



Getting to Know Pi

*Feature-rich Dashboard
Easy-to-use Interface*

Contents

1. What is Pi?	5
2. Connecting to Pi	6
2.1 Logged in	10
3. Categories.....	11
4. Session Filters.....	14
4.1 Legend filter.....	14
4.2 Drag out filters.....	16
5. Category Objects	17
5.1 Category Filters button	17
5.2 Filter Types.....	20
5.3 Filters and URL.....	22
5.4 Send Dashboard.....	22
5.5 Bookmarks / Favourites	23
6. Dashboard Controls.....	24
6.1 Who is Logged in?.....	25
6.2 Send Dashboard.....	25
6.3 Play the Carousel	26
6.4 Information.....	26
6.5 Logout.....	27
7. Notifications	28
7.1 Drill path Notification	28
6.1 Alert Notification	29
6.2 Drill up / Drill down.....	33
7. Chart Tools	34
8. Interface Navigation.....	36
9. Layouts	37
9.1 Replace an existing chart	37
9.2 Add a new Chart Cell.....	39
9.3 Resizing Chart Cells	41

9.4 Publishing a Layout	42
9.5 Removing a Chart Cell.....	43
10. Create / Edit Charts.....	44
10.1 Create a New Chart.....	45
10.2 Create a Simple Chart	47
10.2.1 The Data Source	48
10.2.2 The X-axis	49
10.2.3. Y-Axis	51
10.2.4 Exploring Data	52
10.4.5 Chart Legend	55
10.3 Save Chart.....	57
10.4 Duplicating a Chart	59
10.5 Changing the chart type.....	61
10.6 Filtering Data	63
10.7 Sorting Data	70
10.8 Attributes – Chart	72
10.8.1 Chart Title	72
10.8.2 Drill to full screen.	74
10.8.3 Enable drill down filter	74
10.8.4 Show data labels.....	75
10.8.5 Trend Line.....	76
10.8.6 X-Axis	76
10.9 Chart Targets	79
10.10 Chart Colours	82
10.11 Chart SQL	84
10.12 Peek Button	85
10.13 Auto Refresh.....	87
10.14 Chart Config	88
10.14.1 Chart Category.....	89
9. Maps.....	90

9.1 Creating a Map Data Object	90
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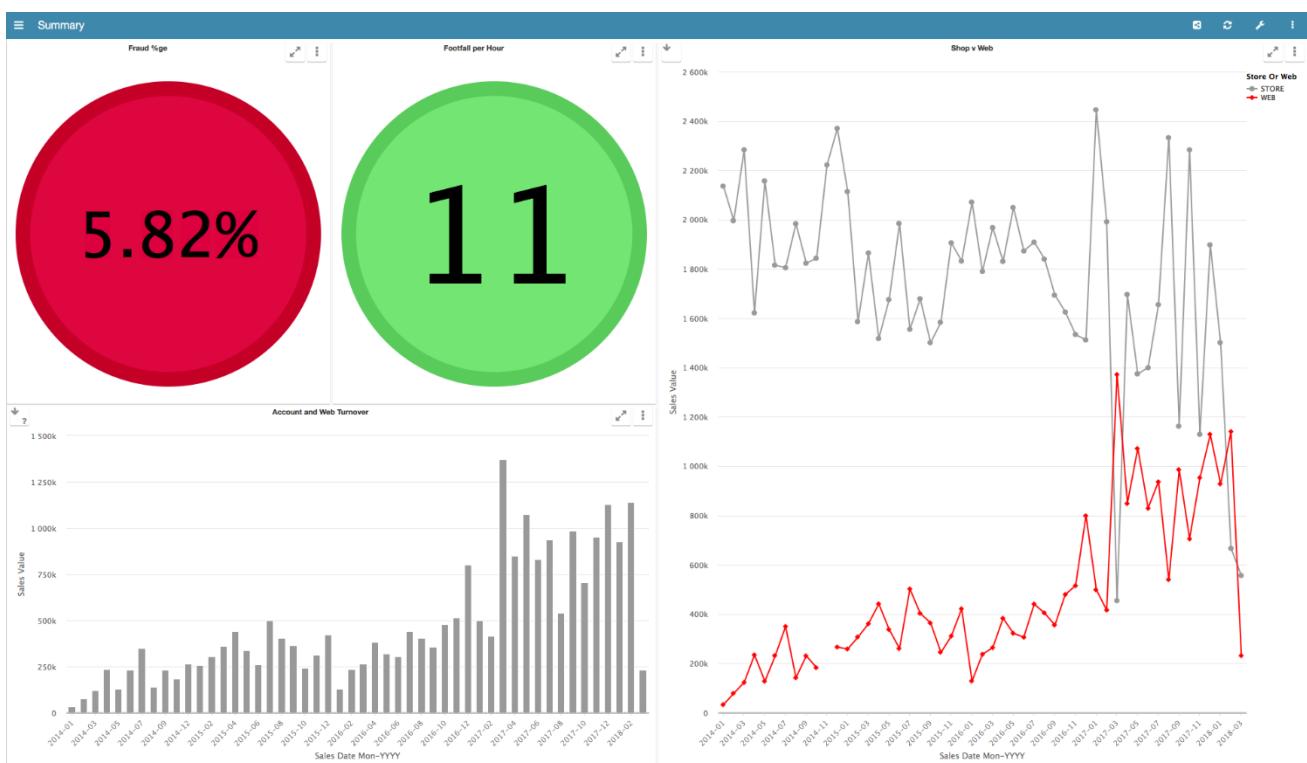
1. What is Pi?

Pi is the latest version of the Panintelligence software. Pi is a web application which delivers the power of data visualisation through a web interface. This allows for an optimal user experience across all platforms: desktop, tablet, and mobile.

Pi allows all business users access to a truly self-service world of intelligent reporting, allowing you to monitor, alert, and act on business-critical information. Reports often tell us what we already know; when business users steeped in domain knowledge use Pi, they can get to the bottom of what they don't already know.

Pi also offers powerful Analytical processes which allow users to find patterns and trends that would otherwise remain hidden. IT should not drive the data available to the business, it is you who should have control.

All existing configurations will work in the new interface.



2. Connecting to Pi

You connect to Pi via a web browser. Pi works on any browser: IE, Chrome, Firefox, Safari, etc.

Depending on how the server configuration has been set up, you may have a different URL to connect to. If you've just installed on your local machine, then you can go ahead and connect using:

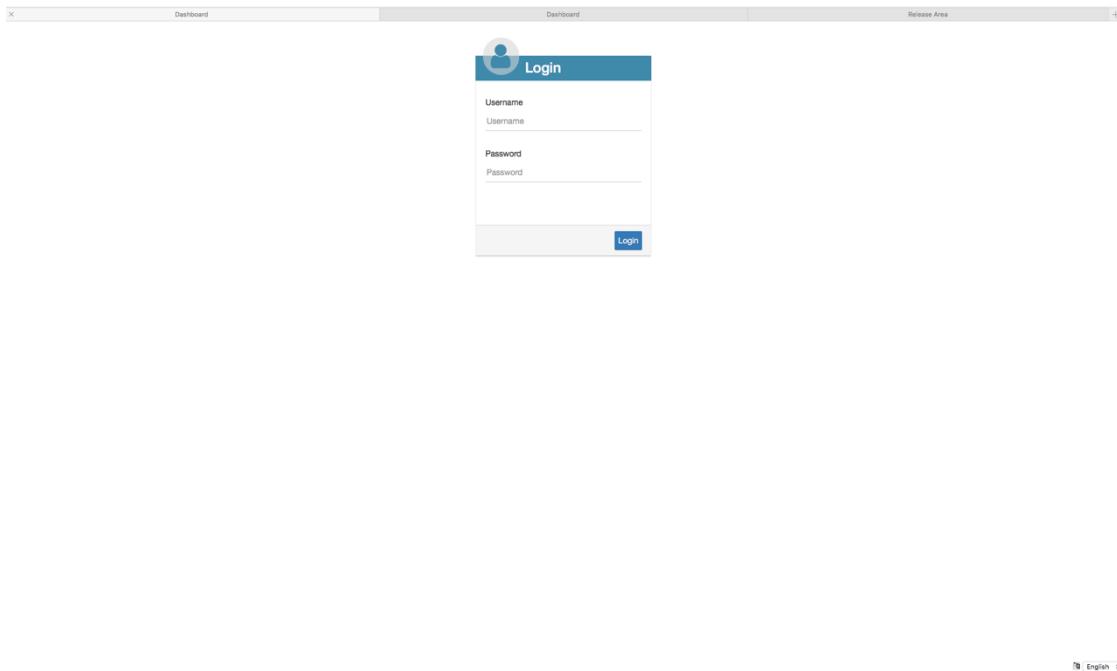
<http://localhost:8224/>

If you are connecting to a deployed dashboard, you will need to ask for the URL from your administrator. It will take the form of (or be similar to):

<https://mycompany-dashboard>

You can bookmark or favourite the page as you would any other.

Once successful, you will be presented with the login screen.



NOTE: The dashboard can be configured to accept an external login, you may not be presented with this login screen.

At the login screen, you will need to enter the username and password supplied by your administrator.

Simply enter your credentials and hit the Login button in the bottom right-hand corner.

The screenshot shows a clean, modern login form. It features a blue header bar with a white user icon on the left and the word "Login" in white on the right. Below the header are two input fields: "Username" and "Password". Each field has a placeholder text: "Username" for the first and "Password" for the second. At the bottom center of the form is a blue "Login" button with white text.

OK, so what can go wrong?

1. Invalid username or password.

If you enter either a username and password combination that is invalid, then you will receive this message.

You will need to re-enter your username and password and retry.

Sorry, we don't tell you which is wrong; it could be the username or password.

NOTE: The username is not case sensitive but the password is.

The screenshot shows the same login interface as the first one, but with an error message. The "Password" field contains the placeholder text "Password". Below the password field, a red error message reads "The user name or password you entered was invalid". The "Login" button at the bottom is still blue and visible.

2. The tarpit

To prevent the system repeatedly trying passwords to force entry, you will enter the tarpit if you get your username or password wrong multiple times.

This produces exponentially longer wait times between retries. It will also tell you how long you must wait before retrying.

The required waiting time gets longer and longer. If you get into difficulty, your administrator will need to re-save your user account to clear the attempts.

Sorry, we know you're one of the good guys and you just want to see your data, but we have to keep the bad guys out too!

A screenshot of a login interface. At the top right is a user icon and the word "Login". Below it is a "Username" field containing "Username". Below that is a "Password" field containing "Password". To the right of the password field is a dropdown arrow. A red error message at the bottom states: "You have tried to login unsuccessfully 2 times. Login attempts within the next 4 seconds will not be processed." At the bottom right is a blue "Login" button.

3. Password Expired / Update your password

You may still see this message from time to time, and you'll likely get this message when you first login.

It means you have your username and password correct, but you now need to provide a new password.

Type the new password, and confirm it, in the second box.

Then click Change and Login.

A screenshot of a password update interface. At the top right is a user icon and the words "Update Password". Below it is a "New Password" field containing "New Password". Below that is another "New Password" field. Below those is a "Confirm New Password" field containing "New Password". A red message at the bottom left states: "Your password has expired, you must change it before you can log in". At the bottom right is a blue "Change and Login" button.

The values must match and they're case sensitive.

A screenshot of a web-based password update form titled "Update Password". It features a blue header bar with a user icon and the title. Below the header are two input fields: "New Password" and "Confirm New Password". The "New Password" field contains a single character, while the "Confirm New Password" field contains a different character. A red error message below the "Confirm New Password" field states, "This value should be the same." At the bottom right is a blue "Change and Login" button.

If you see this message, then re-type and try again.

Finally, when providing your new password, you could potentially see the following message.

This is because your password is not complex enough. Your administrator can put minimum requirements for passwords into the system.

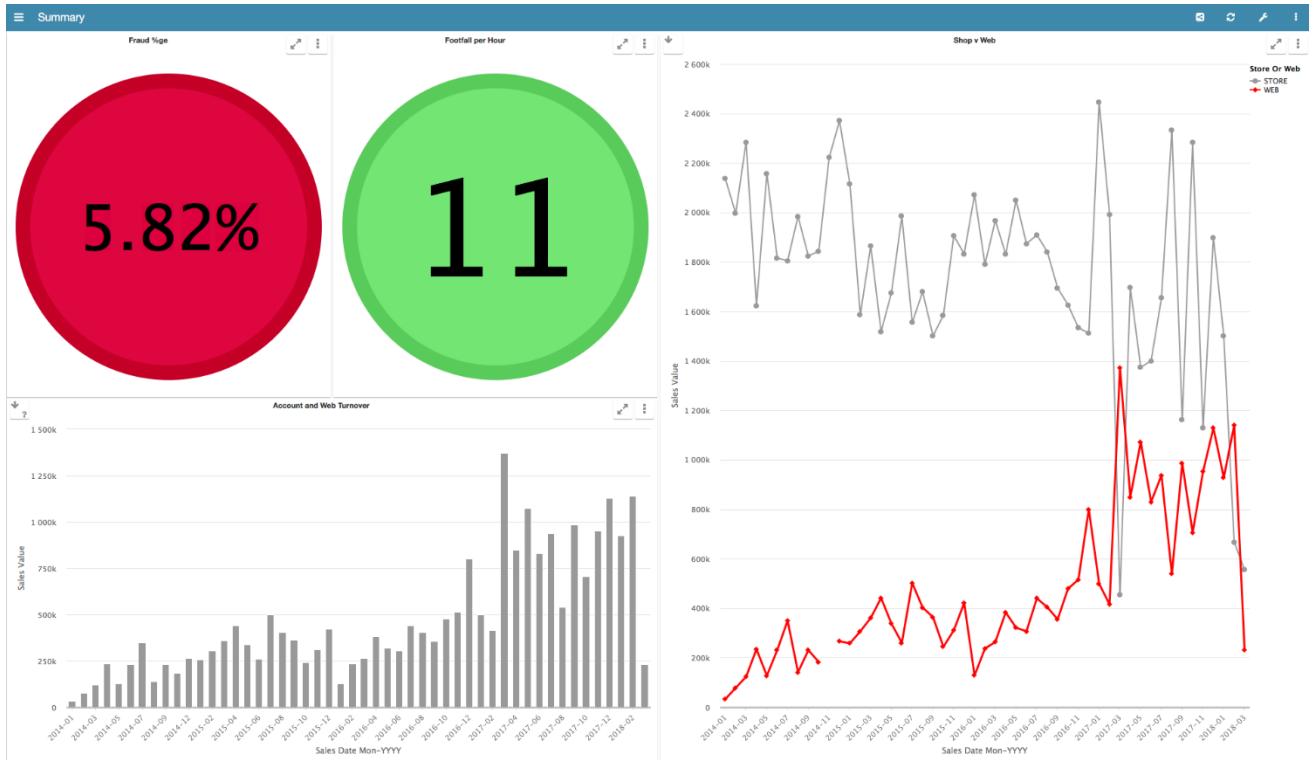
Try using a phrase – a mixture of case, characters, and numbers, i.e.

Turn a phrase like 'I Love Data' into IL0v3D@t@

A screenshot of a web-based password update form titled "Update Password". It features a blue header bar with a user icon and the title. Below the header are two input fields: "New Password" and "Confirm New Password", both of which are labeled "New Password". A red error message below the "Confirm New Password" field states, "The password you entered was invalid". At the bottom right is a blue "Change and Login" button.

2.1 Logged in

So, once you've got through the Login screen, you should now be presented with a dashboard.



If you see a blank screen here, then your administrator has not allocated you any categories or dashboard pages.

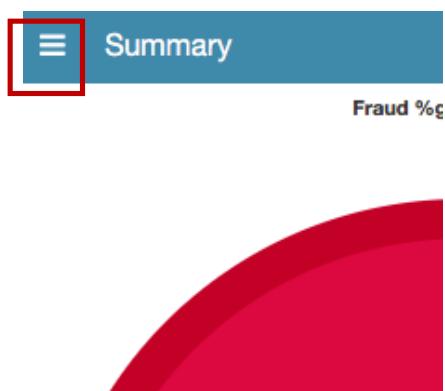
Your administrator controls what you can see – you only have access to the items that have been granted to you.

3. Categories

Categories in Pi are pages which can be configured to hold information. Categories are also used to control which users get to see which bits of information.

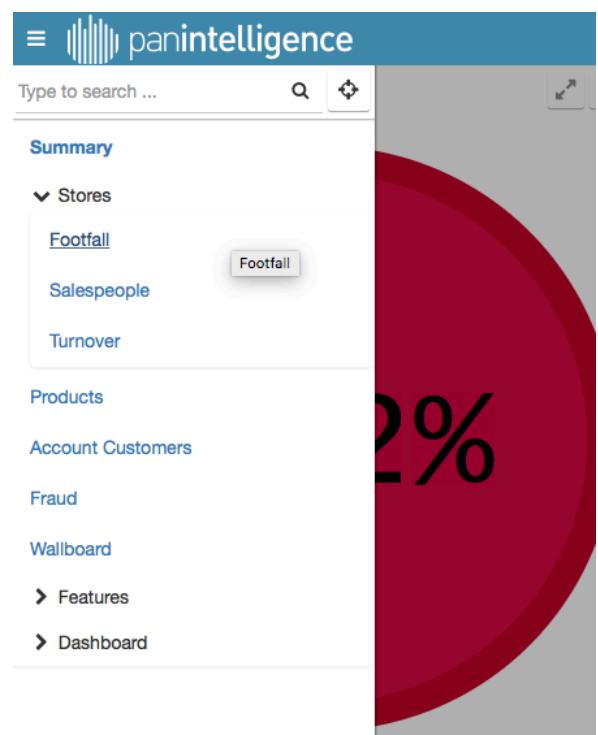
Pi has been designed to work across all platforms with consideration given to touch devices, and the controls have been designed to be more familiar on those devices. The icons used are commonly found in other software to make it easy to navigate and learn.

Pi shows one category (page) at a time. To access the list of Categories, click on the icon (Burger) at the top left of the screen, highlighted beneath in red.



The category list will then slide in from the left side of the screen in a tree structure, with sub-categories available underneath.

These can be opened and closed by clicking on the arrow beside each group. In the example to the right, *Stores* is the group heading for several additional categories.



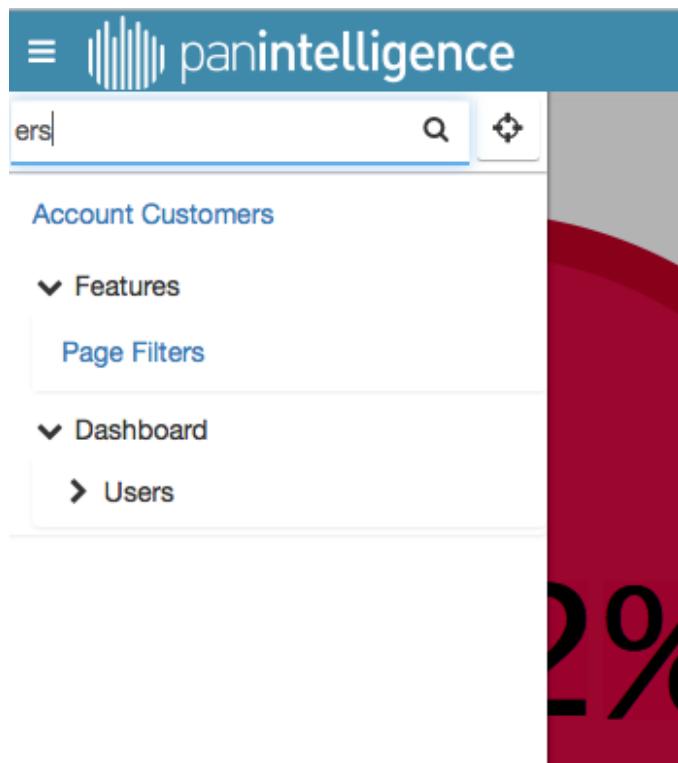
In this example, the PiExplore interface opens on the Summary category, as shown above. Additional categories are shown underneath.

Once you have selected a new category, the list will disappear off the screen again, maximising the amount of space to display the charts.

There is also a text box with a Search function. If you start to type in the name of a category, it will display all those featuring the text, even if they are a nested category. There is no need to use any wild card symbols in your search.

In the example shown below, by simply typing in “**ers**”, the Pi interface shows several possibilities, and also where they can be found in the category tree structure.

In the example provided, the filter is showing ‘Account Customers’, ‘Page Filters’, and ‘**Users**’ as they all contain the string ‘ers’.



NOTE: The parent and child items are also shown in the list to aid the search.

Clearing the search box will then show the entire list of available categories again.



An additional feature, *Locate active category*, shows you where to find the current category in the tree structure. This provides you with some context about the charts being shown.

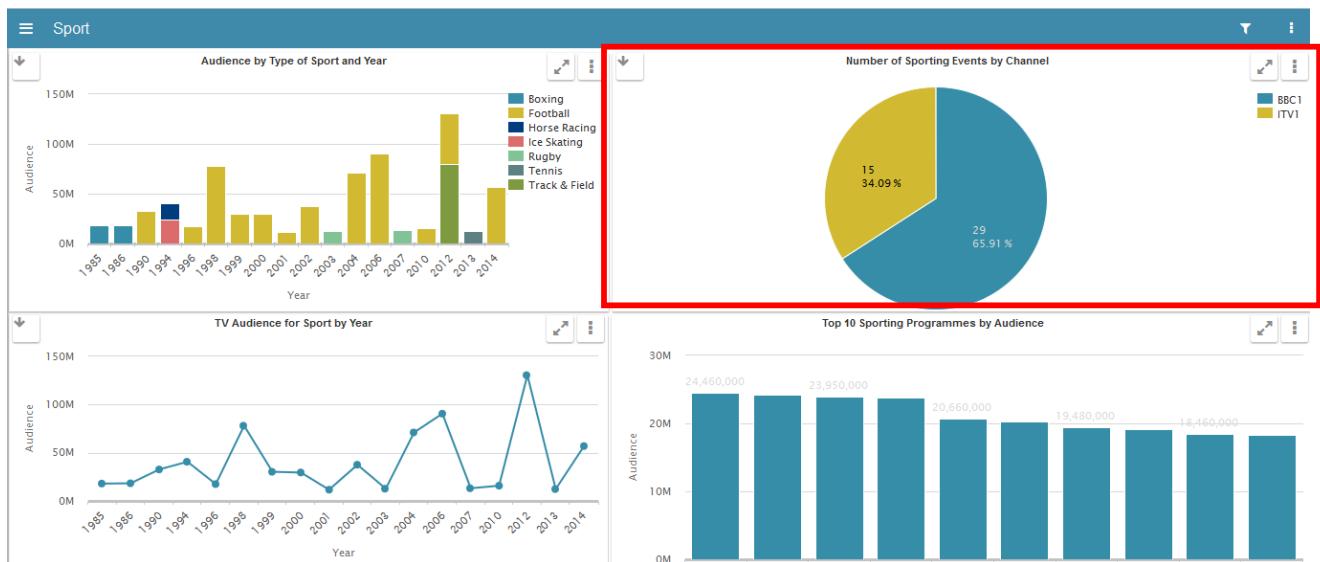
To close the Category menu, either select a category or click on the same button at the top left of the screen.

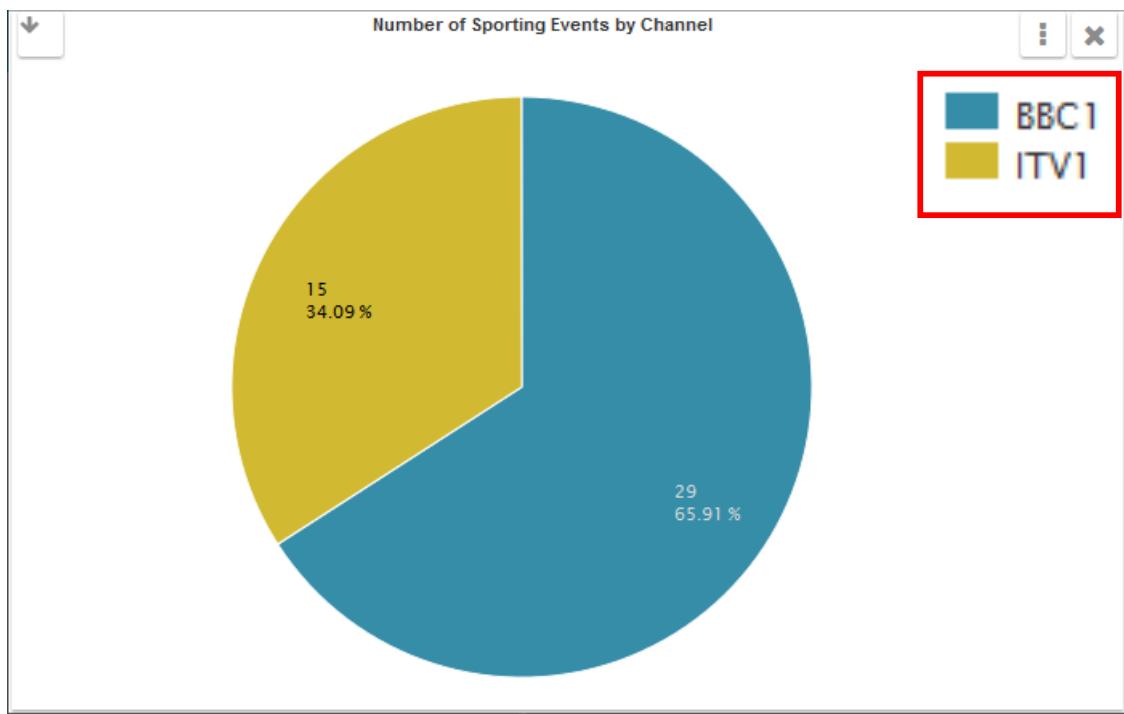
4. Session Filters

The Pi interface includes several session filters. These filters are temporary and only apply to the current session.

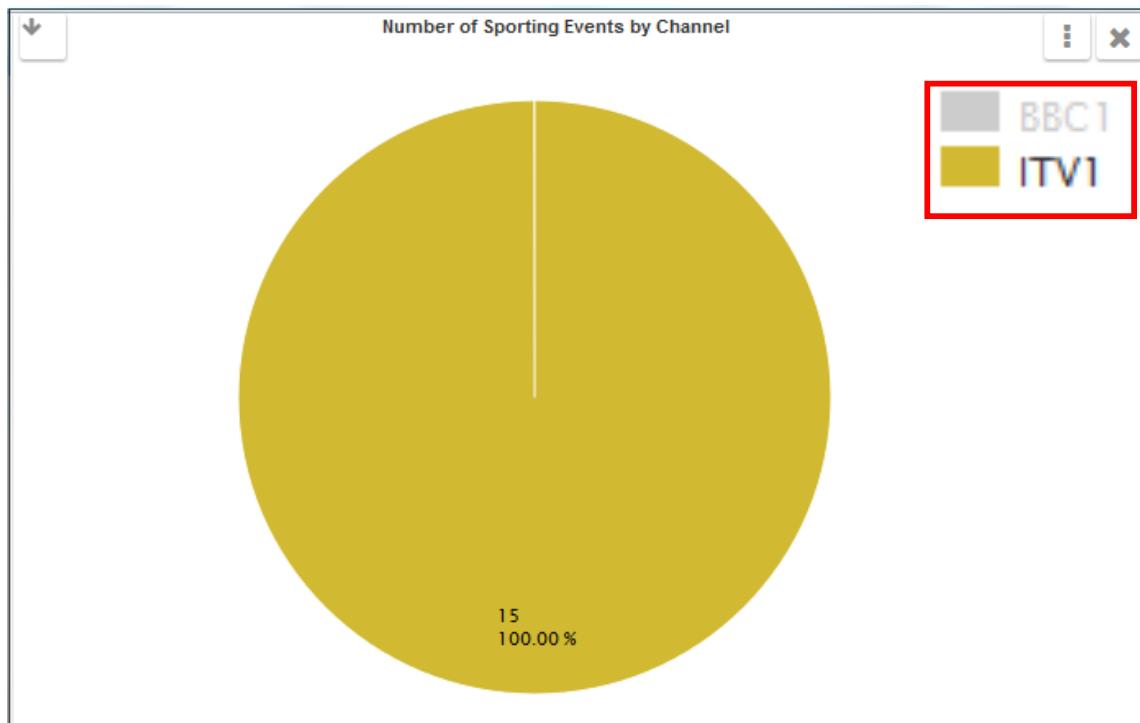
4.1 Legend filter

In the category below, if we select the pie chart and show it on full screen, clicking on individual items in the Legend will rebuild the chart, **using only that item**.



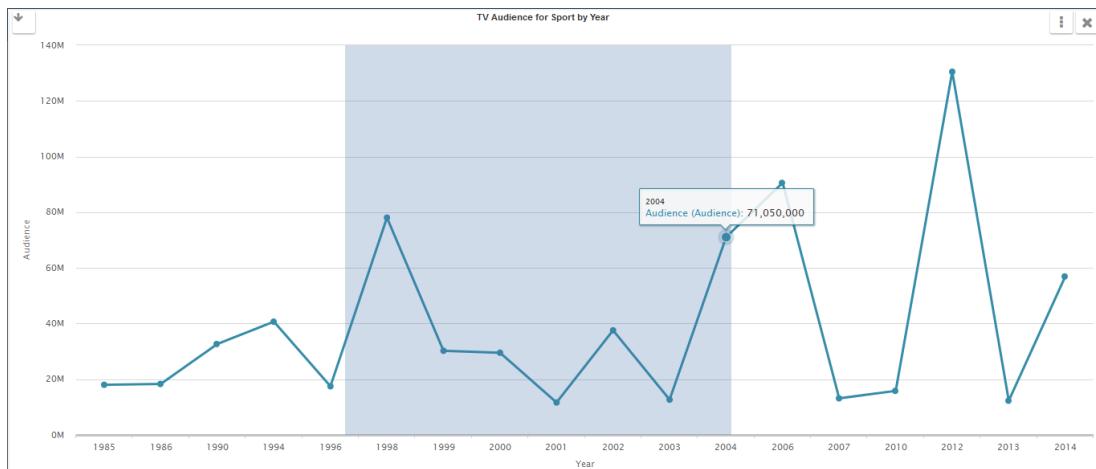


In the pie chart above, if you click on ITV1 in the legend, the chart will then look like the one below. You can see in the Legend item, at the top right of the pie chart, that BBC1 is greyed out to indicate that it is not currently selected.

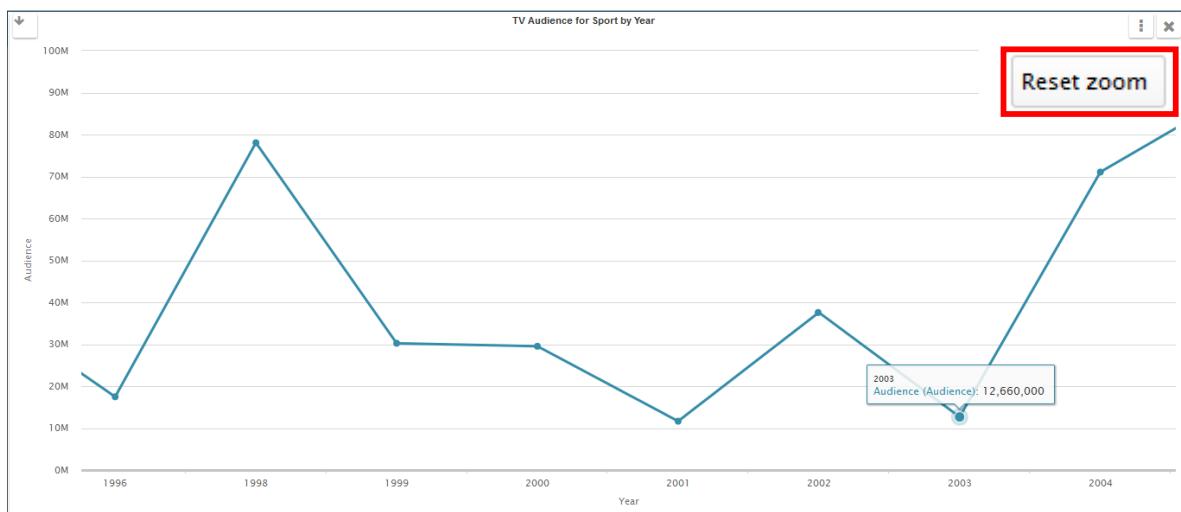


4.2 Drag out Filters

On a line, bar, or area chart, you can adjust the chart to focus on a particular area. Drag a box over a section of a chart in the interface. This will highlight the section in blue, as shown below, and this zooms the chart in to focus on the selected area.



The result will then look like the below in the PiExplore interface.

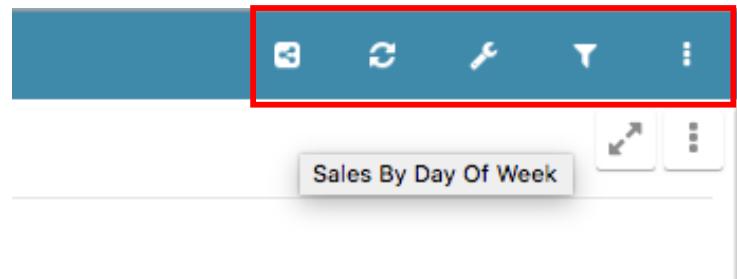


To clear the drag out filter, simply click on the Reset Zoom button, highlighted above in red.

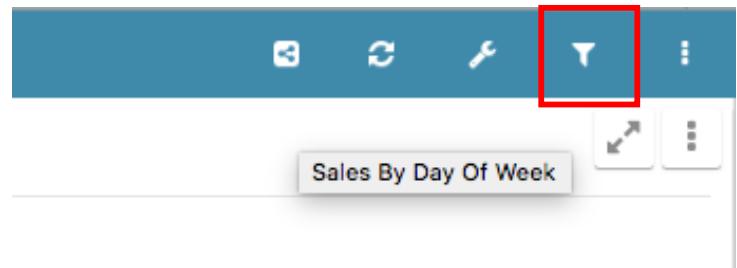
5. Category Objects

5.1 Category Filters button

At the top right of the screen is a group of buttons.



The button located second from the right accesses the category filters. These are filters that apply to all elements on the page.

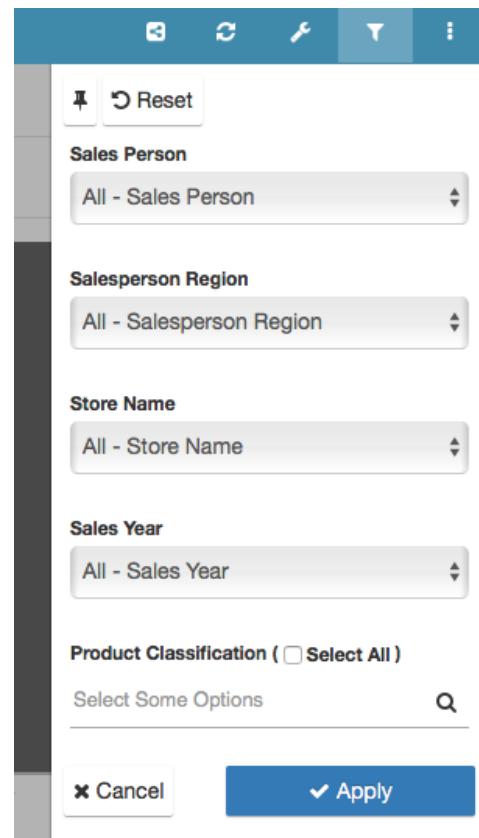


It opens the filter menu, shown to the right, and it includes all filters currently applied to the chart, together with some drop-down options.

There can be a combination of drop lists, multi-pickers, sliders, and number-pickers.

The Category Designer has decided what these should be and how they should behave.

NOTE: There are times when the filters do not filter. Instead, they might be used to select values, swap objects, or other things. But here we are going to consider only how they operate as filters.



To apply one or more filters, select the values you require and then hit the Apply button.

Sales Person
Alex Greaves

Salesperson Region
All - Salesperson Region

Store Name
All - Store Name

Sales Year
2018

Product Classification (Select All)
Select Some Options

If you decide not to apply the filters as you make your selections, then hit the cancel button.

Sales Person
Alex Greaves

Salesperson Region
All - Salesperson Region

Store Name
All - Store Name

Sales Year
2018

Product Classification (Select All)
Select Some Options

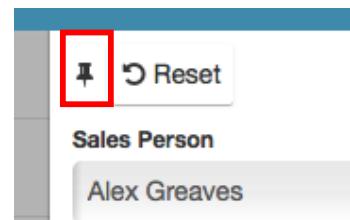
NOTE: By default, filters cascade selections to each other vertically down the list. Selecting a Sales Person will limit the region, Store Name, and Sales Year selection automatically.

Reset will return all the drop lists back to default and remove all filters.

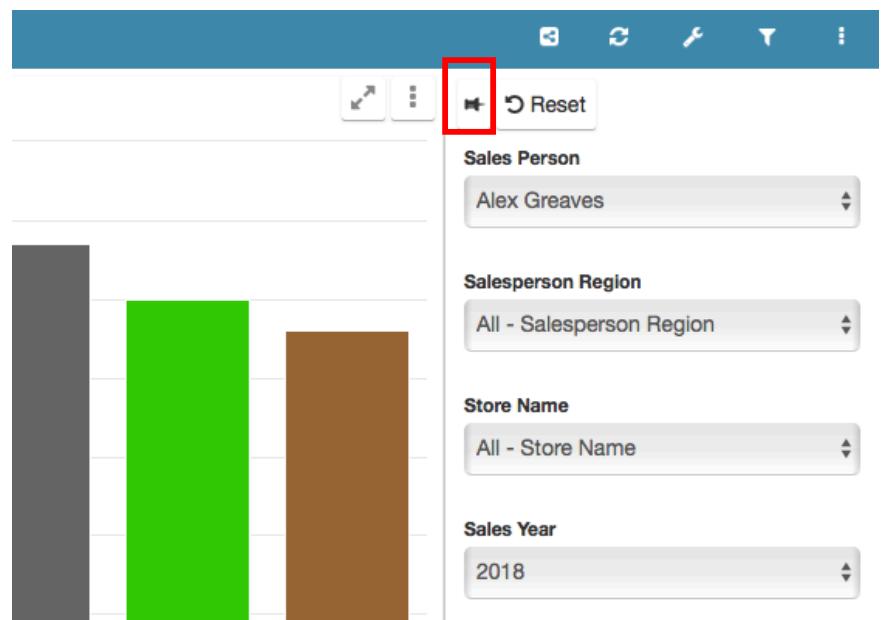


If charts on the category already have filters applied to them, then the filters button will indicate this with a tick next to it, as shown on the left. Default filter values will often be applied, so filters are automatically applied when you open the category.

If you click the Pin icon, then you can set the panel to be permanently open or on view.



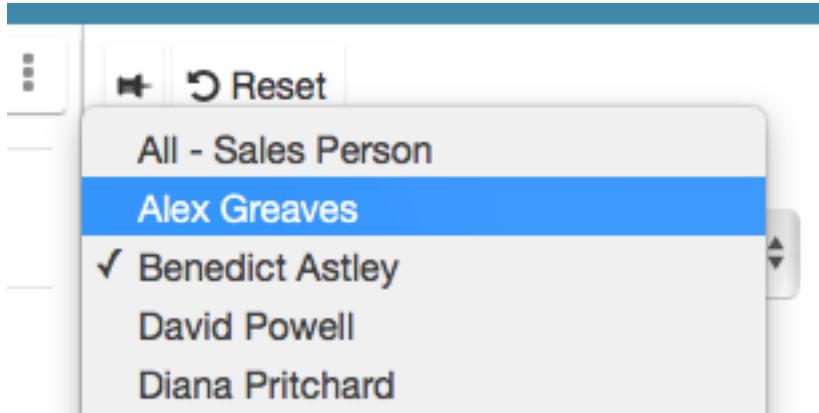
Clicking the Pin button once again will hide the filters panel.



5.2 Filter Types

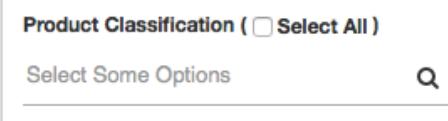
Drop List

The most commonly used filter type is the Drop List. This allows the selection of a single item at a time. At the top of the Drop List, there is often a 'Select All' option. When Select All is selected, no filter for that object is used in the charts query.

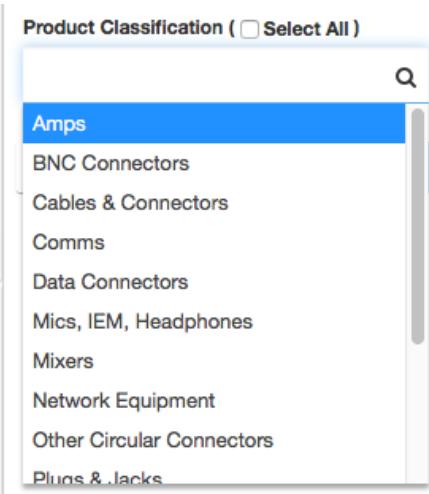


Multi-Picker

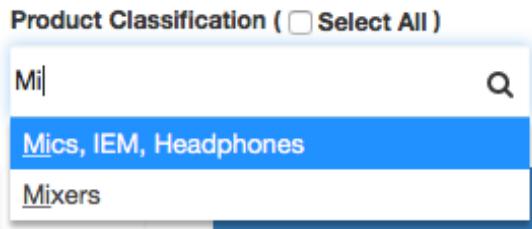
This is like a drop List, but allows multiple items or lists to be selected at once.



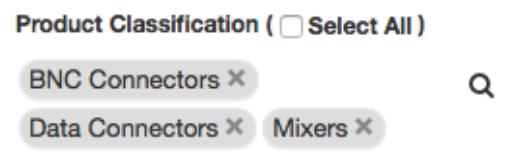
Clicking into the text area opens the Search Panel.



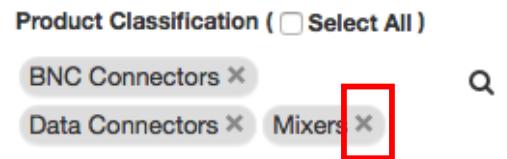
You can then either select an item or start typing to search.



Then click an item to select; multiple items can be added by repeating the process.



You can remove items from the list by clicking the X next to the selected item.



5.3 Filters and URL

In the PiExplore interface, applying category filters adds this information to the URL. This makes it incredibly easy to send the specific charts, with the filters you have currently applied, to another user.

[http://pan-dash:8081/pi/#PA-CA###category/118/category-filter-params=\[\[Financial%20Year\]\]{{2012}}\[\[Financial%20Period\]\]{{1\\$!#!9}}\[\[Cost%20Centre\]\]{{Branch%201}}](http://pan-dash:8081/pi/#PA-CA###category/118/category-filter-params=[[Financial%20Year]]{{2012}}[[Financial%20Period]]{{1$!#!9}}[[Cost%20Centre]]{{Branch%201}})

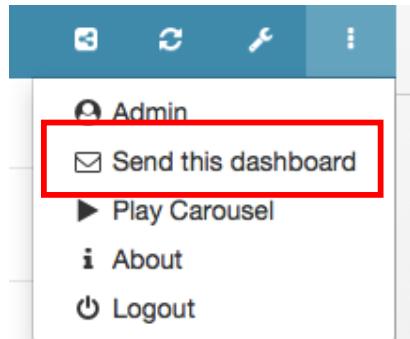
In the example above, the latter part of the URL relates to the filters. In Financial Year, I have applied the year 2012; the Financial Period is from periods 1 to 9, and the Cost Centre is set to Branch 1.

5.4 Send Dashboard

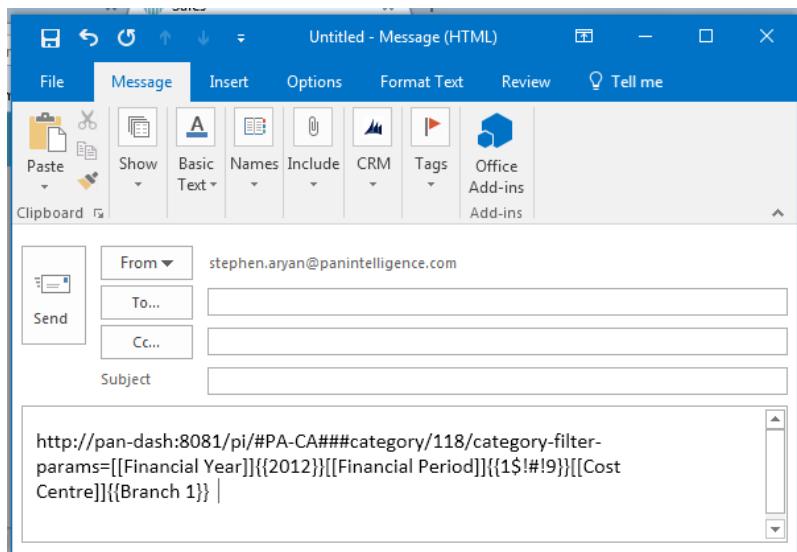
By accessing the dashboard controls in the top right of the screen, you can send the link to the filtered dashboard.



The button at the top right of the screen, shown here, has several different options, one of which is **Send this dashboard**.

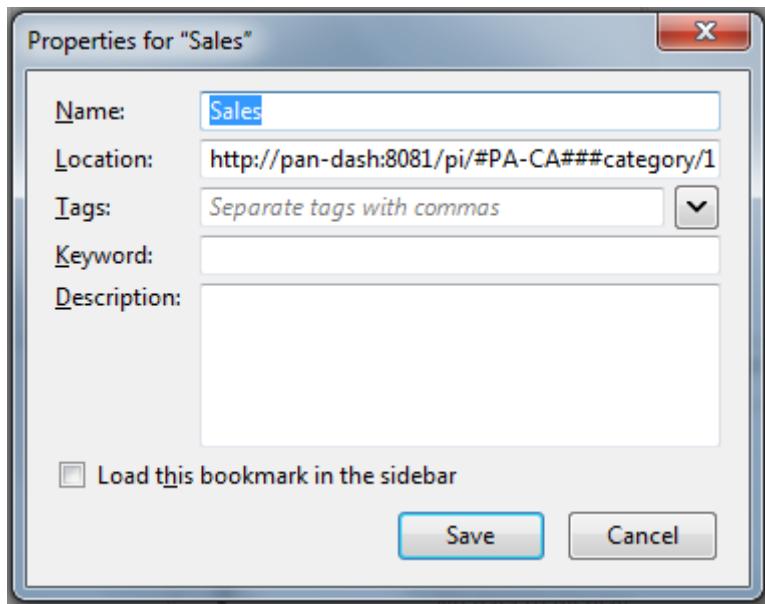


This will copy the full URL from your web browser and open it in your email software. If the recipient has access to the interface, and they have permission to view that category, then they will be able to see the charts exactly as you have filtered them.



5.5 Bookmarks / Favourites

It is also possible to **Bookmark or Favourite** a category with filters applied in your web browser. Like any other URL, it allows you to immediately revisit this set of filters without having to reapply each filter again.



This allows you to create several tailored filters for each category, e.g. for your team or department, last week's or last month's data, or a certain product across a specific period of time.

6. Dashboard Controls

There are buttons in the top right of the screen; these allow further control of the dashboard.



Working from left to right:

Publish Layout – See chapter on Layouts.



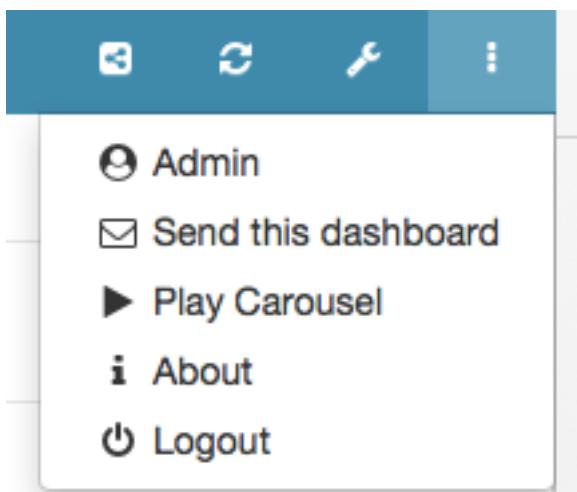
Refresh Category – Refreshes all elements on the page.



Open Admin – Opens the Admin Panel, see administration chapters.



Opens dashboard tools.

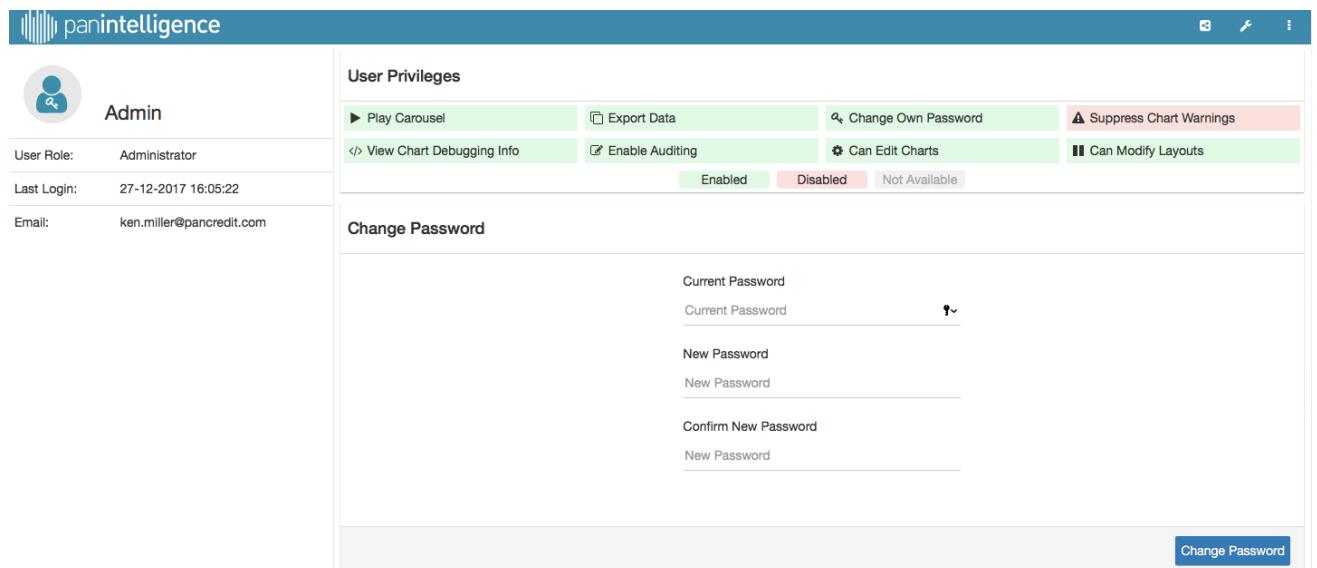


6.1 Who is Logged in?

Here, we can see who we are logged into the dashboard as. In this example, we are logged in as Admin.

 Admin

Clicking on this name will provide information about your account's privileges.



The screenshot shows the Panintelligence dashboard interface. At the top, there is a header bar with the Panintelligence logo and some navigation icons. Below the header, on the left, is a sidebar containing a user profile section for 'Admin'. This section includes a circular profile picture placeholder, the role 'Administrator', the last login time '27-12-2017 16:05:22', and the email address 'ken.miller@pancredit.com'. To the right of the sidebar, the main content area is titled 'User Privileges' and lists several permissions with status indicators (Enabled, Disabled, Not Available). Below this, there is a 'Change Password' form with fields for Current Password, New Password, and Confirm New Password, followed by a 'Change Password' button at the bottom right.

User Privileges			
▶ Play Carousel	Export Data	Change Own Password	Suppress Chart Warnings
</> View Chart Debugging Info	Enable Auditing	Can Edit Charts	Can Modify Layouts
<small>Enabled Disabled Not Available</small>			

Here we can see our role, the last login time we recorded, and the e-mail address configured for this account.

Under user privileges, we can see what we have access to.

We can also change our password from this screen.

6.2 Send Dashboard

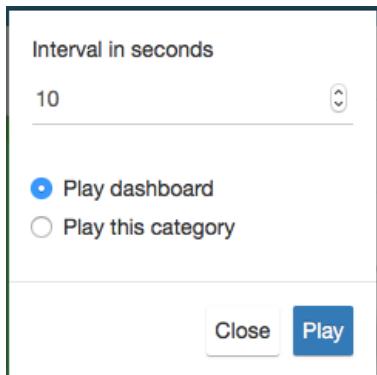
As mentioned in section 5.4, we can send this dashboard. This sends a URL, which allows someone (providing they have access) to directly access the filtered category we are viewing.

 Send this dashboard

6.3 Play the Carousel

► Play Carousel

This will cycle the interface through the different categories, and you can set the interval between cycles. This is used when the dashboard is viewed on a TV or large monitor to provide a communal view.



You can decide on the interval (how often the dashboard refreshes)

And to Play Dashboard (Cycle through all available categories)

Or Play this category (Refresh only the visible category).

6.4 Information

i About

Clicking on this item will open a screen which tells you what version is currently installed.

About Dashboard

Name	Info
Product Version	pi.17.12.07.8ce1bb1ace_release_30-11-2017
Code Date	2017-12-07 11:32:15, 2017
Security Token	rvzwBjCojwKqqgVWEPuHqmkPxSG5jkExNj8CYyQ9vpDGr5mKYJ

3rd Party Libraries Used

6.5 Logout

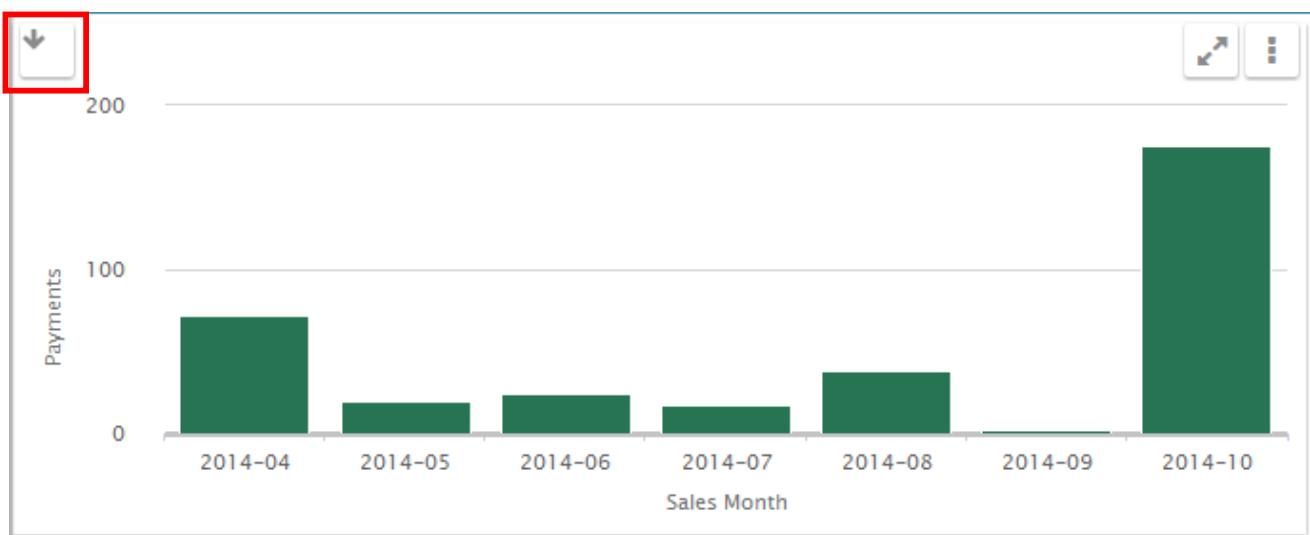


Logout will log you out of the Pi interface.

7. Notifications

7.1 Drill path Notification

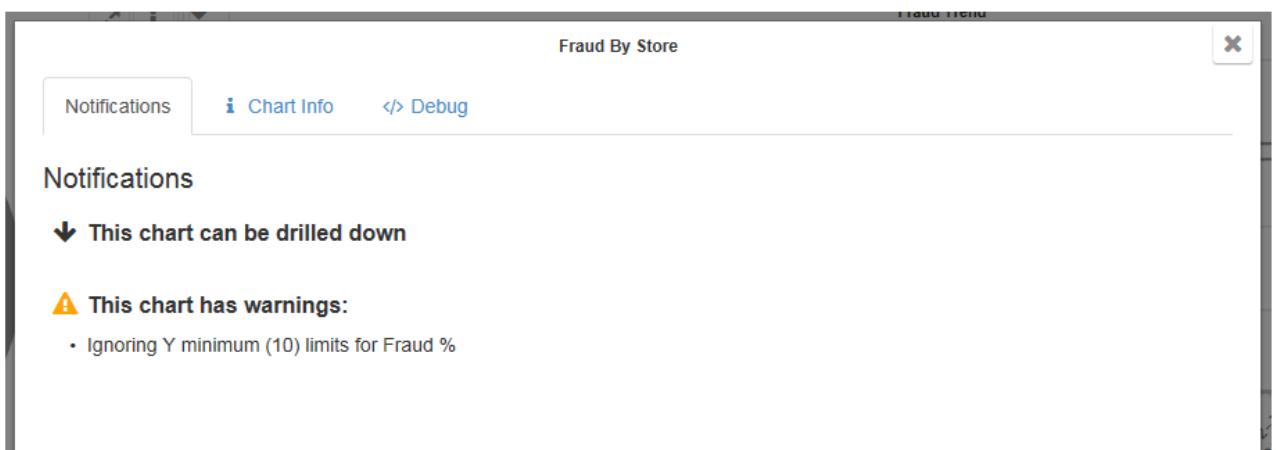
In Pi, you can immediately see if a chart has a drill path. As shown below in the Notifications section, in the top left of a chart cell, it will have a down arrow.



6.1 Alert Notification



The Notification button at the top left of a chart cell can also indicate other information. If there is a yellow warning triangle, as shown above, this indicates a few possibilities. Clicking on the alert button will open the following window and provide more information.



The Notification button has three tabs. The first – Notifications – indicates that the down arrow is telling you the chart has a drill path.

The orange triangle is a warning to show that, on this chart, *Fraud By Store*, the chart is ignoring any fraud less than 10 on the Y axis.

This means that when the chart was created, in the PiCreate interface, a low value level has been set on the Y axis in the Chart Edit window, as shown below.

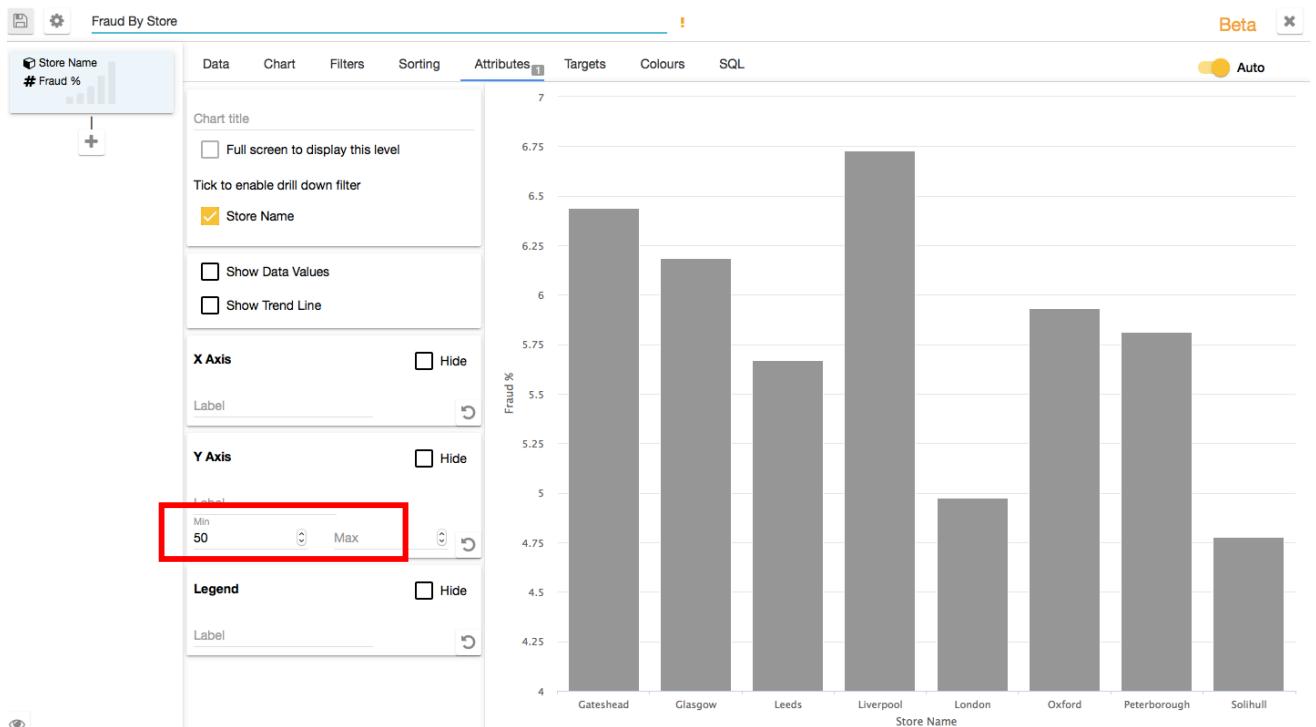


Chart Info tab – This tab, as shown below, provides more information about the chart, such as the data source and categories, and there is the option to embed this chart into your application by using the unique URL provided.

Notifications i Chart Info </> Debug

Most Popular Genre of Films

Chart Information

- Chart Name: Most Popular Genre of Films (ID: 247)
- Data Source: TV Ratings (ID: 29)
- Category: Films (ID: 34)

Embed this chart

The link below can be used to embed this chart on a page.

http://localhost:8224/pi/chart#chart-filter/247_1

The Chart Info tab will also provide you with additional information when you drill into a chart. Below, you can see it shows what level the chart is on and the data object.

 Chart Info

 Debug

Chart Information

- Chart Name: War Films by Name (ID: 247)
- Data Source: TV Ratings (ID: 29)
- Category: Films (ID: 34)

Drilldown levels

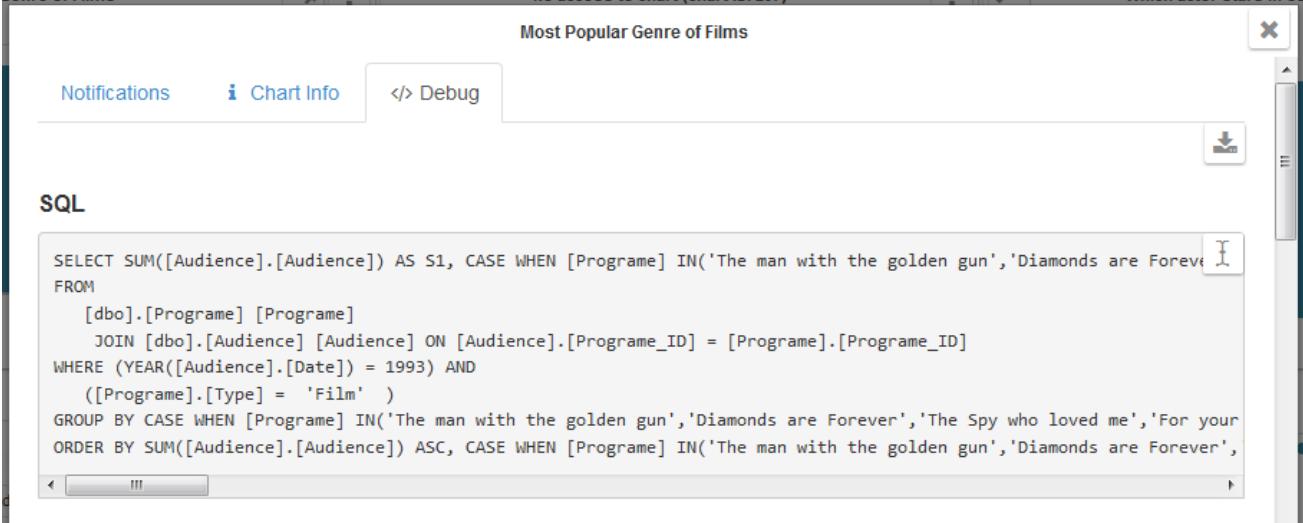
- Level 1: [[Type of Film]]{{War}}

Embed this chart

The link below can be used to embed this chart on a page.

http://localhost:8224/pi/chart#chart-filter/247_1

Debug tab – This has information about the SQL used to build the chart and there are more options to help resolve any issues with the chart, such as copying the SQL to paste into another application, or downloading all of the debug information as a text file. The equivalent of this tab in the PiCreate interface is the View XML button on the Chart toolbar.

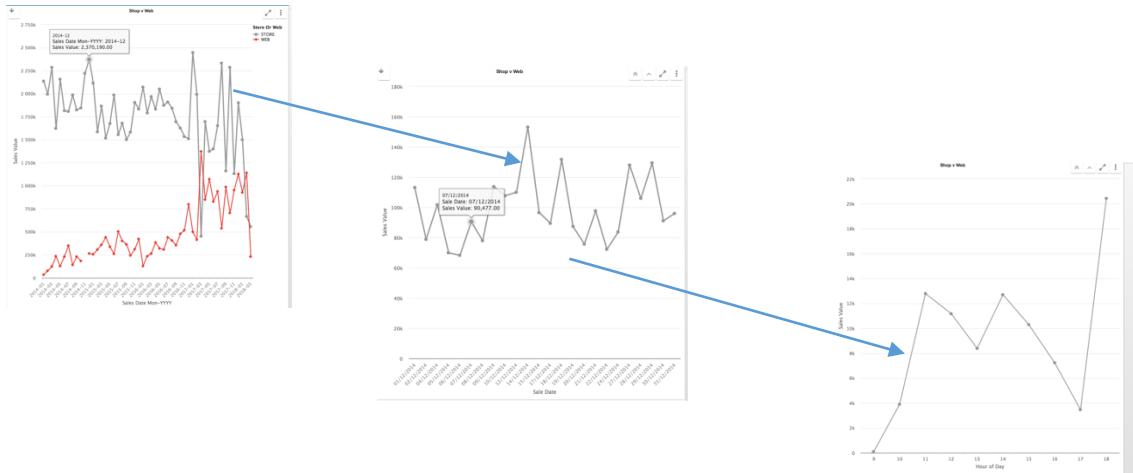


The screenshot shows a software window titled "Most Popular Genre of Films". At the top, there are three tabs: "Notifications", "Chart Info", and "Debug", with "Debug" being the active tab. Below the tabs, the word "SQL" is displayed. A large text area contains the following SQL query:

```
SELECT SUM([Audience].[Audience]) AS S1, CASE WHEN [Programme] IN('The man with the golden gun','Diamonds are Forever') THEN 1 ELSE 0 END AS S2  
FROM  
[dbo].[Programme] [Programme]  
JOIN [dbo].[Audience] [Audience] ON [Audience].[Programme_ID] = [Programme].[Programme_ID]  
WHERE (YEAR([Audience].[Date]) = 1993) AND  
([Programme].[Type] = 'Film' )  
GROUP BY CASE WHEN [Programme] IN('The man with the golden gun','Diamonds are Forever','The Spy who loved me','For your eyes only') THEN 1 ELSE 0 END  
ORDER BY SUM([Audience].[Audience]) ASC, CASE WHEN [Programme] IN('The man with the golden gun','Diamonds are Forever','The Spy who loved me','For your eyes only') THEN 1 ELSE 0 END
```

6.2 Drill up / Drill down

When a chart or a table has a drill path defined, you can click on the chart block, or double-click on the table row to drill down into the underlying detail.



Once you have drilled down, you will see the following icons, as shown below.



The first icon on the left, with two upwards arrows, returns the chart to the top level.



The second icon, with one upwards arrow, drills up one level of the chart.



7. Chart Tools



At the top right of all chart cells, you will see the two buttons shown above. The first will display the chart in full screen mode, and the second opens a chart toolbar with additional options, shown below.

The Chart Toolbar in PiExplore will look like the below.



On the top row, from left to right:

- Drill up to the top of the chart
- Drill up one level of a chart
- Show chart on full screen
- Close tools

Second row, from left to right:

- Information – opens the chart information panel
- Download as Excel (tables only)
- Edit Chart
- Refresh Chart

Third row left to right

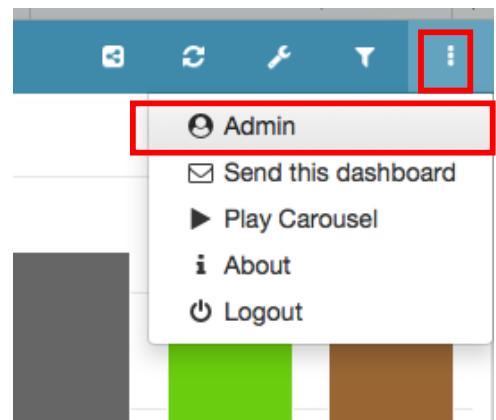
- New chart
- Split cell from top to bottom
- Split chart cell from left to right
- Delete chart / table

Bottom row, from left to right:

- Chart Library
- Download all as .csv – useful for large data tables
- Schedule Chart

NOTE: You may not have all the items listed above. The control of these items is either granted or denied by a set of user privileges. If you wish to see what your access rights are, then you can view them through the User Profile screen.

Click on the dashboard menu located in the top right-hand corner of the screen, then click on your user name. (I'm called Admin here.)



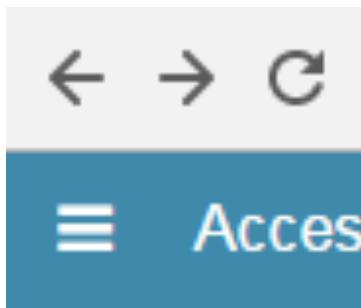
In the User Privileges section, a green box means that you do have that privilege; a red box means that you don't.

A screenshot of the Panintelligence User Profile page. At the top, there's a header with the Panintelligence logo and some icons. The main area has a sidebar on the left with a user icon and the name "Admin". Below that are sections for "User Role: Administrator", "Last Login: 28-12-2017 10:55:21", and "Email: ken.miller@pancredit.com". To the right, there's a "User Privileges" section with a table. The table has two rows of six items each. The first row has green backgrounds for all items except the last one, which has a red background. The second row has green backgrounds for all items. Below the table, there are three status indicators: "Enabled" (green), "Disabled" (red), and "Not Available" (grey). At the bottom of the page is a "Change Password" link.

If you need access to a certain privilege, then contact your dashboard administrator.

8. Interface Navigation

The dashboard is designed to work using regular browser controls. If you move from one category to another, or drill down / up, then you can easily navigate forwards and backwards using the browser controls. Similarly, you can refresh an entire page by refreshing the browser.



The Dashboard is entirely URL driven, so you can bookmark, favourite, copy, and send URLs in any way that suits you.

You can also use this to your advantage by embedding dashboard elements in other pages, or even in your own application.

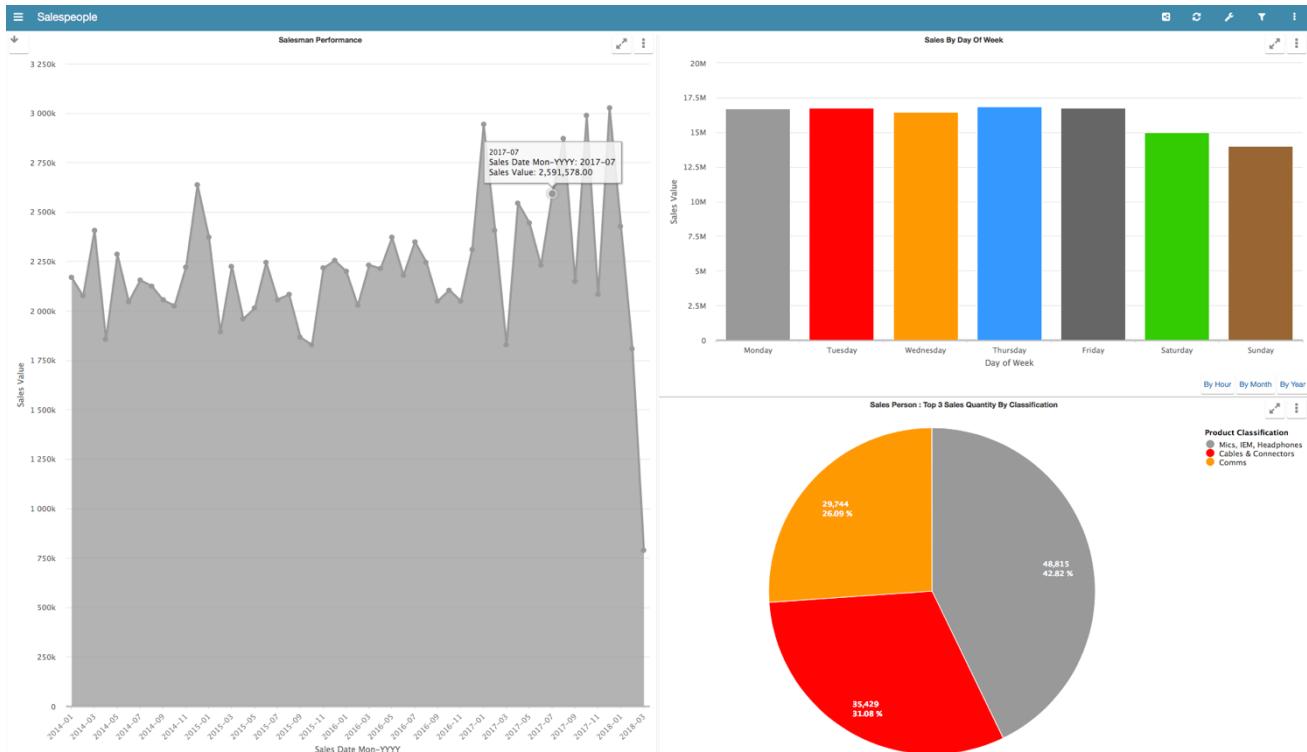
9. Layouts

You can quickly modify the way the dashboard is presented to you.

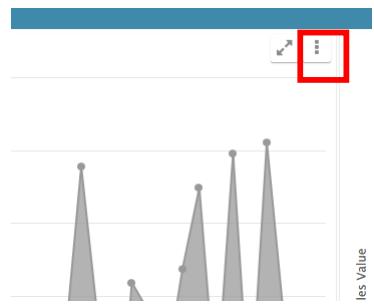
The first change you may want to make is to replace a chart in a cell with a different chart. To do this, we will open the Chart Library and select the chart we want to display.

9.1 Replace an existing chart

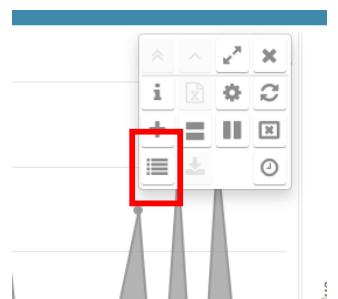
Let's look at an existing category.



If I want to swap the chart displayed in the chart cell on the right, first open the tools on the chart cell.



Then select the chart Library from the tools.



The Chart Library list will appear. This will show a complete list of all the charts you have access to. This list is grouped by the categories the charts belong to.

Type to filter ...
sales

...ll Sales By Hour Of Day
...ll Sales By Month
...ll Sales By Year

Parent Child

...ll Details For Sales Person: {{Salesman}}
...ll Sales Person : Top 3 Sales Quantity By C

Products

...ll Top 20 Best Sellers - by Units {{Sales Year}}
...ll Top 20 Best Sellers - by Value {{Sales Year}}
...ll Top 20 Brands {{Sales Year}}

Salespeople

...ll Performance v Target Salesperson: {{Sale
...ll Salesman Performance

NOTE: If you cannot see a chart you require here, you will need to ask an administrator to grant you access to the category that the chart belongs to. *If you can see the chart on someone else's dashboard, ask which category it is grouped under – this is the category to ask for permissions to.*



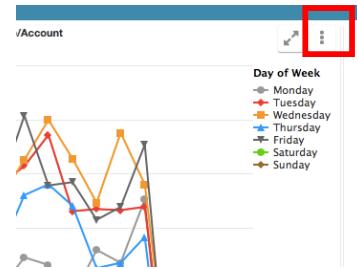
To replace the current chart with the one in the library, simply click it in the library and the charts will swap.

NOTE: This now means you are no longer looking at the default view for the category. You now have your own custom view that will be different to others' view.

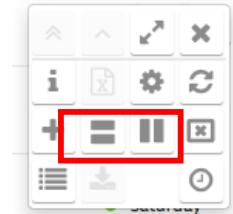
9.2 Add a new Chart Cell

Sometimes we want to add an item from the Chart Library into a new cell on the category. In this case, we need to create a new cell(s) on the category page. This involves splitting an existing chart cell. Categories always have at least one chart cell on them, so can always be split in this way.

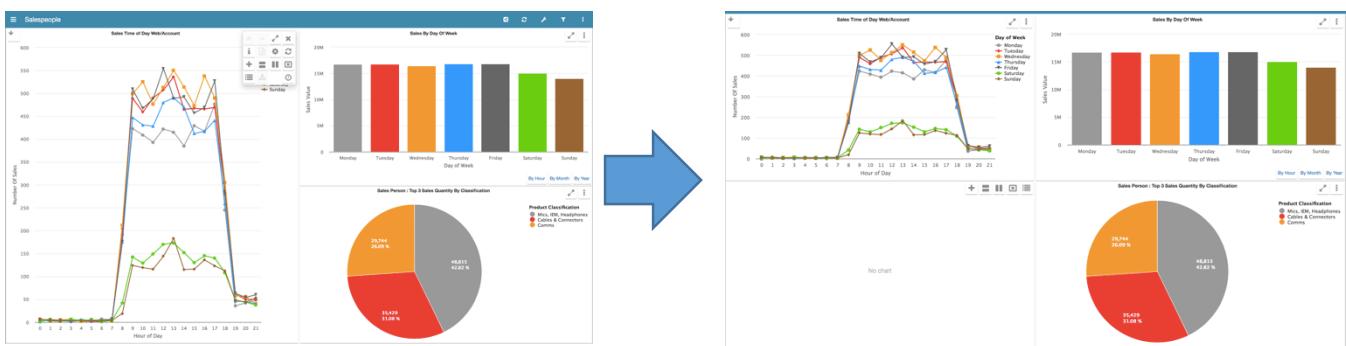
To create a new cell, we open the chart tools on the cell we wish to split.



There are two buttons we can use; the first will split from top to bottom, and the second from left to right. The best way to get to know these buttons is to experiment, so give it a go!



For this example, I am going to split my cell from top to bottom.



I now have an empty chart cell in the bottom left-hand corner. You will notice that there are buttons immediately available in the top righthand corner.

Now we can repeat the steps in section 9.1. and add a chart from the library to the new chart cell.

We now have four charts on our page.



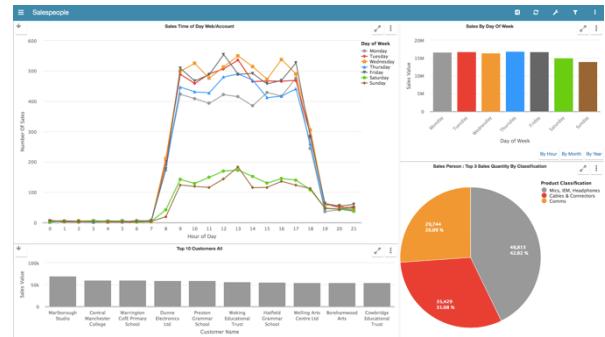
9.3 Resizing Chart Cells

Between the chart cells, there is a grey dividing line. If you hover over with a mouse or touch on mobile or tablet, you will see this line becomes highlighted by a wider grey bar.



You can now drag the bar from side to side, if the divider runs from top to bottom, as shown above. You can drag it up and down if you select a divider which runs from top to bottom.

You can drag and resize the chart cells to optimise the space used for the charts.



NOTE: There is a snap-to feature. If you drag a cell border close to the position of an adjacent border, then it will align with the existing line. This helps to create neat layouts and allows you to quickly line chart cells up.

Also, the size of a cell is held as a screen proportion. If you open the dashboard on a different device then it will resize using the proportions, redrawing to the available screen size.

IMPORTANT – This is now your own individual layout. If you look at other users' screens, they may not look the same as yours. You can now publish this layout to other users.

9.4 Publishing a Layout

There are two types of layout in the dashboard. Depending on your user account, you will either be restricted to see the default layout for a category, or you will be allowed to create your own tailored layout.

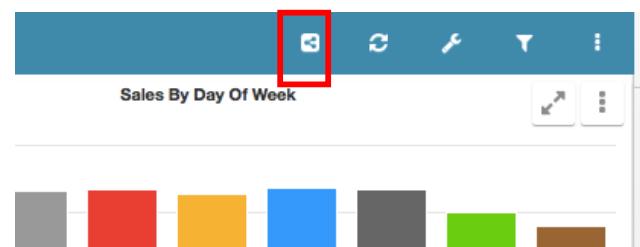
You will not have been able to complete any of the steps in Section 9 if you did not have the ability to create your own layout.

What if we want other users to see the layout we have now created? There are two types of user that we can push a layout to.

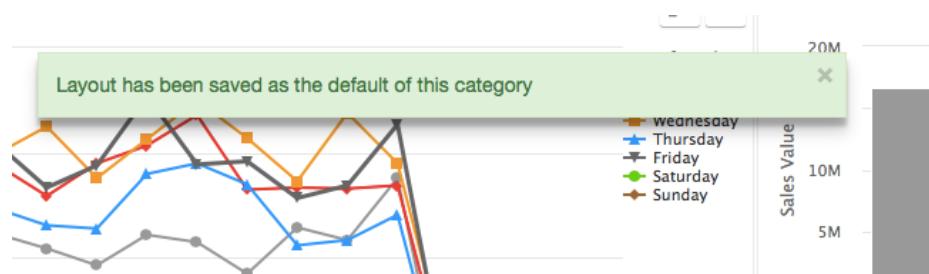
1. A user who does not have the ability to create their own layout. In Pi, we call this user type a Chart Viewer.
2. A user who can create their own layout but has never made a change to it, so they are currently viewing the existing default layout.

We cannot publish layouts to users who have their own tailored layouts.

To publish a layout, all we need to do is click the button which looks like  located in the top righthand corner of the dashboard.



Once published, you will receive a confirmation in a snack bar popup.



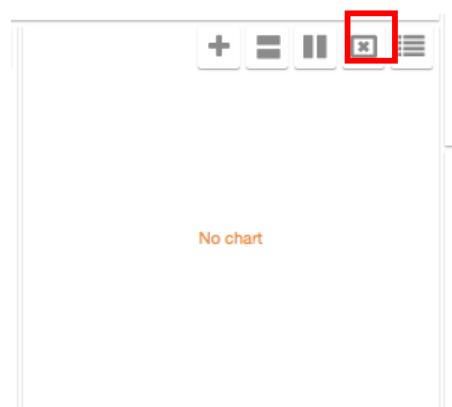
NOTE: Users will need to refresh their browser to view the newly published layout.

9.5 Removing a Chart Cell

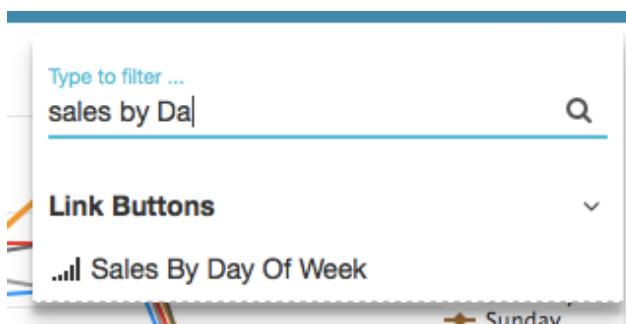
Let's look at removing a chart cell from your layout.



Open the chart tools for the cell. If it is an empty cell, then the delete button is close to the top right of the screen.



NOTE: This deletes the cell, not the chart. In the example above, if I delete the cell that the Sales By Day Of Week is located in, I can still open the chart library and retrieve the chart.



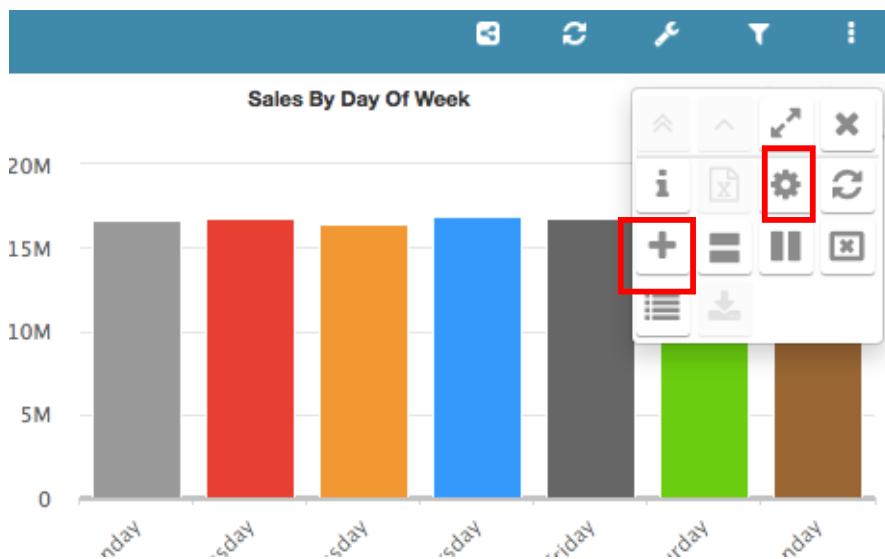
10 Create / Edit Charts

In this section, we will be introduced to the HTML Edit Chart screen.

We can open this screen in two modes: to edit an existing chart, or create a new one from scratch.

NOTE: You need to be a Chart Designer to have access to this part of the application.

We access the Edit Chart screen from one of two buttons on a chart cell.



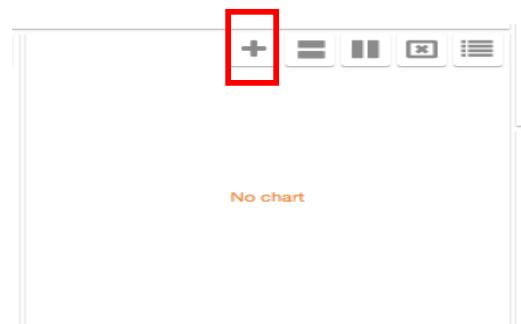
Edit the chart in the selected chart cell.



Create a new chart

NOTE: If you select 'Create a new chart' in an occupied chart cell, then the new chart will replace the current occupant. You will not delete the chart, it will still be in the chart library and can be retrieved using the steps in section 9.1.

On a new chart cell, the Add Chart button appears towards the top-right of the cell.

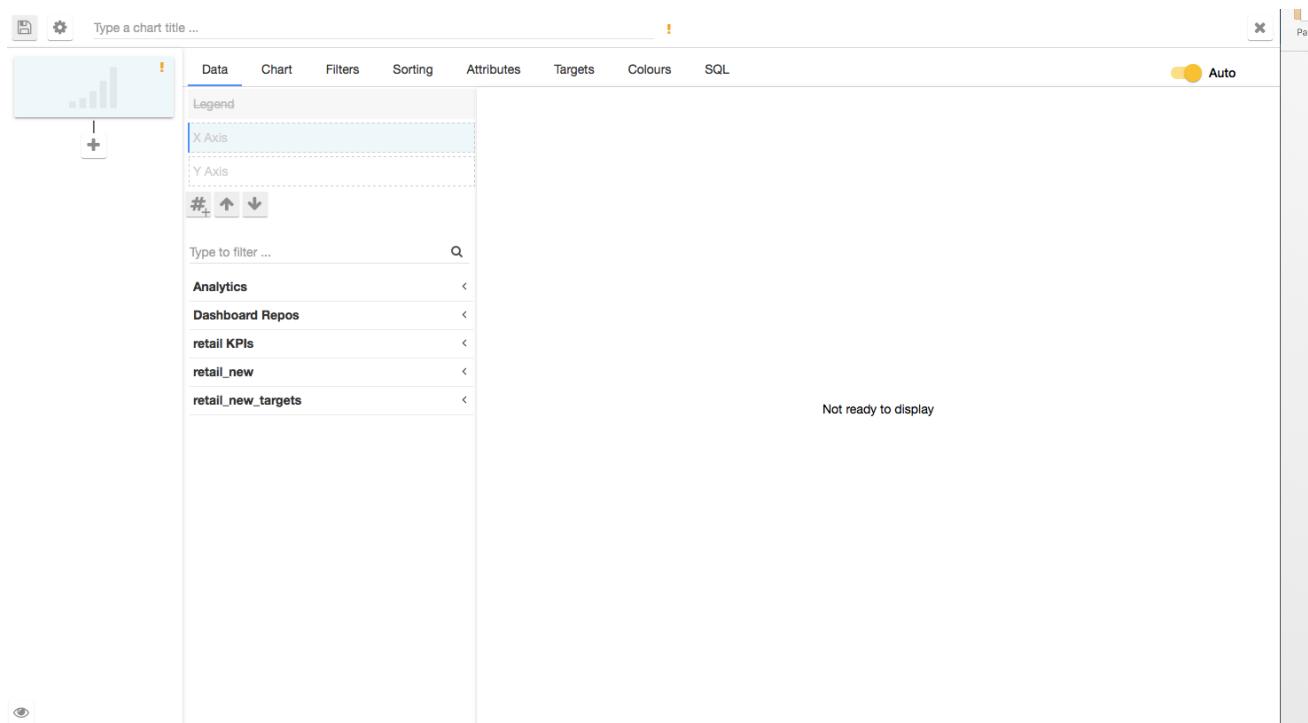


Regardless of whether we open the chart via editing or creating a new chart, the screen we open is the same. The only difference will be that the screen is either empty or pre-populated.

10.1 Create a New Chart

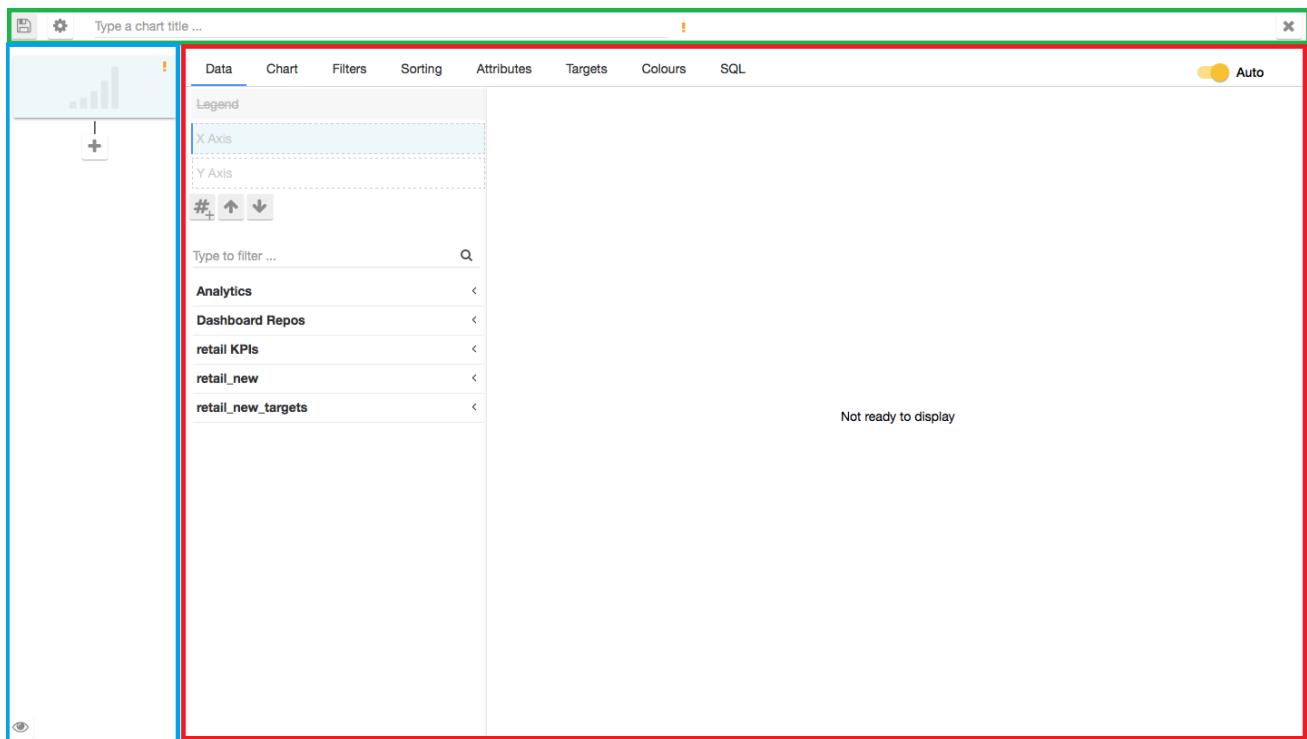
The best way to try this is to create a new chart cell, then click the Add New Chart button. 

Welcome to the Edit Chart screen.



In this chapter, we're going to go through each function one section at a time. First, let's take a quick tour.

Firstly, there are three main areas to the Edit Chart screen.



They've been coloured in green, red, and blue above.

Green: The Overall Chart Control.

Anything you change here acts globally over the whole chart and all drill levels.

Blue: The Drill Path

This shows how the user will drill down through the charts. Each step is represented as a separate chart.

Red: The Chart Definition

While most actions are configured in the Chart Control, anything you set in this panel influences the chart drill level selected in the left panel.

We will revisit all these panels in greater detail. For now, let's start with some simple scenarios.

10.2 Create a Simple Chart

The dashboard is designed to allow you to create a chart with only a few simple clicks.

Let's concentrate on the chart section of the Edit Chart screen first.

The screenshot shows the 'Data' tab selected in a top navigation bar. Below the navigation bar is a 'Legend' section containing 'X Axis' and 'Y Axis' fields, each with a delete button (#) and up/down arrow buttons for reordering. To the right of these fields is a search bar labeled 'Type to filter ...' with a magnifying glass icon. Below the search bar is a list of items under 'Analytics': 'Dashboard Repos', 'retail KPIs', 'retail_new', and 'retail_new_targets'. The 'retail_new_targets' item has a note 'Not ready to display' next to it. On the far right of the panel is a yellow circular button labeled 'Auto'.

We start with the Data panel. We always start with the data!

10.2.1 The Data Source

First, we have to decide which data source we want to use. The data sources are listed on the left portion of this panel.

Analytics	<
Dashboard Repos	<
retail KPIs	<
retail_new	<
retail_new_targets	<

In my example here, I am going to build on the Retail data source, as it will return data that we have seen in the previous chapters. If you're presented with a list of data sources here that you aren't familiar with, a good place to start is to use the source from a chart that you are familiar with. Section 6.1. showed us how to find the data source of an existing chart, using the chart information button.

If I click on the arrow next to the data source, this will expand the list and show me the objects available.

At the top of the expanded list, we are given a count of the objects in the data source. In this example, there are 65 objects available.

Analytics	<
Dashboard Repos	<
retail KPIs	<
retail_new	Total: 65
Customer Area	
Customer Location	
CUSTOMERS	▼ ▾
Address1	
Address2	
Business Sector	
County	
Cus Corp Sex	
Customer Name	
Postcode	
Telephone	
Town	
FOOTFALL	

10.2.2 The X-axis

We are going to select the item that we wish to display on the x-axis of the chart. Below, I Have selected the x-axis field at the top of the Data section.

A screenshot of the Panintelligence interface showing the 'Data' tab selected. In the 'Legend' section, the 'X Axis' field is highlighted with a blue border, indicating it is selected. Below it, the 'Y Axis' field is visible.

I can see it is selected because the background is grey and there is a blue line on the left-hand side of the field.

The object list below is now filtered to only show dimensions. This is because the default chart type (bar chart) only supports dimensions on the x-axis.

Now I scroll down the list and select the dimension I am interested in.

Here I will select Sales Person.

A screenshot of the Panintelligence interface showing the 'Data' tab selected. In the 'Legend' section, the 'X Axis' field is highlighted with a blue border. In the 'Y Axis' section, the 'Sales Person' field is selected, indicated by a blue border. Below the Y Axis section, a list of dimensions is shown, including 'Retail', 'Customer Area', 'Customer Location', 'CUSTOMERS', 'FOOTFALL', 'Fraud', 'Image Url', 'Kens Object', 'Order Number', 'Sale Days Ago', 'SALES', and 'Sales Person'. The 'Sales Person' item is currently selected, highlighted with a blue border. A note on the right says 'Not ready to display'.

NOTE: The chart panel on the right still does not display a chart. This is because we still need to add at least one more item to the chart. A bar chart won't draw without at least an x-axis and a y-axis item.

10.2.3. Y-Axis

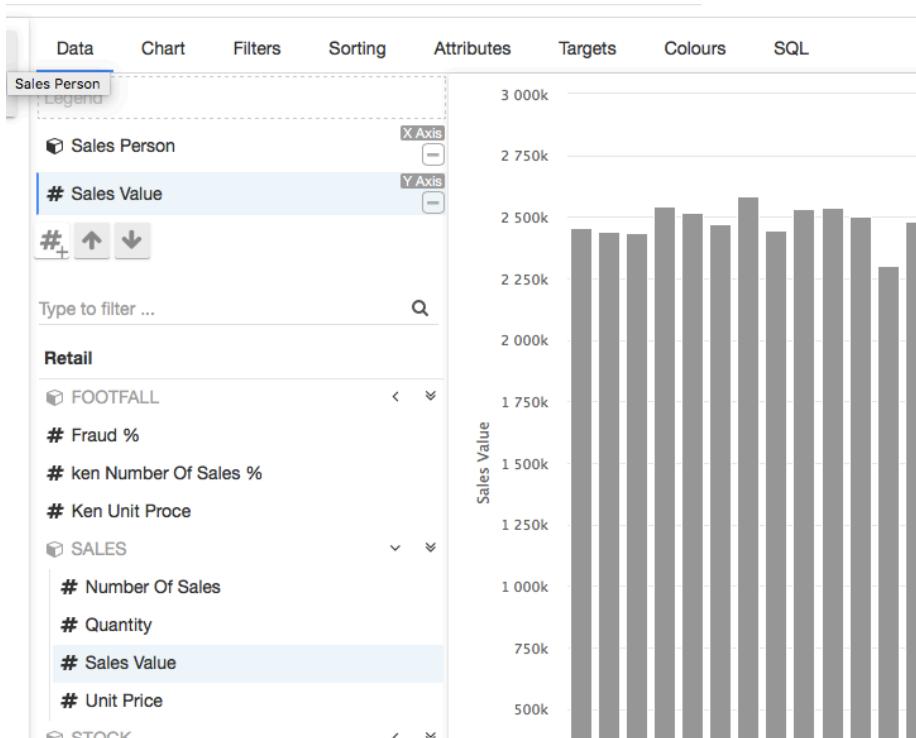
Now we select the y-axis field in the Data screen.

The screenshot shows the 'Data' tab selected in the top navigation bar. A legend entry for 'Sales Person' is visible. Below it, a 'Y Axis' section contains a single item, '# Sales Value'. At the bottom of this section are three buttons: '#', an upward arrow, and a downward arrow. To the left of the Y-axis section, there is a blue vertical bar indicating that the 'Sales Value' field is currently selected.

As with the x-axis, the field is selected by clicking on it. The field is grey with a blue line on the left to indicate that it is selected.

The object list below is filtered to show only Measures, as this is a requirement of the bar chart.

Find the measure you require and click on it. It will now appear in the Y-axis and the chart will draw.



10.2.4 Exploring Data

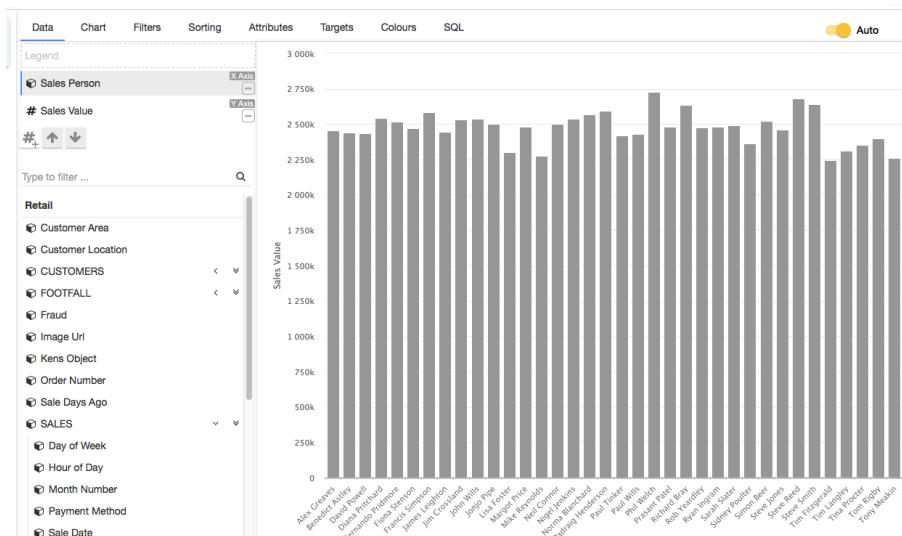
You can now start to explore the data.

The screenshot shows the Panintelligence interface with the 'Data' tab selected. In the legend area, there are two items: 'Sales Person' and '# Sales Value'. To the right of these items is a legend editor with 'X Axis' and 'Y Axis' sections, each containing a remove button (a minus sign). A red box highlights these remove buttons.

For example, you could click the Remove Object buttons to remove an element of data. However, the simplest way to accomplish this is to select the object you wish to replace and click on a new object to view.

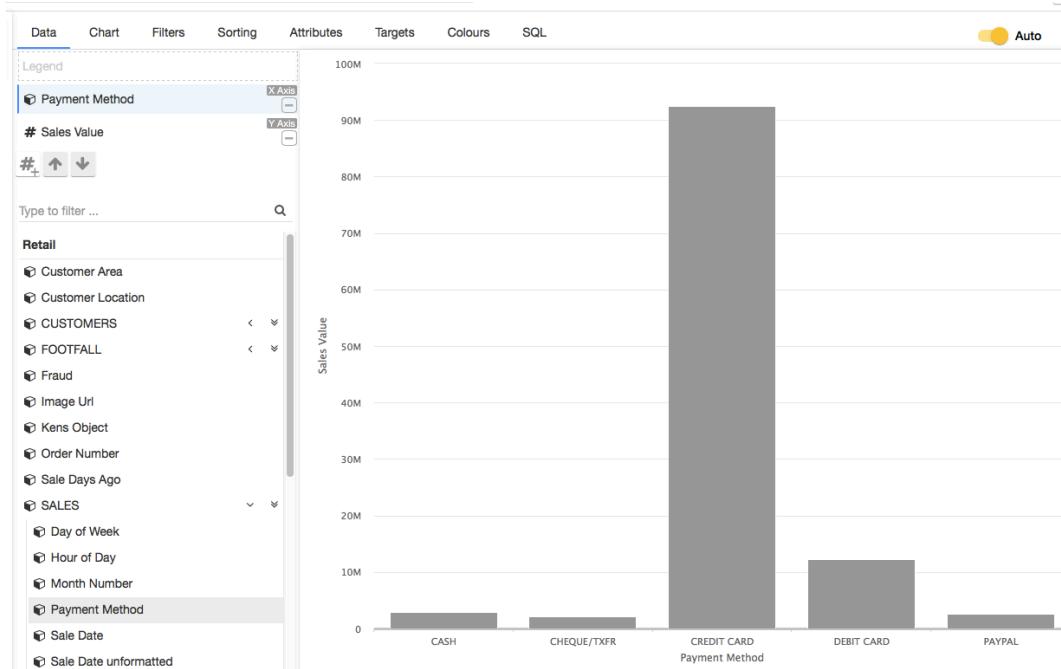
This allows you quickly to change the data displayed and allows you to explore the data set.

Let's select the x-axis again.

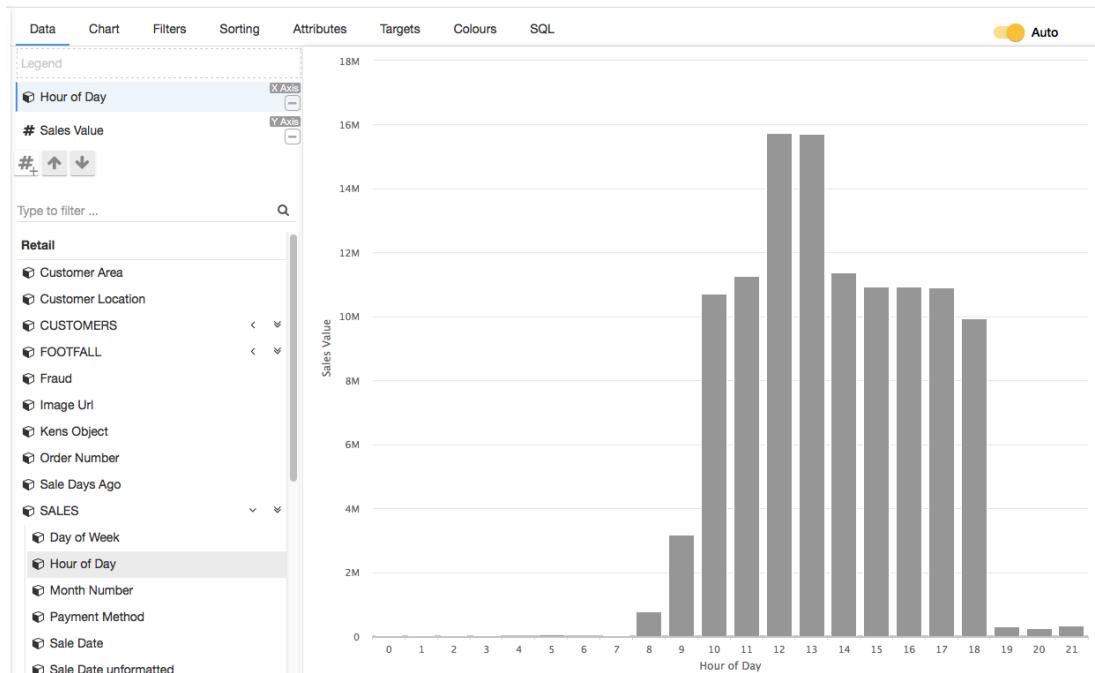


I can now quickly click any other Dimension object to view the data.

Let's try Payment Method...



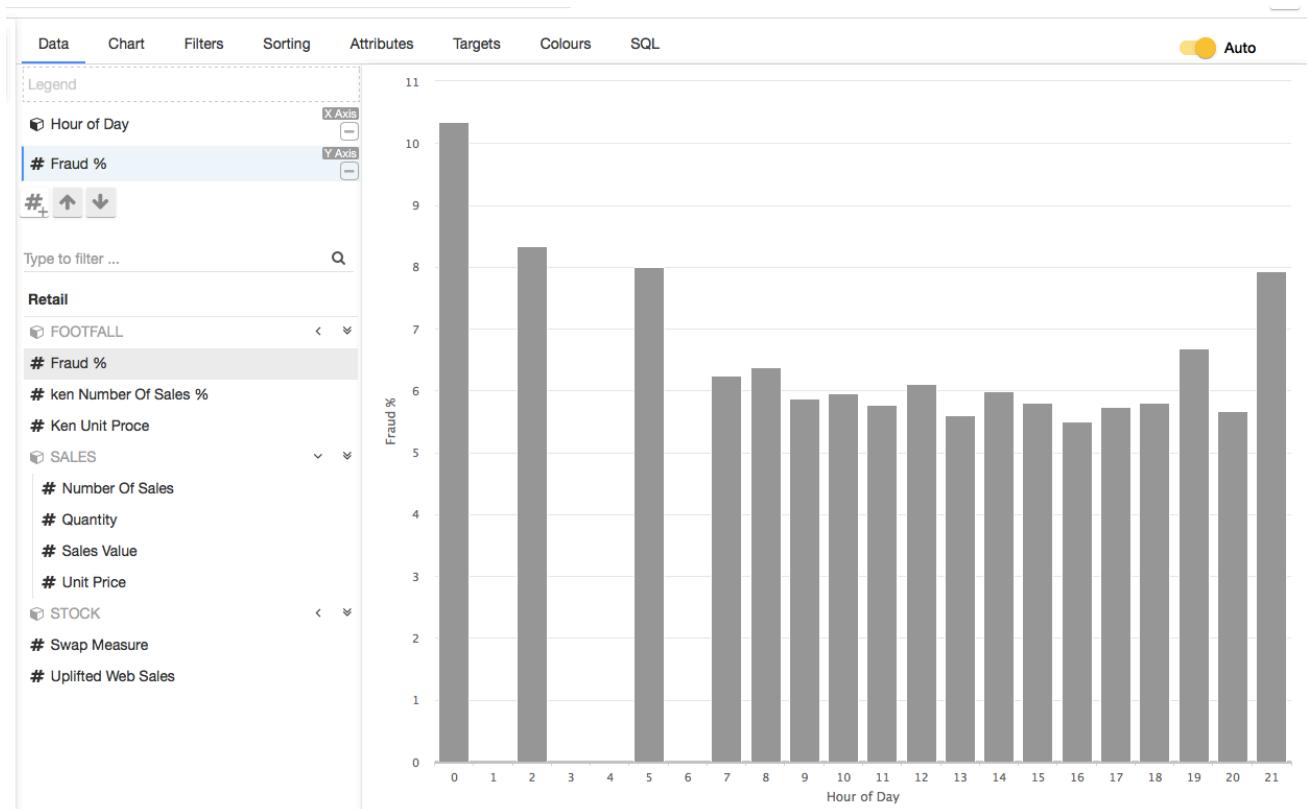
Or we can select Hour Of Day.



I can also do the same thing by selecting the y-axis

The screenshot shows the Panintelligence interface with the 'Data' tab selected. On the right side, there is a legend section with two items: 'Hour of Day' and '# Sales Value'. Below the legend are three buttons: '#+' (add), an upward arrow, and a downward arrow. To the right of the legend, there are 'X Axis' and 'Y Axis' dropdown menus, both currently set to their default values. The '# Sales Value' item is currently selected.

I can now change the chart to see Fraud % by hour of day.



We can now see that there is a lot of fraud happening at night!

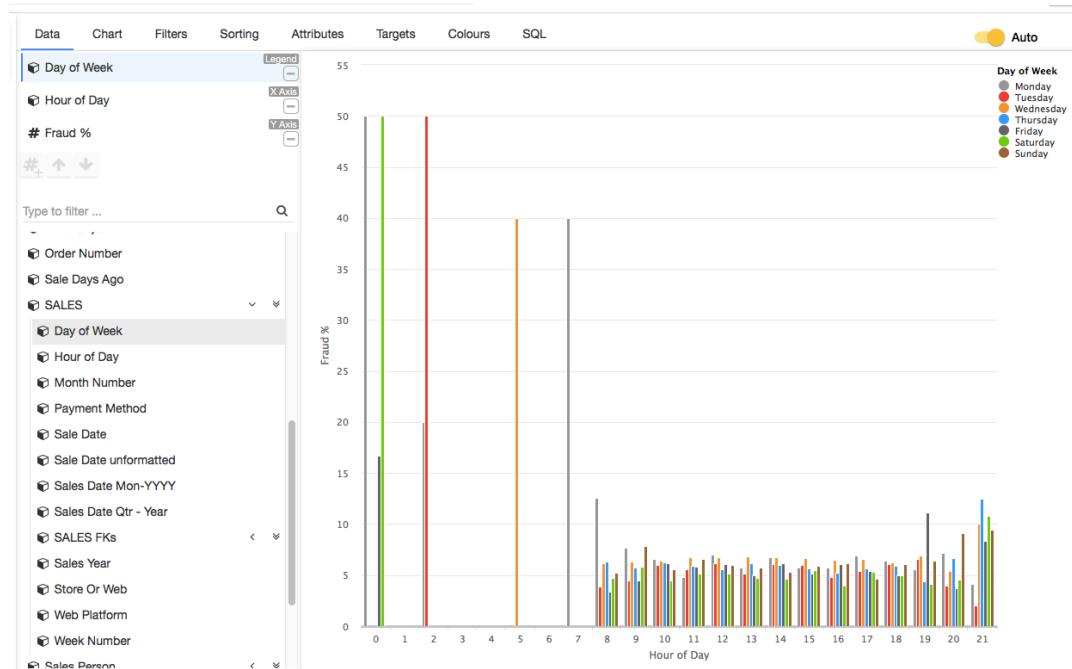
10.4.5 Chart Legend

I can now introduce a 2nd dimension. (The bar chart supports two dimensions.)

To add the second dimension, I'll select the Legend field.

The screenshot shows the 'Legend' tab selected in the top navigation bar. The legend panel contains two items: 'Hour of Day' and '# Fraud %'. Each item has an 'X Axis' and 'Y Axis' dropdown menu. Below the legend are buttons for '#', '+', up arrow, and down arrow.

Just like before, the field is coloured grey and a blue line indicates that it is selected. This chart type will allow only dimensions on the legend. The object list is filtered to show only dimensions.

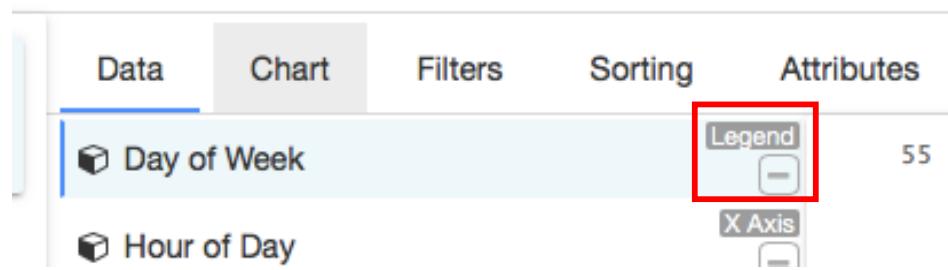


Here we can click on the Day of Week object. I now have a chart showing the percentage of fraud occurring by Hour of Day and Day of the Week. This data

suggests that I have been targeted by fraudsters during the night on certain days of the week.

As with the x-axis and the y-axis, I can quickly explore the data by selecting the legend and clicking on other objects.

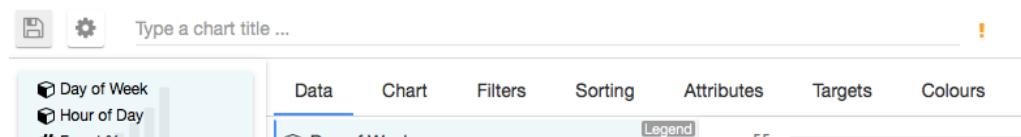
If I wish to remove the legend, then I would click on the Legend Remove button.



10.3 Save Chart

In the section above, I have now created a chart. I would now like to save it.

First, I must give it a name (or description).



At the top of the Edit Chart screen, I can set the name of the chart.

NOTE: at the moment, there is an orange exclamation mark to the right of the name field.

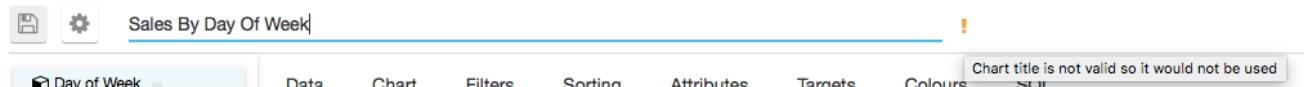


If I hover over the exclamation mark, the error is visible. I must provide a name to get rid of this error message.

As I start typing, the exclamation mark should turn to a green tick and the save button will become active.

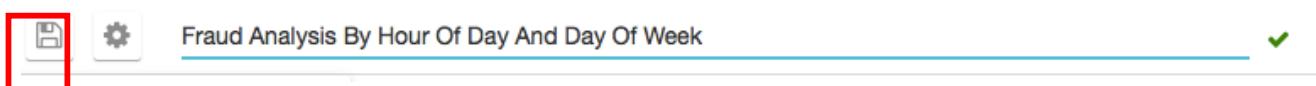


However, if I enter the name of an existing chart, the exclamation mark will return and the save button will become inactive.

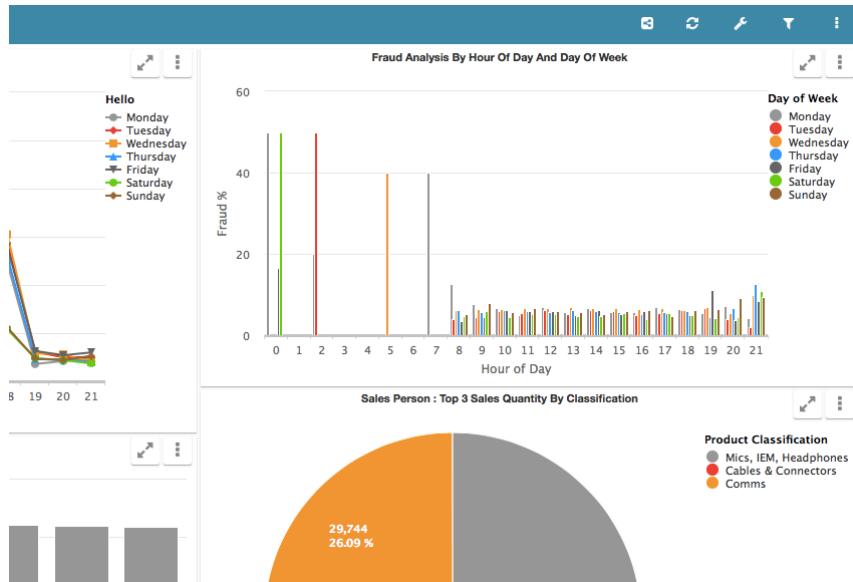


This is because chart names must be unique. The dashboard will not allow you to save your chart with the same name as an existing chart.

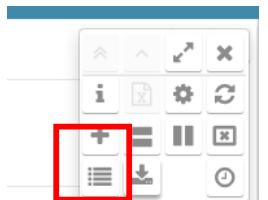
Once you have entered a unique name, you will be able to save the chart.



The chart you just saved will now appear in the cell you were editing.



If you were in a chart cell which already contained a chart, then it will have replaced that chart. The original chart has not been removed though; you will be able to find it in the chart library.



Type to filter ...

sales

Account Customers

- ...ll Quarterly Sector Proportions {{Sales Year}}
- ...ll Sales Time of Day Web/Account
- ...ll Sector Split of {{Sales Year}} Corporate C
- ...ll Sex Split, Personal Customers {{Sales Ye}}
- ...ll Top 10 Customers {{Sales Year}}

Dynamic Drill

- ...ll Sales By Store

Large Table

- ...ll All Sales By Salesperson - Download all 1

Link Buttons

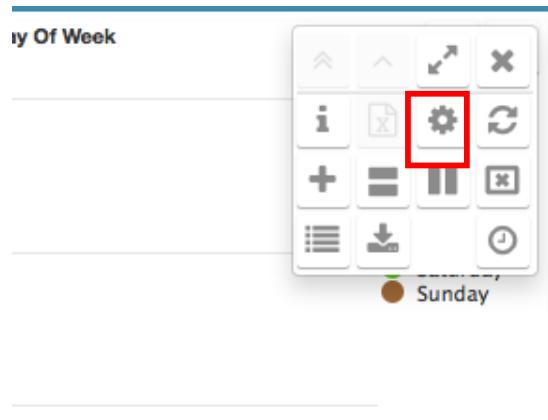
- ...ll Sales By Day Of Week
- ...ll Sales By Hour Of Day

191 - Sales By Day Of Week

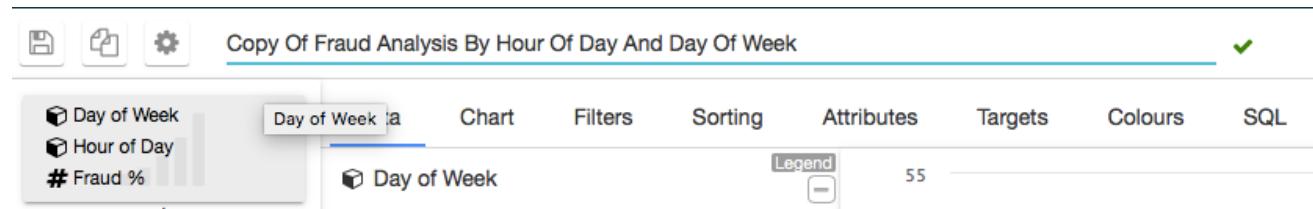
10.4 Duplicating a Chart

You can duplicate a chart very simply.

Firstly, edit the chart you wish to duplicate.



Then alter the chart's name.

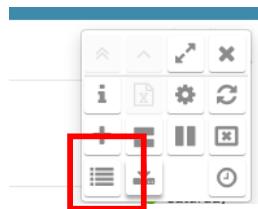


You'll notice there is another button next to the Save icon which has become available.



Clicking this button will save the chart as a new chart, leaving the original chart as was.

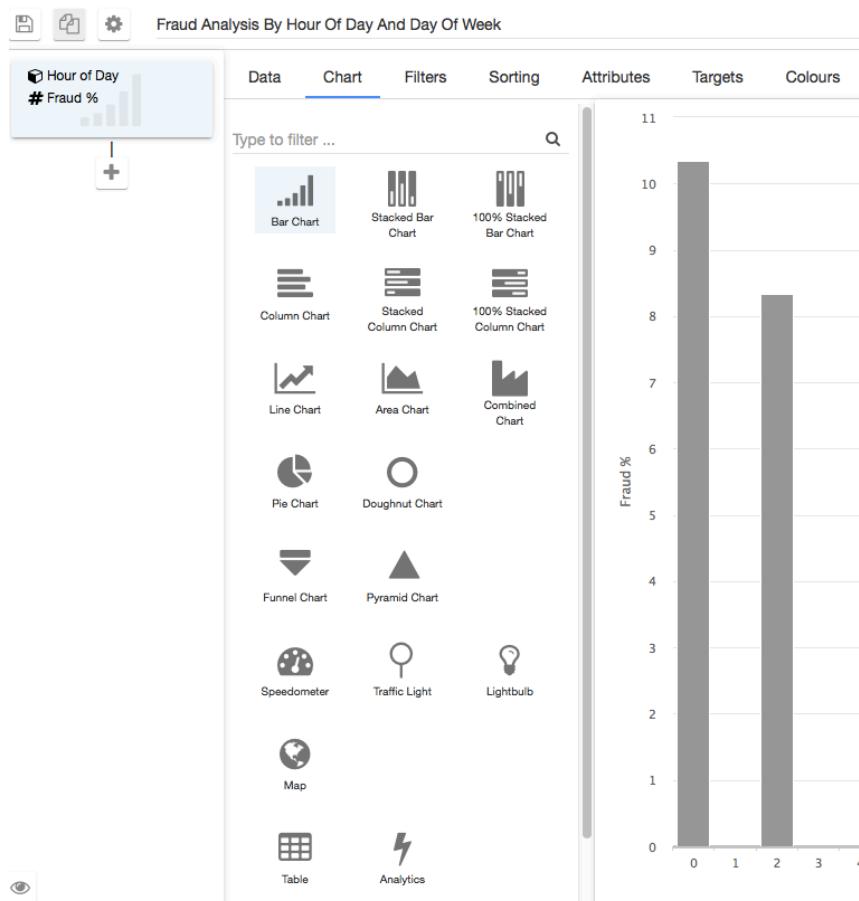
NOTE: When we Save As, we do not replace the chart in the cell; you'll need to go into the Chart Library and find it.



10.5 Changing the chart type

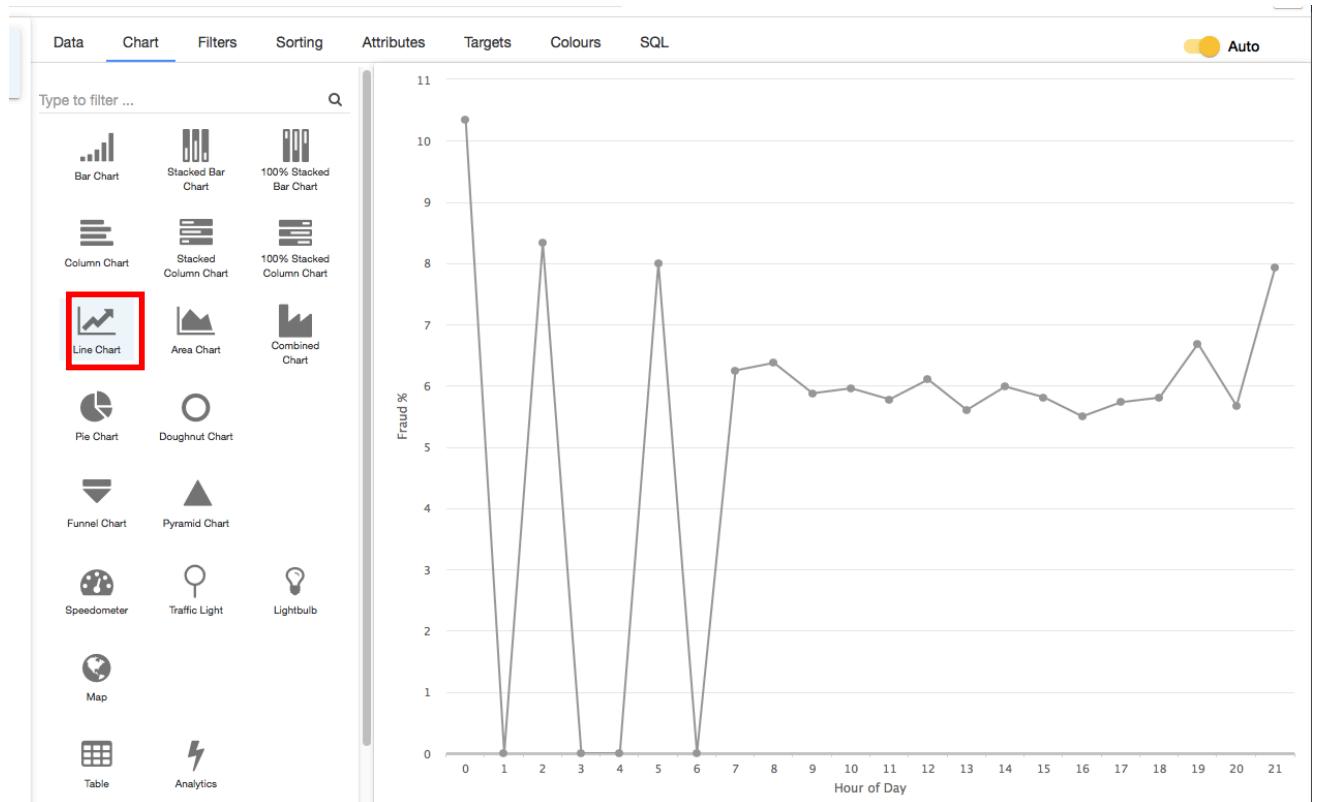
Changing the chart type is another simple way of exploring the data. Different chart types will convey the appropriate meaning within the data.

Firstly, I will use a chart without a legend item. To change the chart type, select the Chart tab in the Edit Chart window.



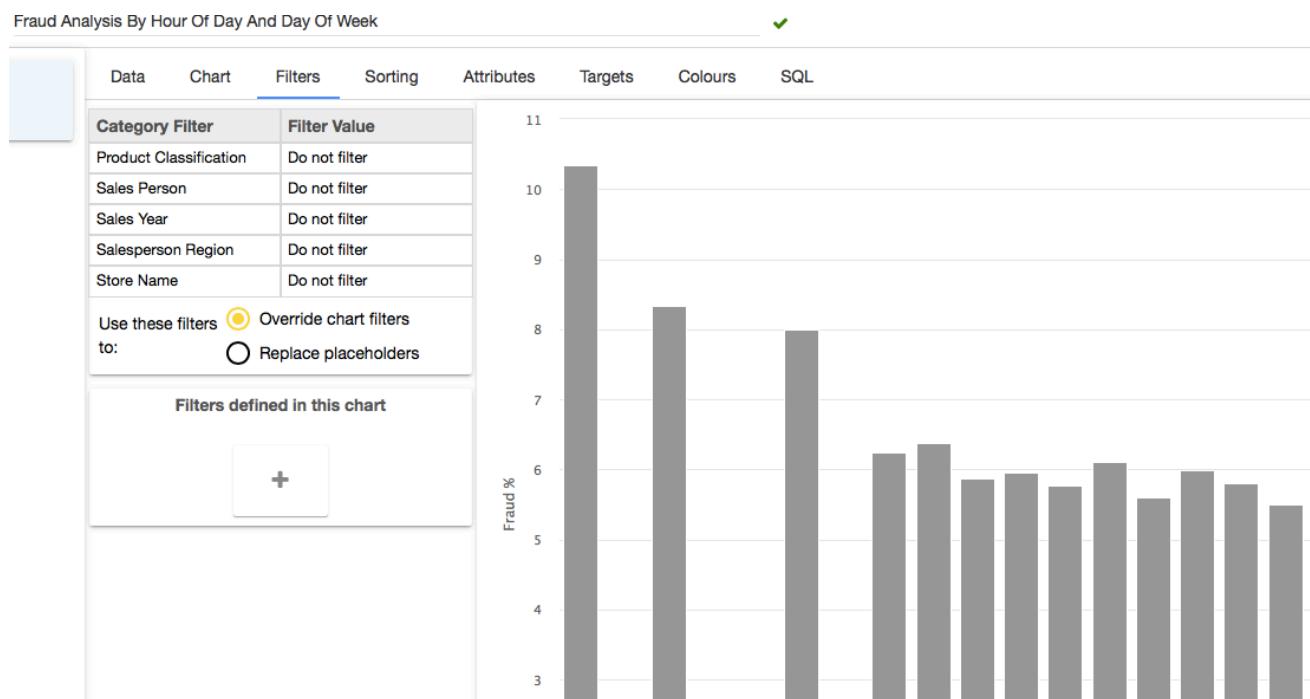
I can now see a complete list of all chart types available to use. Later in this document, you will complete descriptions of all chart types. Some even have their own sections entirely. For now, we are only concerned with the ability to select a different chart type.

To switch to a different chart type, click on the desired chart icon and the chart on the right will update.



10.6 Filtering Data

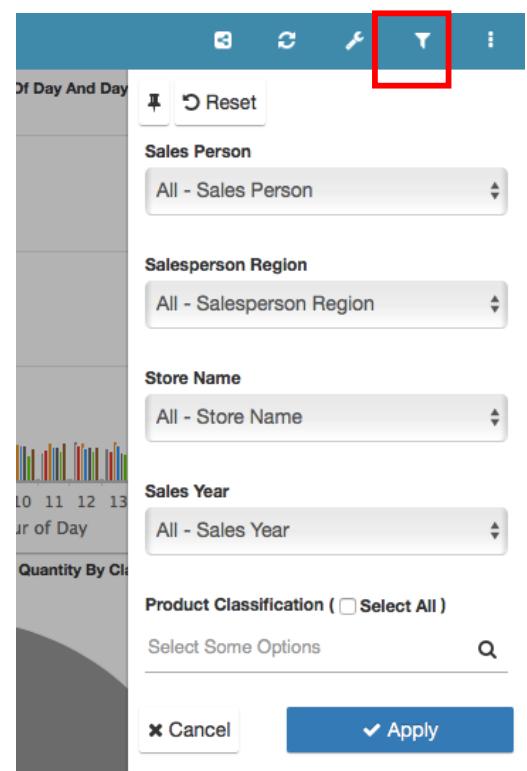
At present, our chart is not filtered. It is showing all data that is available to us.



We can open the Filters tab to view and create filters.

VERY IMPORTANT: We learnt earlier about category filters. These are the page-level filters that apply to all charts on a page.

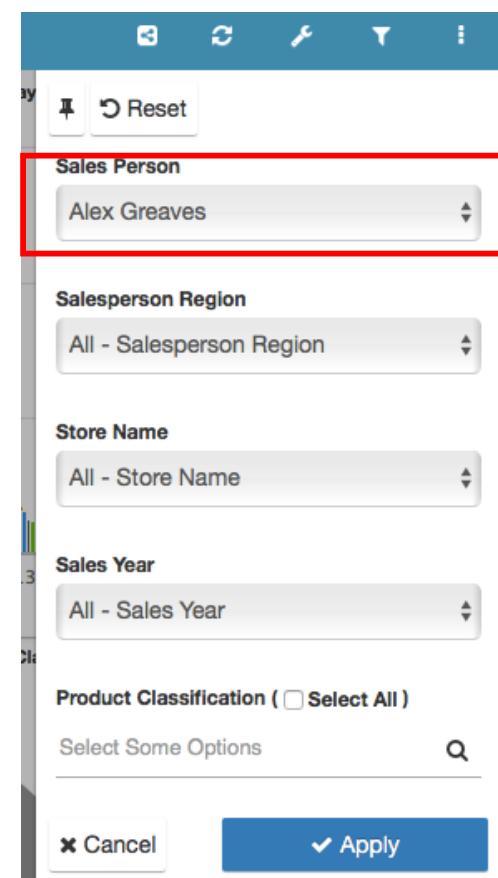
The default behaviour is for these filters to take precedence over filters within a chart.



The top section of the filters tab shows you what impact these filters are having.

Category Filter	Filter Value
Product Classification	Do not filter
Sales Person	Do not filter
Sales Year	Do not filter
Salesperson Region	Do not filter
Store Name	Do not filter

In the example above, no filters are selected on the page. Let's go back to the page and apply some filters and re-enter the edit chart screen.



You will see that the category Filters panel in the Edit Chart screen updates to reflect the filter selections on the page.

Category Filter	Filter Value
Product Classification	Do not filter
Sales Person	Alex Greaves
Sales Year	Do not filter
Salesperson Region	Do not filter
Store Name	Do not filter

You do have the option to ignore page level filters.

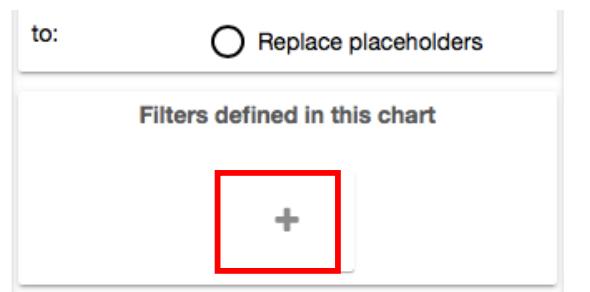
Placeholder	Replace With
<code>{{Sales Person}}</code>	Alex Greaves

Use these filters Override chart filters
to: Replace placeholders

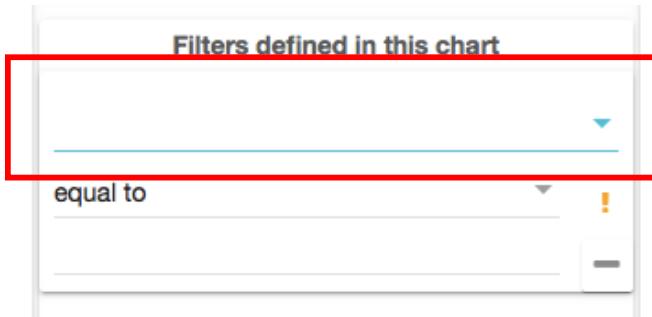
If you select the replace placeholders option, then filters from the page will be ignored. This allows you to manually control exactly how they are applied. To find out more, see the section on manually overriding category filters.

In this example, we'll stick with the default option, which is to override the chart filters, i.e. allow the category filters to take precedence.

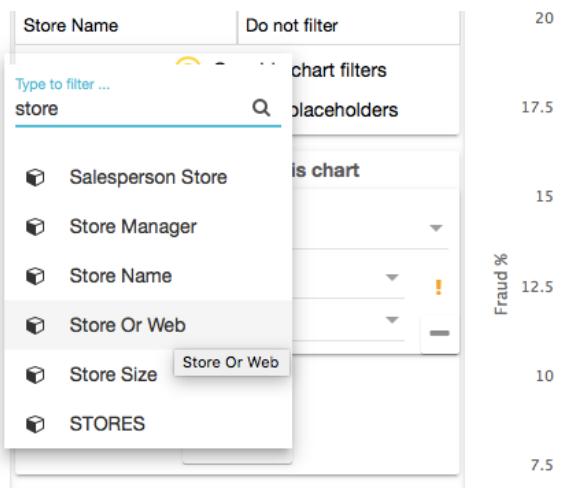
To add a new filter, click on the + button.



I can then select the object to filter on by dropping down the object list.

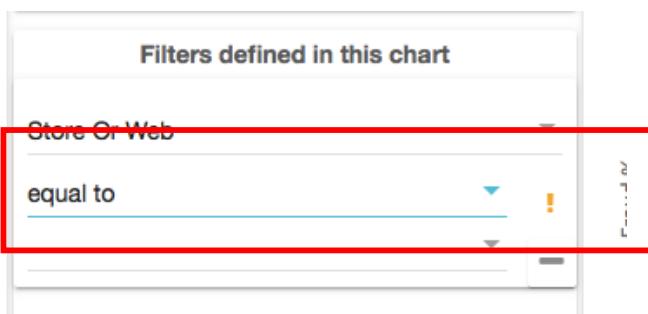


This opens the following selector. I can filter the list by typing in text to match.



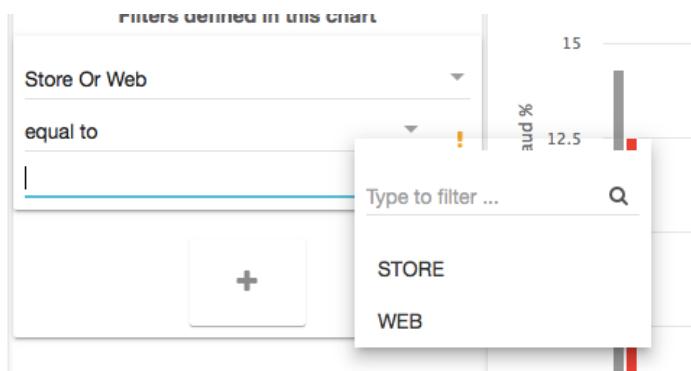
Clicking on the object will select it.

Next, I can select the operator. By default, it is set to equal to.



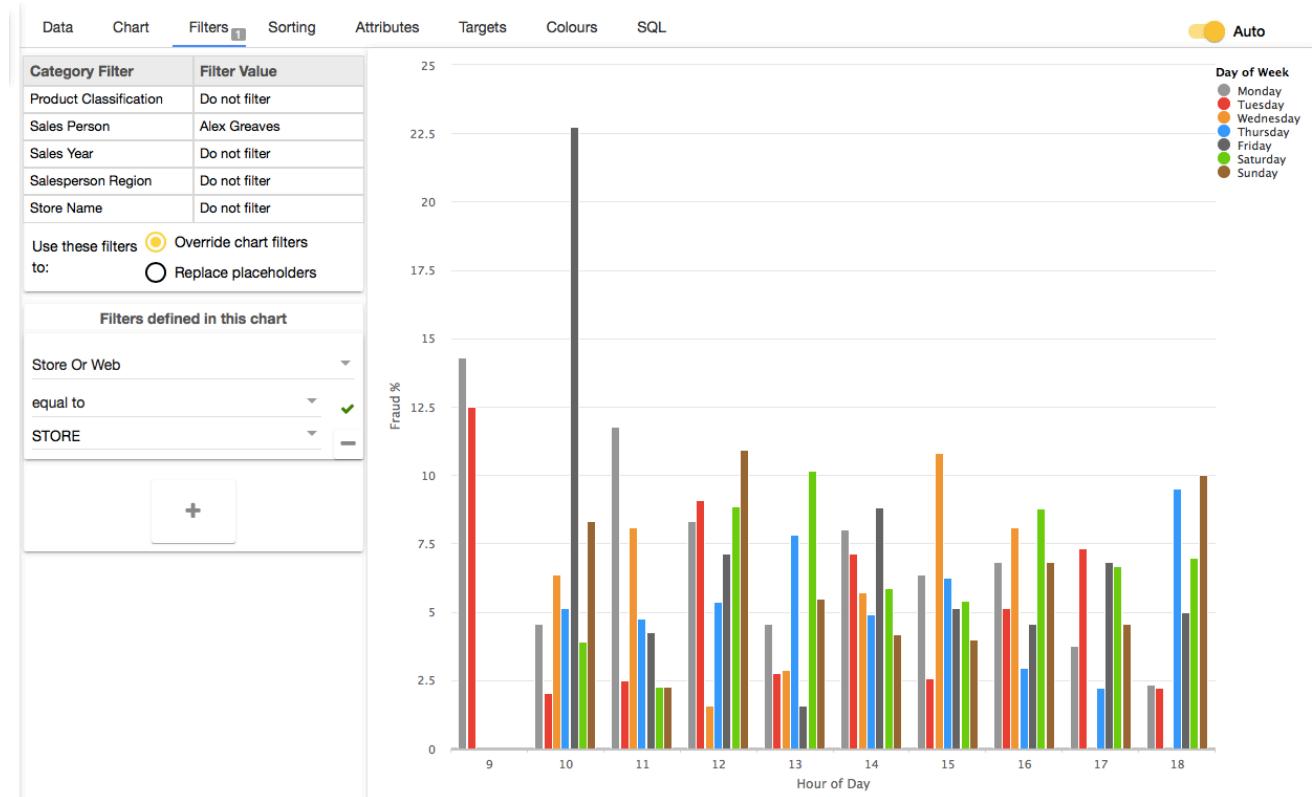
You can change it to something else, but we'll stick with 'equal to' for now.

Finally, select the operand. This will show a list of available items. Click on one to select it. As I'm using 'equal to', I can only select one item here.



Now the filter is completed, clicking anywhere else on the screen will apply the filter.

The filter is now applied; I'm only viewing data from purchases made in store.



You can continue adding filters using the + button.

NOTE: If I add a filter using the same object that is used as a category filter, then I will receive a warning which tells me that, on the category page, the filter will be ignored.

Category Filter	Filter Value
Product Classification	Do not filter
Sales Person	Alex Greaves
Sales Year	Do not filter
Salesperson Region	Do not filter
Store Name	Do not filter

Use these filters Override chart filters
to: Replace placeholders

Filters defined in this chart

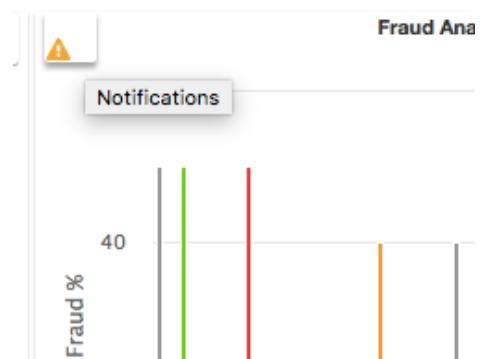
Store Or Web

equal to STORE

Sales Year

equal to 2018

The filter here is orange, showing it will not be applied.



If I save the chart with this filter, I will get a message in the Notifications panel.

If you click on the Notifications button, you will see more information about the warning.

Notifications

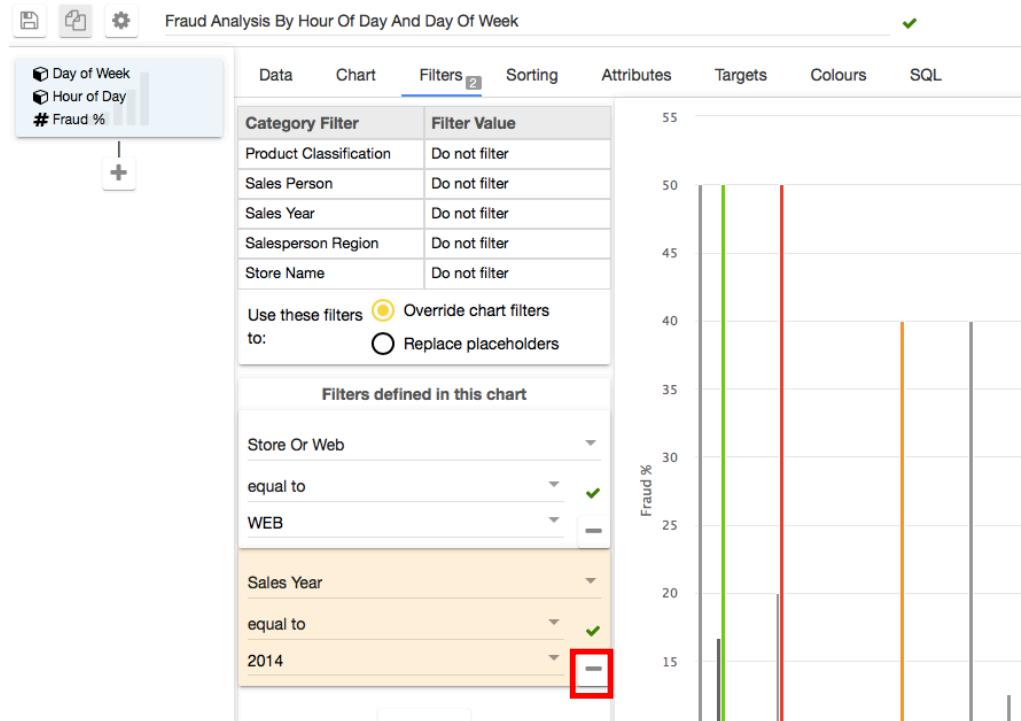
i Chart Info </> Debug

Notifications

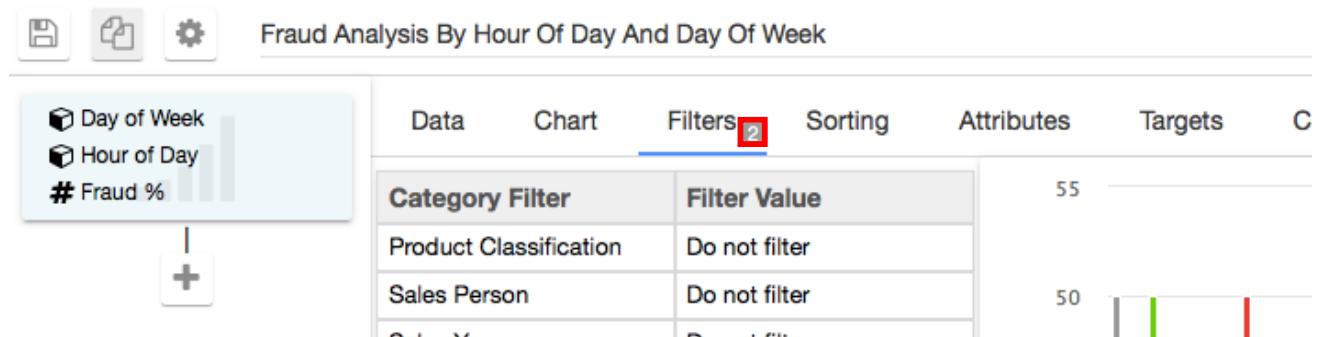
⚠ This chart has warnings:

- Ignored the chart filter value '2014' for 'Sales Year' as it has been overridden or ignored.

To remove a filter, all you need to do is to click the – icon on the filter.



Let's look at how to notice which filters are applied at a glance.

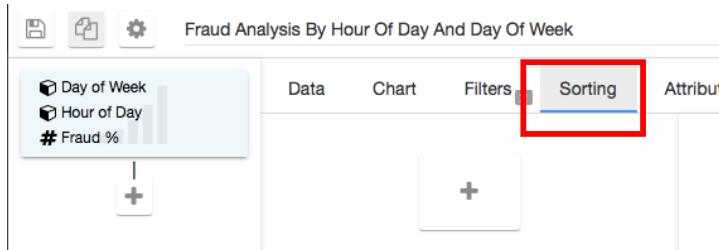


Notice that when filters are applied to the chart, a small number appears next to the Filters tab. This shows that the chart contains two filters, without needing to even open the tab.

10.7 Sorting Data

It is often important to sort data from largest to smallest, or smallest to largest. Ranking data in this way encourages the observer to understand either that the largest or smallest amount is better or worse than the other.

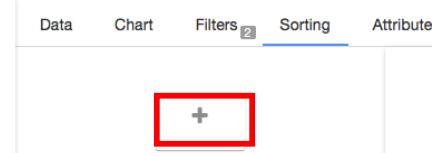
What better way is there to encourage friendly competition than to show who or which team performs better than others?



The screenshot shows a dashboard titled "Fraud Analysis By Hour Of Day And Day Of Week". At the top, there are several icons: a file, a refresh, a gear, and a search. Below these are tabs: "Data", "Chart", "Filters", "Sorting" (which is highlighted with a red box), and "Attribute". On the left, there's a sidebar with three items: "Day of Week", "Hour of Day", and "# Fraud %", each with a small icon. A large plus sign icon is at the bottom of the sidebar.

Let's select the Sort tab by clicking on it. Once selected, its background becomes grey and it's underlined in blue.

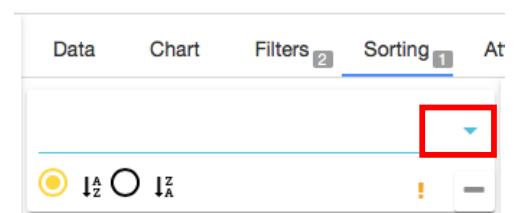
To add a sort, you click on the + icon.



The screenshot shows the "Sorting" tab selected. Below it is a large plus sign icon, which is highlighted with a red box.

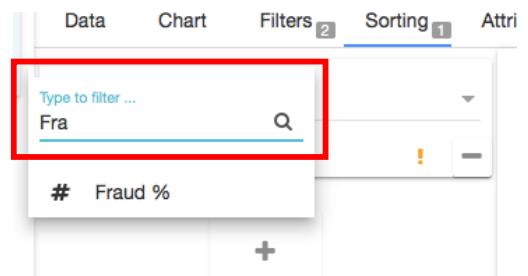
This then shows the Sort Box.

Select the object to sort on using the blue downward arrow.



The screenshot shows the "Sorting" section. It includes a blue downward arrow icon, which is highlighted with a red box, indicating where to click to select the sorting object.

You can type a search value into the Filter Box.



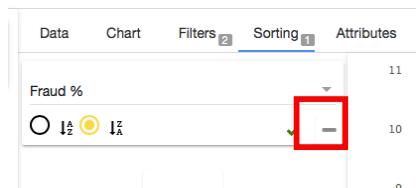
The screenshot shows the "Filter" section. There is a search bar with the text "Type to filter ... Fra", which is highlighted with a red box.

Select the item; in this example, I am going to choose fraud percentage, which is the same object as I use on the y-axis of the chart.

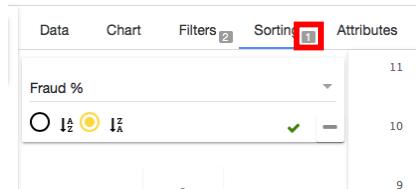
I then choose whether I want to sort smallest to largest, or largest to smallest.



To Remove a sort, you can click the – button.

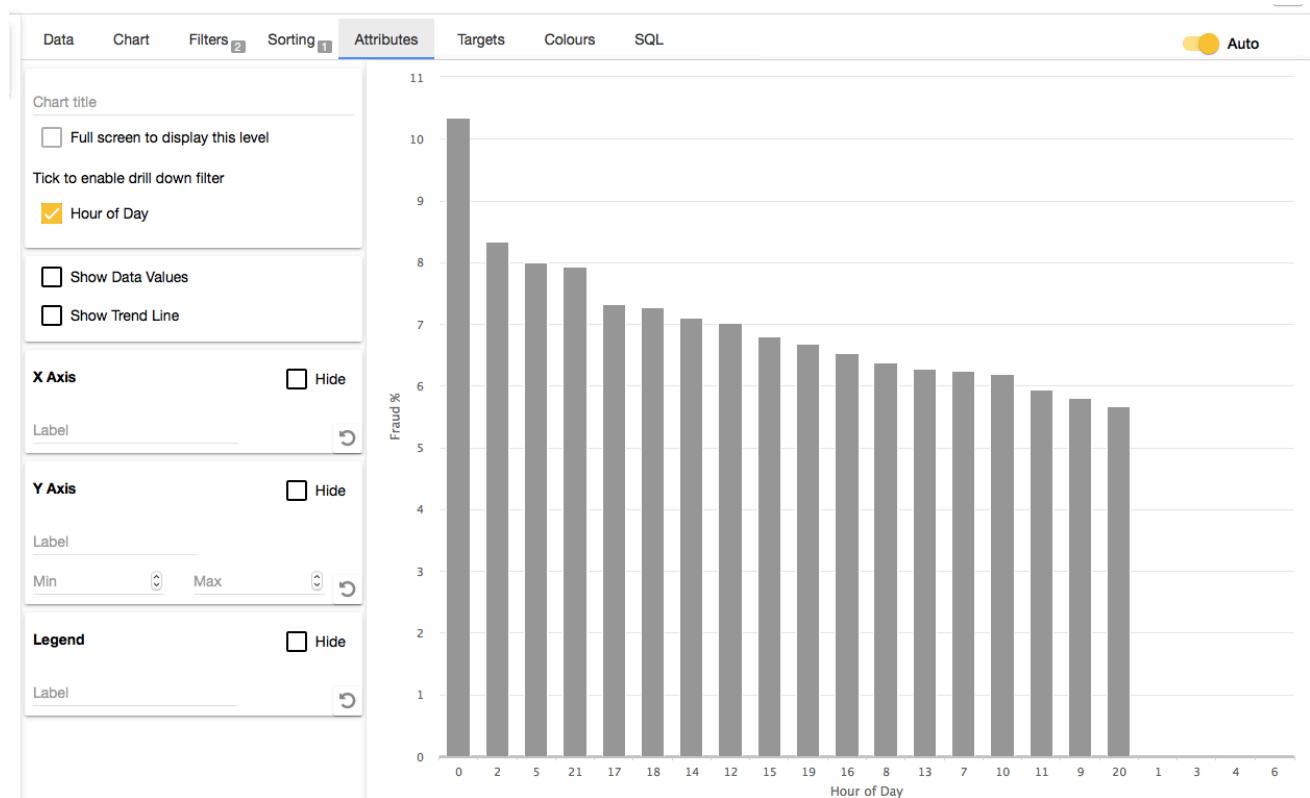


A number next to the Sort Tab indicates how many sorts are applied to this chart's drill level.



10.8 Attributes – Chart

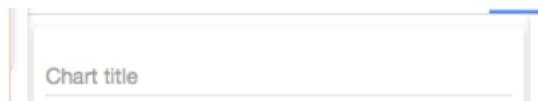
This section will deal with the attributes of a chart. There is a whole chapter dedicated to data tables in this document; please refer to that section for the behaviour of this panel when dealing with data tables.



There are several fields of interest on this tab.

10.8.1 Chart Title

This field allows us to set a different chart title at each level of drill down. You can also set this at the top level.



A very useful feature in the title is to use replacements to display any filters applied to the chart. You do this by entering an object name enclosed in {{ }} (double braces).

The screenshot shows the 'Fraud Analysis By Hour Of Day And Day Of Week' interface. On the left, there are two drill-down levels. The first level has a chart titled 'Hour of Day' with 'Fraud %' as the metric. The second level has a chart titled 'STORES' with 'Fraud %' as the metric. A red box highlights the 'Hour of Day' chart. A red arrow points from this box to a text input field in the center labeled 'You select {{Hour of Day}} to drill.' Below this field are several checkboxes: 'Full screen to display this level', 'Tick to enable drill down filter' (which is checked), 'Show Data Values', and 'Show Trend Line'. To the right is a vertical axis ranging from 7 to 11.

NOTE: I have used the object from the upper drill level; now when the chart is drilled on a chart page. This is a great way to show the user that the chart has a filter.



This same approach can be used for category filters, parent filters, and any other session filters.

10.8.2 Drill to full screen.

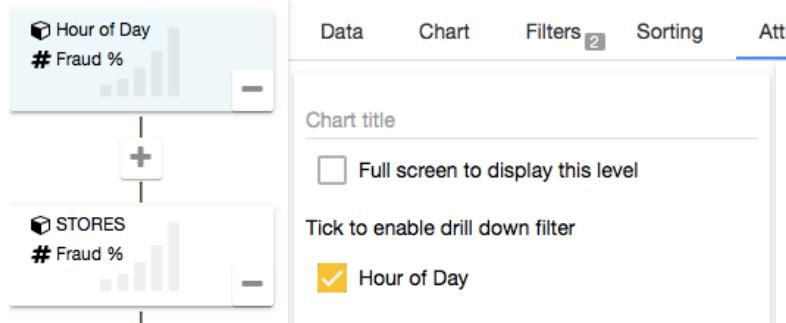
Full screen to display this level

This tick box does not apply to the top drill level of a chart. When ticked, the chart will automatically open the drill step in full screen.

If the user is already viewing the chart in full screen mode, this has no effect. This function is particularly effective when drilling to a data table with many columns.

10.8.3 Enable drill down filter

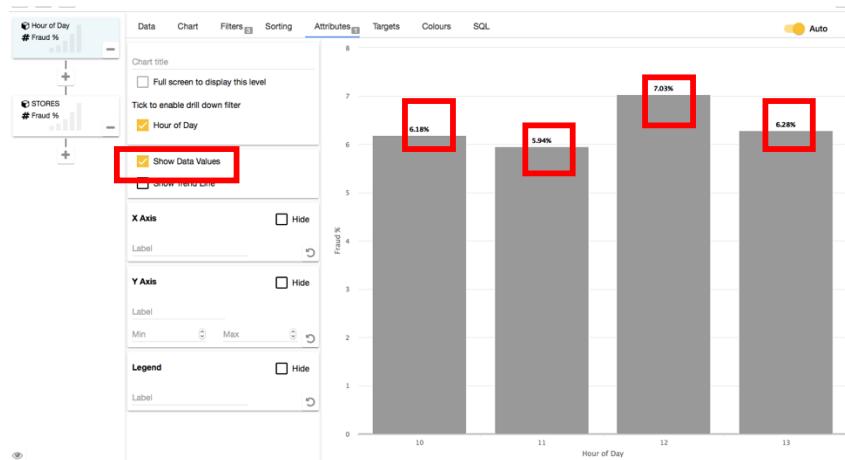
This option is ticked by default. Normal drill behaviour filters the chart data depending on the item the user selects. However, you can override this by unticking this box if you do not want the data to be filtered.



It is always advisable to inform the user that the data has not been filtered, i.e. indicating so by altering the chart title.

10.8.4 Show data labels

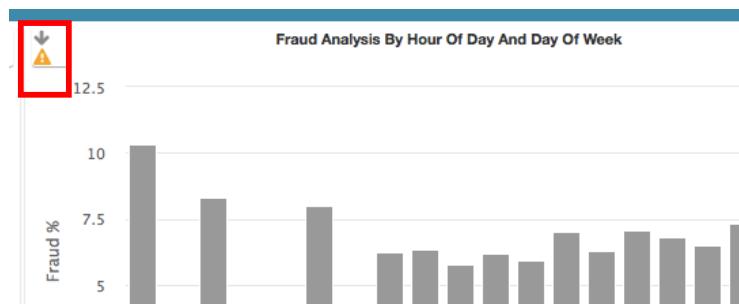
Ticking 'Show Data Labels' will show the value as text on the chart.



Depending on the chart type, these labels are shown in different ways.

NOTE: If the chart contains too much data, the labels will not show.

When this happens, you will see a warning on the notifications button.



If you click the notifications button, you will see the message.

Notifications

↓ This chart can be drilled down

⚠ This chart has warnings:

- Ignored the chart filter value '2014' for 'Sales Year' as it has been overridden or ignored.
- Labels are hidden as some text would not be visible or would overlap.

10.8.5 Trend Line

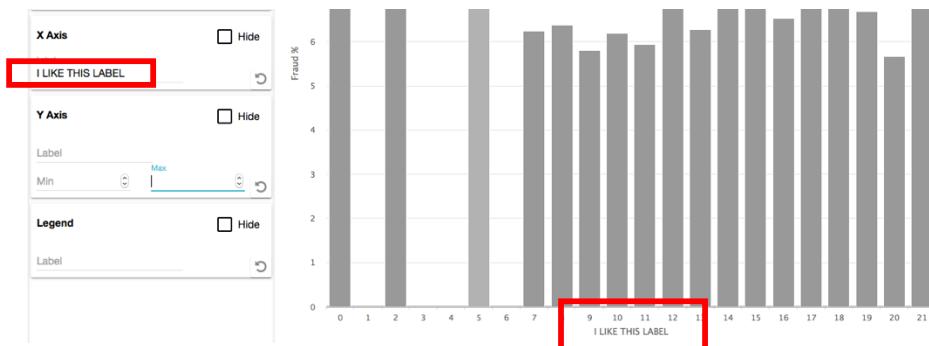
Selecting ‘Show Trend Line’ will draw a linear trend line on the chart. This line is a simple regression line.



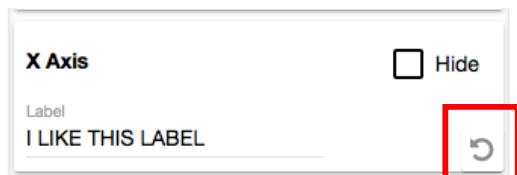
10.8.6 X-Axis



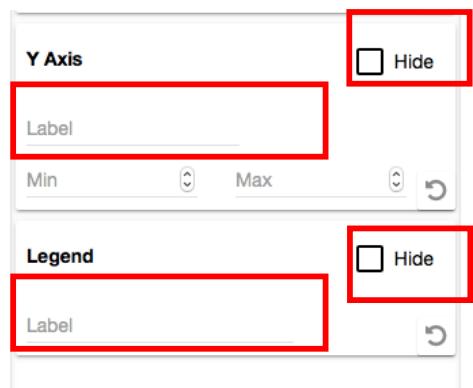
You can choose to Hide the X-axis; i.e. remove the label, or you can choose to override the label with different text.



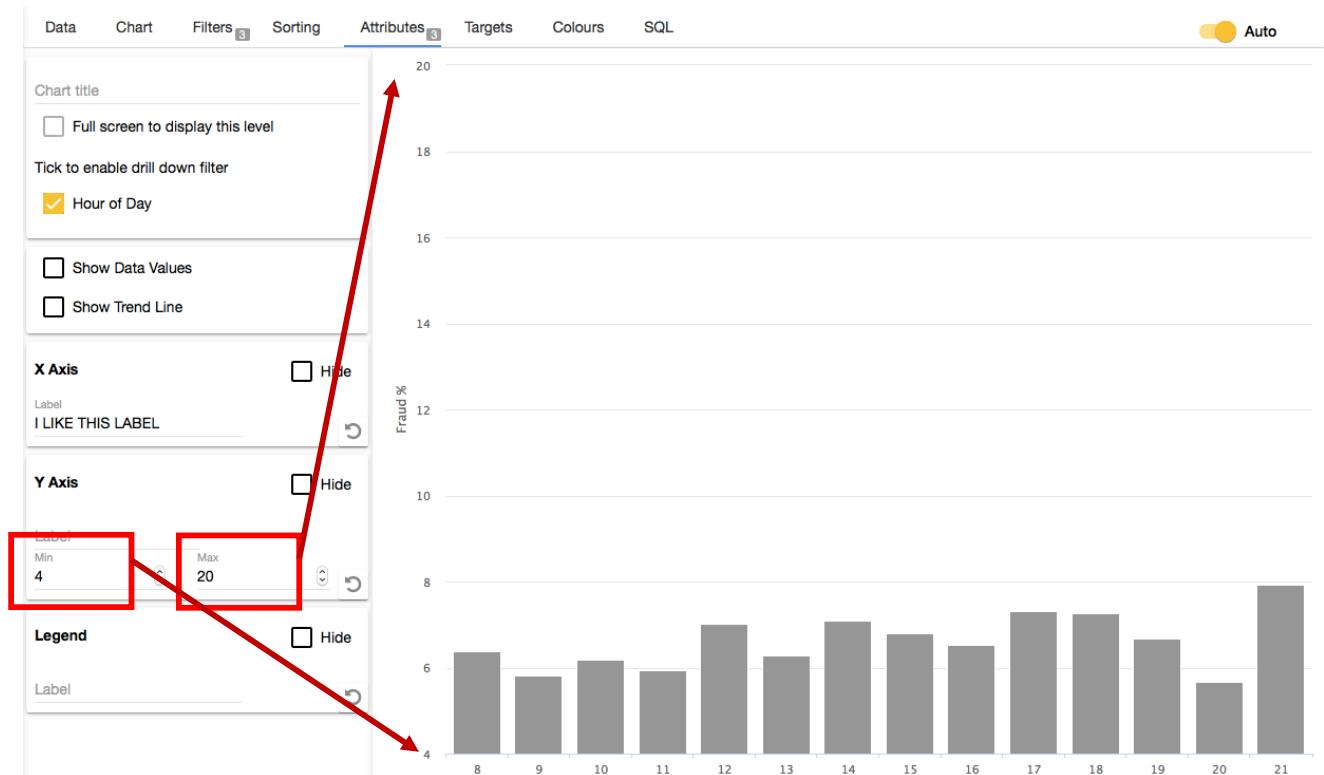
You can click on the Reset to Default button to remove your changes.



NOTE: You can control the y-axis and legend labels in the same way.



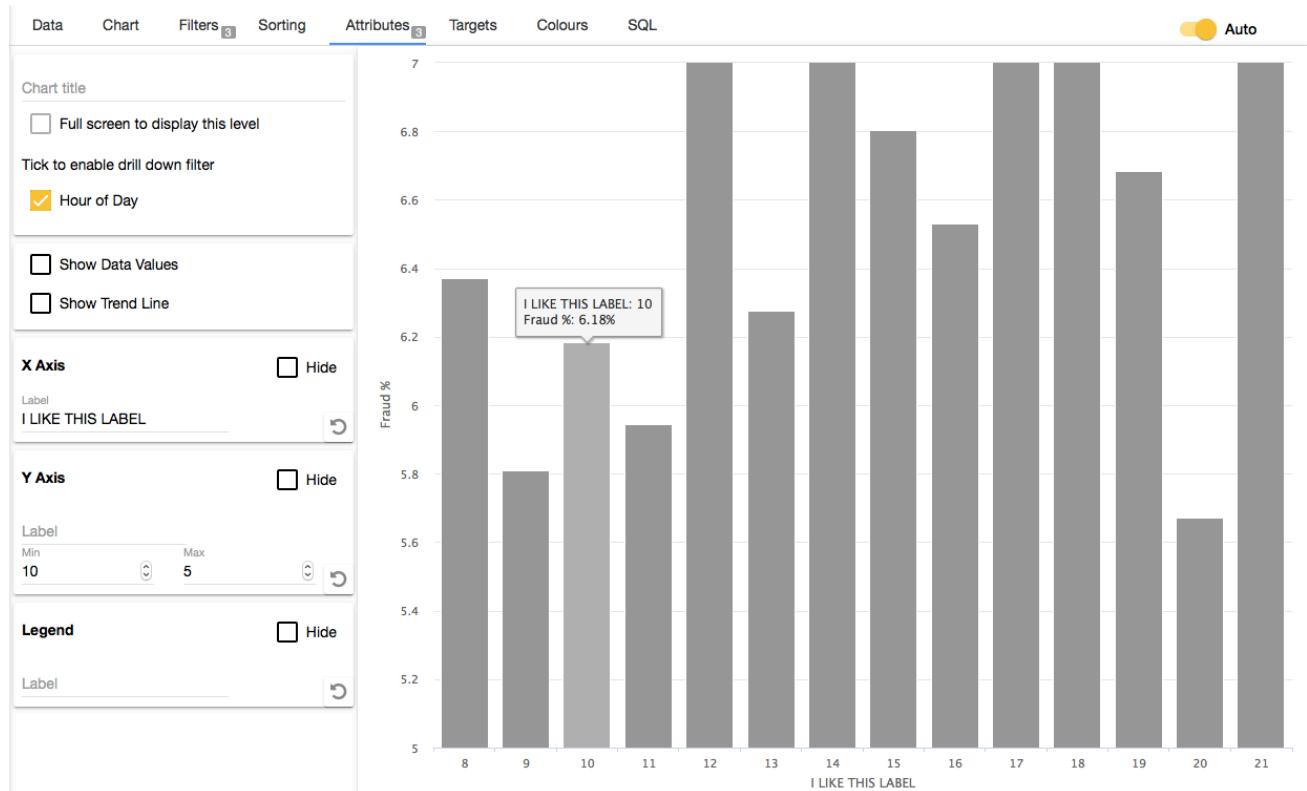
In addition, you can also set the minimum and maximum values for the y-axis.



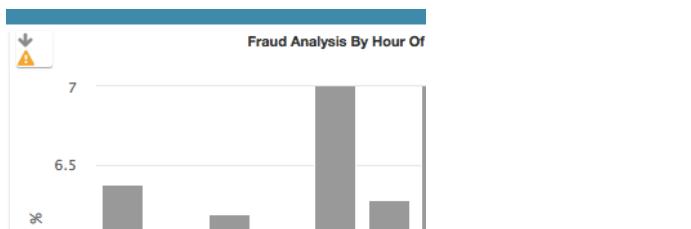
NOTE: If you set values, either set:

- 1) A max value lower than the highest data point.
- 2) A min value higher than the lowest data point.

Then those selections will be ignored.



On a category page, you will get an alert on the notifications button.



If you click the notifications button, you will see the message(s).

Notifications

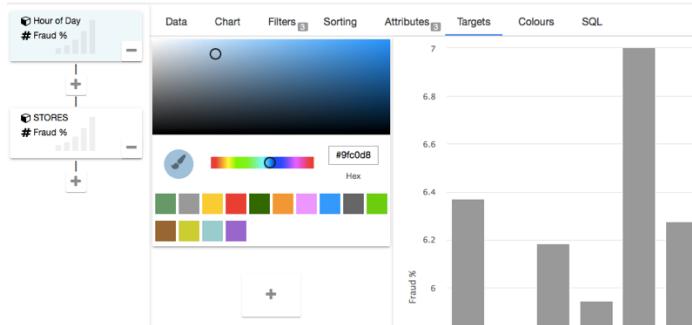
↓ This chart can be drilled down

⚠ This chart has warnings:

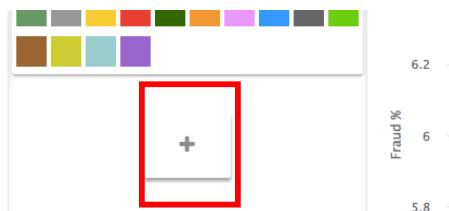
- Ignoring Y maximum (5) and minimum (10) limits for Fraud %
- Ignored the chart filter value 2014 for Sales Year as it has been overridden or ignored.

10.9 Chart Targets

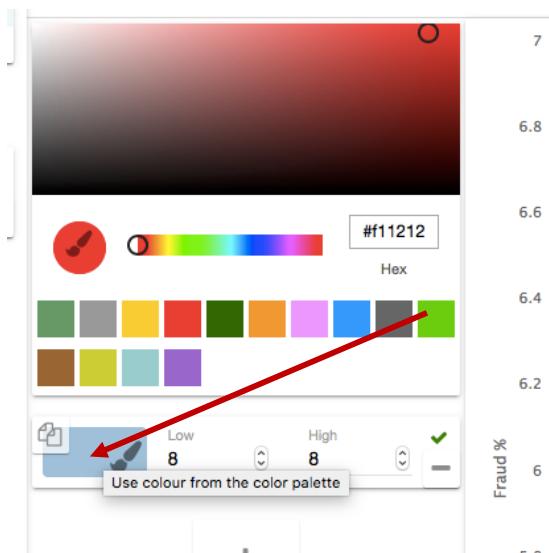
You can apply target areas and target lines to the chart by selecting the Targets tab.



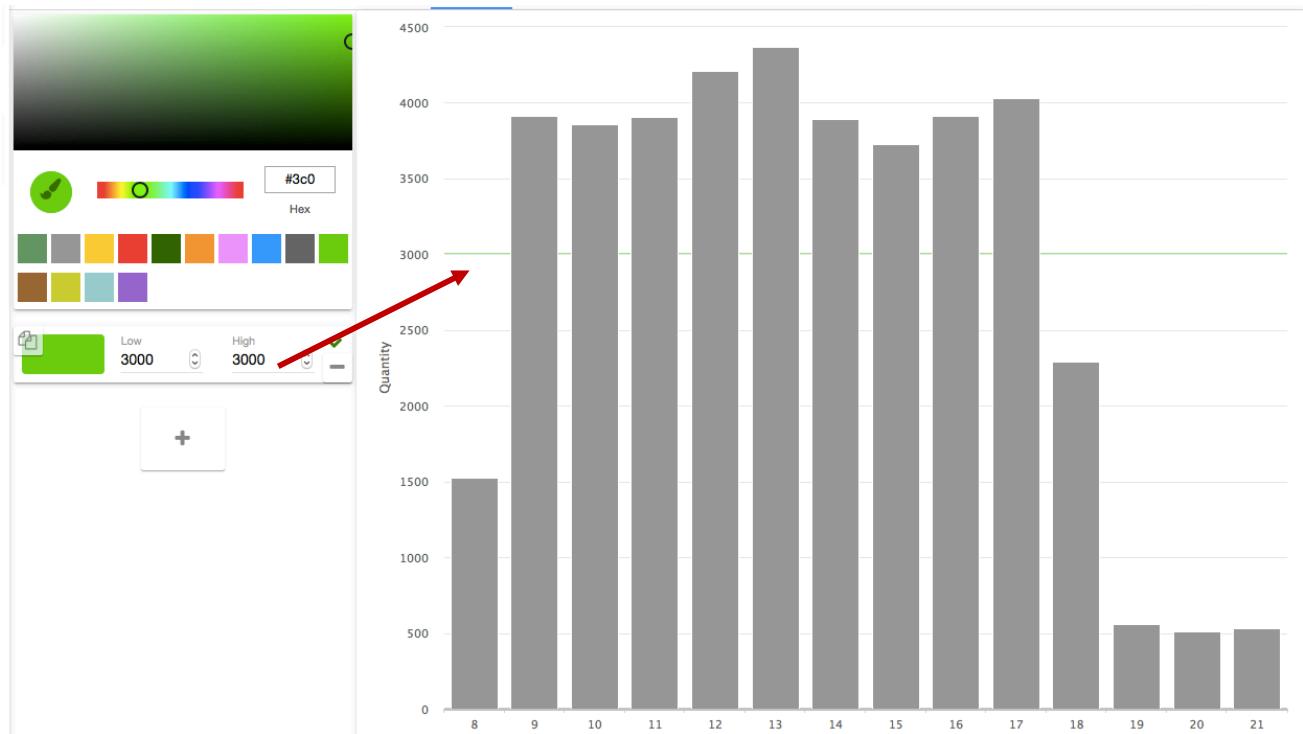
To add a target, click the + button.



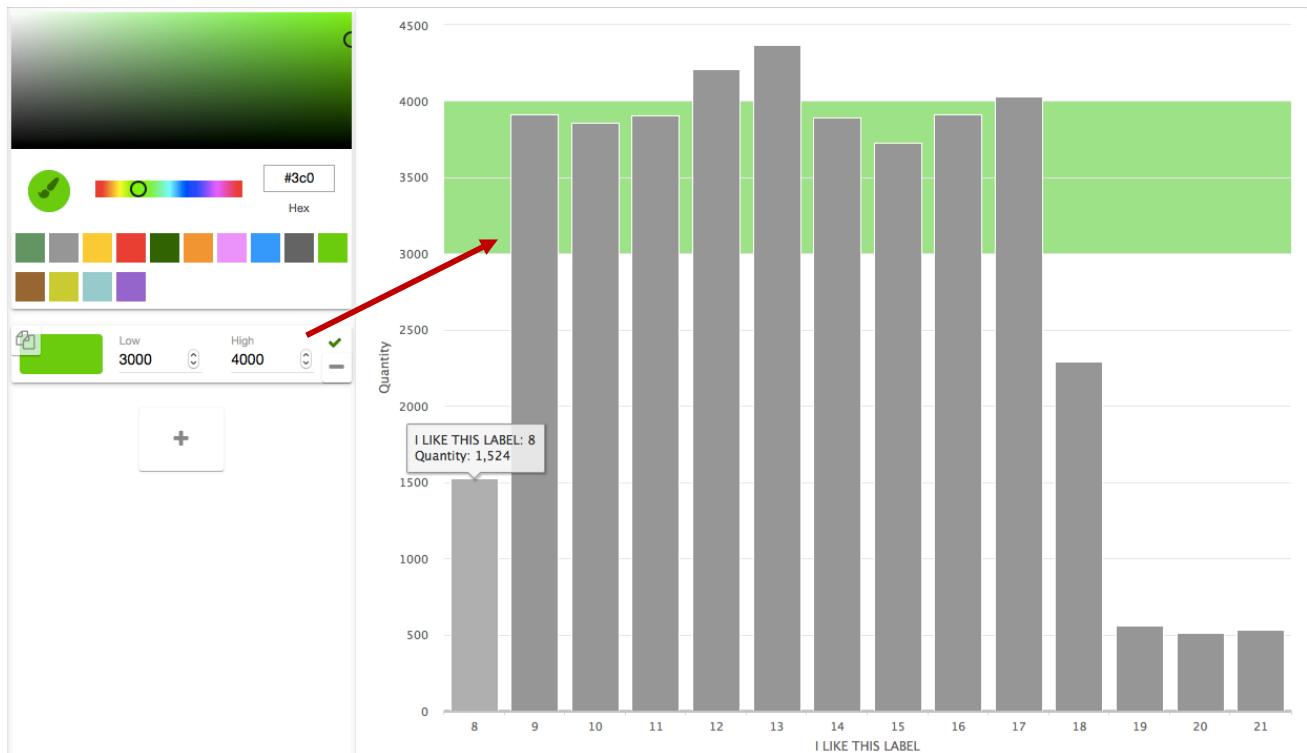
Then enter the top and bottom range values, and click a colour in the palette.



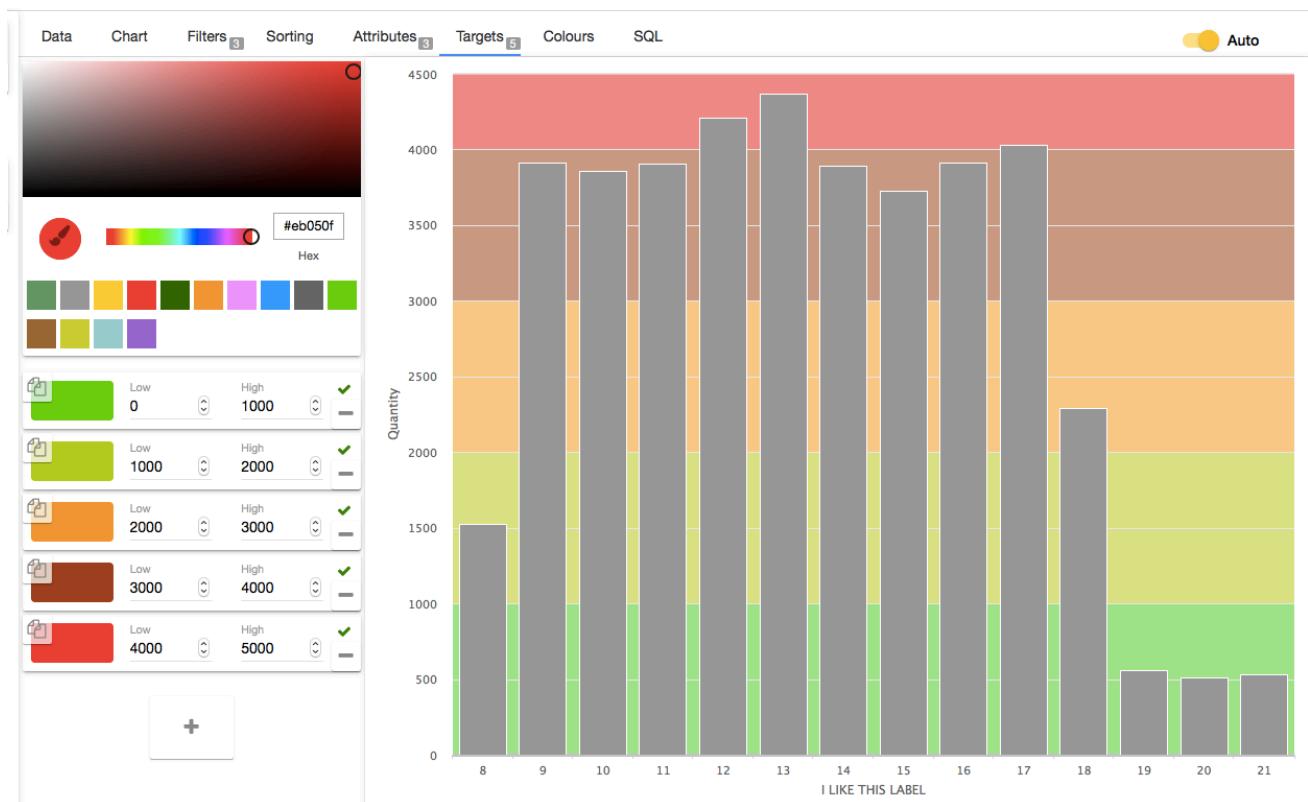
If you make the min and the max the same value, the dashboard will draw a line.



If you supply a range, the background of the chart will change.



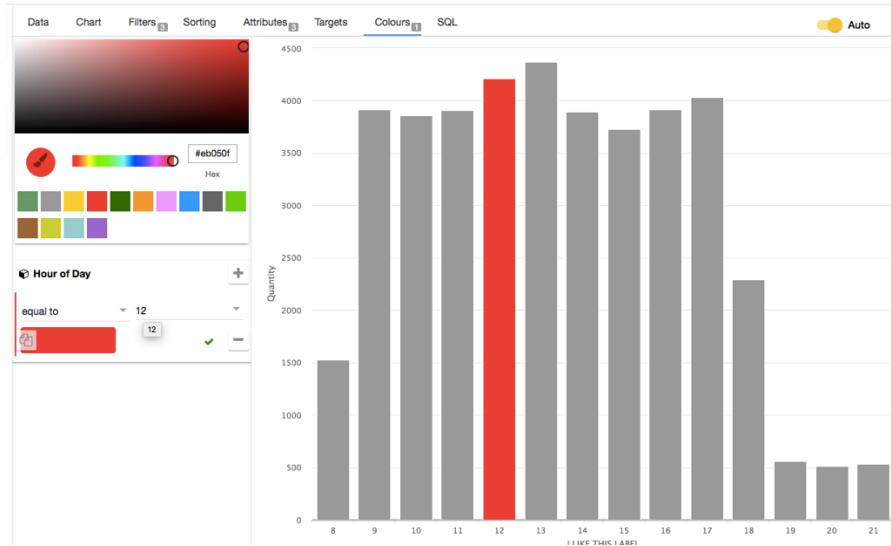
You can add as many lines or targets as you want.



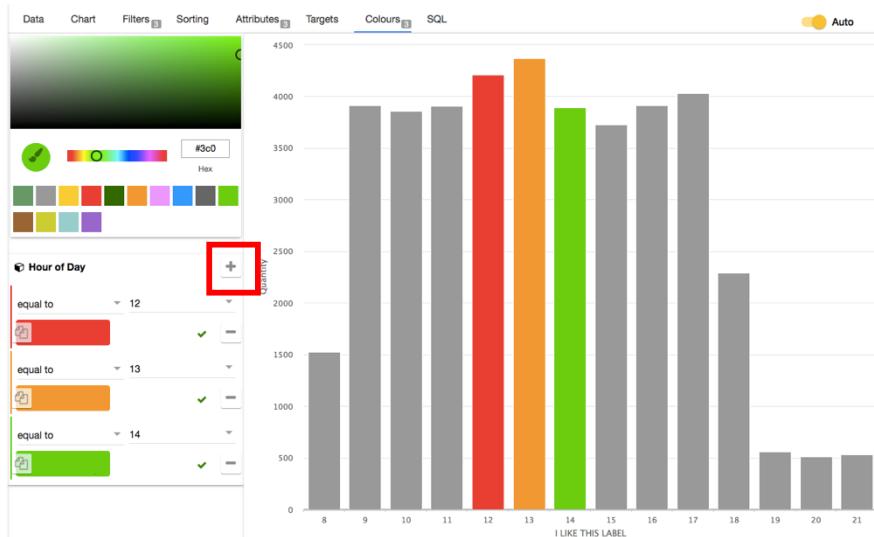
Ensure you remember the value of white space. Less ink on the page equals greater understanding.

10.10 Chart Colours

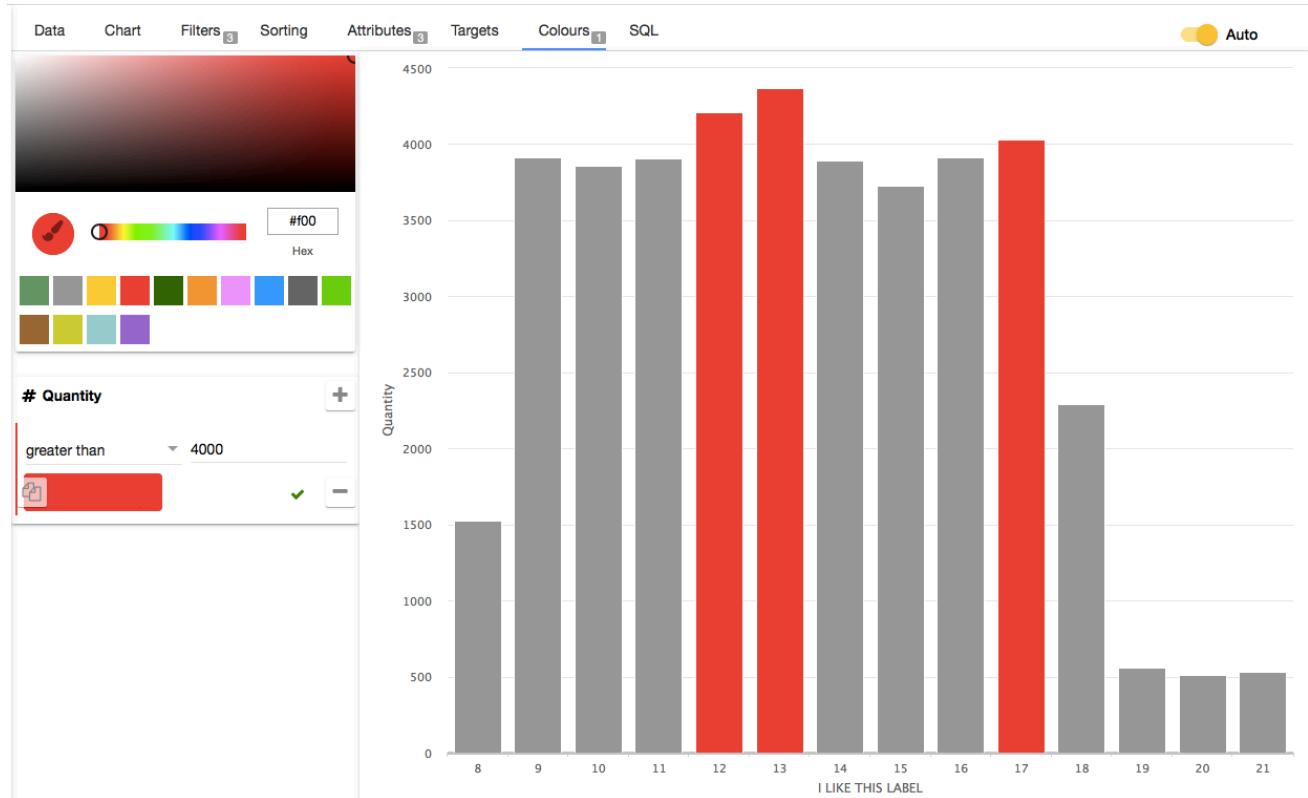
You can select the colour of a block based either on the measure or the dimension. However, if your chart has a Legend Item, then colours are reserved for it.



If I want to highlight a block of my chart based on the dimension, and use the + icon to add multiple colour rules.



I can also choose a colour based on the value of the chart block. Note that I can only choose a colour based on the dimension or measure of the chart – not both at once.



10.11 Chart SQL

The first rule of Chart SQL is, we don't talk about chart SQL!

OK, I guess we must, but beware, once you have overridden the SQL, we leave it to you. This means you will need to code all filters etc. manually.

However, there is always a better way!

That said, there are a few circumstances when this can be useful.

For example, to edit the SQL:

A screenshot of a software interface with a toolbar at the top containing tabs: Data, Chart, Filters (3), Sorting, Attributes (3), Targets, Colours (1), and SQL (on). The SQL tab is highlighted with a red box. Below the toolbar, there is a checkbox labeled "Edit SQL to build the chart or table" which is checked. Underneath the checkbox is a text area containing the beginning of a SQL query: "SELECT", "FROM", and "WHERE".

Select the SQL tab, and off you go! Over to you – all bets are off.

NOTE: When the SQL is overridden, the indicator says on. This is so that you can spot a chart with overridden SQL quickly.

If someone asks you to debug a chart, be sure to look for it first. Many hours have been lost trying to figure out what has happened, only to notice this at the last moment.

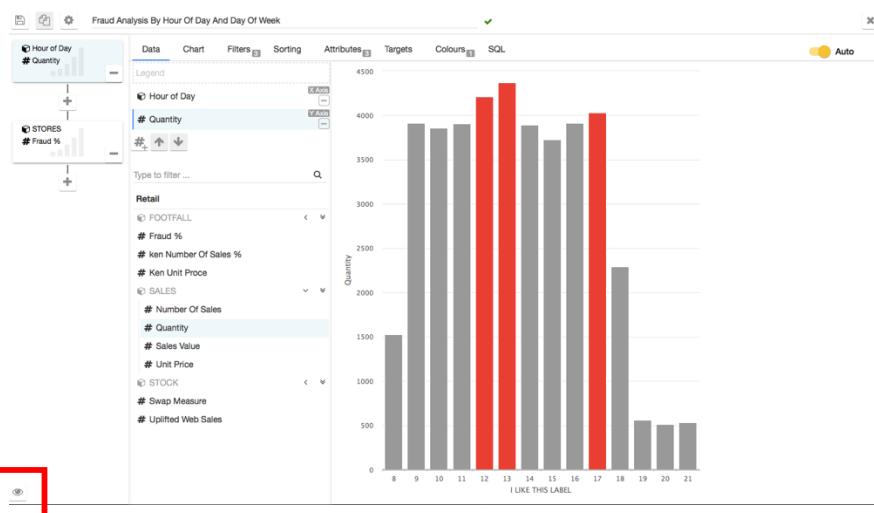
10.12 Peek Button

After you have used the dashboard for some time, a strange thing will happen. You will find yourself in the Edit Chart screen, wondering why you went there.

This is a common situation; you are not alone. It happens because you were inspired to create a new element by something you noticed on the category page that you came from.

You will have been filtering or drilling, and something you saw made you think ‘what about...?’ And that is how you came to be in the Edit Chart window.

Now faced with a world of possibilities, your original calling has been forgotten. Fear not, dear friend, help is at hand. In the bottom left corner there is a Peek-a-boo button.



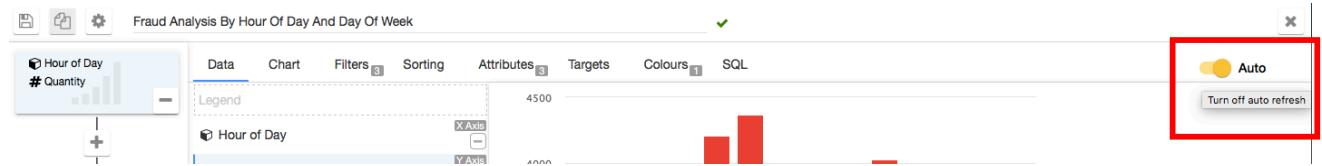
Hovering over this button will allow you to travel back in time and see the category page that provided you with your reason for entering the Edit Chart screen, reminding you what it was you wished to see or build.



You're welcome!

10.13 Auto Refresh

In the top right corner of the Edit Chart screen, there is a Toggle button which allows you to control the auto-refreshing of charts.



By default, it is on. This is useful, as it allows you to quickly explore your data.

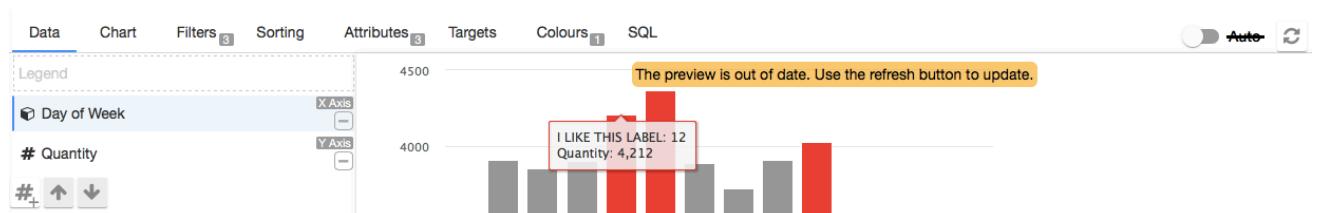
However, there may be times when you just want to build, then refresh with all your changes made.

You can do this by toggling this button off by clicking it.



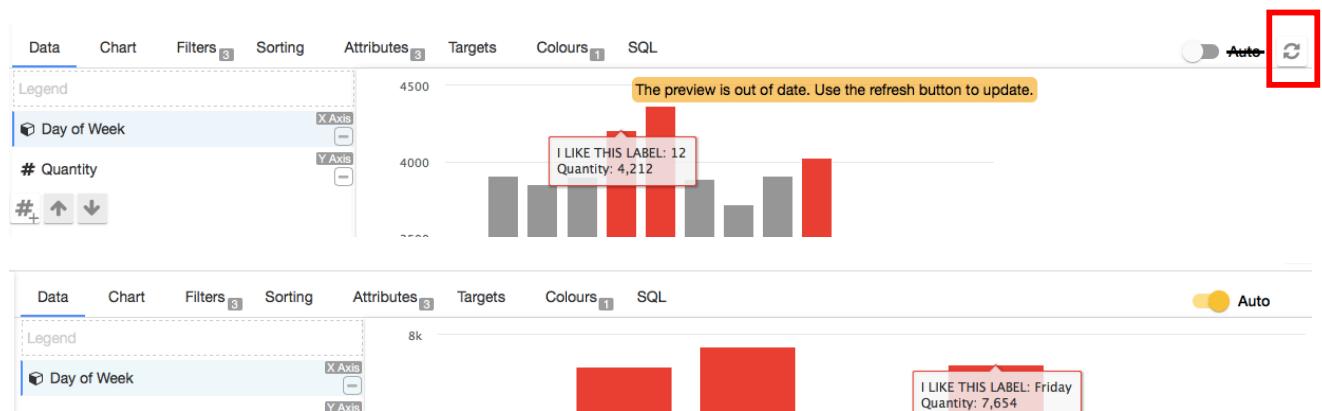
Now the chart will not refresh or update in the preview panel as you make changes.

When you now make a change, you will see a message saying the following:



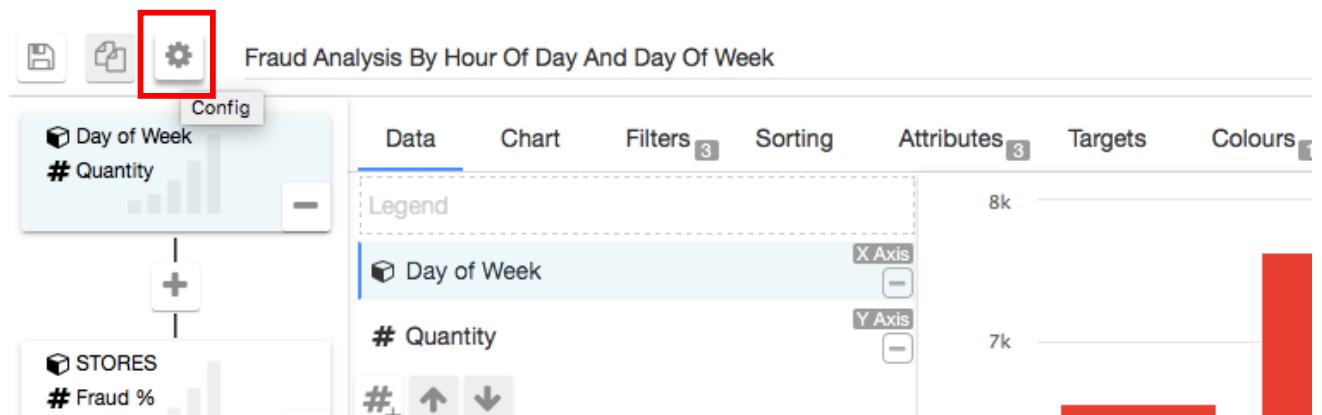
The preview is out of date; use the Refresh button to update.

When you have made the changes you require, you can either refresh to view by clicking the Refresh button, or by turning auto refresh back on.



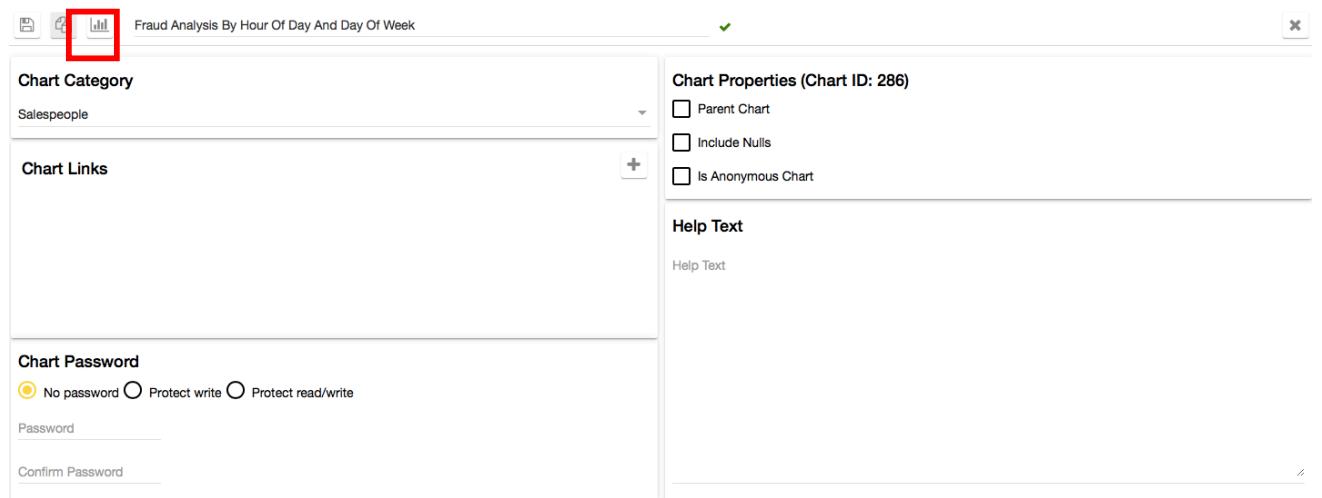
10.14 Chart Config

This is the section where we set anything that applies to the whole chart – i.e. applying to all drill levels.



Clicking on this panel opens the following screen.

NOTE: the button becomes a toggle, allowing you to return to the chart.



10.14.1 Chart Category

All charts belong to a category. This doesn't limit which category page they can be placed on, but is used to control user access. Users can only view charts that belong to categories that are allocated to them.

To pick a category for a chart, do the following:

Chart Category

Products

Drop down the list, and select the category you wish to locate this chart under.

If you allocate a chart to the Home category, then it is always visible to all users.

The default value in the category is the category page from which you initially created the chart.

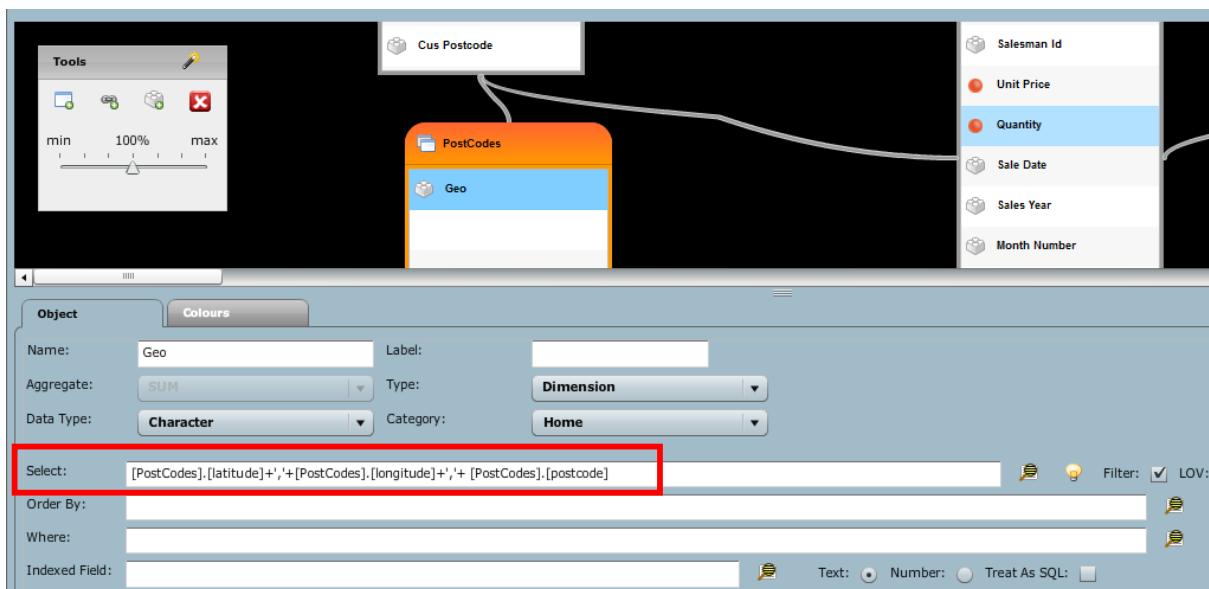
If a user opens the dashboard and receives a message stating that they do not have access to a chart (even if it is on their default layout) then this category restriction is the reason.

If you wish for them to have access to the chart, then you must either move the chart into a category they have access to, or give them access to the category that the chart belongs to.

9. Maps

9.1 Creating a Map Data Object

To create a map in the PiCreate interface, you require a data object that has longitude, latitude, and a value. In this case, it is the postcode. As shown in the image below, the data object, Geo, has all three in the Select statement.



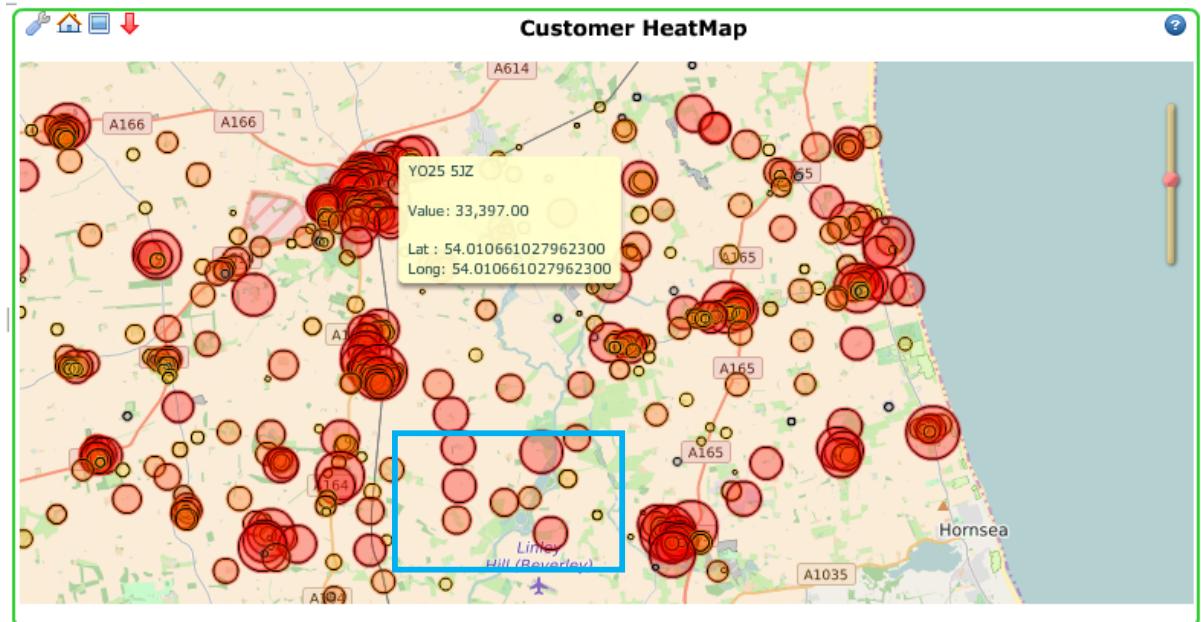
In your data model, select the object that contains the latitude, longitude, and postcode dimensions in it, and create a new dimension called “Geo”.

Setup the Geo dimension Select section to look like this:

[PostCodes].[latitude]+','+[PostCodes].[longitude]+','+[PostCodes].[postcode]

In your environment, the [PostCodes] part will likely need to be substituted for the alias of the table that contains the columns mentioned.

The result is that when you create a map and hover over a data point, it will present you with a pop up window, which in this example displays the longitude, latitude, and post code, as shown below.



To

populate points on a map, you will need a data object tied into location. In this example, in SQL Server, a data object has been created with all the UK postcodes included.

	id	postcode	latitude	longitude
1	1693225	AB10 1AA	57.14823188000000	-2.096647896000000
2	1812462	AB10 1AB	57.149303362900000	-2.097262456000000
3	1693226	AB10 1AF	57.14870708000000	-2.097806027000000
4	1693227	AB10 1AG	57.14923188000000	-2.096647896000000
5	1693228	AB10 1AH	57.14908068000000	-2.094644297000000
6	1693229	AB10 1AJ	57.14942848000000	-2.097970559000000
7	1693230	AB10 1AL	57.14951627000000	-2.095323250000000
8	1693231	AB10 1AN	57.14972452000000	-2.094734616000000
9	1693232	AB10 1AP	57.14863587000000	-2.095879479000000
10	1693233	AB10 1AQ	57.14800806800000	-2.094644297000000
11	1693234	AB10 1AR	57.14808068000000	-2.094644297000000
12	1693235	AB10 1AS	57.14832104000000	-2.097507523000000
13	1693236	AB10 1AU	57.14777401000000	-2.096299542000000
14	1693237	AB10 1AW	57.14738716000000	-2.097058940000000

This data object was created in Notepad as a CSV file (as shown below), and then

Id	postcode	latitude	longitude
1	AB10 1XG	57.14416516000000	-2.114847766800000
2	AB10 6RN	57.13787916000000	-2.121486688000000
3	AB10 7JB	57.12427317000000	-2.128189640000000
4	AB11 5QN	57.14270108000000	-2.093946100000000
5	AB11 6UL	57.13595630000000	-2.126958860000000
6	AB11 8RQ	57.13546632000000	-2.072111840000000
7	AB12 1JL	57.09800240000000	-2.077668775000000
8	AB12 4NA	57.06427275000000	-2.130018015000000
9	AB12 5GL	57.08193792000000	-2.246567389000000
10	AB12 9SP	57.14870708000000	-2.2684780602700000
11	AB14 OTQ	57.10155692000000	-2.268485752000000
12	AB15 5HB	57.14742800000000	-2.147266200000000
13	AB15 6NA	57.15156178000000	-2.186537293000000
14	AB15 8BA	57.13562422000000	-2.175239142000000
15	AB15 8UF	57.15400596000000	-2.224401880000000
16	AB15 9SE	57.11864762000000	-2.174250607000000
17	AB16 5ST	57.16346588000000	-2.159333430000000
18	AB16 6SZ	57.15875117000000	-2.165214861000000
19	AB16 7NX	57.16843840000000	-2.162496655000000
20	AB21 0AL	57.26331747000000	-2.161422784000000
21	AB21 0TF	57.22234051000000	-2.277775717000000
22	AB21 7LD	57.21213578000000	-2.185353182000000
23	AB21 7LE	57.21176269000000	-2.182487276400000
24	AB21 7LF	57.20342973000000	-2.173905553000000
25	AB21 7LG	57.21095510000000	-2.181887300000000
26	AB21 7LH	57.21026833000000	-2.180907185000000
27	AB21 7LJ	57.21035313000000	-2.181967108000000
28	AB21 7LL	57.21245975000000	-2.184957476000000
29	AB21 7LN	57.21032413000000	-2.183374100000000
30	AB21 7LP	57.20999264000000	-2.182891931000000
31	AB21 7LQ	57.20907512000000	-2.183632762000000
32	AB21 7LR	57.20890384000000	-2.184045758000000
33	AB21 7LS	57.20880379000000	-2.184889505000000
34	AB21 7LT	57.20906884000000	-2.181778686000000
35	AB21 7LU	57.20888863000000	-2.182158539000000
36	AB21 7LW	57.20477389000000	-2.176262271000000
37	AB21 7LX	57.20805630000000	-2.180591773000000
38	AB21 7LY	57.21018632000000	-2.179284462000000
39	AB21 7LZ	57.209443173000000	-2.179297353000000
40	AB21 7NA	57.20944281000000	-2.177824089000000

imported into SQL Server, with comma delimited columns including all postcodes, longitudes, and latitudes.

The map function is based on Open Street map technology. This mapping system uses freely available geospatial data under an open license.

It allows you to drill right down on a map to building level, as shown below, and annotate the map, to highlight areas. This could be used to add information to different department buildings, or even a name, as shown with Linetime and Gecko in this example.

