

2.10 Exercise: Numeric variables (*iNZight Lite*)

This exercise will enable you to construct the types of graphs and summaries used in the previous two videos. The skills addressed are:

1. Get dot plots and summary tables for your numeric variables.
2. Colour by another variable.
3. Change between dot plots and histograms.

INSTRUCTIONS

Follow these instructions to generate the plots. If you have a problem during this exercise, see the common questions on page 6.

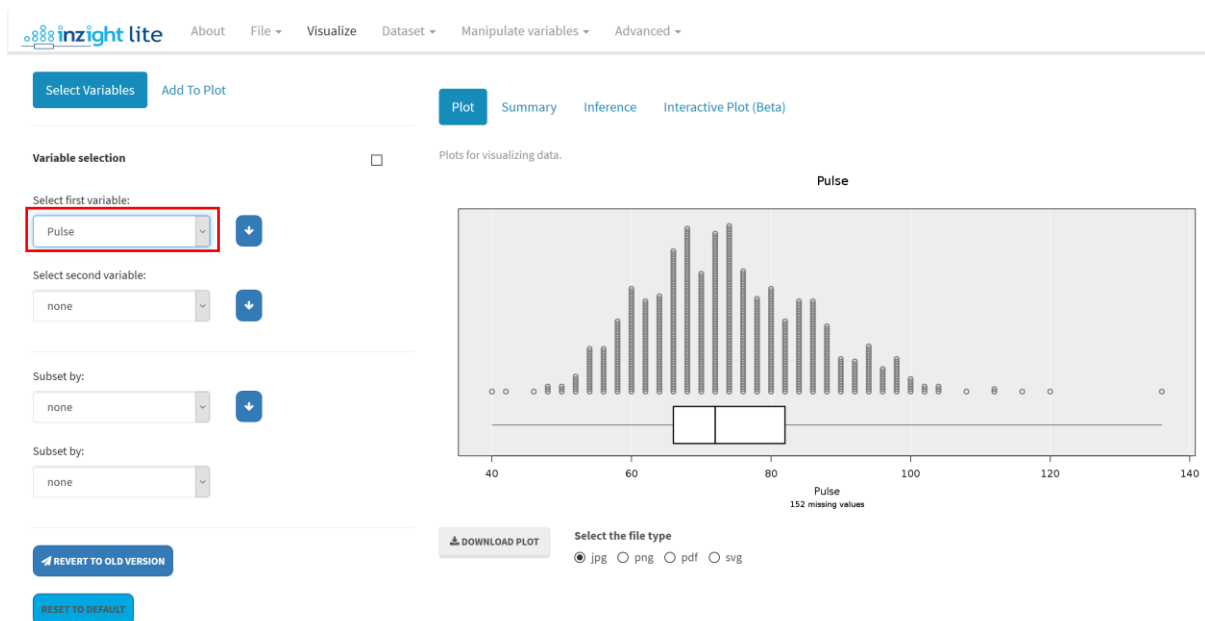
Before starting this exercise, import the **NHANES-1000** dataset into *iNZight Lite*:

- Select **File > Dataset Examples**
- Select Data set category: **Future-Learn**
- Select **NHANES-1000**
- Click on **Select Set**.

Make dot plots from your numeric variables

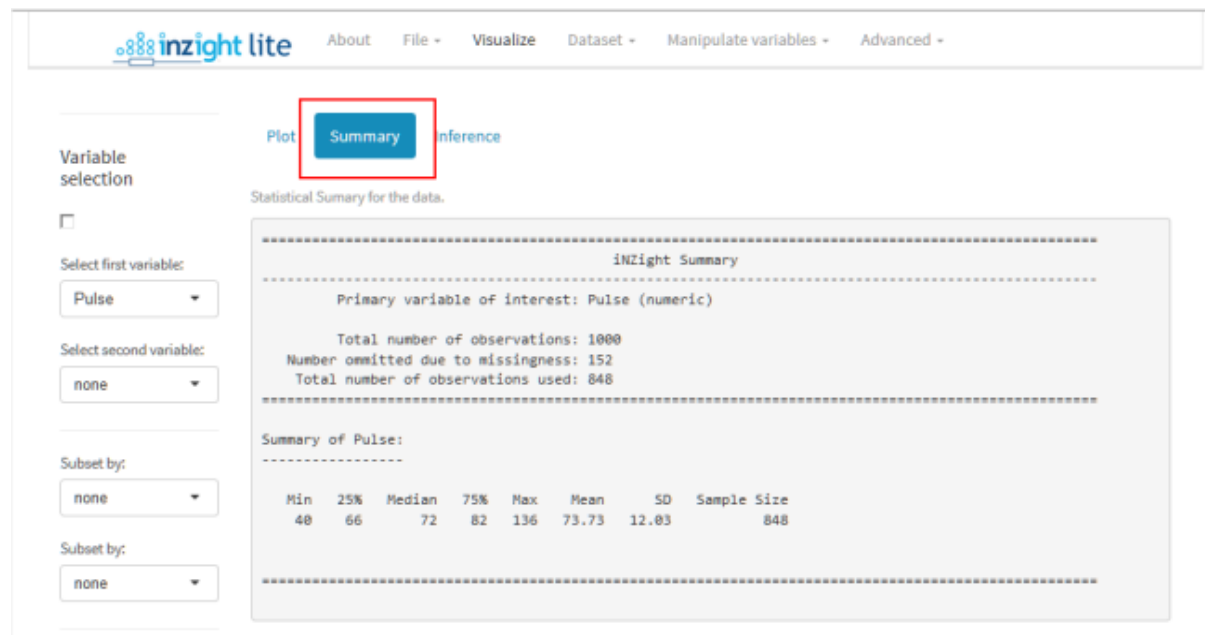
iNZight automatically produces a dot plot for a numeric variable when you select its name in the first variable slot.

Select the variable name **Pulse** in the first variable slot.



The screenshot shows the iNZight Lite interface. The 'Variable selection' panel on the left has 'Pulse' selected in the 'Select first variable' dropdown, which is highlighted with a red box. The 'Plot' tab is active, displaying a dot plot for 'Pulse'. The plot shows a distribution of data points with a boxplot overlaid. The x-axis is labeled 'Pulse' and ranges from 40 to 140. Below the plot, it indicates '152 missing values'. A 'DOWNLOAD PLOT' button is visible, along with options to select the file type: .jpg, .png, .pdf, or .svg.

Click the **Summary** tab to show the associated summary table.



The screenshot shows the iNZight Lite interface with the 'Summary' tab selected, highlighted with a red box. The 'Variable selection' panel on the left shows 'Pulse' selected in the 'Select first variable' dropdown. The 'Summary' panel displays the following information:

Statistical Summary for the data.

```
-----
                          iNZight Summary
-----
Primary variable of interest: Pulse (numeric)

Total number of observations: 1000
Number omitted due to missingness: 152
Total number of observations used: 848
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Summary of Pulse:
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```

| Min | 25% | Median | 75% | Max | Mean | SD | Sample Size |
|-----|-----|--------|-----|-----|-------|-------|-------------|
| 40 | 66 | 72 | 82 | 136 | 73.73 | 12.03 | 848 |

PRACTICE (~5 min)

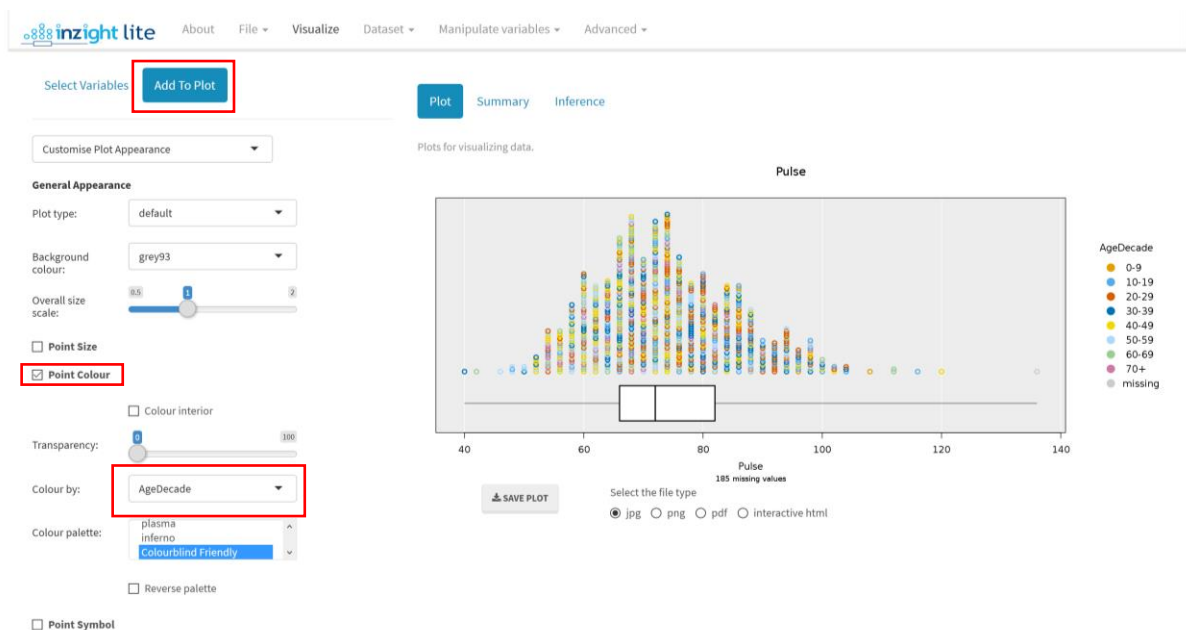
Spend a few minutes selecting the names of some other numeric variables in the **first variable** slot until you are confident that you can get simple graphs and tables like these quickly.

Colour by another variable

From the left side above the options, select **Add to Plot**. This will display more options.

Click on **Point Colour** to reveal the point colour options

Colour by Levels of AgeDecade



PRACTICE (~5 min)

Try some other choices for the numeric variable in the **Variable1** slot and the colour-by variable. Remember that if you have previously coloured a variable, you may need to remove the colour before your next plot.

Change between dot plots and histograms

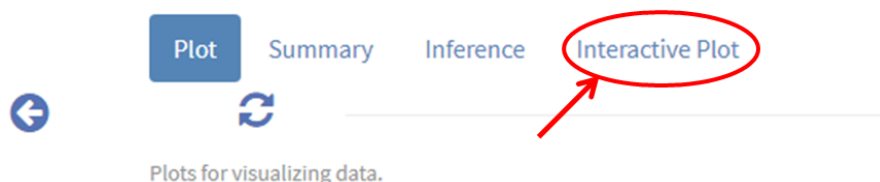
- Using the **Add to Plot** tab and **Customise Plot Appearance**
- Select Plot Type: **histogram**.

Your histogram may not look like the one below. The bar width depends on the width of the plotting window. You can manually adjust the number of bars using the slider. In this example the number of bars has been reduced to 40.



Optional

Try this new feature (interactive graphics)



Click on the **Interactive Plot** tab. This will give you an interactive version of your graph that lets you query it in various ways like hovering over points or clicking them. You have to Click **Produce Plot** for it to appear.

This is a protection as the conversion process can be slow if there are many points to be drawn.

You can download these plots as Interactive HTML files which you can give to others. They do not need to be connected to iNZight Lite to work.

Other ways of representing data on a numeric variable (iNZight versions from 3.4.6)

There are several ways of plotting the data on a single numeric variable. Go to **Add to Plot** and look at what is delivered by the various options under **Plot type**. Can you see relationships between the ways the various types of graph represent the information? Play with some of the controls for each plot type.

Common questions

I see some columns of dots that look like they are suspended in mid-air.

iNZight stacks points that are close together but not identical. This problem occurs when the points are discretely spaced but too big to drop down onto the axis. Either stretch the plot window horizontally until there is room for them to drop down or make the points smaller clicking on the **Add to Plot** tab and selecting **Point Size** to reveal the point size slider. Slide the slider to the left to reduce point size.

I don't like the plot title or axis labels. How do I change them?

Use **Add to plot** tab and select **Axes and Labels**.

I get gaps in my histogram, why is this happening?

Gaps in a histogram occur in intervals where there is no data. Whether or not you see them depends on number of bars/bar width which you can adjust using the **Number of bars** slider.