

## 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 **Anything** menu or by dragging variables sets from the **Data Sets Tree** (bottom-left) onto the page.
- Add a new page to the **Pages Tree** by hovering your cursor to the right of the page. Press the + button that appears. 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 **Toolbar > Hide**.
- Arbitrary calculations are performed using **Calculation** menu (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 **Toolbar** (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 **Toolbar > Publish** in the toolbar 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 **+ New Document** (If using in conjunction with Q, see [Using Q Projects in Displayr](#))

Add and modify text, shapes, and images: use **Image** and **Shape** from the **Toolbar**. Any options that can be customized in a particular object, such as its font size, stat testing, formatting etc., are in the **Object Inspector**.

Create folders by dragging pages on top of other pages

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

### Flow A: Type in data

- **Toolbar** > **Visualization**
- **Object Inspector** > **Inputs** > **DATA SOURCE** > **Paste or type data**

### Flow B: Insert Pre-Calculated Tables

- **Toolbar** > **Paste**
- **Extract results from tables using R Outputs**
- **Toolbar** > **Visualization**
- **Object Inspector** > **Inputs** > **DATA SOURCE**: **Outputs in 'Pages'**

### Flow C: Analyze imported data sets (raw data)

- **+ Add a data set**
- **Create a table (Tables)**
- **Extract results from tables using Calculation**
- **Toolbar** > **Visualization**
- **Object Inspector** > **Inputs** > **DATA SOURCE**: **Outputs in 'Pages'** or **Variables in 'Data'**

### Flow D: Live updating

Either **Flow B** or **Flow C**, except with **Updating with Revised Data**

## 5. Duplicate

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

## 6. Export

**Toolbar** > **Publish** > **Excel, PDF, PowerPoint, 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 **Toolbar** > **Hide**

## 7. Filters for clients


Select the variables(s) in the **Data Tree** and click **Anything** > **Filter** > **Filters from Selected Data**

## 8. Create navigation

Set hyperlinks to text, shapes, images, and charts: **Toolbar** > **Anything** > **Page Design** > **Link**


Hide the navigation bar (pages) from view mode by clicking **Toolbar** > **Publish** > **Publish as Web Pages** > **Advanced Options** and checking **Hide Navigation Pane**

## 9. User management

Press  (top right of Displayr) > **Account settings** > **Settings** > press **Expand [username]** (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**  on the right, 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

### A. Manual updating of a data set

Click on the data set in the **Data Sets Tree**, and press **Update** in the **Object Inspector**

### B. Manual updating of a table/ visualization

Click on the table or visualization and click **Object Inspector** > **Inputs** > **DATA SOURCE** > **Edit Data**

### C. Automatic updating via SQL

**Data Sets Tree** > **+ Add a data set** > **SQL** > specify **Automatically refresh every**

### D. Automatic updating via URL

**Data Sets Tree** > **+ Add a data set** > **URL** > specify **Automatically refresh every**

### E. Automatic updating of R Calculations

**Toolbar** > **Calculate** > **Custom Code**

`flipTime::UpdateEvery`  
[Automatically Updating R Outputs, R Variables, and R Data Sets](#)

### F. Automatic updating of R Calculations

**Data Sets Tree** > **+ Add a data set** > **R**

### G. API


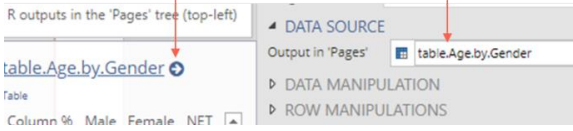
If you have programming skills, you can write code to update using the [API](#)

<p><b>Tables</b></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 <a href="#">Manipulating tables</a>)</p>	<p><i>Summary tables</i></p> <p><i>Crosstabs</i></p> <p><i>Duplicate a table</i></p> <p><i>Changing the data</i></p> <p><i>View additional statistics</i></p> <p><i>Multiway table (layers)</i></p> <p><i>Create lots of tables</i></p>	<p>Drag dragging from the <b>Data Sets Tree</b> onto the page</p> <p>Create <i>crosstabs</i> by dragging a variable set from the <b>Data Sets Tree</b> and releasing it on the <b>Columns</b> slot of an existing table</p>  <p><b>Toolbar</b> &gt; <b>Duplicate</b></p> <p><b>Object Inspector</b> &gt; <b>Inputs</b> &gt; <b>DATA</b></p> <p><b>Object Inspector</b> &gt; <b>Inputs</b> &gt; <b>STATISTICS</b></p> <p><b>Toolbar</b> &gt; <b>Anything</b> &gt; <b>Table</b> &gt; <b>Multiway</b></p> <p><b>Toolbar</b> &gt; <b>Anything</b> &gt; <b>Report</b></p>
<p><b>Manipulating tables</b></p> <p>If a table is created by dragging variables sets from the <b>Data Sets Tree</b>, 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>	<p><i>Merging categories</i></p> <p><i>Creating NETs</i></p> <p><i>Sorting/Re-ordering categories</i></p> <p><i>Removing a category and/or rebasing</i></p> <p><i>Switch between % and averages as main statistics on a table</i></p>	<p>Click on the row or column name on a table and drag , or, select all the categories to be merged and press <b>Toolbar</b> &gt; <b>Combine</b></p> <p>Select the categories, right-click and select <b>Create NET</b> from the menu</p> <p>Click on the row or column name on a table and drag , or, <b>Toolbar</b> &gt; <b>Sort</b></p> <p>Click on the variable set in the <b>Data Sets Tree</b> and press <b>Object Inspector</b> &gt; <b>Properties</b> &gt; <b>DATA VALUES</b> &gt; <b>Missing values</b></p> <p>Click on the variable set in the <b>Data Sets Tree</b> and change the <b>Object Inspector</b> &gt; <b>Properties</b> &gt; <b>GENERAL</b> &gt; <b>Structure</b> (see <a href="#">Variable Set Structures</a>)</p>
<p><b>Weights and filters</b></p> <p>Weights and filters can be applied to the entire project or to selected tables and plots.</p> <p>Where visualizations and R Outputs are created from tables, weights need to be applied to the source table.</p>	<p><i>Use existing variables as filters/weights</i></p> <p><i>Create new weights or filters manually</i></p> <p><i>Apply weights and filters</i></p> <p><i>Create complicated weights and filters</i></p> <p><i>Apply filters and weights to an object</i></p> <p><i>Show sample size on page</i></p> <p><i>Linking filters to controls</i> <input type="text" value="Males"/></p> <p><i>Weights and filters in R Code</i></p>	<p>Select the variable in the <b>Data Sets Tree</b> and press <b>Object Inspector</b> &gt; <b>Properties</b> &gt; <b>GENERAL</b> &gt; <b>Usable as a filter</b> or <b>Usable as a weight</b></p> <p><b>Toolbar</b> &gt; <b>Anything</b> &gt; <b>Filter</b> &gt; <b>New</b> or <b>Weight</b> &gt; <b>Single Variable</b> or <b>Multiple Variables</b></p> <p>Weights and filters can be created and applied from the <b>Inputs</b> tab of the <b>Object Inspector</b> when a page, table, or other output is selected. To apply a filter or weight to a folder, <b>select folder</b> &gt; <b>drag a question from the Data Sets Tree onto the page</b> &gt; <b>hide summary table that is created</b> &gt; <b>select folder</b> &gt; <b>Object Inspector</b> &gt; <b>Inputs</b></p> <p><b>Toolbar</b> &gt; <b>Anything</b> &gt; <b>Data</b> &gt; <b>Variables</b> &gt; <b>New</b> &gt; <b>Custom Code</b> &gt; <b>R/JavaScript -Numeric</b> and press <b>Object Inspector</b> &gt; <b>Properties</b> &gt; <b>GENERAL</b> &gt; <b>Usable as a filter</b></p> <p>Click on the object: <b>Object Inspector</b> &gt; <b>FILTERS &amp; WEIGHT</b> &gt; <b>Weight</b></p> <p><b>Toolbar</b> &gt; <b>Page Design</b> &gt; <b>Sample Size Description</b></p> <p><a href="#">How to Connect Filters to a Combo Box (Control)</a> <a href="#">Combo Boxes (Controls) With Dynamic Lists in Displayr</a></p> <p>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>
<p><b>Extracting results from tables using R Code</b></p> <p>R Outputs are general-purpose outputs, which can contain text, tables, and visualizations. Code is used to determine their contents.</p> <p>A common use case for R Outputs is to contain results from a larger table.</p>	<p><i>Creating an R Output</i></p> <p><i>Finding the name of a table</i></p> <p><i>Extracting a value from a one-dimensional table</i></p> <p><i>Extracting a value from a two-dimensional table</i></p> <p><i>Extracting ranges of data from a table</i></p>	<p><b>Toolbar</b> &gt; <b>Calculation</b> &gt; <b>Custom Code</b>, enter code in <b>R CODE</b>, and click <b>Automatic</b></p> <p>Click on the table: <b>Object Inspector</b> &gt; <b>Properties</b> &gt; <b>General</b> &gt; <b>Name</b></p> <p>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></p> <p>For example, to extract the result for Males aged 35 to 44: <code>table.Gender.by.Age["Male", "35 to 44"]</code></p> <p>For example, to extract the result for Males for columns 2 through 4: <code>table.Gender.by.Age["Male", 2:4]</code></p>
<p><b>Variables</b></p> <p>Tables, visualizations, and analyses take variables and variable sets as inputs. A variable set is a set of one or more variables.</p> <p>Displayr automatically groups variables into variable sets when data sets are imported.</p>	<p><i>Split a variable set into individual variables</i></p> <p><i>Combine individual variables into a variable set</i></p> <p><i>Change the structure of a variable set</i></p> <p><i>Recode the values of a variable set (including missing values)</i></p> <p><i>Create a new variable</i></p> <p><i>Recode into a different variable</i></p> <p><i>Banding/categorizing a numeric variable</i></p>	<p>Click on the variable set in the <b>Data Sets Tree</b> and press <b>Toolbar</b> &gt; <b>Split</b></p> <p>Click on the variables in the <b>Data Sets Tree</b> and press <b>Toolbar</b> &gt; <b>Combine</b></p> <p>Click on the variable set in the <b>Data Sets Tree</b> and press <b>Object Inspector</b> &gt; <b>Properties</b> &gt; <b>GENERAL</b> &gt; <b>Structure</b> (see <a href="#">Variable Set Structures</a>)</p> <p>Click on the variable and review <b>Object Inspector</b> &gt; <b>Properties</b> &gt; <b>DATA VALUES</b> &gt; <b>Labels, Values, Missing Values</b></p> <p><b>Toolbar</b> &gt; <b>Anything</b> &gt; <b>Data</b> &gt; <b>Variables</b> &gt; <b>New R</b> or <b>New JavaScript</b></p> <p>Select the original variable and press <b>Toolbar</b> &gt; <b>Duplicate</b> and then see <i>Recode the values of a variable set</i></p> <p><b>Toolbar</b> &gt; <b>Anything</b> &gt; <b>Data</b> &gt; <b>Variables</b> &gt; <b>New</b> &gt; <b>Custom Code</b> &gt; <b>R - Numeric</b> with <b>R CODE</b> of <code>cut(VARIABLE.NAME, 2)</code> to create two categories, then set <b>Object Inspector</b> &gt; <b>Properties</b> &gt; <b>GENERAL</b> &gt; <b>Structure</b> to <b>Nominal</b></p>



- 🔗 When you are stuck, click on whatever you are trying to modify and:
  - Click the **Toolbar > Anything > Suggestions**
  - Look around the **Toolbar**
  - Look around the **Object Inspector**: it has multiple tabs and groups to be expanded
- 🔗 Read our [Displayr Help](#)
- 🔗 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](mailto: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	<b>Object Inspector &gt; Inputs &gt; STATISTICS &gt; Cells &gt; Count or Sample Size</b>
Check the variable set structure	Click on the input variables in the <b>Data Sets Tree</b> , and review <b>Object Inspector &gt; Properties &gt; GENERAL &gt; Structure</b> (see <a href="#">Variable Set Structures</a> )
Check that the appropriate Filter and Weight have been applied	Select the output, then check <b>Object Inspector &gt; Inputs &gt; FILTERS &amp; WEIGHT</b>
Review the value attributes of the input variable(s)	Click on the variable and review the options in <b>Object Inspector &gt; Properties &gt; DATA VALUES</b>
View the raw data	See <a href="#">Viewing raw data</a>
Review how the input variables have been constructed	Click on the variable and review its <b>R CODE</b> or <b>JAVASCRIPT CODE</b> in the <b>Object Inspector &gt; Properties</b>
Check that the correct Rules are applied and, try and remove the rules	Rules that have been applied will appear in the <b>Object Inspector &gt; Properties &gt; RULES</b>
If empty rows/columns are hidden	Check to see if you applied the following rule: <b>Object Inspector &gt; Properties &gt; RULES &gt; Modify Whole Table or Plot &gt; Hide empty rows and columns &gt; OK</b>

What to do when a visualization looks wrong	
Check the source data	Click on the visualization, hover over the data inputs ( <b>Object Inspector &gt; Inputs &gt; DATA SOURCE</b> ), and click the  to go to the input or inputs.  <div style="text-align: center;"> <span style="margin-right: 100px;"><b>Click here</b></span> <span><b>Hover here</b></span> </div> 
View the data table	See <a href="#">What to do when the data in a table looks wrong</a> Set <b>Object Inspector &gt; Inputs &gt; OUTPUT &gt; Chart type</b> to <b>Table</b>
Modify the data manipulation settings	If the data table looks wrong, but the inputs look correct, check the settings in <b>Object Inspector &gt; Inputs &gt; DATA MANIPULATION, ROW MANIPULATIONS, and COLUMN MANIPULATIONS</b>

Viewing raw data	
Viewing the raw data for a variable set	Click on the variable set in the <b>Data Sets Tree &gt; Object Inspector</b> set <b>Properties &gt; DATA VALUES &gt; View in Data Editor</b>
Seeing raw data for lots of variables in Excel	<ol style="list-style-type: none"> <li>1. Select <b>Toolbar &gt; Anything &gt; Table &gt; Raw Data &gt; Variables</b></li> <li>2. Select the desired variables from your <b>Data Sets Tree</b> and drag them over to the output's <b>Variables</b> box on your Page, or select them from <b>Inputs &gt; Raw Data &gt; Variables</b> fields within the <b>Object Inspector</b></li> <li>3. Select <b>Toolbar &gt; Publish &gt; Export &gt; Export Pages &gt; Excel</b></li> </ol>
Viewing the raw data for multiple variables	Select one or more variables in the <b>Data Sets Tree</b> , then right-click on the selected variables and select <b>View in Data Editor</b>

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																
<b>Text</b>	A single variable containing text (or, numeric data that is interpreted as text)	What is your name? _____																
<b>Nominal</b>	A single variable that contains unordered, mutually exclusive, and exhaustive categories (i.e., has a nominal measurement scale)	Gender categories: Male, Female, Unknown																
<b>Ordinal</b>	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																
<b>Numeric</b>	A numeric variable (i.e., <i>interval</i> or <i>ratio</i> scale).	The amount of money in a bank account.																
<b>Date /Time</b>	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 ____																
<b>Text – Multi</b>	A set of related text variables.	First Name, Last Name, and Street Address																
<b>Binary – Multi</b>	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																
<b>Nominal – Multi</b>	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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<b>Ordinal – Multi</b>	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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Qantas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>															
<b>Number – Multi</b>	A set of related numeric variables measured on the same scale.	Balance of Savings Account, Balance of Credit Card, Balance of Home Loan																
<b>Binary Multi – Grid</b>	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																
<b>Number – Grid</b>	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 ____																
<b>Ranking</b>	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 ____																
<b>Binary – Multi (Compact)</b>	The same underlying data as Binary - Multi, except that it 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 people's first car, 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.																	
<b>Experiment</b>	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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