- Jamovi has been installed and is ready to use. This cheatsheet uses Jamovi 2.7.4.0.
- Basic understanding of statistical concepts and terminology. For example, understanding the difference between categorical and continuous variables.
- Basic knowledge of how to create model formulas e.g. $y \sim x$

## Data

We will use the well-known penguins dataset from the `palmerpenguins` R package. The dataset has been exported from the package in a format that Jamovi can read (.csv).

Download penguins.csv

## Install the `flexplot` module

If you have not already installed the `flexplot` module, you can do so by following these steps:

1. Open the **Modules** tab in Jamovi.
2. Click on **Jamovi Library**.
3. Search for `flexplot` and click **Install**.

assets/20250819-jamovi_flexplot_install.mp4

# Import data

1. Click the **hamburger menu** at the top-left of the Jamovi window.
2. Select **Open** to open the file dialog.
3. In the dialogue, navigate to the folder where you saved `penguins.csv` and click **Open**.

assets/20250819-jamovi_open_penguins.mp4

# Plot

## Recalling formulae syntax

In most cases, general linear models can be described using a standardised formula syntax. For a response variable that is influenced by a certain predictor variable, the formula would be:

$$Y \sim X$$

which corressponds to the statement

> The response $Y$ is predicted by $X$

$$response \sim predictor$$

## Plotting

1. In the **Analysis** tab, click on the **Flexplot** option.
2. Select the **response variable** and drag it to the "Outcome variable" box.
3. Select the **predictor variable** and drag it to the "Predictor variable" box.
4. Tinker with the plot options to customise the behaviour of the plot.

## Examples

### Single continuous $Y$

This produces a histogram or boxplot

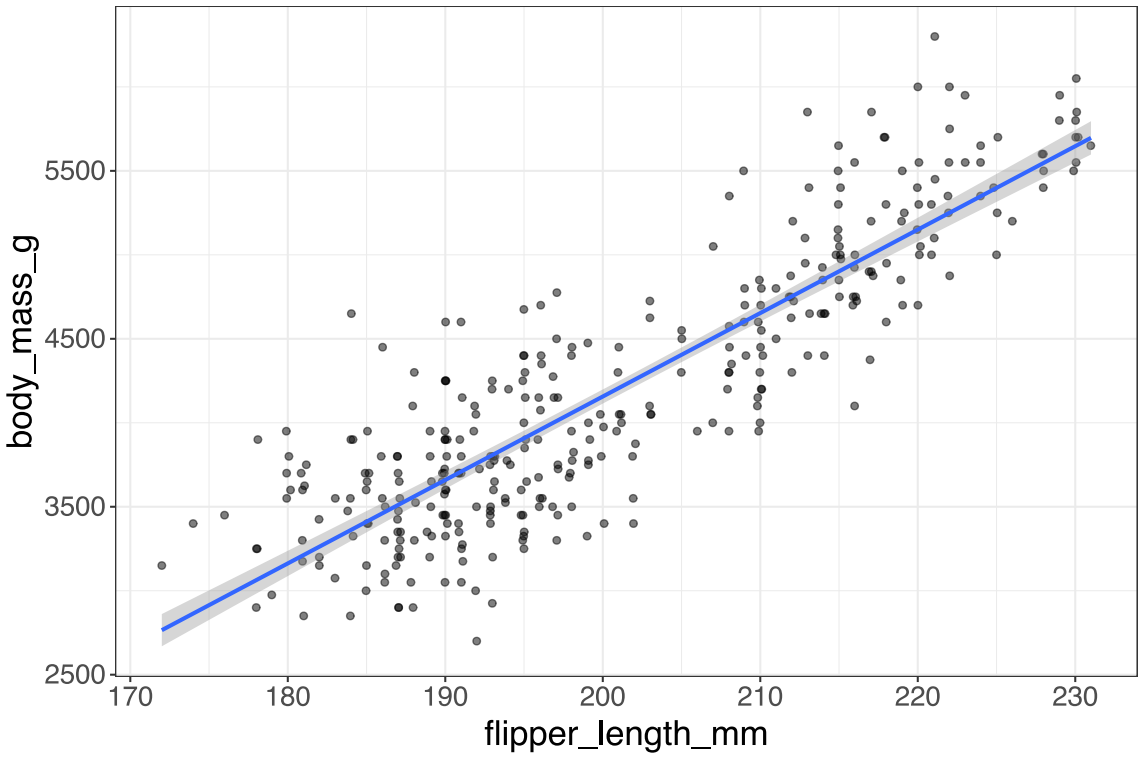
### Continuous $Y$, continuous $X$

This produces a **scatterplot**. You should explore options for fitted line, confidence bands and jittering.

# Video

assets/20250819-jamovi-scatterplot.mp4

## Scatter plot



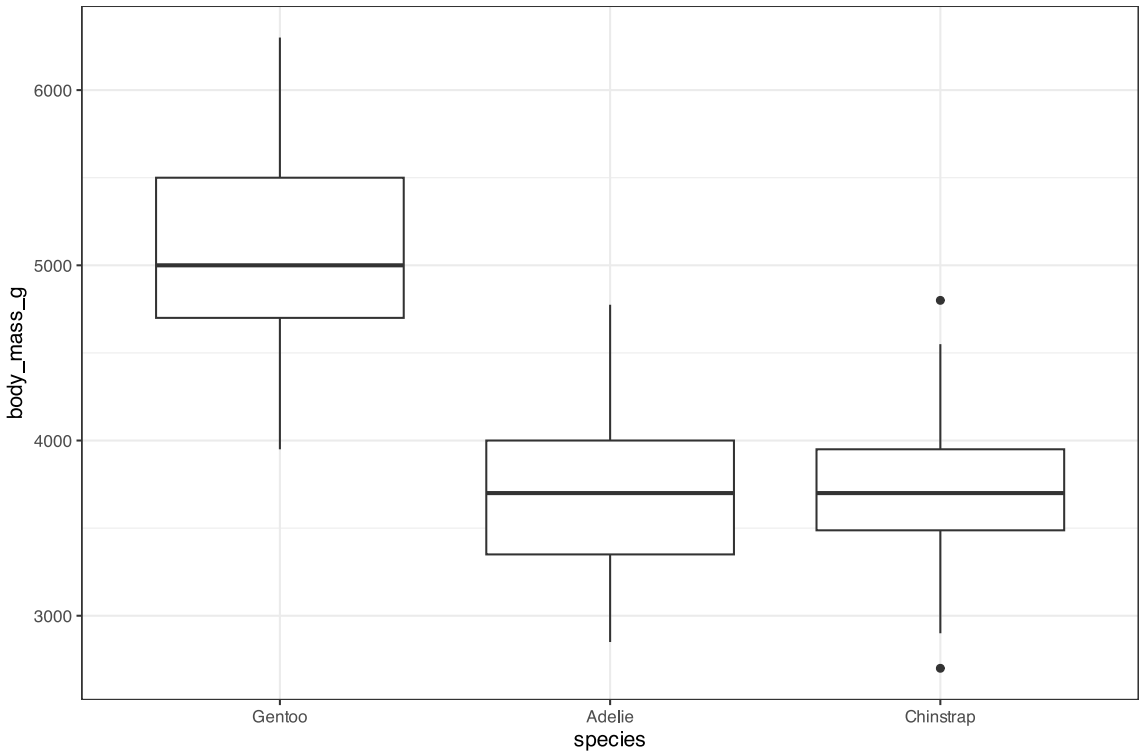

**Continuous $Y$, categorical $X$**

This produces various plots such as the boxplot and violin plot. The categorical variable $X$ is used to group the data.

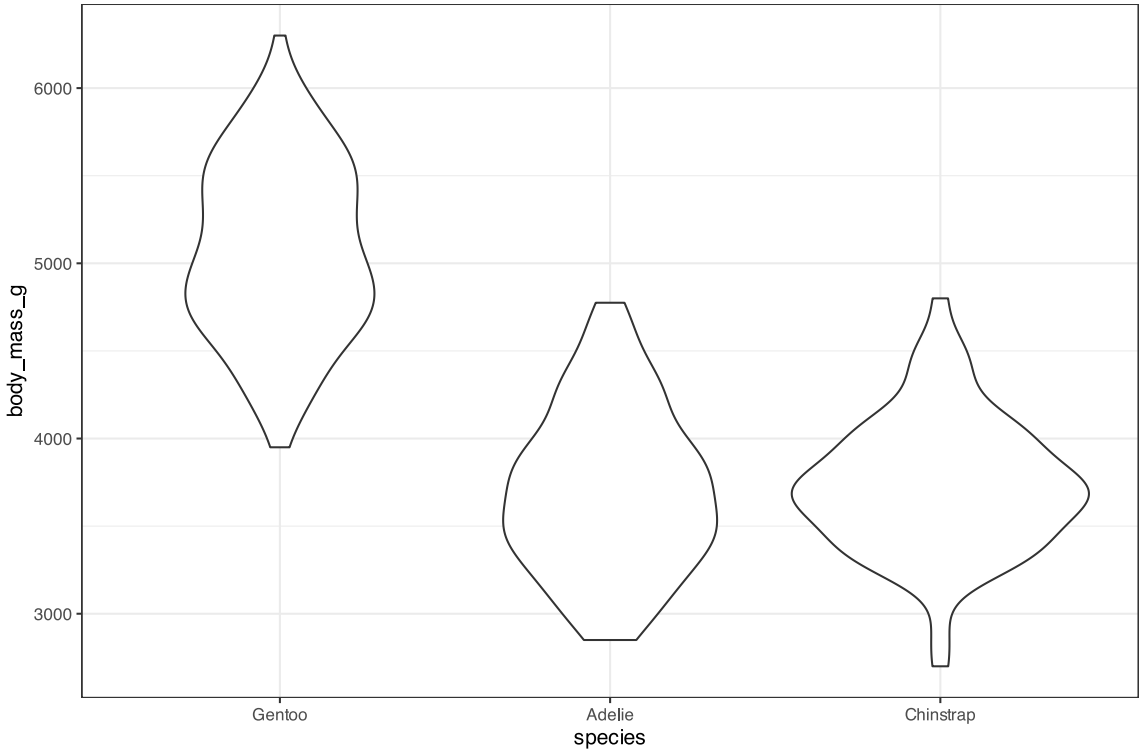
## Video

assets/20250819-jamovi_flexplot_install.mp4

# Boxplot


6000
5000
4000
3000
body_mass_g
Gentoo
Adelie
Chinstrap
species

## Violin plot




### Continuous $Y$, multiple, multiple $X$

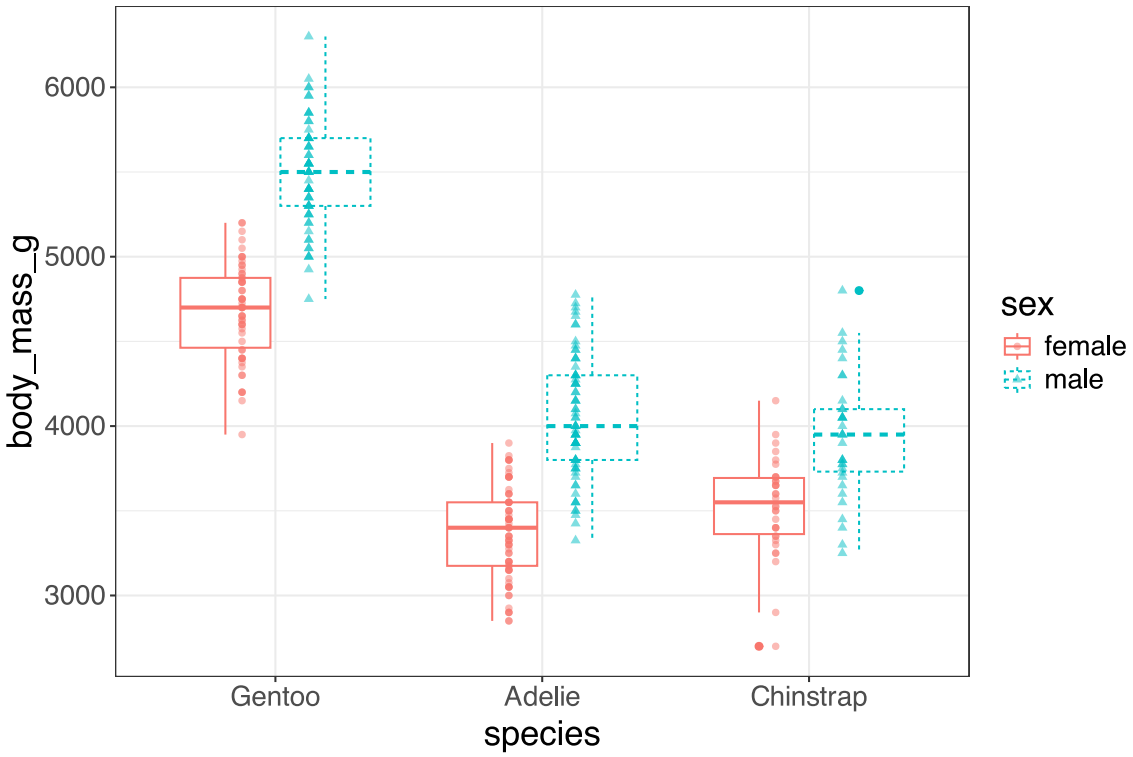
If you add multiple $X$ variables, you can explore more ways to visualise the relationships between the variables. Use **paneling** to create separate plots for each combination of $X$ variables.

## Video

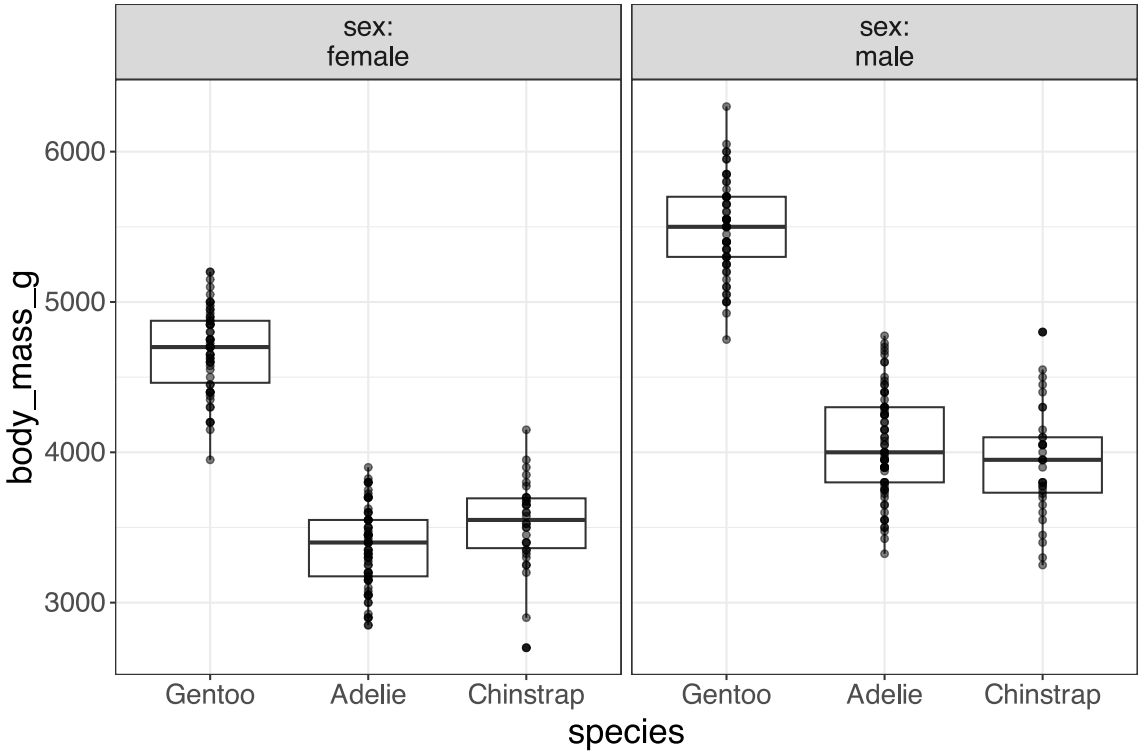
Note: the video explores some of the options available for mixed plots and has no specific focus on a single plot type.

assets/20250819-jamovi-multi-flexplot.mp4

## Mixed plot


6000
5000
4000
3000
body_mass_g
Gentoo
Adelie
Chinstrap
species
sex
female
male

## Faceted plot




## Attribution