2.10 Exercise: Numeric variables

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.

[*iNZight Lite version linked here*]

INSTRUCTIONS

Follow the instructions below to generate the plots. Or you may prefer to print the instructions. If you have a problem during this exercise, scroll down to **Common questions**.

Load the **nhanes_1000** dataset into iNZight using **File > Example data ….** You will find the data set in **Module (package)** *FutureLearn*.

Click **View Variables** . This mode is much better than **View Data** when you have lots of variables. Note the "(n)" in front of the name of numeric variables and "(c)" in front of categorical variables.
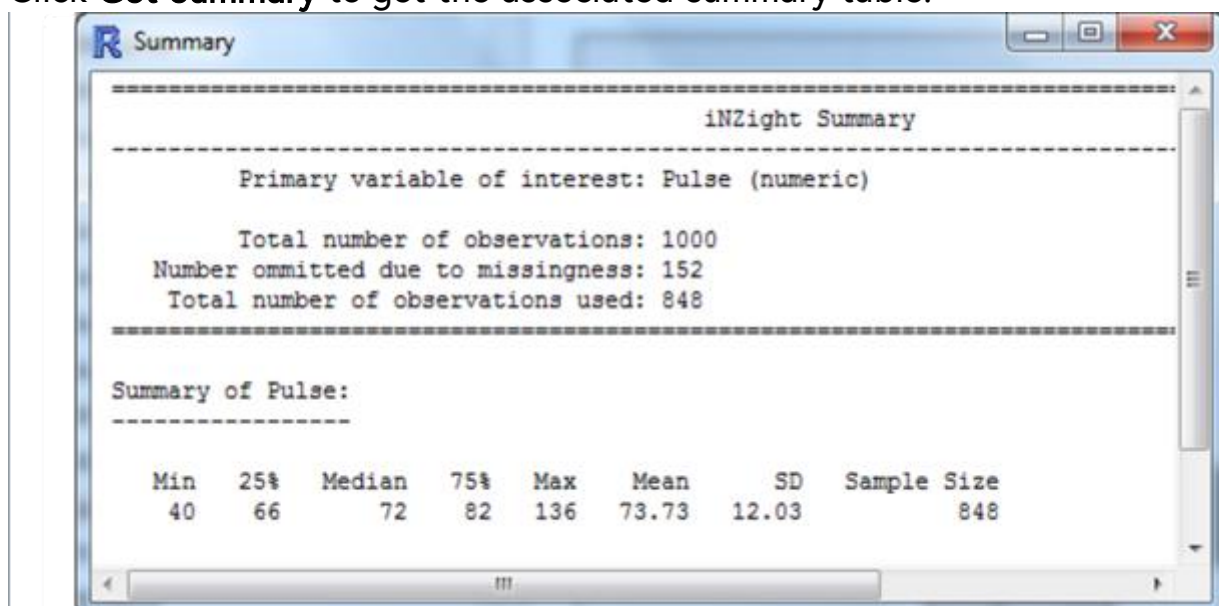
Make dot plots from your numeric variables

iNZight automatically produces a dot plot for a numeric variable when you drag its name into the **Variable 1** slot.

Drag the variable name **Pulse** into the **Variable 1** slot.
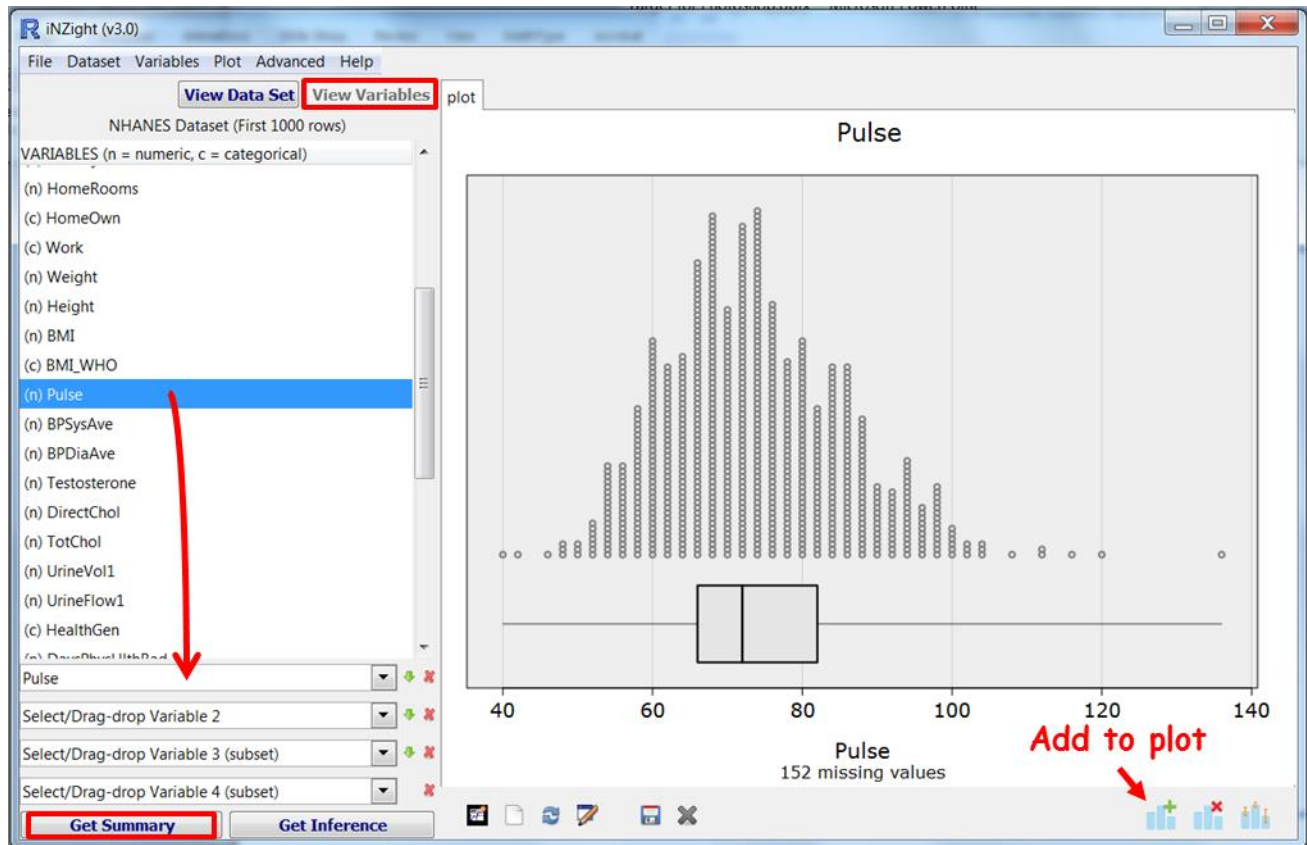
Click **Get Summary** to get the associated summary table.

PRACTICE (~5 min)

Spend a few minutes dragging the names of some other numeric variables into the **Variable 1** slot until you are confident that you can get simple graphs and tables like these quickly.

Colour by another variable

Click on the **Add to Plot** icon on the bottom menu under the plot window, **Customise plot appearance**. Under **Colour by** choose **Age**. (Add to Plot can also be found under *Plot > Add to plot …*)
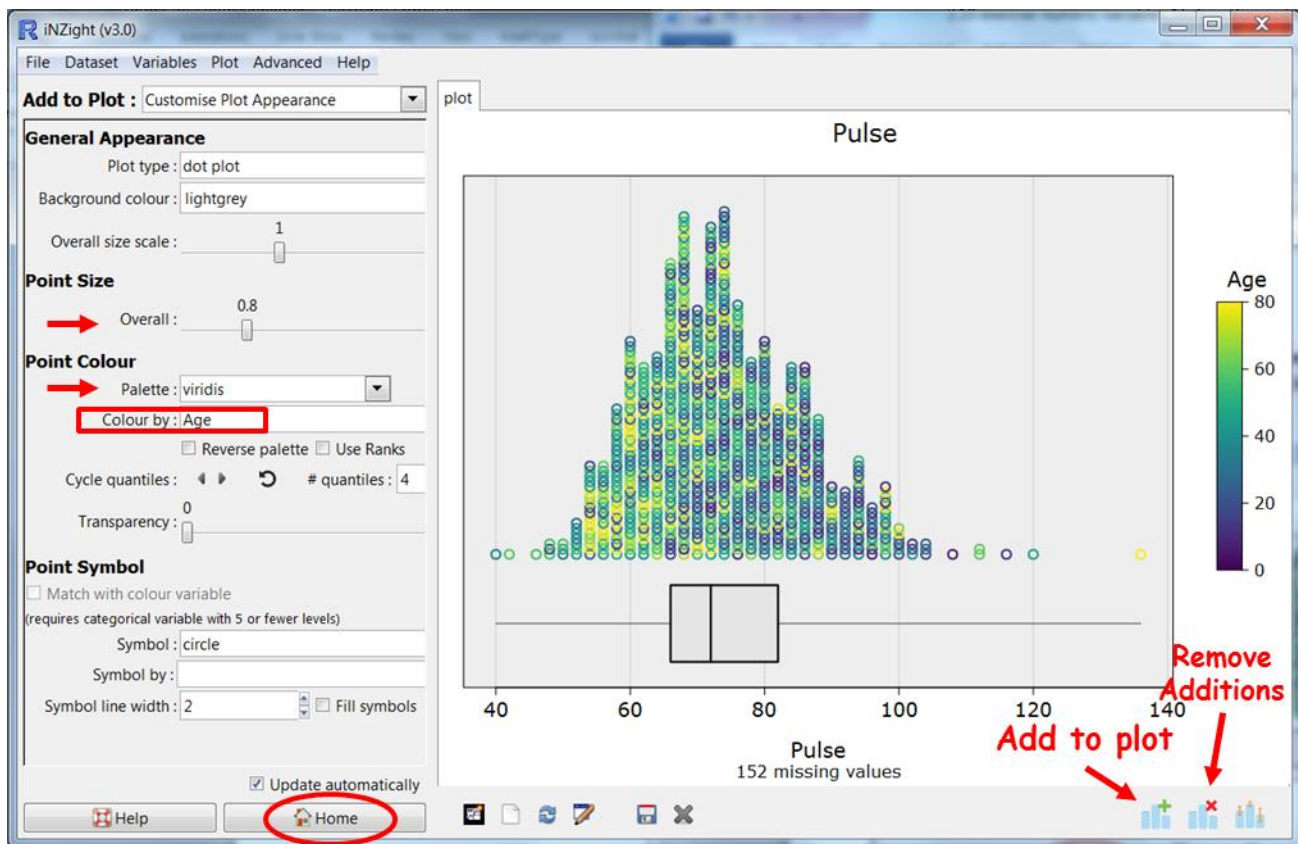
While you have the Customise Plot Apearance command window active, experiment with: decreasing and increasing the **Point Size**; changing the **Colour Palette**; changing the **Colour by** variable; and changing each of the other control settings in this window just to see what they do.

PRACTICE (~5 min)

Try some other choices for the numeric variable in the **Variable 1** slot and the colour-by variable. You will need to press the **Home** button (at bottom) to return to the Home command panel so that you can plot other variables.

Remember that if you have previously coloured by a variable, that colour-by instruction will remain in force until you click **Remove Additions** and select **Remove colour by** or colour by another variable.

Change between dot plots and histograms

Under *Add to Plot , Change Plot Appearance*, change **Plot type** from **dot plot** to **histogram**.
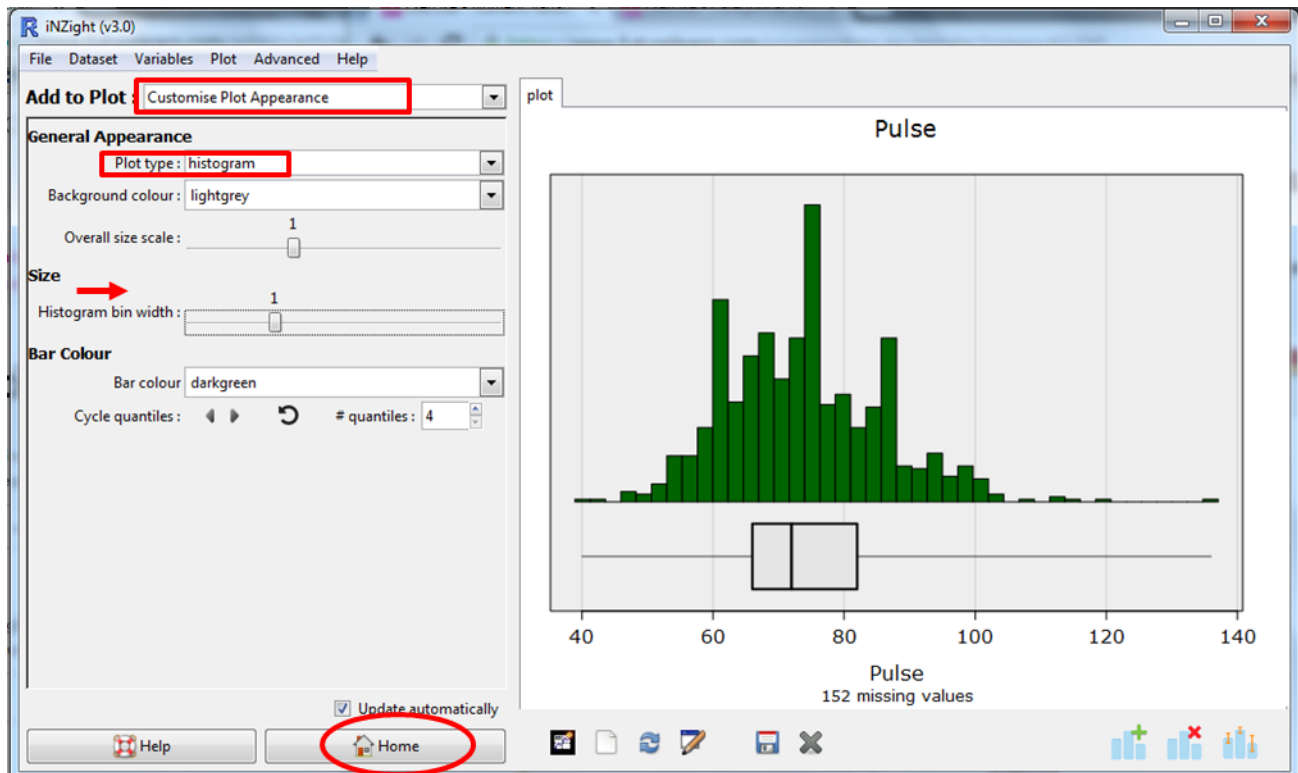
Your histogram may not look exactly like the one above. The initial bar width depends on the width of the plotting window. Use the **Histogram bar width** slider to change the bar widths (and hence number of bars).

You will need to press the **Home** button to return to the Home command panel to plot other variables.

Continued over …

Optional

Try this new feature (interactive web graphics)

Save your graph as **File Type:** *Interactive HTML* (you will have to supply a name for the file). The file will open up in your default browser. If that is a modern browser like Chrome, Firefox or Safari (but not Internet Explorer) this will then give you an interactive version of the graph that lets you query it in various ways like hovering over the points or clicking them. Click on the box plot and it will display the numerical values.
        The save process can be slow if there are a lot of dots to be drawn.

The save window allows other variables to be exported along with the plot. This is particularly useful for hover-over if you have a variable that gives the names of the people or objects.

You can give such files to others. They do not need to be connected to iNZight to work.

Alternatively when this icon appears and is blue, simply clicking it will fire up an interactive version of the current plot.

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

When I resized the window my plot disappeared.
Click the "Redraw plot" button (It's the circling arrows in the bottom tool bar - third icon from the left- *you can hover over the icons to see what they do*).

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. Reduce the **Point size** until they drop down.

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 bar width which you can adjust using the **Histogram bar width** slider.

I don't like the plot title or axis labels. How do I change them?
In **Add to Plot** select **Axes and labels**.

How do I save my graph from iNZight for use in another document?
Click on the **Save Plot icon** at the bottom of your graph, or go **Plot > Save Plot**. There several formats available, e.g. pdf, png, …

How do I copy and paste my graph from iNZight into another document?
Copy and paste only works in Windows. (Otherwise you have to use screen shots.) Click on the **New graphics window** icon at the bottom of your graph (*you can hover over the icons to see what they do*), then you will have another copy of your graph in a separate graphics window. Right click on this new window, and **Copy as bitmap**. (Copy as metafile is not working for dot plots.)

Remember, for *how to* instructions for iNZight you should consult iNZight's [User Guides](#). For *technical issues* with running iNZight, you should first consult iNZight's [frequently asked questions (FAQ)](#) page and if the answer you need is not there ask at [iNZight support](#).