Lab 3: Watson Studio Assembling a Dashboard

In this lab we will cover several data visualization capabilities provided by IBM Watson Studio:

- The IBM Watson Studio Dashboards service, with a UI-driven capability to build and publish dashboards largely inspired by IBM Cognos Analytics capabilities.

Watson Studio Cognos Dashboard Embedded

IBM Watson Studio has a built-in capability to build interactive, publishable dashboard.

Setting up a dashboard

1. Back to your project's Assets list, select the `[(+) Add to project]` button
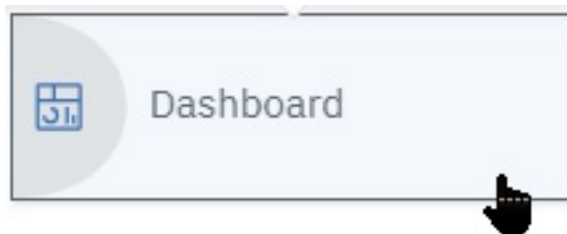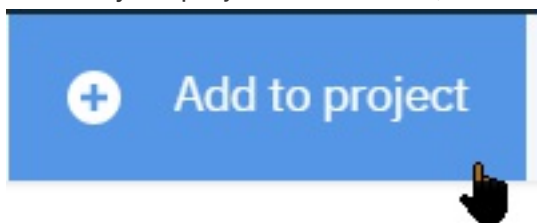
2. Select the `Dashboard` button   to create a new dashboard
3. Enter a name, e.g. `NYC Bike Rentals`
4. We will need to create a dashboard service instance, select the `Associate a Cognos Dashboard Embedded service instance` link

   Associate a Dynamic Dashboard Embedded service instance
   No Dynamic Dashboard Embedded service instances associated with your project.
   Associate a Dynamic Dashboard Embedded service instance with your project on the project settings page, then

5. Choose the 'Lite' configuration, and confirm default org and space
6. Click the `Reload` link and select the instance, then the `Save` button:

New Dashboard

Name*

NYC Bike Rentals

84

Description

Type your description here

300

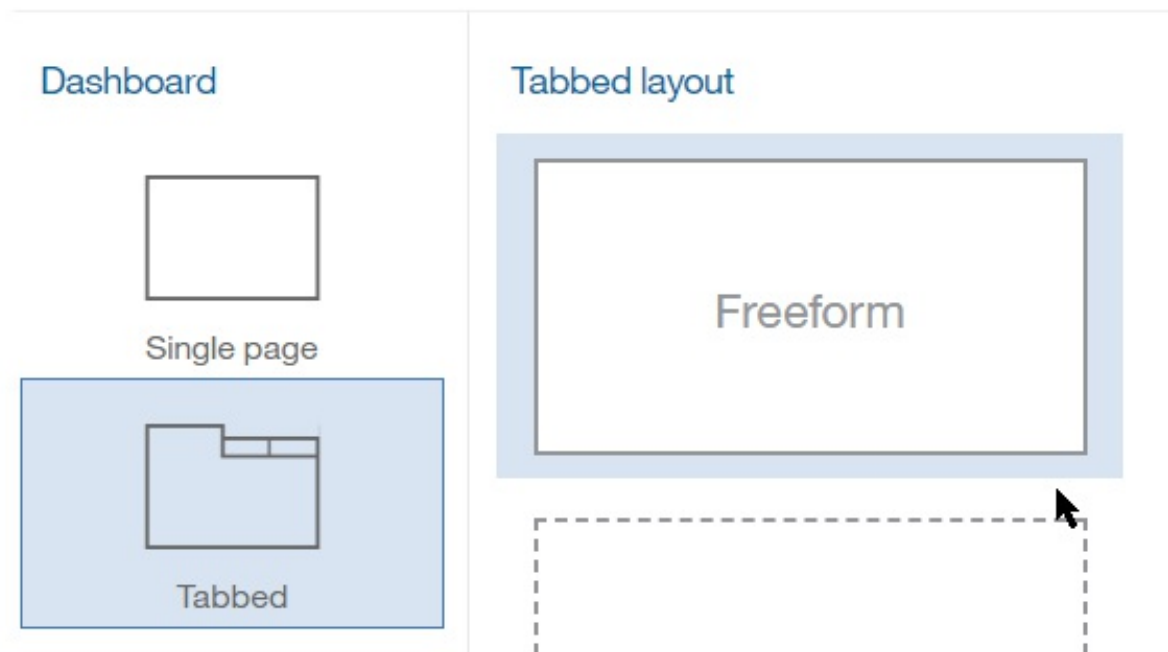**Dynamic Dashboard Embedded Service**

dynamic-dashboard-embedded-watstud ⌄

Cancel   **Save**

7. In the `Select a template`, use `Tabbed` and `Freeform`:

, then `[OK]` button.

Adding data to a dashboard

We will now use the data produced by Data Refinery for the NYC bike share dataset.

1. Switch to the `Select` tab and expand `Selected sources`

Selected sources

2. Select the `201701-citibike-tripdata_cleansed.csv` file:

DSX_Workshop

Data assets (4)   Connections

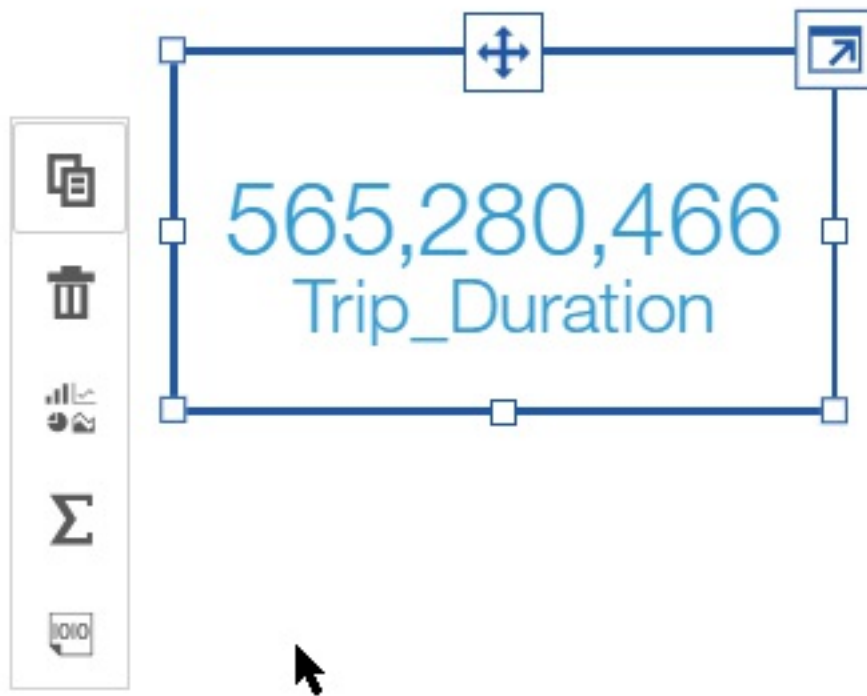201701-citibike-tripdata.csv

201701-citibike-tripdata_clea... 👁
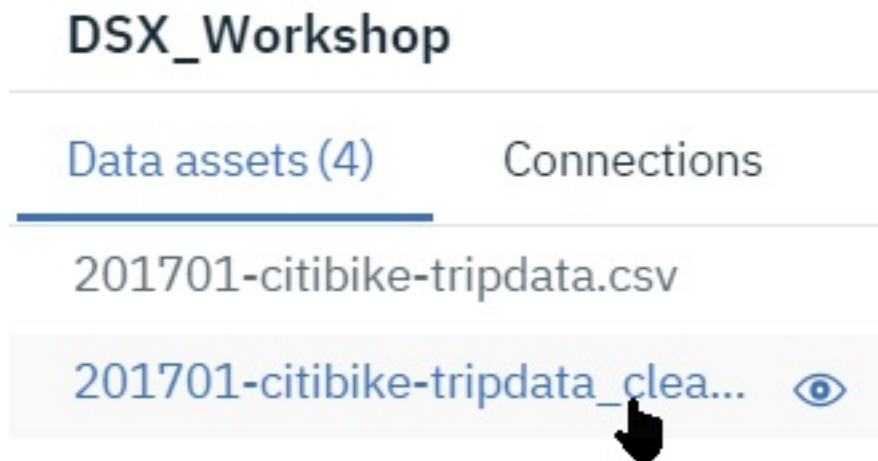
3. The dashboarding has the ability to propose a graph type based on the data. We will start by displaying the `Trip Duration` by `Age` :
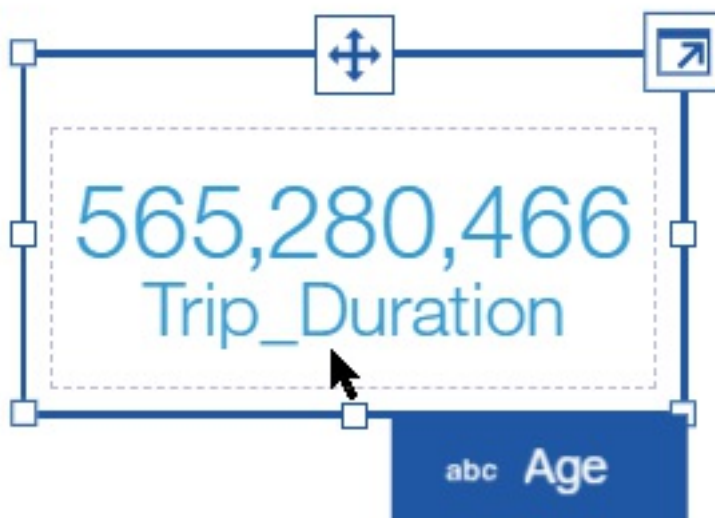
   i. Drag&Drop the `Trip_Duration` from the data panel on the left to the dashboard canvas on the right;
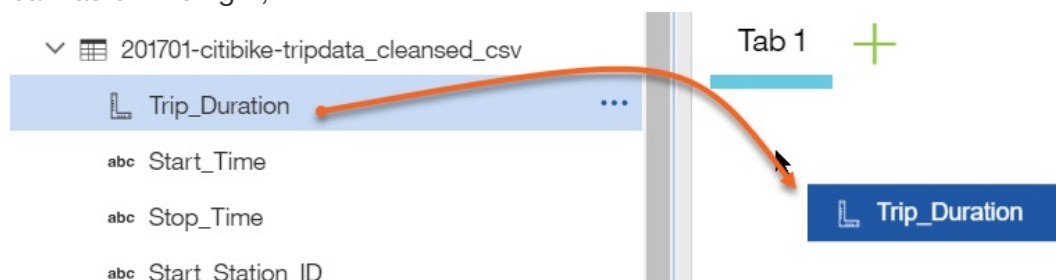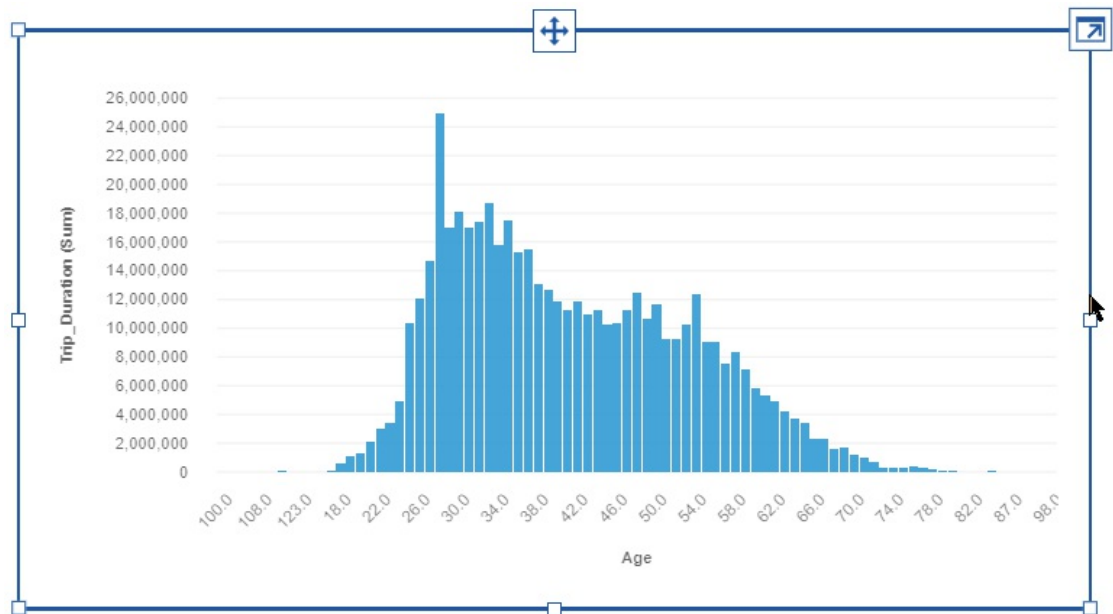

   The `Trip_Duration` total aggregated sum is displayed as a big number:

ii. Drop the `Age` field onto the `Trip_Duration` widget:

iii. IBM Watson Studio changes the graph to a more suitable representation, in this case a bar graph:

iv. Unfortunately, our data has not been cleansed enough and we have erroneous values for `Age` . Right-click on the `Age` label to display the menu, and select the filter icon

v. In the filter definition box, select all values which do not make sense (no value, values above 100):

Age   ✕

Add a filter condition   ❯

🔍 Search

☑ (no value)
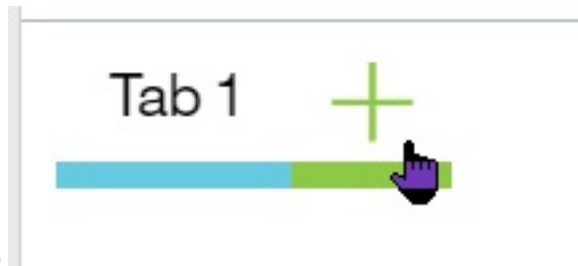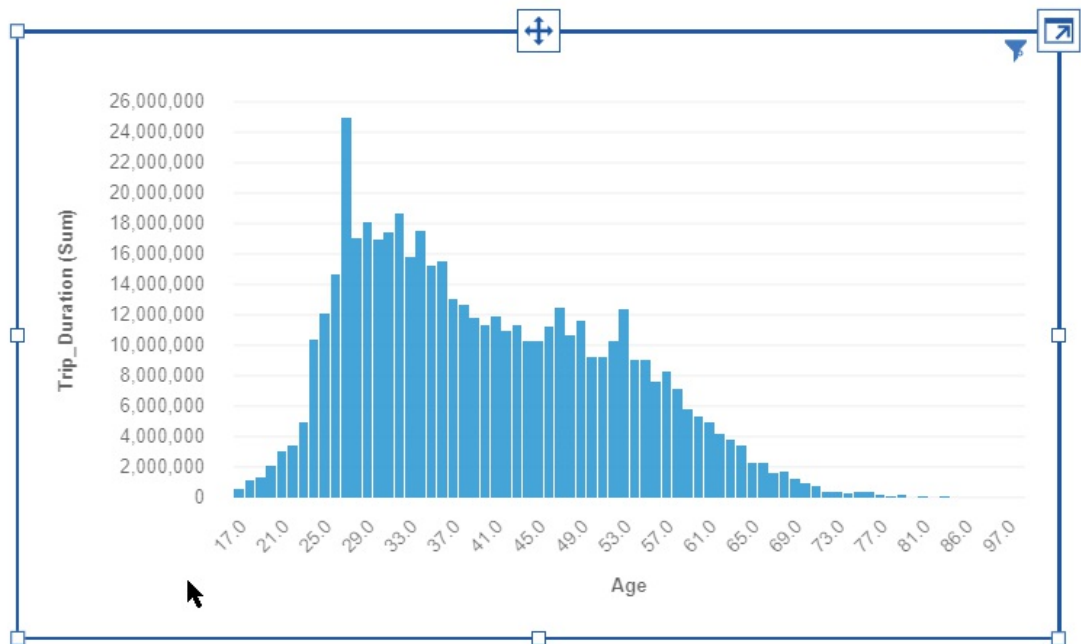
☑ 100.0

☑ 102.0

☑ 105.0

☑ 107.0

☑ 116.0

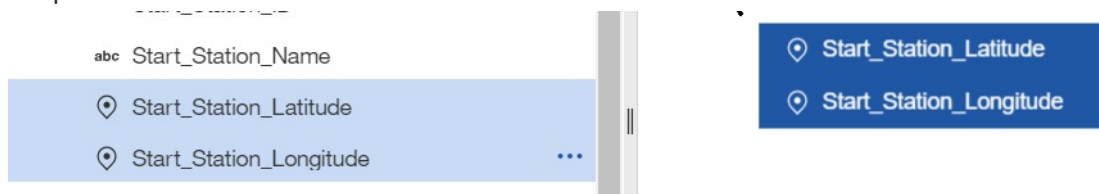☑ 117.0

☑ 118.0

Clear all   Invert

vi. then click the `Invert` button and OK. We get a better-looking graph where we can see the trip duration distribution by age

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4. Now add a new Freeform tab and we will create a map display of the stations by count of rentals:

   i. Select the two `Start_Station_Latitude` and `Start_Station_Longitude` fields and drop them on the canvas:

   ii. The system automatically creates a map display:

iii. Unfortunately, there is some parasistic data with erroneous coordinates that show up in the middle of the ocean at coordinate (0,0) below the African continent (This virtual place is known as `Null Island`). Select the `Expand` button at the top right of the widget:
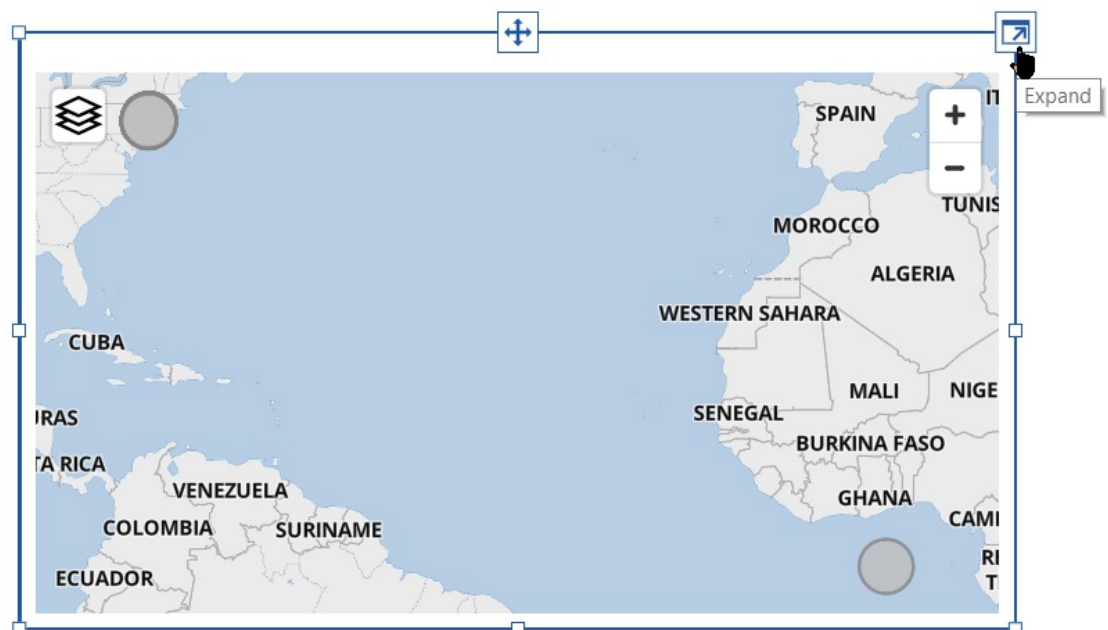
iv. Expand the `Start_Station_Latitude`:

Latitude/longitude

⌄

📍 **Start_Station_Latitude** •••

📍 **Start_Station_Longitude** •••

abc Label

⬉⬊ Point size

⦂• Point color

v. Then select filter
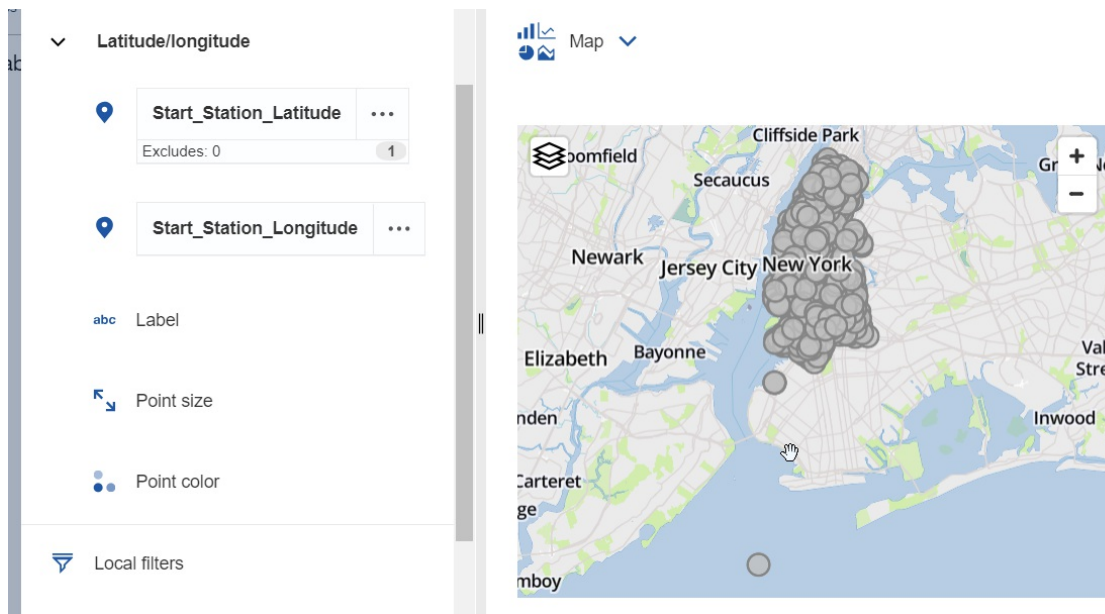
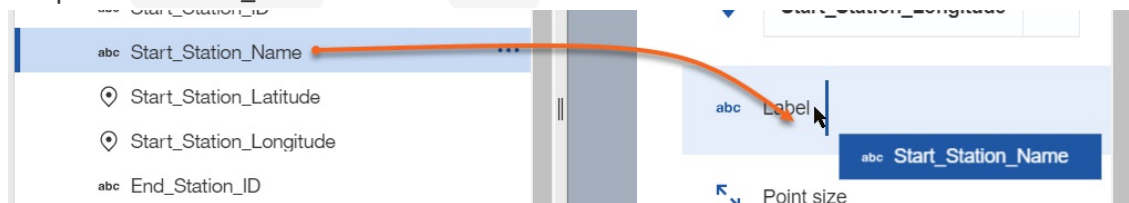⌄ Latitude/longitude

📍 Start_Station_Latitude ••• Filter

vi. In the filter definition, select the first `0` value, then `Invert` and OK button. The map will center itself on NYC:

vii. Drop the `Station_Name` onto the `Label`:

viii. We see on the map an outlier, south on the ocean, we can filter it out by name, as we can get the `8D OPS 01` label now by hovering over it. Click the Filter button for `Label`, and enter a `Does not begin with` condition for `8D OPS`:
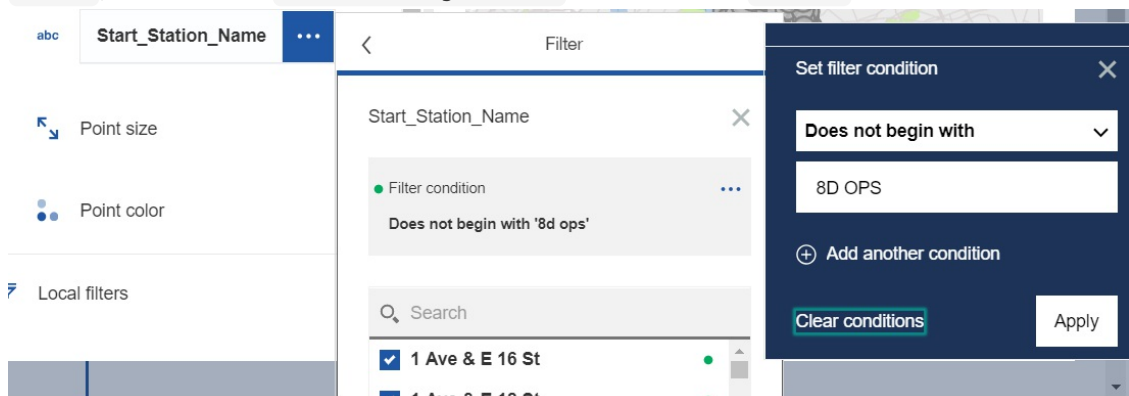

. The outlier point will disappear from the display.

ix. Drop the `Trip_Duration` field onto the `Point color`. The default aggregation is `SUM` which will show stations from where the cumulative trip are longer. This shows that a few stations are issuing longer rides than others, as they show in darker colors:
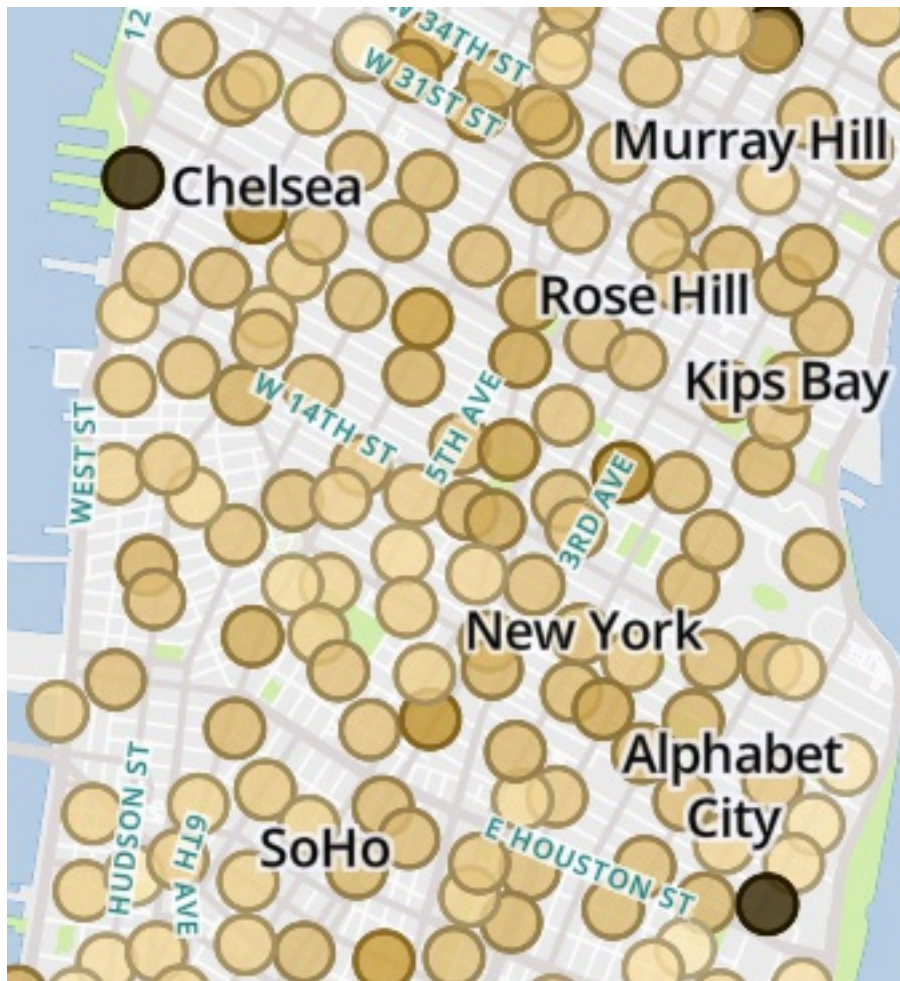
x. Change the aggregation used for the coloring, now based on the average trip duration. Select `Trip Duration` -> `Summarize` -> `Average` :


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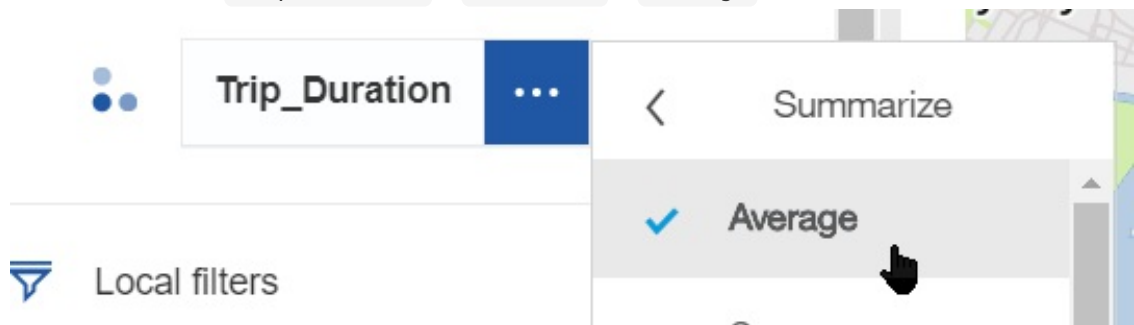
xi. All points now look similar. You can remove outlier manually by right-click selecting them on the map and selecting `exclude` :

40.65 | -74.02 | NYCBS Depot - SSP

Trip_Duration (Average):   2,337.191

✓ Keep   ⊘ Exclude   ▽
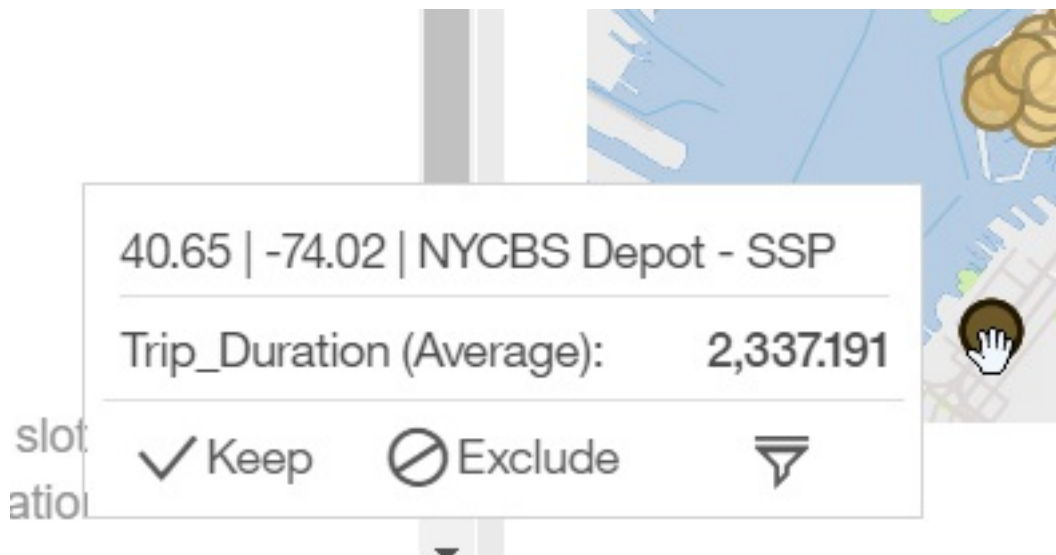
5. Correlated graphs selections (Widget connections)

i. Drop the `End_Station_Latitude/Longitude` on the freesapce besides the `Start_Station` map to create a new map.

Now, when clicking on a Station in the first map, the second map adjusts to show the corresponding `End_Station` :
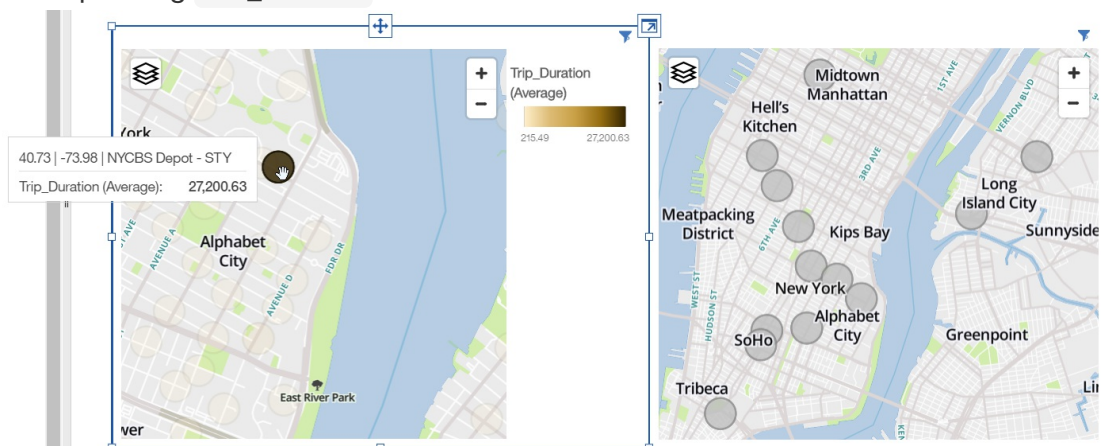
ii. The same applies if you drop a label field, for example `Start_Station_Name` and `End_Station_Name` , the fields will reflect the currently selected data points subsets:
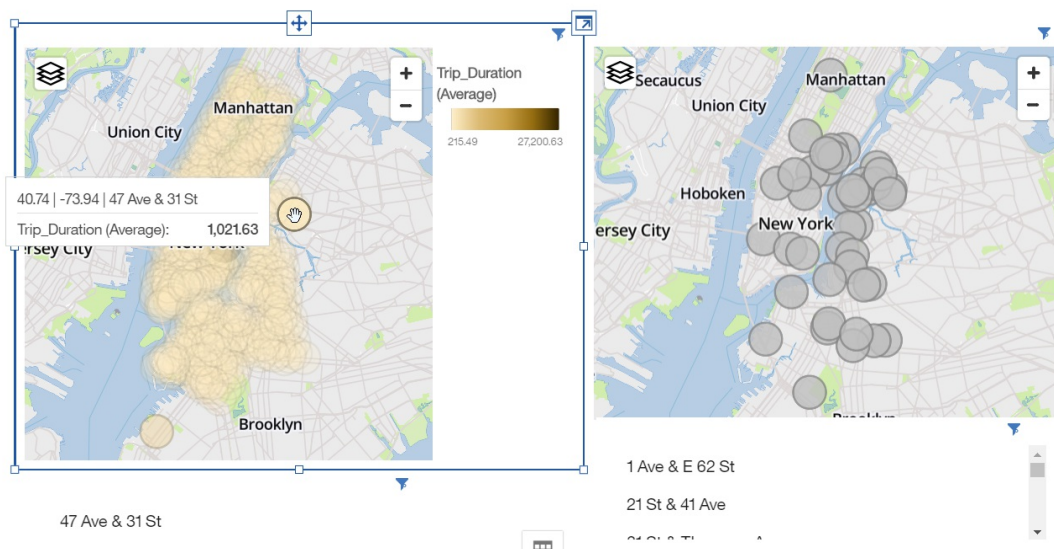
iii. Note that the selection groups can be adjusted using the `Widget connections` icon

Widget Connections
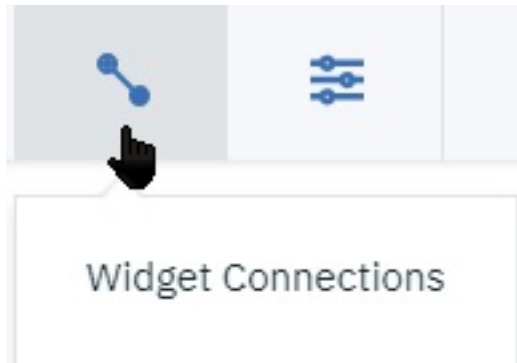
at the top

6. Many other types of graphs can be built, as an exercice, build:

i. a graph on another tab that will show the distribution of rentals by the hour of the day and user type. You should end up with a graph such as:
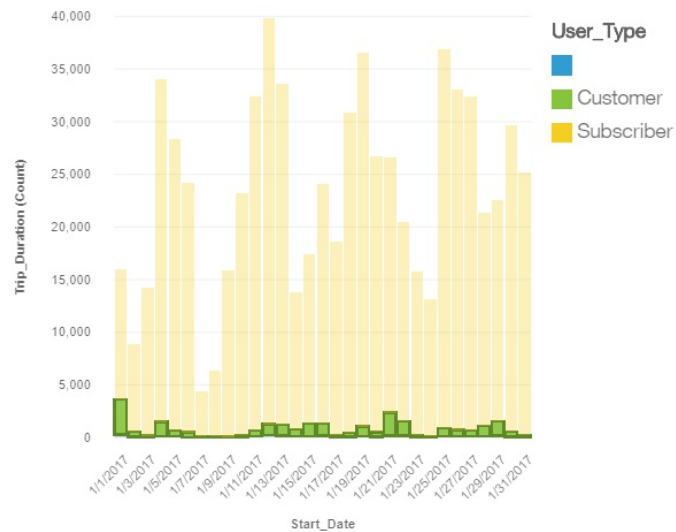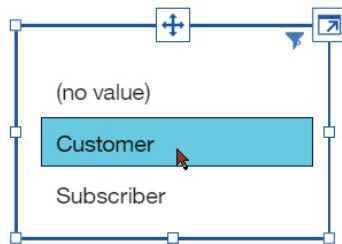

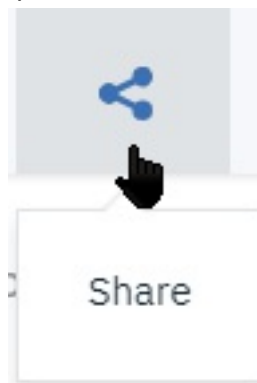ii. And last, build a graph that shows usage by date:

. We see the weekly cycle, and probably the impact of weather conditions.

7. Graph elements can also act on others on the same tab. On the last tab you created, drop a `User_Type` field. This will drive the beahvior of the usage by date graph:

8. Finally, dashboards can be published:

i. Click the `Share` icon:

ii. Enable sharing:

Share with anyone who has the link.

(i) The link always points to the most recent version of the dashboard.

Permalink to view dashboard

https://eu-gb.dataplatform.ibm.com/dashboards/1701e5a9-0770-4d

iii. Open the link from another tab or browser to get a web view on the dashboard