

Trelliscope Quick Start Guide

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The intent of this guide is to give a brief introduction to Tessera's Trelliscope user interface. Additional documentation is available at <http://tesseractdata.org/trelliscope>.

Trelliscope is a tool designed to allow an analyst to sort, filter and view multiple related visualizations.

Open a New Display: When the user has generated a new display of visualization panels using the Trelliscope library and opens the display in their browser (*Firefox, Chrome and Safari only*), a view similar to the following is shown:

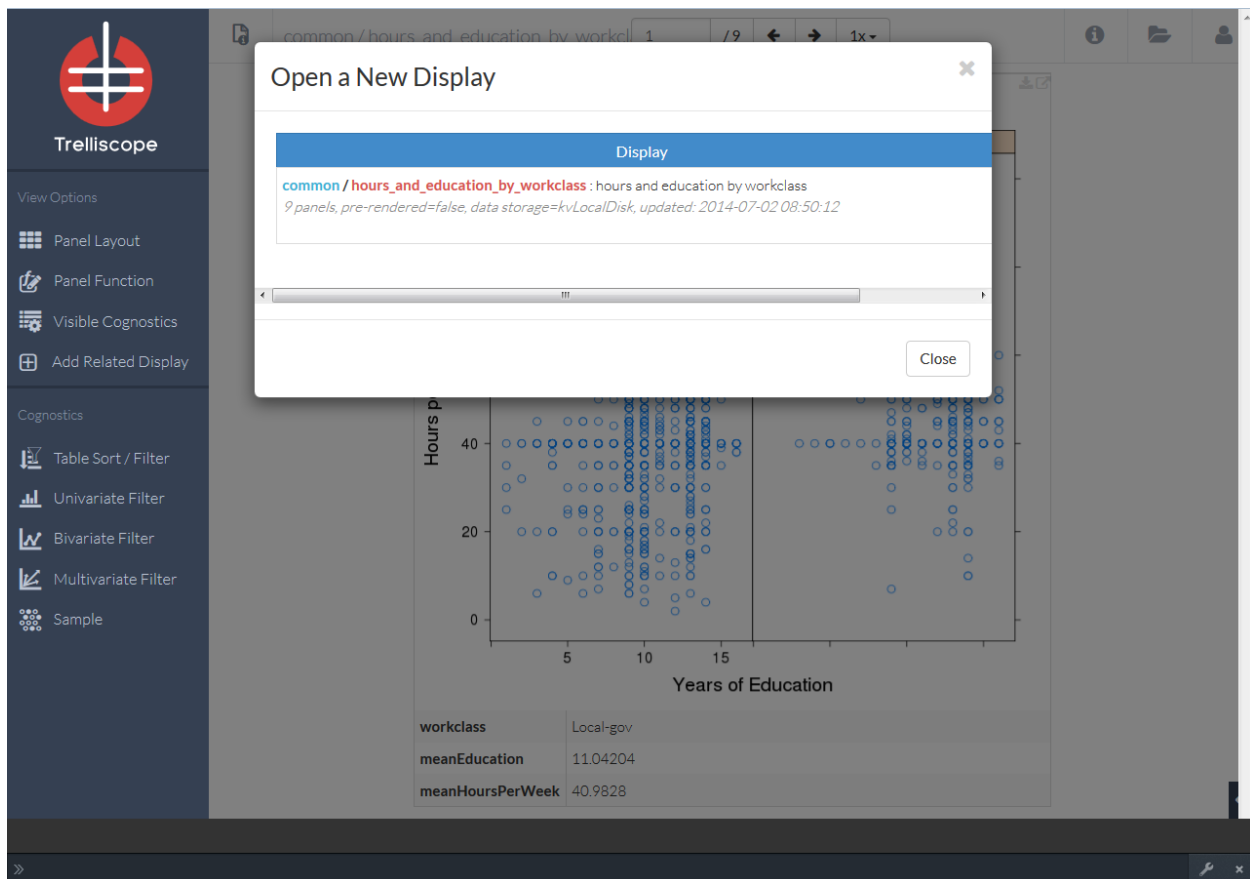


Figure 1: Trelliscope open display view.

New Display: There will be a list of one or more displays to select. Once the user selects a display from the list, a plot similar to the figure below is shown (without the callouts):

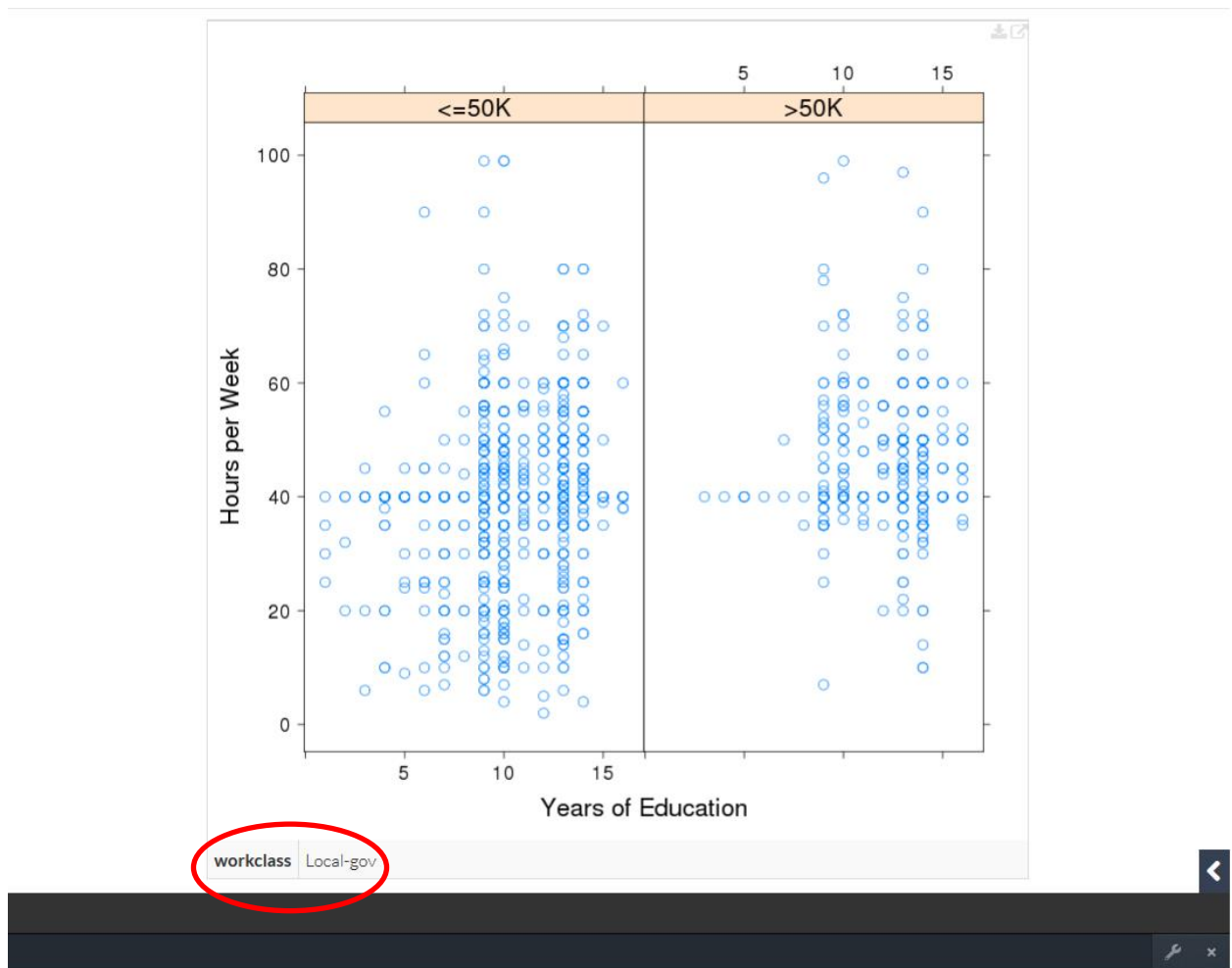


Figure 2: Trelliscope Main Display

Note the main parts of the display marked in the figure above. The functions of each will be explained more below. They are:



- **Main Display:** Area where the data visualizations are displayed.
- **Navigation Banner:** Controls to navigate amongst the various visualizations in the Main Display.
- **Main Menu:** Main menu of commands to sort, filter and otherwise alter the Main Display.

Main Display: A close-up example of the Main display is shown below:



• Figure 3: Trelliscope Main Display

- Note that the visualization shown is just an example and can be very different depending upon the data that is being examined. Note, however, that a typical visualization will be labeled with the parameters that are being visualized (in this case, Hours per Week vs. Years of Education split over a salary both less than and greater than \$50,000). Further note the grey textbox in the lower left corner of the display (circled in red), it shows the ‘cognitive’ parameters (more on this below) for this series of panels. In this case, it is showing workers who work for local governments (‘workclass: Local-gov’) but it can show multiple variables.


- **Import/Export Buttons**  : This feature is not yet implemented.
- **CogMap Control**  : This feature is not yet implemented.

Navigation Banner: A close-up example of the **Navigation Banner** is shown below:



Figure 4: Navigation Banner.

Moving from left to right, this banner has the following features:

 **Information Button** : This feature has not yet been implemented.


Display Name `common / hours_and_education_by_workcl` : This feature shows the name given to the display when it was generated using DataDR and `make_display` command.


Navigation tool  :


Current Panel: Display of the current panel out of the total number of panels available.

Navigation arrows: Controls to move forward or backward amongst the available panels.

Skip Frequency: Indication of how many panels to skip on each click of the Navigation arrows.

 **About Button** : Display information about Trelliscope with some links to documentation and other open-source projects which have contributed to its development.

 **Open New Display** : Open a new display. Allows the user to open a new display. Displays a control similar the one shown in Figure 1.

 **Login/Sign Up** : This feature is not yet implemented.

Main Menu: A close-up of the [main menu](#) is shown in the figure to the left and below:

The main menu is sorted into two sections; ***View Options*** and ***Cognostics****:

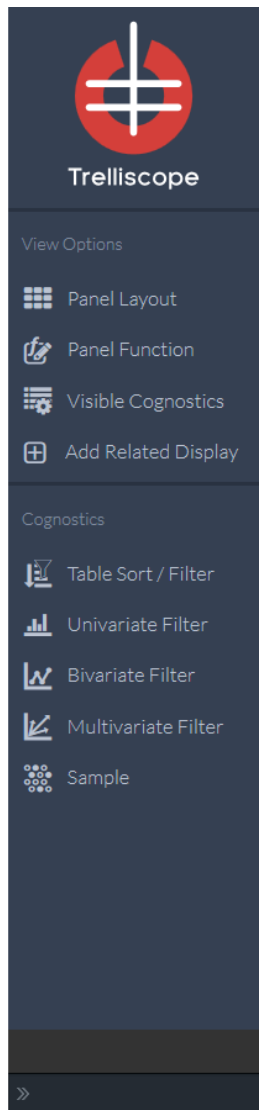


Figure 6: Trelliscope Main Display

***Laptop Users:** All of the menu options open another window with Cancel/Apply buttons in the lower right part of the screen. For laptop users, these buttons may be shown off screen and unreachable (no scroll bar). In order to bring them into view, use 'Control –' (Control minus sign) to make the menu smaller so that it is visible

View Options:

Panel Layout: Allows the user to choose the number of Panels per screen and the arrangement per screen (rows, column) as is typical for a trellis-like layout. An image of the command window is below. Note that the user has chosen 2 rows and 1 column for this particular layout.

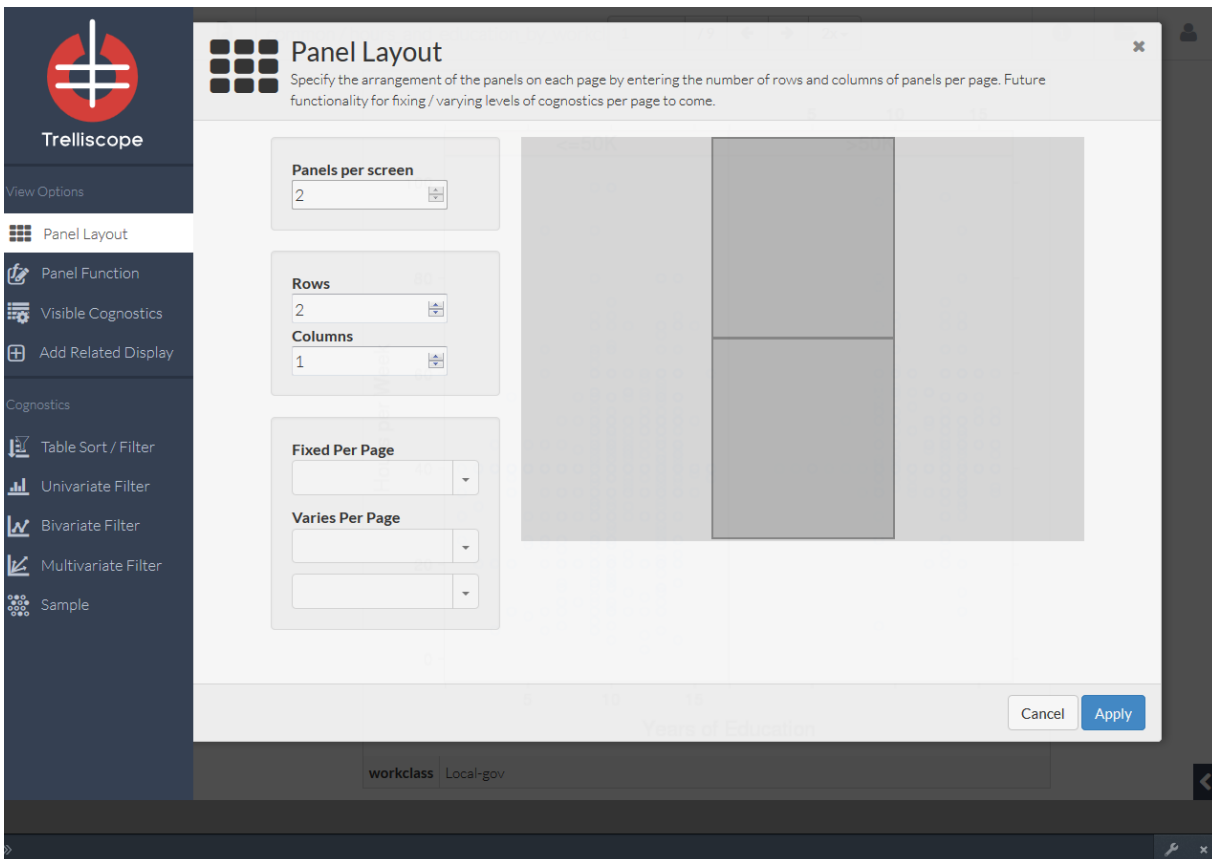


Figure 5: Panel Layout.

In order to apply the changes to the layout, the user must click the 'Apply' button in the lower right corner. In order to cancel the changes, the user must click the 'Cancel' button.

Panel Function: For advanced users: This allows users to change the code that generated each panel.

Visible Cognostics: Allows the user to select which cognostics functions to show in each panel. An image of this menu is shown below:

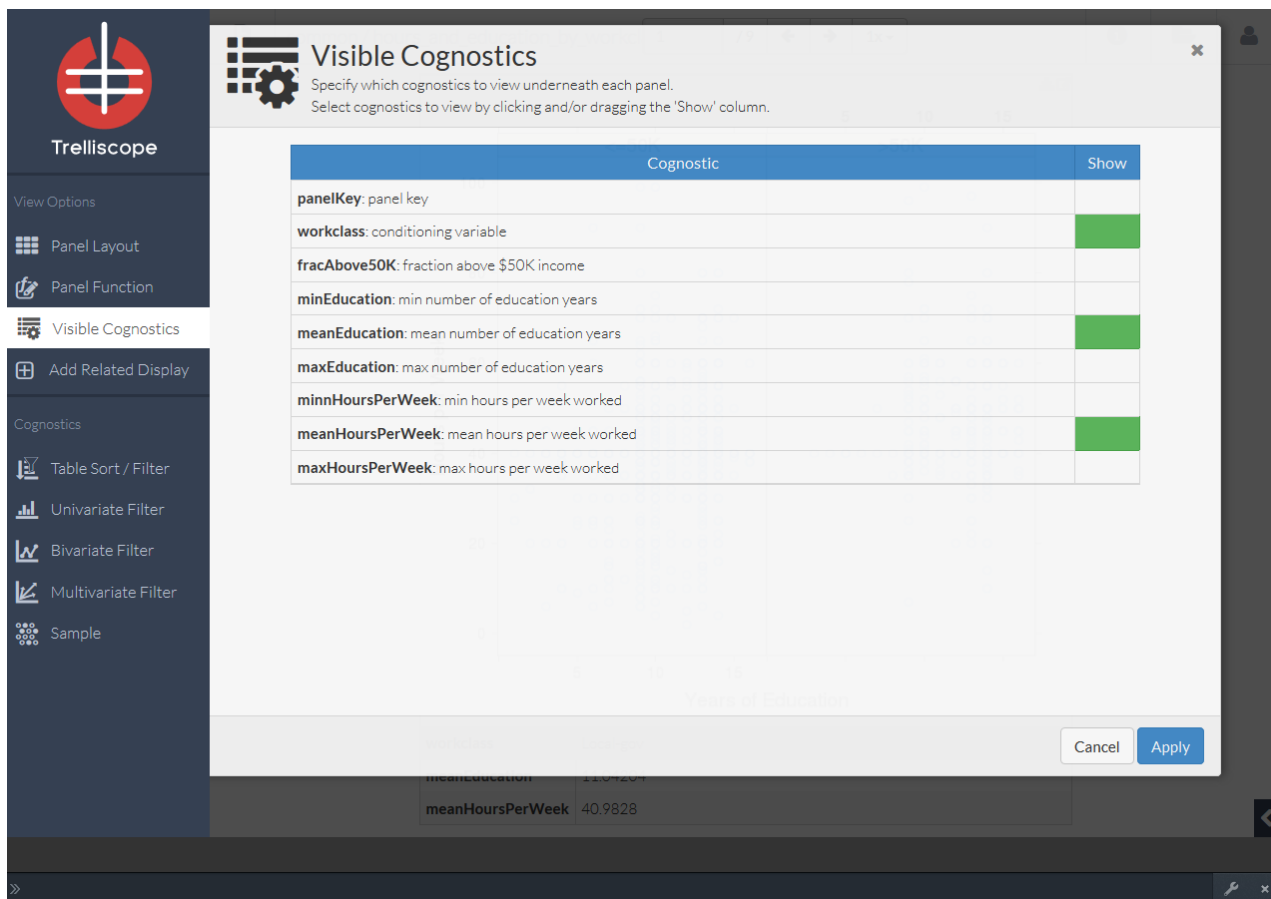


Figure 6: Trelliscope Visible Cognostics Menu.

This menu item is populated with those functions that were used when the overall cognostics function was originally generated in DataDR. The user can turn off each function in the view by clicking on the right 'Show' box. All elements shown are indicated by a green box. The left side lists the cognostic and explains what it is.

The Main Display changes to the following when the user makes the selections in Figure 8. Note that the display will vary with the data and the overall cognostic function generated using DataDR.

Add Related Display: This feature is not yet implemented.

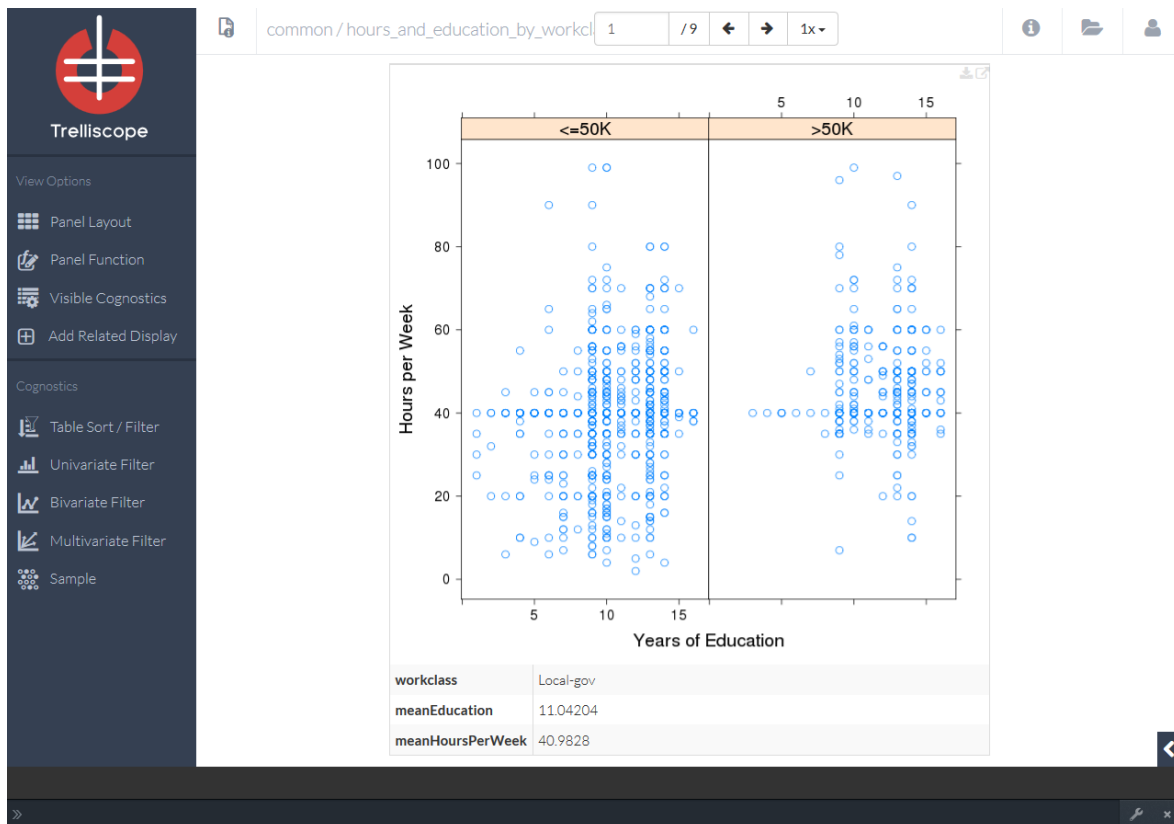


Figure 7: Main Display with Visible Cognostics Changes.

Cognostics:

Table Sort/Filter: This menu item allows the user to filter and sort on each of the cognostics functions. A typical view of that menu item is shown directly below.

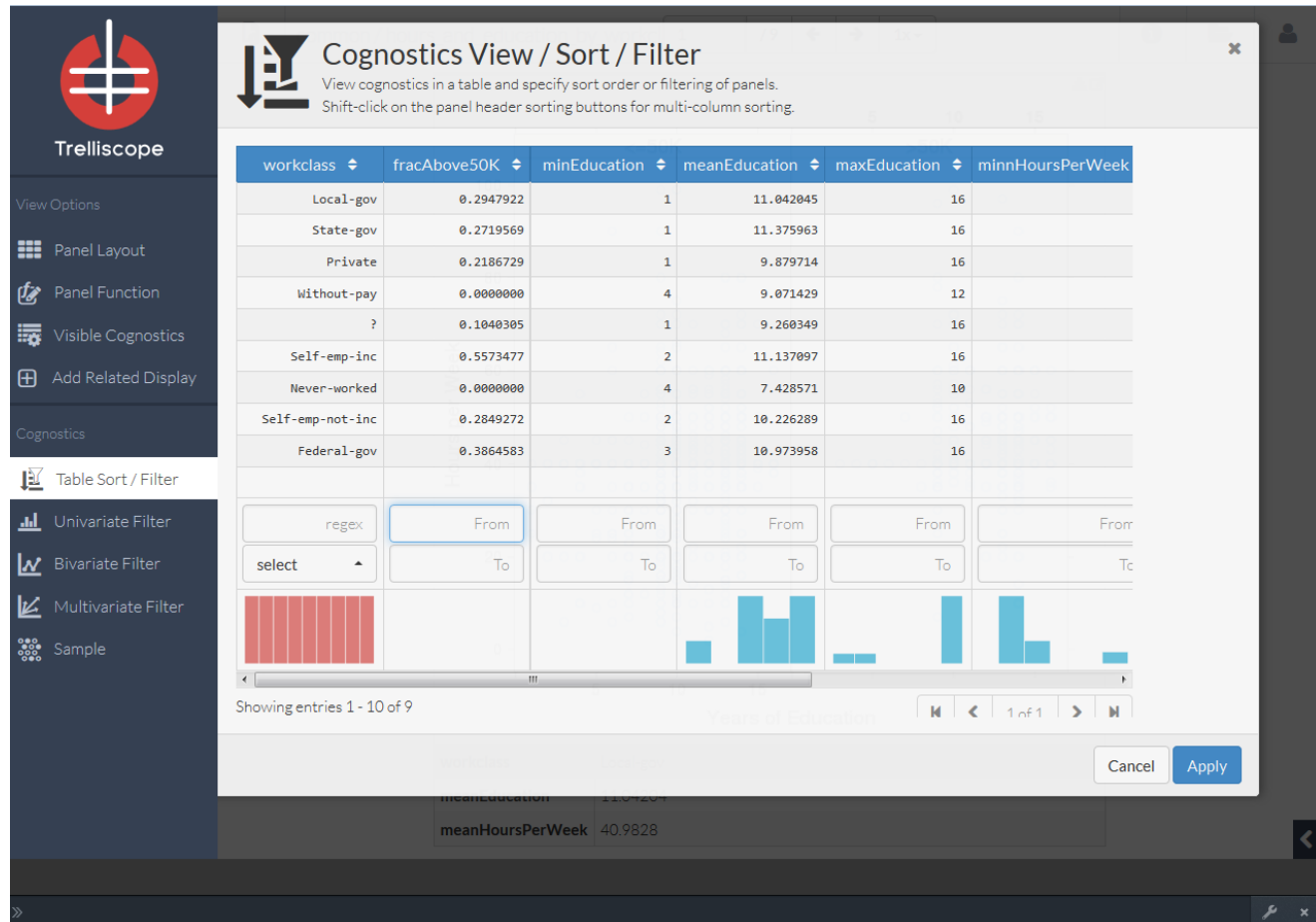


Figure 8: Trelliscope Table Sort/Filter Menu.

Note some features of this menu item.

- **Categorical Variables (strings):** One can choose a single category or sort them using regular expressions. An example in the figure is the 'workclass' variable. This is done using the 'select' button and the 'regex' button at the bottom of the cognostic function column.
- **Numerical Variables:** One can filter/select using a range of values. This is done using the 'From' and 'To' controls at the bottom of the cognostics function column.
- **Sort:** Every cognostic column can be sorted using the up/down arrows at the top of each column.
- **Histogram:** Each column has a histogram of values to show its distribution. This is intended to help the user select which values they would like to view.

- **Paging:** Note that the cognostic variables are divided into screens of 10 functions. If there are more than 10 variables, use the control at the bottom right to scroll backwards and forwards through the variables.

Filter Bar: Once the user sets some type of filter on the display using the features above, a new control appears in the **lower left corner** of the display. An example close up of this feature is shown below. This filter bar is, at the same time, a short cut to the Filter menu item, and the only way to delete a filter that exists on the display.

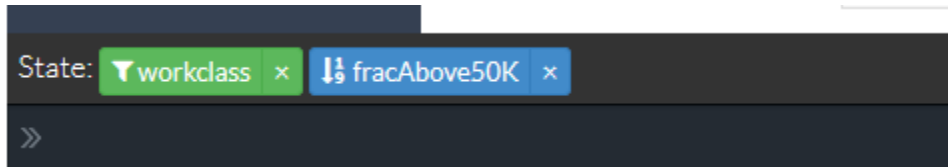


Figure 11: Trelliscope Table Sort/Filter Menu.

Open Filter Menu: To open the filter menu control, click on either of the colored boxes in the Filter bar.

Delete: To delete any filter on the displays, click on the 'x' symbol on the right side of any Filter Bar textbox control.

Univariate Filter: Allows the user to filter the panels based upon a single cognostic function. They are guided by the visual display of the distribution of the cognostic function.

This menu item allows the user to sort the panels based upon a single cognostic function. The user selects a single variable using the menu on the left side and then selects the range of the filtering by clicking and dragging a selection box on the image on the right (see the result of these actions in the figure below).

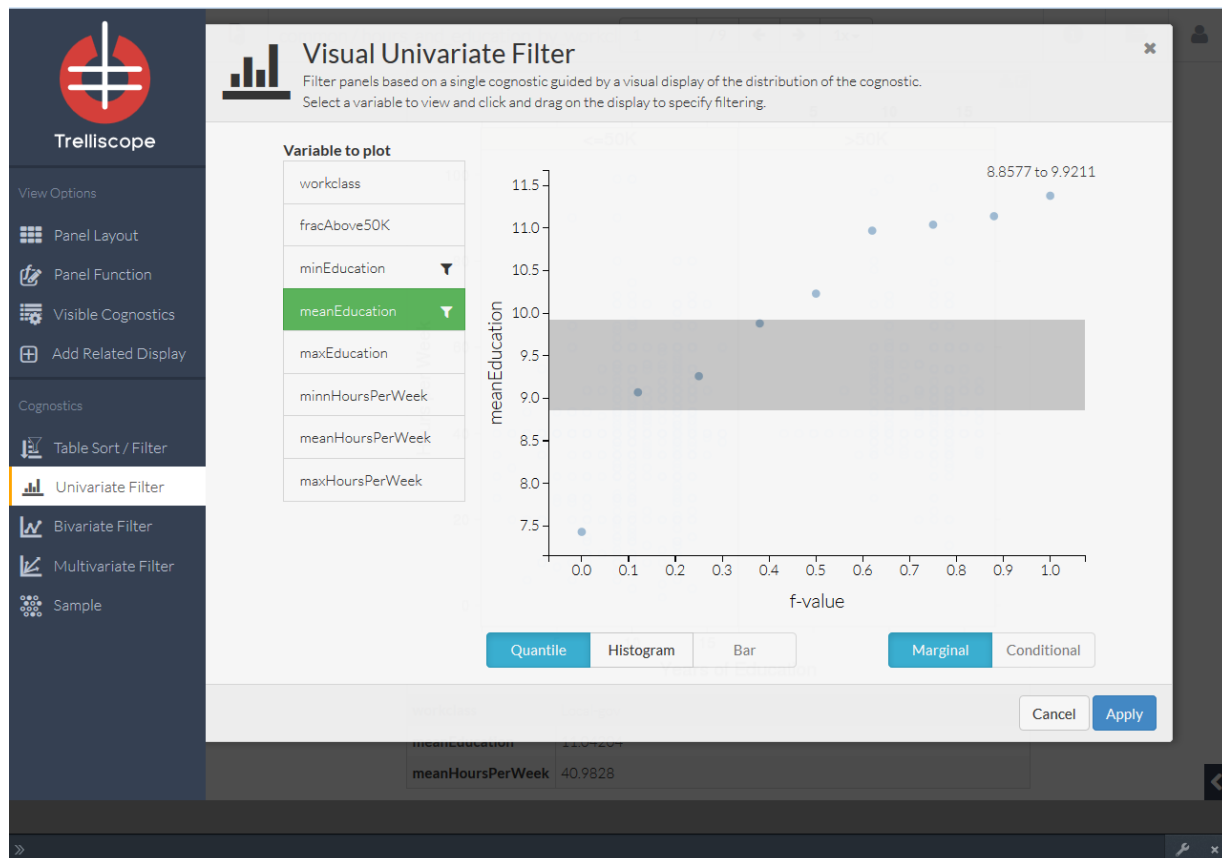


Figure 9: Univariate Filter Example.

In this case the user selected 'meanEducation' as the variable and then highlighted (note the grey highlight box and the legend in the upper right of the main display) a range of 8.8577 to 9.9211 for the mean value of the number of years of education. Note that the selection values and ranges will depend upon the data and the actual cognostic function.

Note some further features of this menu item:

Graph Display: The user can choose between a Quantile Scatter Plot, a histogram plot or a bar chart as a way to view the cognostic function. The available selections depend upon the type of data.

Type of Selection: (Marginal/Conditional): This feature is not yet implemented.

Bivariate Filter: For advanced users. This is similar to the univariate filter except that it allows the user to select a filter using two cognostic functions. See complete documentation for a description of its use.

Multivariate Filter: This feature is not yet implemented.

Sample: This feature is not yet implemented.