Wiz Usage/Help Guide

Contents

1 Overview

This guide will help users of Wiz understand some of the functionality of Wiz by working through some of the examples.

2 Navigating within Wiz

2.1 General Structure

Wiz can be found at `https://wiz.shef.ac.uk`. When navigating between pages in Wiz, use the navigation bar or the back/forward buttons. Refreshing a page will create a new session (log you out). The main address will take you to the home page. Here you will see the screen in Figure 1. From the Home page, the navigation bar allows you to access the Help/Documentation and Examples pages.

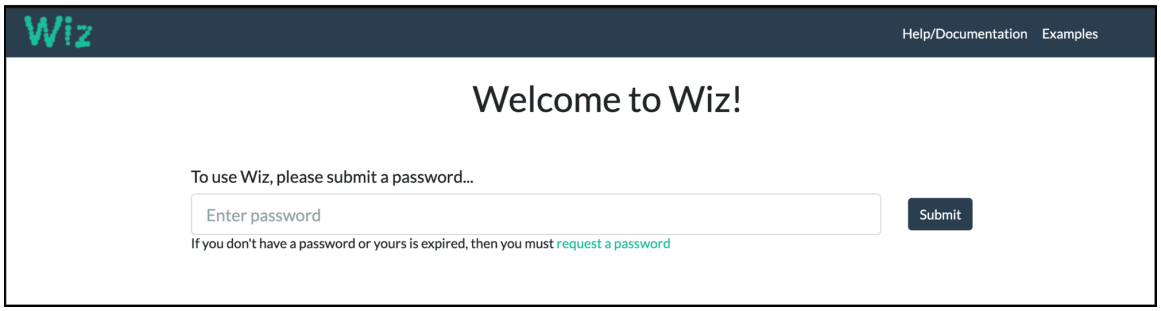


Figure 1: Wiz home page view

There is also the password entry form. If you do not have a password, you can click the link to request one. After correctly inputting a password, you can access the main features of Wiz (Figure 2).

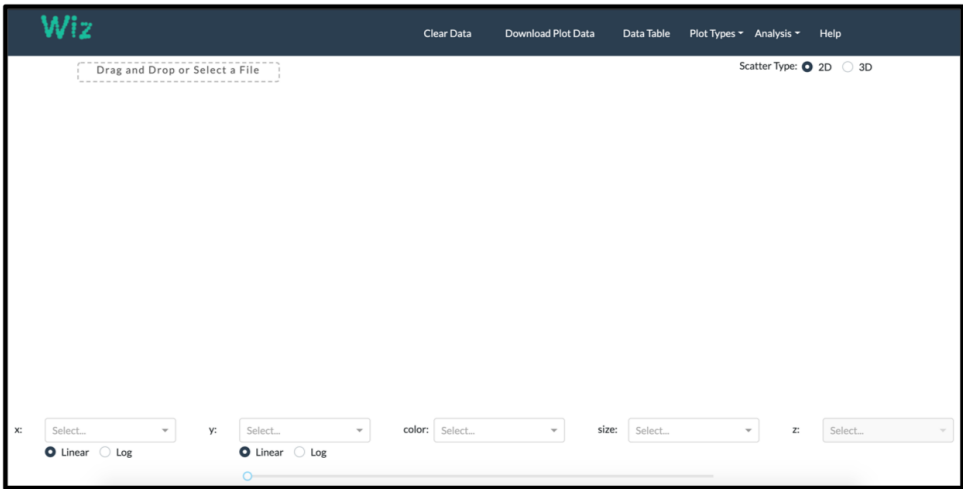


Figure 2: Wiz view after entering password

The home page defaults to scatter plots, but other plot types or analysis-types can be accessed through the navigation bar at the top. Also accessible are the examples and documentation through the Help tab.

Note that navigating away from a page with plotted data erases the plot

2.2 Request a Password

A password is required to enter Wiz. To request a password, go to `https://wiz.shef.ac.uk/request-password`. Fill out the form and we will email you a password for Wiz. Your password will expire periodically. If this happens, then request another password. We cycle passwords to keep an updated count of users.

3 Usage

This section outlines the steps to utilize the major features of Wiz.

3.1 Uploading Data

Each page has an *Upload Data* component. The data upload is separate for each page, meaning that one cannot switch between scatter and line pages with the same dataset. To use the upload component, simply *Drag and Drop* the file(s) onto the upload bar, or click the upload bar to bring up an upload window.

The following data types are accepted...

- A single spreadsheet with one or more sheets (in .xlsx or .xls or .ods)
- Single (or multiple) text based files in any combination (.csv, .dat, or .txt)

If uploading a spreadsheet, the sheet names will populate the bottom slider bar. The file names of .csv, .dat, or .txt will populate the slider if that is data type uploaded.

3.1.1 Formatting Data to Upload

On any given app page, there is guidance on how to upload your data in a compatible way. For example, from the Scatter page, when you click *Help/This page*, the following diagram shows the correct data format for Wiz to read the data.

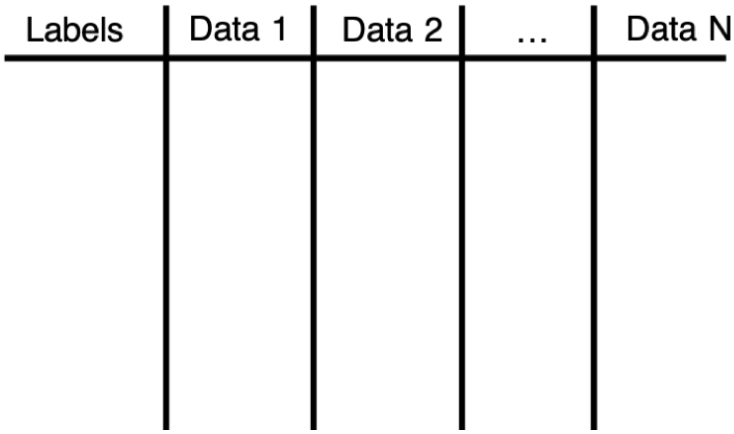


Figure 3: Proper format for scatter data

3.2 Clearing Data

On pages where data can be uploaded, the data that was uploaded can be cleared using the *Clear Data* link in the navigation bar at the top of the page.

3.3 Plotting Data

After uploading data and seeing the slider at the bottom populate with info, the page-specific dropdowns will populate. The dropdowns populate with the variables that are possible to plot. For example, in the scatter plots, the *Size* axis cannot have categorical variables.

By selecting from the dropdown menus, you can tell Wiz which columns/datasets you would like to plot. Example 4 (`https://wiz.shef.ac.uk/example-4`) is best for testing out the dropdown interface.

The slider on the bottom of the page can be used to switch between data files or sheets (if Excel). By changing the slider, you are repopulating the dropdowns with the new columns from that slider value. If the previous dropdown value is present in the new datasheet then the dropdown will not change. Example 2 (`https://wiz.shef.ac.uk/example-2`) is best for exploring changing between sheets/datasheets.

3.3.1 Categorical Data

Wiz automatically parses whether your data is categorical during plotting. This is a key feature as the plot type can change if one the axes is categorical. Categorical includes any data with text or a list of integers with less than 20 unique values. We use Python's Pandas on the backend to make this determination.

3.4 Graph Controls

The following will go through the main controls for all of the Wiz

3.4.1 Linear/Log

On certain app pages, there are toggle buttons to change the x- and y-axis between linear and log scaling. Simply click one or the other to switch between. Note that attempting to switch to *log* for an unsuitable data-type (categorical/negative) will not switch the axis scale.

3.4.2 Edit Axes Limits

The axes limits on the plots can be adjusted after the plot is generated. To do this, move your cursor to end of the axis you want to change. For instance, to change the maximum x-value, place your cursor in the bottom right-hand corner of the plot area. When the cursor turns into an arrow-shape, double-click to edit the limit. This can be done for the maximum and minimum of each axis.

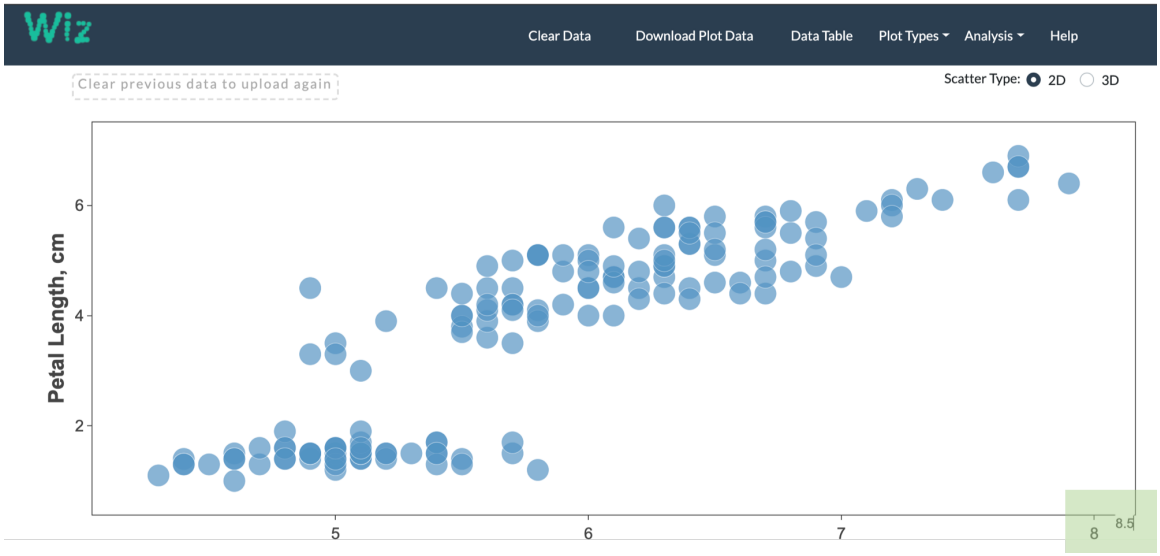


Figure 4: Editing x-axis maximum. Green highlighted region the entry of the new axis limit

3.4.3 Edit Axes Titles

For line charts, the axes titles are editable. To edit an axis title, simply double click on the current title.

3.4.4 Clickable Points

The points on any type of scatter plot (scatter, PCA/LDA projections) are clickable. When you click a point on the graph, a box with info about that point appears on the graph. To clear the point's info, click a blank space on the graph, another point, or the original point.

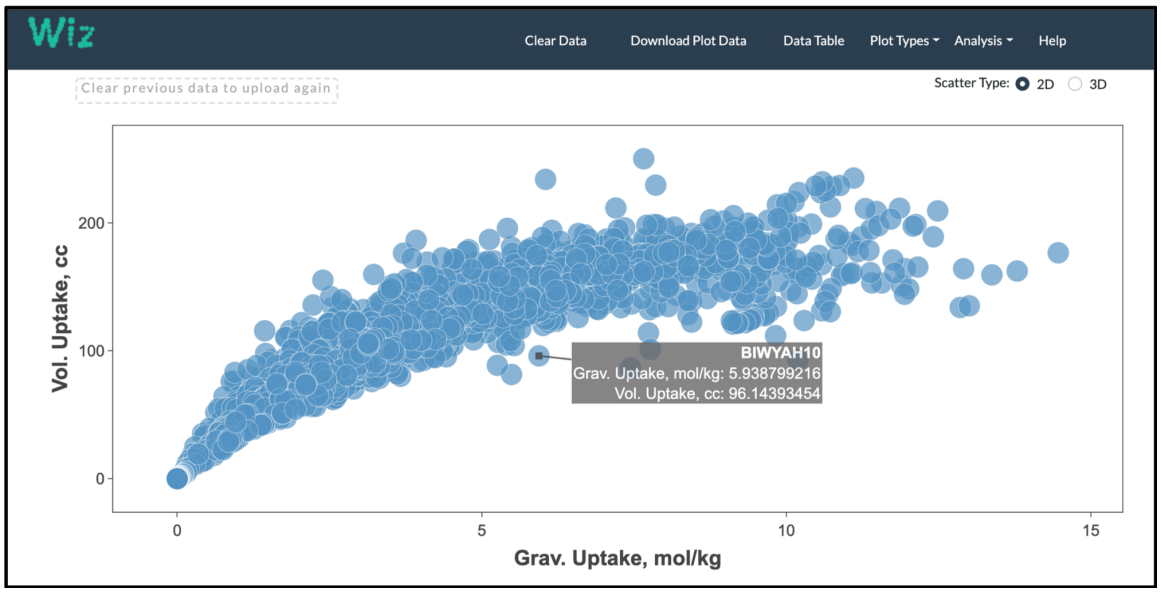


Figure 5: Clickable points in the scatter page

3.4.5 More On-Graph Controls

In the graph window, the default cursor tool is zoom. That means that you zoom in on regions by "dragging" to create a box. Other cursor tools are available by hovering over the top right-hand side of the plot window. Note that the tools do not affect any of the underlying data. For instance, the *Select* tool simply highlights a certain section of data. The selection does not persist as one changes the axes selections.

3.4.6 Export plot

Graph windows can be exported into .svg files. To export, hover your cursor above the top, right-hand corner of the graph window. Select the first icon from the left in the tool bar that appears.

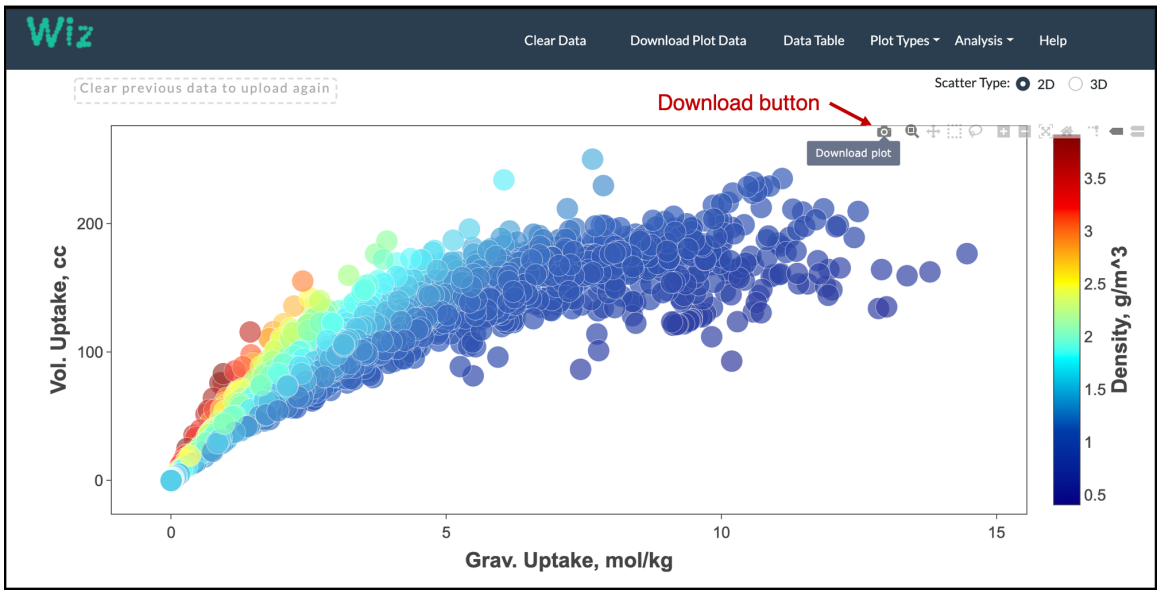
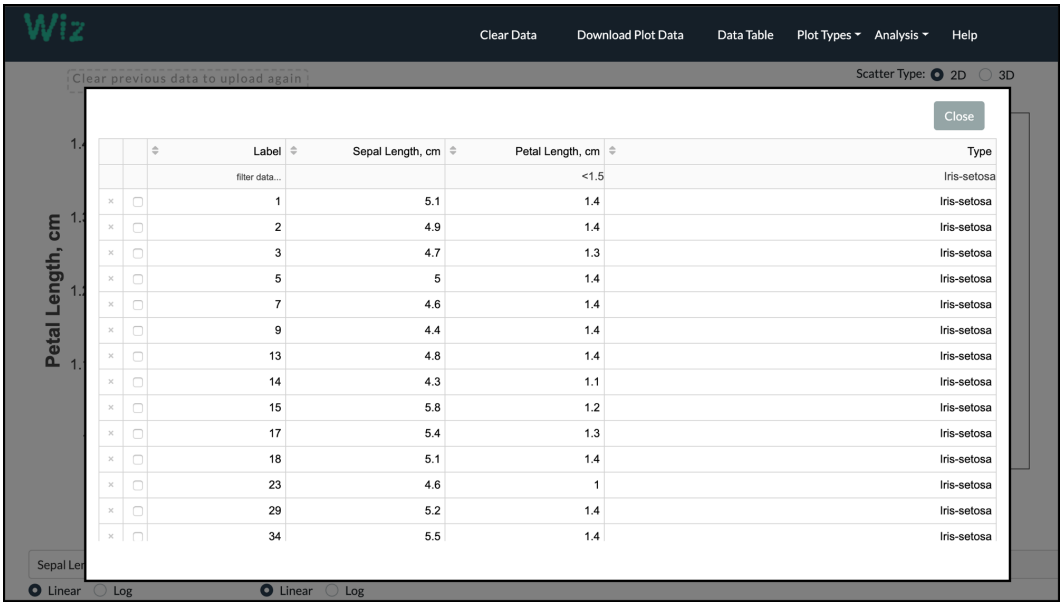


Figure 6: Example of downloading plot

3.5 Data Filtering

The uploaded data can be filtered using the *Data Table* tab on the app page. Only filtered data is plotted. In order to filter data, use logical expressions. For example, if your data is numerical simply type "<10" or "==10" to filter that column. For strings or categorical data, simply start typing the string or category. For example, if your data has categories Apples, Beets, and Carrots, typing "Beets" into the filter will filter the column.



		Label	Sepal Length, cm	Petal Length, cm	Type
		filter data...		<1.5	Iris-setosa
×	☐	1	5.1	1.4	Iris-setosa
×	☐	2	4.9	1.4	Iris-setosa
×	☐	3	4.7	1.3	Iris-setosa
×	☐	5	5	1.4	Iris-setosa
×	☐	7	4.6	1.4	Iris-setosa
×	☐	9	4.4	1.4	Iris-setosa
×	☐	13	4.8	1.4	Iris-setosa
×	☐	14	4.3	1.1	Iris-setosa
×	☐	15	5.8	1.2	Iris-setosa
×	☐	17	5.4	1.3	Iris-setosa
×	☐	18	5.1	1.4	Iris-setosa
×	☐	23	4.6	1	Iris-setosa
×	☐	29	5.2	1.4	Iris-setosa
×	☐	34	5.5	1.4	Iris-setosa

Figure 7: Example of filtering data. Column 3 (Petal length) is filtered for values less than 1.5 and the flower type is filtered for a particular type

3.5.1 Export Plot Data

The plotted data can be exported by selecting *Download Plot Data*. The data exports as a CSV file.

4 More Help

If you need more help, please consult the examples and documentation pages (`https://wiz.shef.ac.uk/examples` and `https://wiz.shef.ac.uk/help`). Or feel free to reach out at `https://wiz.shef.ac.uk/contact-us`.