


Key Concepts

- Add raw data sets to the **Data Sets Tree** (bottom-left), or, add pre-calculated data to existing visualizations (see [Workflow](#)).
- The **Data Sets Tree** contains sets of one or more variables (*variable sets*); the *structure* of a variable set determines how it is analyzed.
- Create tables and other analyses using options in **Ribbon > Insert** or by dragging variables sets from the **Data Sets Tree** (bottom-left) onto the page.
- Press **Ribbon > Home > New Page** to create new pages. Drag and drop pages to organize documents. Folders are created by dragging pages onto other pages.
- Pages and other objects can be hidden from exports by selecting them and clicking **Ribbon > Appearance > Hide**.
- Arbitrary calculations are performed using **Ribbon > Insert > R Outputs** (see [Extracting results from tables using R Outputs](#)).
- Modify objects by clicking on them and either
 - Directly manipulating them (e.g., moving or resizing them).
 - Modifying more commonly used options in the **Ribbon** (top of the screen).
 - Modifying options in the **Object Inspector** (right-side of the screen).
- Trace any calculation back to the original data by hovering over the data input and pressing the  that appears in the preview window.
- Use **Ribbon > Export** to publish the document as a web page, PDF, PowerPoint, or Excel file.

1. Plan your dashboard

Create a detailed plan for the dashboard (e.g., by prototyping slides in PowerPoint). It should show all the pages you want to create and the layout on each of those pages.

2. Design and layout

(Optional) Get a graphic artist to create a color palette, style guide, and images as PNGs and JPEGs
[Dashboard Design: Working with a Graphic Designer](#)

(Optional) Perform more advanced customizations using via the CSS
[Customizing Logos, Icons, CSS, HTML Headers, and Language in Displayr](#)

3. Create a document

[Log in to Displayr](#) and click **+ Add New** (If using in conjunction with Q, see [Using Q Projects in Displayr](#))

Add and modify text, shapes and images: **Ribbon > Insert > Text and images** and **Appearance**

Create folders by dragging pages on top of other pages

4. Hook up visualizations to data: there are four flows

<p>Flow A: Type in data</p> <ul style="list-style-type: none"> Ribbon > Insert > Visualization Object Inspector > Inputs > DATA SOURCE > Paste or type data 	<p>Flow B: Insert Pre-Calculated Tables</p> <ul style="list-style-type: none"> Ribbon > Insert > Paste Table Extract results from tables using R Outputs Ribbon > Insert > Visualization Object Inspector > Inputs > DATA SOURCE: Outputs in 'Pages' 	<p>Flow C: Analyze imported data sets (raw data)</p> <ul style="list-style-type: none"> + Add a data set Create a table (Tables) Extract results from tables using R Outputs Ribbon > Insert > Visualization Object Inspector > Inputs > DATA SOURCE: Outputs in 'Pages' or Variables in 'Data' 	<p>Flow D: Live updating</p> <p>Either Flow B or Flow C, except with Updating with Revised Data</p>
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5. Duplicate

Create something, and press **Home > Duplicate**, and modify the input data. You can apply this to everything from a text box through to a whole report.

6. Export

Ribbon > Export > Excel, PDF, Web Page

When exporting to a web page, the resulting dashboard is seen by the viewer in *view mode*.

Prevent items from being exported by selecting them and pressing **Ribbon > Appearance > Hide**

7. Filters for clients


Select the variable(s) in the **Data Tree** and click **Insert > Utilities > Filtering > Create Filters from Selected Data**

8. Create navigation

Set hyperlinks to text, shapes, images, and charts: **Insert > Hyperlink**

Hide the navigation bar (pages) from view mode by clicking the bottom of **Export > Web Page** and checking **Hide Navigation Pane**

9. User management

Press  (top left of Displayr) > **Company Settings**, press **Expand** (only if this option is available at the bottom of the page), and **+ New User**.


To allocate a license to a user, go to **Licenses** tab and press **Professional user > Add** (to buy a new license) or **Professional user > Assign** (to assign an existing license to that user).



To create groups of users (with access to different documents), press **+ New Group**


To assign user access to individual document, go to the Documents page, hover over your document and click **Settings**, then go to **Properties** and modify which use groups have access to the document (**Authorized for...**) and individual pages in the document (**Set tab-based access to document**)

10. Updating with revised data

<p>A. Manual updating of a data set</p> <p>Click on the data set in the Data Sets Tree, and press Update in the Object Inspector</p>	<p>B. Manual updating of a table/ visualization</p> <p>Click on the table or visualization and click Object Inspector > Inputs > DATA SOURCE > Edit Data</p>	<p>C. Automatic updating via SQL</p> <p>Data Sets Tree > + Add a data set > SQL > specify Automatically refresh every</p>	<p>D. Automatic updating via URL</p> <p>Data Sets Tree > + Add a data set > URL > specify Automatically refresh every</p>	<p>E. Automatic updating of R Outputs</p> <p>Ribbon > Insert > R Output</p> <p><code>flipTime::UpdateEvery</code></p> <p>Automatically Updating R Outputs, R Variables, and R Data Sets</p>	<p>F. Automatic updating of R Outputs</p> <p>Data Sets Tree > + Add a data set > R</p>	<p>G. API</p> <p>If you have programming skills, you can write code to update using the API</p>
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<p>Tables</p> <p>Note that one of the main ways of modifying a table is to change the data in the table, and when this is done all other tables using the same data will also change (see Manipulating tables)</p>	Summary tables	Drag dragging from the Data Sets Tree onto the page	
	Crosstabs	Create <i>crosstabs</i> by dragging a variable set from the Data Sets Tree and releasing it on the Columns slot of an existing table	
	Duplicate a table	Ribbon > Home > Duplicate	
	Changing the data	Object Inspector > Inputs > DATA	
	View additional statistics	Object Inspector > Inputs > STATISTICS	
	Multiway table (layers)	Ribbon > Insert > More > Tables > Multiway Table	
Create lots of tables	Ribbon > Insert > Report		

<p>Manipulating tables</p> <p>If a table is created by dragging variables sets from the Data Sets Tree, the categories of the table can be manipulated by dragging and dropping, and the changes apply to all other analyses based on the variable sets.</p>	Merging categories	Click on the row or column name on a table and drag  , or, select all the categories to be merged and press Ribbon > Data Manipulation > Merge
	Creating NETs	Select the categories and press the Ribbon > Data Manipulation > Create NET
	Sorting/Re-ordering categories	Click on the row or column name on a table and drag  , or, Ribbon > Data Manipulation > Sort
	Removing a category and/or rebaseing	Click on the variable set in the Data Sets Tree and press Object Inspector > Properties > DATA VALUES > Missing values
	Switch between % and averages as main statistics on a table	Click on the variable set in the Data Sets Tree and change the Object Inspector > Properties > INPUTS > Structure (see Variable Set Structures)

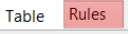

<p>Weights and filters</p> <p>Weights and filters can be applied to the entire project or to selected tables and plots. Where visualizations and R Outputs are created from tables, weights need to be applied to the source table.</p>	Use existing variables as filters/weights	Select the variable in the Data Sets Tree and press Object Inspector > Properties > GENERAL > Usable as a filter or Usable as a weight
	Create new weights or filters manually	Ribbon > Insert > New Filter or New Weight
	Apply weights and filters	Weights and filters can be created and applied from the Inputs tab of the Object Inspector when a page, table, or other output is selected.
	Create complicated weights and filters	Ribbon > Insert > New R/JavaScript (Variable) > Numeric and press Object Inspector > Properties > GENERAL > Usable as a filter
	Apply filters and weights to an object	Click on the object: Object Inspector > Inputs > WEIGHTS/FILTERS
	Show sample size on page	Ribbon > Insert > More (Analysis) > Data > Sample Size Description
	Linking filters to controls 	How to Connect Filters to a Combo Box (Control) Combo Boxes (Controls) With Dynamic Lists in Displayr
Weights and filters in R Code	The filter variable is called <code>QFilter</code> and the weights can be used as either <code>QPopulationWeight</code> , which contains the raw weight, or <code>QCalibratedWeight</code> , which sums to the effect sample size computed using Kish's approximation	


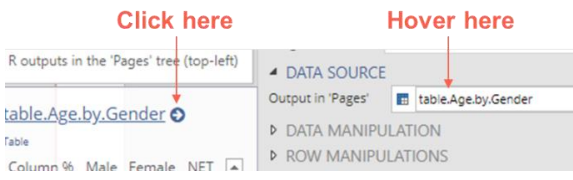
<p>Extracting results from tables using R Outputs</p> <p>R Outputs are general-purpose outputs, which can contain text, tables, and visualizations. Code is used to determine their contents. A common use case for R Outputs is to contain results from a larger table.</p>	Creating an R Output	Ribbon > Insert > R Output , enter code in R CODE , and click Automatic
	Finding the name of a table	Click on the table: Object Inspector > Properties > General > Name
	Extracting a value from a one-dimensional table	For example, to extract the result for Males from a table containing gender data: <code>table.Gender["Male"]</code> or, if the males are in the second cell of the table: <code>table.Gender[2]</code>
	Extracting a value from a two-dimensional table	For example, to extract the result for Males aged 35 to 44: <code>table.Gender.by.Age["Male", "35 to 44"]</code>
	Extracting ranges of data from a table	For example, to extract the result for Males for columns 2 through 4: <code>table.Gender.by.Age["Male", 2:4]</code>

<p>Variables</p> <p>Tables, visualizations, and analyses take variables and <i>variable sets</i> as inputs. A variable set is a set of one or more variables. Displayr automatically groups variables into variable sets when data sets are imported.</p>	Split a variable set into individual variables	Click on the variable set in the Data Sets Tree and press Ribbon > Data Manipulation > Split (Variables)
	Combine individual variables into a variable set	Click on the variables in the Data Sets Tree and press Ribbon > Data Manipulation > Combine (Variables)
	Change the structure of a variable set	Click on the variable set in the Data Sets Tree and press Object Inspector > Properties > INPUTS > Structure (see Variable Set Structures)
	Recode the values of a variable set (including missing values)	Click on the variable and review Object Inspector > Properties > VALUES > Labels, Values, Missing Values
	Create a new variable	Ribbon > Insert > New R or New JavaScript
	Recode into a different variable	Select the original variable and press Ribbon > Home > Duplicate and then see Recode the values of a variable set
	Banding/categorizing a numeric variable	Ribbon > Insert > New R (Variable) > Numeric Variable with R CODE of <code>cut(VARIABLE.NAME, 2)</code> to create two categories, then set Object Inspector > Properties INPUTS > Structure to Nominal



- ❓ When you are stuck, click on whatever you are trying to modify and:
 - Click the **Suggestions** which pop up in the top right corner of the screen
 - Look around the **Ribbon**
 - Look around the **Object Inspector**: it has multiple tabs and groups to be expanded
- ❓ Read our [wiki](#) and our [blog](#)
- ❓ If writing R code, hover your mouse over code to see additional documentation, use google, and read the warnings and errors that appear above the **Object Inspector**
- ❓ Click on any errors and warnings in the **Pages Tree** and the **Data Set Tree**
- ❓ Contact us: support@displayr.com

What to do when the data in a table looks wrong	
Check the sample size of a table	When you create a table, the sample size is shown at the bottom of the page. Brand attitude SUMMARY sample size = from 180 to 292; total sample size = 327; 147 missing; 95% confidence level
Check count and sample size	Object Inspector > Inputs > STATISTICS > Cells > Count or Sample Size
Check the variable set structure	Click on the input variables in the Data Sets Tree, and review Object Inspector > Properties > INPUTS > Structure (see Variable Set Structures)
Check that the appropriate Filter and Weight have been applied	Select the output, then check Object Inspector > Inputs > FILTERS & WEIGHT
Review the value attributes of the input variable(s)	Click on the variable and review the options in Object Inspector > Properties > DATA VALUES
View the raw data	See Viewing raw data
Review how the input variables have been constructed	Click on the variable and review its R CODE or JAVASCRIPT CODE in the Object Inspector > Properties
If using Q: In Q check that the correct Rules are applied and, try and remove the rules	If a rule has been applied, a pink Rules tab will appear at the bottom of the table. Control when applied using the Apply dropdowns 
If using Q: In Q, check if empty rows/columns are hidden (Q users only; in Q)	Check to see if  is depressed (this hides empty rows and columns)

What to do when a visualization looks wrong	
Check the source data	Click on the visualization, hover over the data inputs (Object Inspector > Inputs > DATA SOURCE), and click the  to go to the input or inputs.  See What to do when the data in a table looks wrong
View the data table	Set Object Inspector > Inputs > OUTPUT > Chart type to Table
Modify the data manipulation settings	If the data table looks wrong, but the inputs look correct, check the settings in Object Inspector > Inputs > DATA MANIPULATION, ROW MANIPULATIONS, and COLUMN MANIPULATIONS

Viewing raw data	
Viewing the raw data for a variable set	Drag the variable onto the page, and in the Object Inspector set Inputs > DATA > Columns to RAW DATA
Seeing raw data for lots of variables in Excel	<ol style="list-style-type: none"> 1. Select Ribbon > Insert > More > Tables > Raw Data 2. Select the desired variables in Object Inspector > Inputs > Variables 3. Click Automatic. 4. Select Ribbon > Export > Excel 5. Click Export and open in Excel
Viewing the raw data for multiple variables	Insert > More (Analysis) > Tables > Raw Data and select the Variables and check Automatic

When you create a table in Displayr from data stored in a *data set*, the way the table appears is determined by the *structure* of the *variable set* (group of variables). Each variable set is represented as a folder in the Data Sets Tree. Each *structure* is represented by an icon. Structures are set automatically when importing data and can be modified in the Object Inspector.

Structure	Description	Example																
Text	A single variable containing text (or, numeric data that is interpreted as text)	What is your name? _____																
Nominal	A single variable that contains unordered, mutually exclusive, and exhaustive categories (i.e., has a nominal measurement scale)	Gender categories: Male, Female, Unknown																
Ordinal	A single variable that contains ordered, mutually exclusive, and exhaustive categories (i.e., has an ordinal measurement scale).	Age categories: Under 18, 18 to 24, 25 to 29, 29 to 54, 54 or more																
2 Numeric	A numeric variable (i.e., <i>interval</i> or <i>ratio</i> scale).	The amount of money in a bank account.																
Date /Time	A numeric variable where the values represent times and/or dates. It contains the number of milliseconds since 1/1/1970.	What is your date of birth? ____ / ____ / 19____																
Text – Multi	A set of related text variables.	First Name, Last Name, and Street Address																
Binary – Multi	A set of related nominal variables, where each value only takes two non-missing values (perhaps after merging categories).	Which of the following have you bought in the past week? <input type="checkbox"/> Coke <input type="checkbox"/> Pepsi <input type="checkbox"/> Fanta																
Nominal – Multi	Multiple related nominal variables.	Which meal did you eat most recently at... <table border="1"> <thead> <tr> <th></th> <th>Breakfast</th> <th>Lunch</th> <th>Dinner</th> </tr> </thead> <tbody> <tr> <td>McDonald's</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Burger King</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Wendy's</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table>		Breakfast	Lunch	Dinner	McDonald's	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Burger King	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wendy's	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Wendy's	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>															
Ordinal – Multi	A set of related ordinal variables (The icon is the same as for Nominal – Multi.)	Please rate your satisfaction with the following airlines: <table border="1"> <thead> <tr> <th></th> <th>Low</th> <th>Med</th> <th>High</th> </tr> </thead> <tbody> <tr> <td>United</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>British Airways</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Qantas</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table>		Low	Med	High	United	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	British Airways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Qantas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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2 Number – Multi	A set of related numeric variables measured on the same scale.	Balance of Savings Account, Balance of Credit Card, Balance of Home Loan																
Binary Multi – Grid	This is a generalization of a Binary – Multi, where the variables can be ordered in two dimensions.	Which of these brands are cool? <input type="checkbox"/> Coke <input type="checkbox"/> Pepsi <input type="checkbox"/> Fanta Which of these brands are young? <input type="checkbox"/> Coke <input type="checkbox"/> Pepsi <input type="checkbox"/> Fanta Which of these brands are sexy? <input type="checkbox"/> Coke <input type="checkbox"/> Pepsi <input type="checkbox"/> Fanta																
2 Number – Grid	This is a generalization of a Number – Multi, where the variables can be ordered in two dimensions.	In the past month, how many <i>economy flights</i> did you take on... Qantas ___ United ___ Delta ___ ...and how many <i>business class flights</i> did you take on... Qantas ___ United ___Delta ___																
1 2 3 Ranking	A set of related numeric variables that represent a ranking, where the highest number is most preferred, and ties are permitted.	Rank the following brands according to how much you like them... Coke ___ Pepsi ___ Fanta ___																
Binary – Multi (Compact)	The same underlying data as Binary - Multi, except that is stored as a Nominal – Multi and the unique values correspond to underlying binary variables. For example, in data storing people's car model ownership, rather than having a binary variable for each model of car, instead the first variable represents peoples first care, the second variable is for their second car, etc. This format should only be used to represent data where it provides massive data storage gains, as it is generally difficult to manipulate and cannot accommodate the notion of missing data well.																	
X Experiment	This structure is used to represent the various types of experiments, from randomized experiments ("Fully randomized experiments" through to "Conjoint Analysis" and "Choice Modeling")	Which of these would you buy? <table border="1"> <tbody> <tr> <td>Coke \$2.00 Can</td> <td>Pepsi \$4.20 Bottle</td> <td>Fanta \$3.20 Flask</td> </tr> </tbody> </table>	Coke \$2.00 Can	Pepsi \$4.20 Bottle	Fanta \$3.20 Flask													
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