



**BIRDOnCloud**

**Version 3.1**

*Powered by SriyamSoft*

**END USER DOCUMENTATION**

**December 18<sup>th</sup>, 2018**

This document provides information about the features and takes the user through all the features of the product.

# Business Intelligence Reporting & Data Visualization

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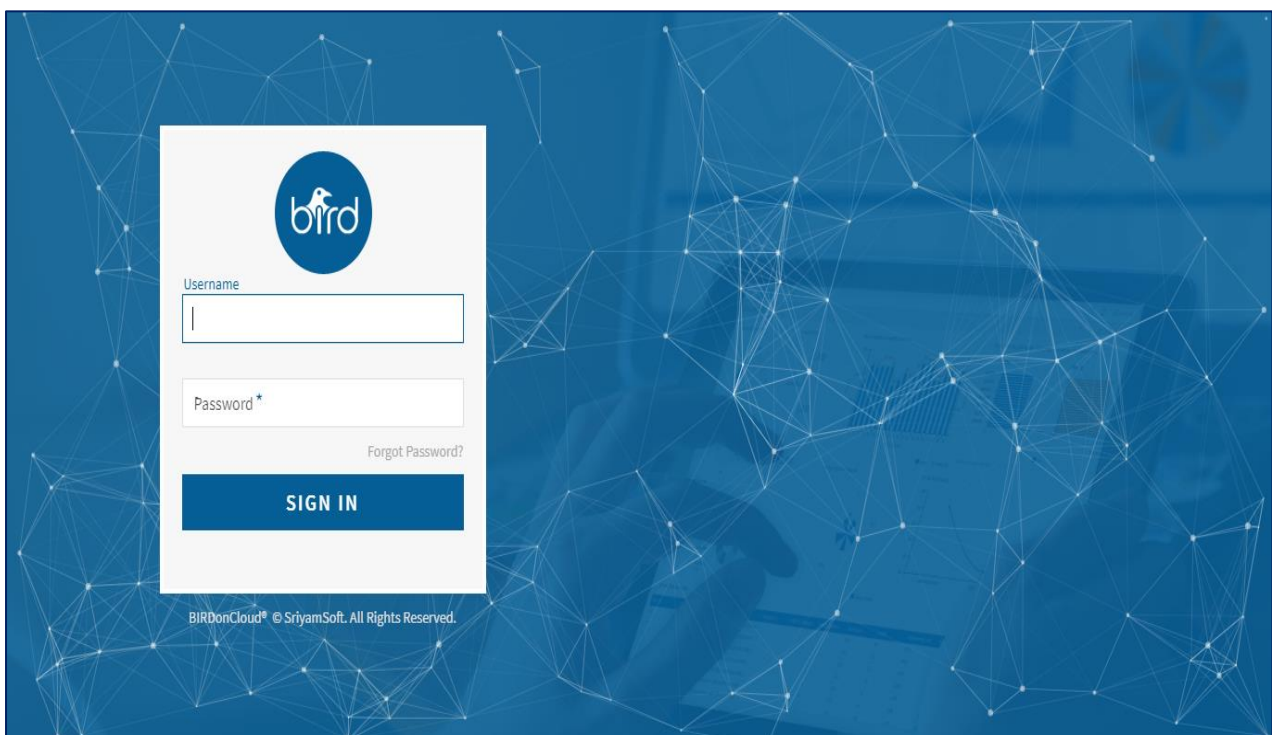
# Business Intelligence Reporting & Data Visualization

## Login Screen

Once BIRDOnCloud software is installed/configured, the admin user will publish the URL to access the system. The URL is typically like:

URL: <http://<IP address or domain name>:8080/Bird> (if HTTPS is enabled, the URL will start with "https"). The **port number** can also vary based on the organization requirements.

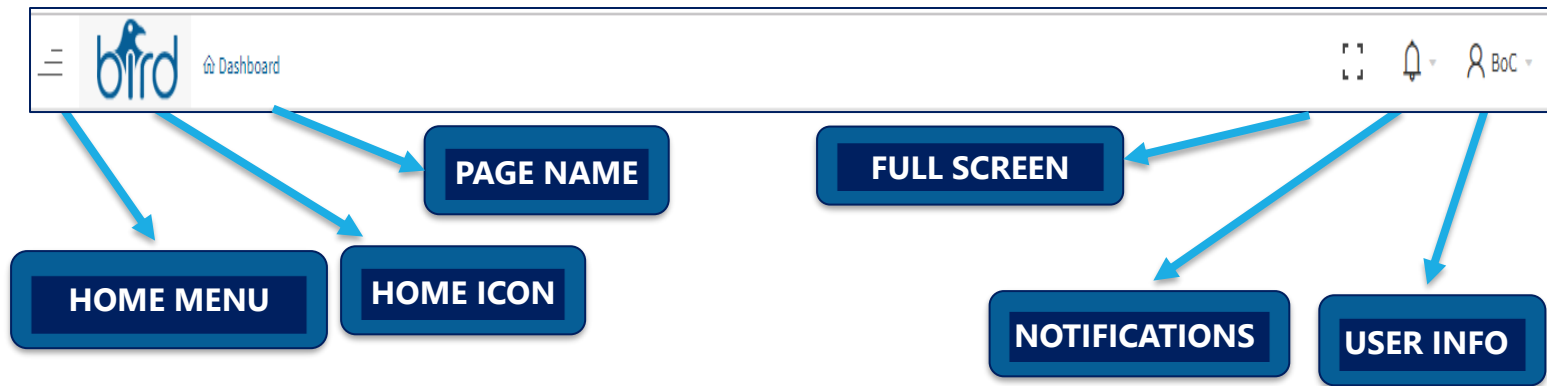
**Note** that "Bird" in the URL is case sensitive. Once admin user has configured your user profile with your email address, you should receive an email with your username and temporary password.





- Login with "Username" and "Password" provided.
- Click on "Sign-In" to get into the Dashboard.
- In case, customer opts to reset the password – an email would be generated and would be sent to configured and valid email address of the user as given in the application.

# Business Intelligence Reporting & Data Visualization

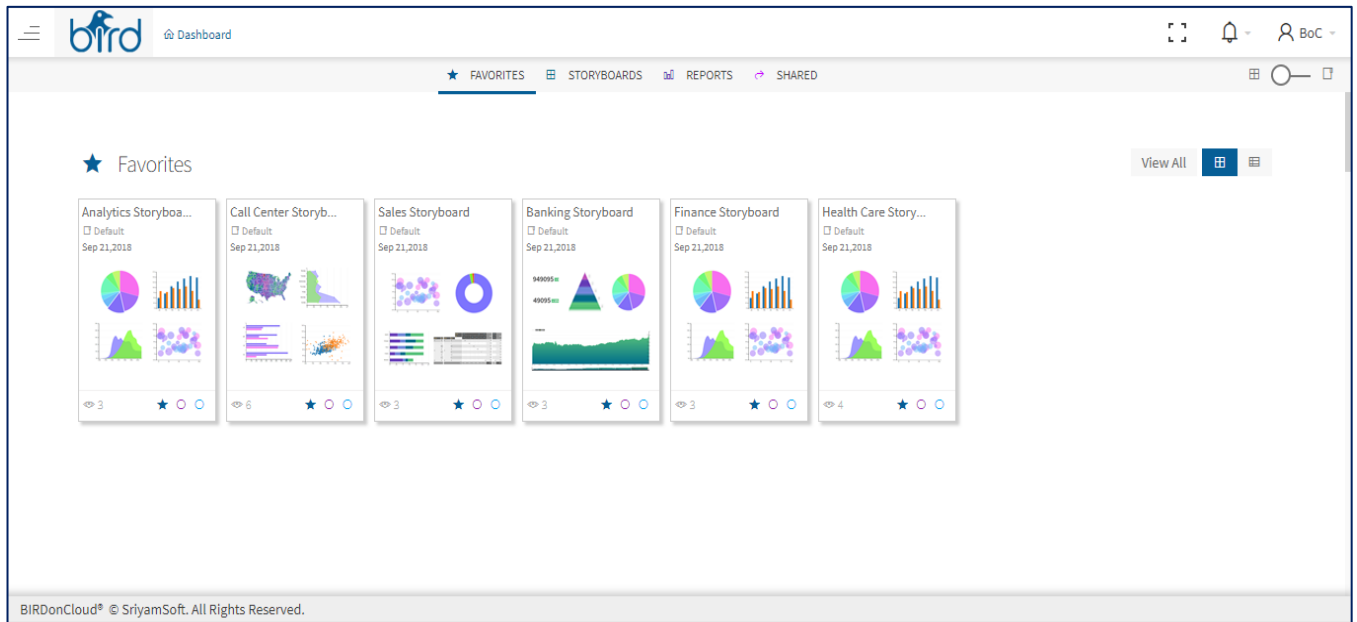
## Home Page Header




The above displayed is the home page header of the application.

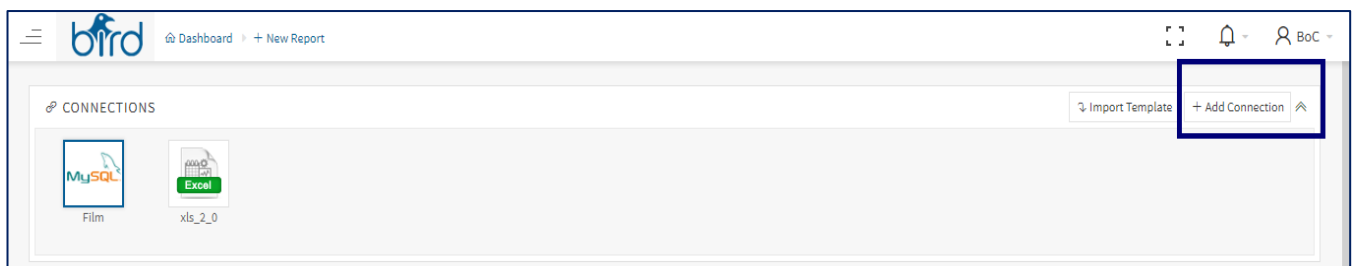
- By clicking on  Home page Menu option, Create Option (to create connections), Administration option (will be in enable mode if applicable or will be in disable mode), Storyboard & Reports options (all the created Storyboards & Reports will be displayed to the user in a hierarchical view).
- Based on **the License Permissions**, user can add and create the connections according to their available Data sources & only power users can generate the reports.
- The  Menu option will be available only for the Poweruser & Read-only user in the application. However, Read-only user will not have the option to create the connections.
- Clicking on "HOME" icon, the user will be re-directed to Home Dashboard irrespective of the screen the user is working on.
- Click on "User Info" ICON to browse the user information, to change the user password, to know about BIRDOnCloud version and licensing agreement and to logout from the application.
- "Notifications" Icon notifies the user about the recent activities performed and updated or shared reports to be viewed, including alerts and notifications.

# Business Intelligence Reporting & Data Visualization



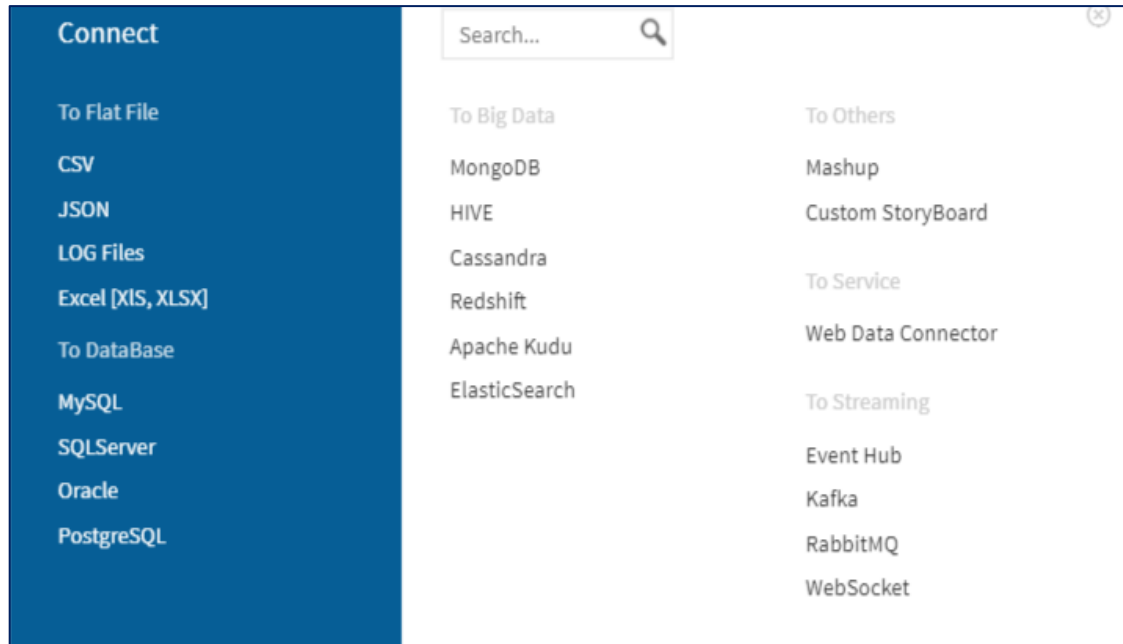
## BIRDOnCloud Home Screen

- Only power-user role users can generate new reports in the system.
- Upon clicking  Menu Icon from Home Dashboard, the "create report" option will be displayed and once the user clicks on create, all the available connectors that are already created by the power user will get loaded. If there are no connections created, then Connections pop-up will be appeared.



- Upon clicking the "Add Connection Option", a screen with the available data sources is displayed. The data sources are divided into five sections, such as: "Databases, Flat Files, Big Data, Services & others", as displayed in the screenshot below.

# Business Intelligence Reporting & Data Visualization




- A Power user can create multiple connectors according to their requirements by clicking on the “Add Connection” Option.

**Note:** To Prepare or to create a new Storyboard please refer to the BoC connections documentation.

## BIRD Logo



- The BIRD logo on the landing page/ home page of the application is used to redirect the user to this home page, wherever the user is in the application.
- Folder Name and Storyboard/Report Name will be displayed on the header of the report.
- By clicking on the Menu  option , Create Report, List of Storyboards, List of Reports and Administration option will be displayed.



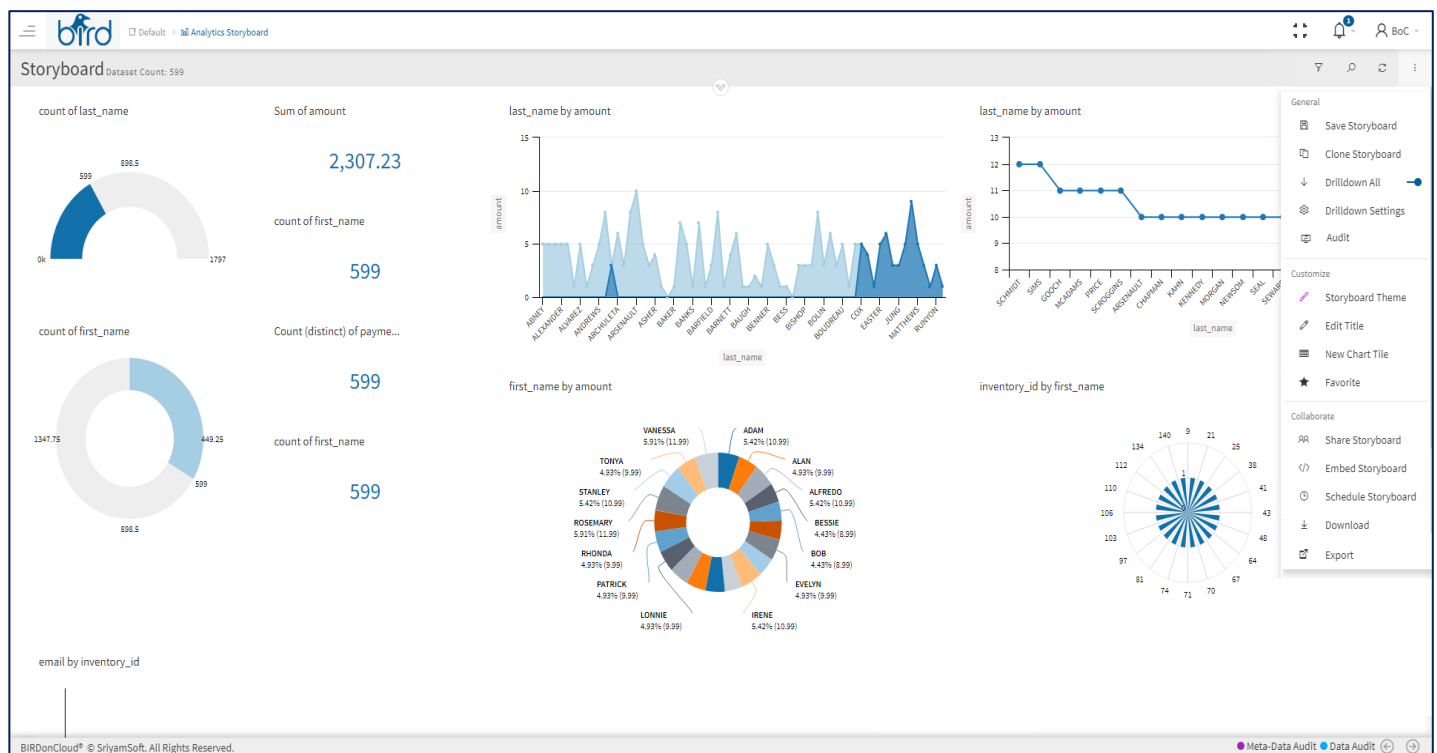
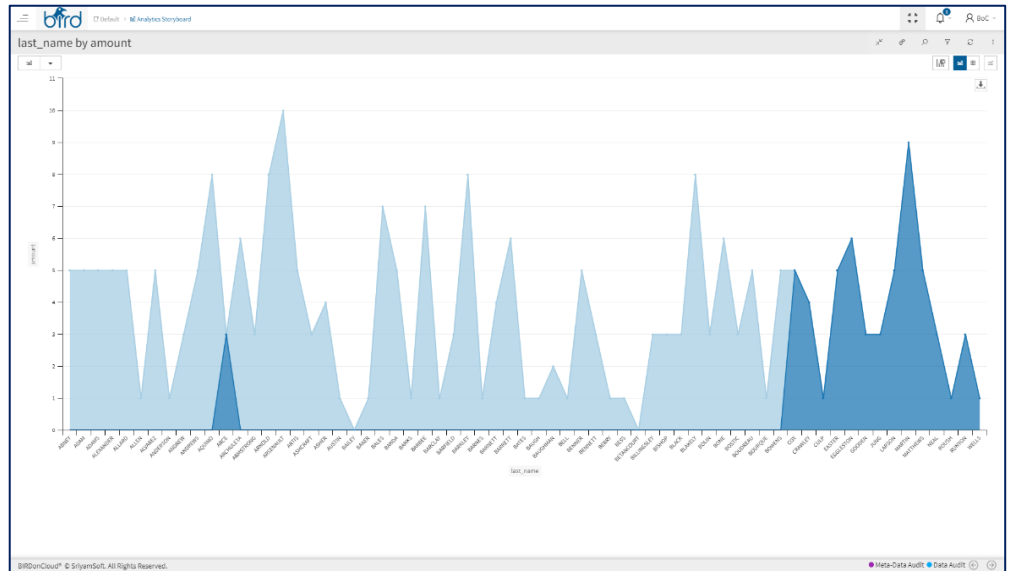
# Business Intelligence Reporting & Data Visualization

## TOGGLE FULL SCREEN

- If a user wishes to have full screen view then, the user can enlarge the screen by using the toggle full screen option.

If user clicks on the toggle full screen option, then the BoC page will be displayed in the maximized view as shown in the screenshot below.

User can make use of the maximized view during presentations.



# Business Intelligence Reporting & Data Visualization

## Notifications

If a power user shares any report or creates any alert, the shared reports and the alerts created by the user will be shown in the notifications window in the home page with date and time under the notification section.

The following features are available in the notifications window.

- **“Mark as Read”** option in the notifications window. Please find the above screenshot for your reference.

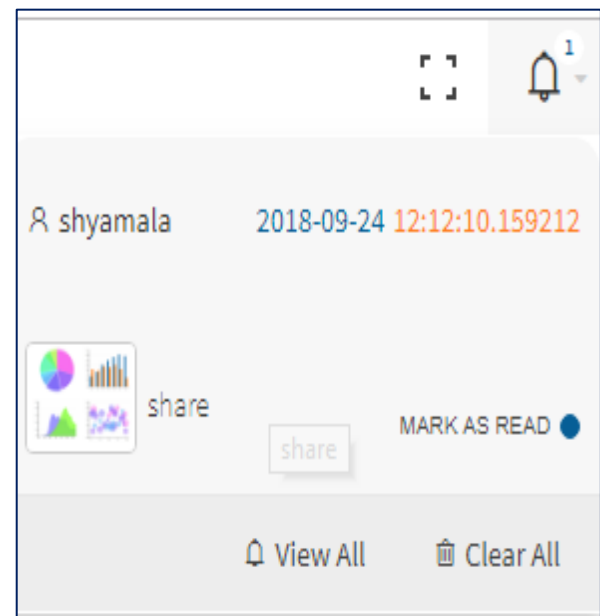
**Purpose:** If a user clicks on the **“Mark as Read”** option then, the count of the notification reduces, and the message will not be available in the Notification window.

- **“View All”** option in the notifications window. Please find the screenshot for your reference.

**Purpose:** If a user clicks on the **“View All”** option, the system will redirect to the Notifications “List page” to view all the details of the reports and alerts that are notified to a user.

**“Clear All”** option in the notifications window. Please find the below screenshot for your reference.

**Purpose:** If a user clicks on the **“Clear All”** option, the system will clear all the Notifications that are available in the window.

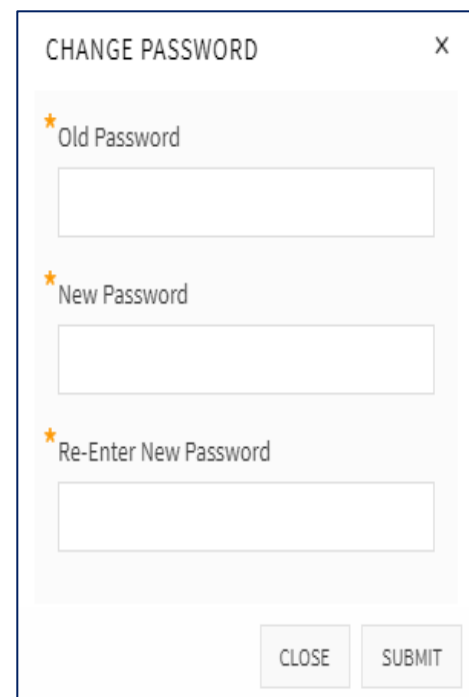
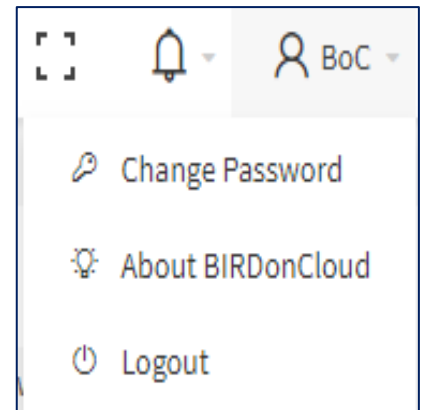


## User Info

If a user wants to change the password, or to have a look on the version of the application, or to logout from the application, the "User Info" option is used to perform all the generic settings from the home page.

## Change Password

- Click on "**Sign-In**" to get into the Dashboard from the home page
- For the first time, you are requested to reset your password.
- **Note:** In case, customer opts to reset the password, an email would be triggered to the configured and valid email address of the user as mentioned at the time creating Users
- If the user is logging into BIRDonCloud application for the first time a unique password with OTP will be shared to their registered email address
- User needs to login with the shared credentials for the first time and later can change the password by entering the digital password and the new password.
- By selecting the Change Password option under the User Info, the user can change the password after some time if the user requires it for security reasons.
- Please be informed that, for generating a new password, user need to provide the current password and then needs to generate a new password accordingly.

A screenshot of a 'CHANGE PASSWORD' form. The form has a title bar with 'CHANGE PASSWORD' and a close button 'X'. It contains three input fields, each preceded by a red asterisk: 'Old Password', 'New Password', and 'Re-Enter New Password'. At the bottom right, there are two buttons: 'CLOSE' and 'SUBMIT'.

# Business Intelligence Reporting & Data Visualization

## About BIRDonCloud

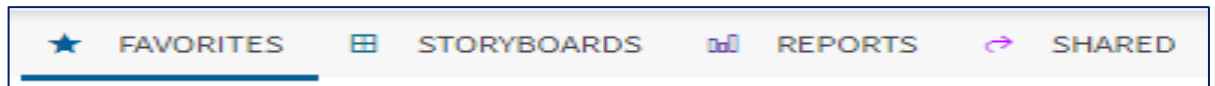
- On clicking the "About BIRDonCloud" option the user will be able to see the version of BIRDonCloud and the license agreement details.



- Note:** We request the user to read our SriyamSoft End User License agreement carefully before using the product.

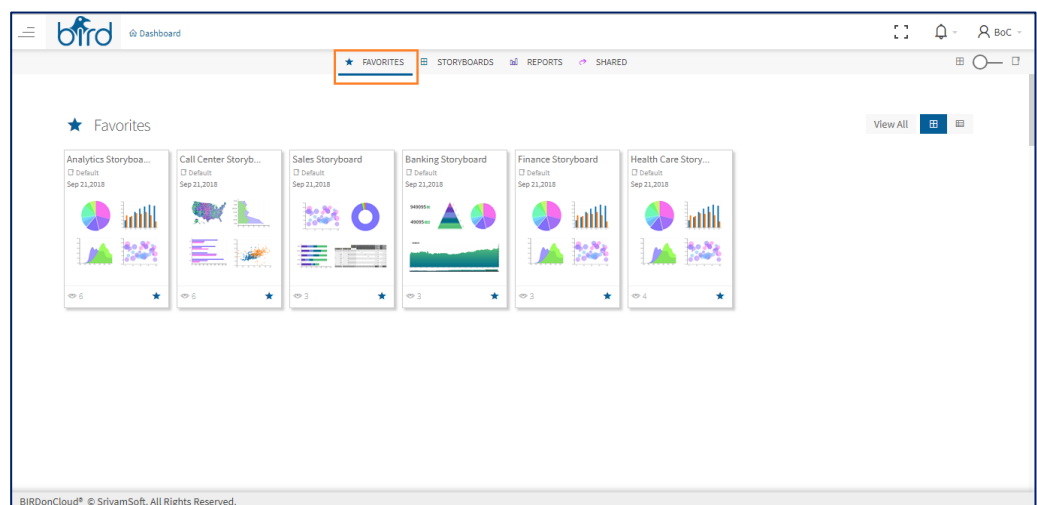
## BIRDonCloud Home Page Navigator

A navigator which is on the top of the home page displays the four sections namely (Favorites, My Storyboards, My Reports and Shared Reports) available in the home page of the BIRD application.



## Favourites

- All the storyboards and individual reports that the user has marked as favourites while saving them would be displayed under this section.
- Storyboards or reports can be enabled as their favourite reports, for easy reference, so that the user can find all the important reports at the first section itself.

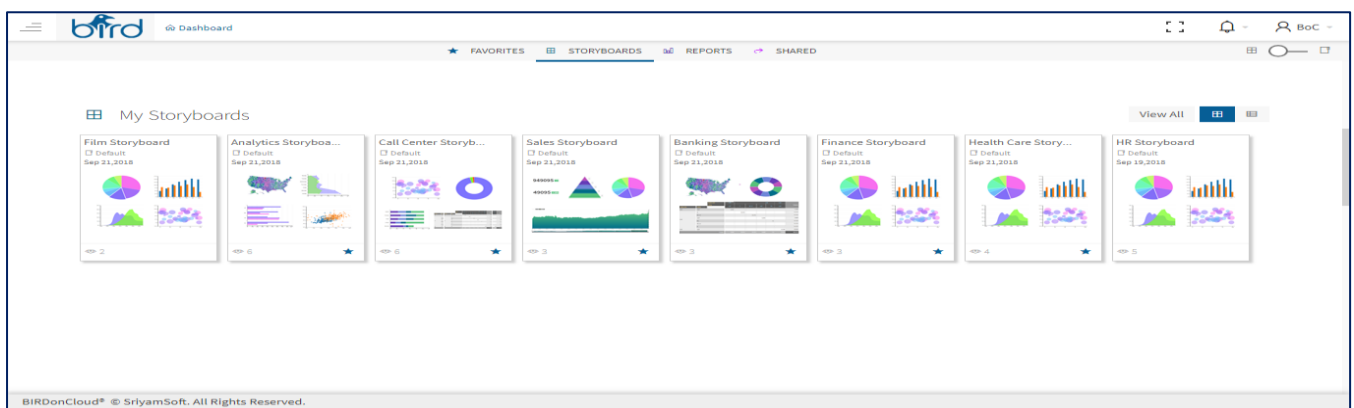


# Business Intelligence Reporting & Data Visualization

- The reports/Storyboard which are enabled as favourites are shown in blue colour and represented by star symbol.

## MyStoryboards

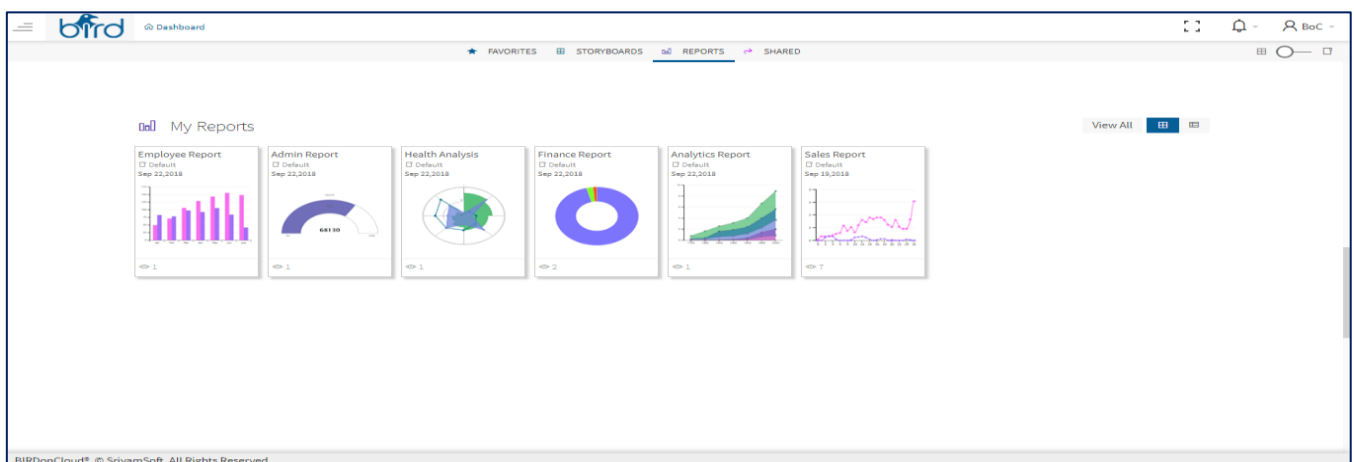
- Whenever a user saves a storyboard, it comes under My Storyboard section on the home page
- In the My Storyboard section, limited reports will be displayed



- Remaining storyboards can be visible on clicking *View All* in the My Storyboard section

## MyReports

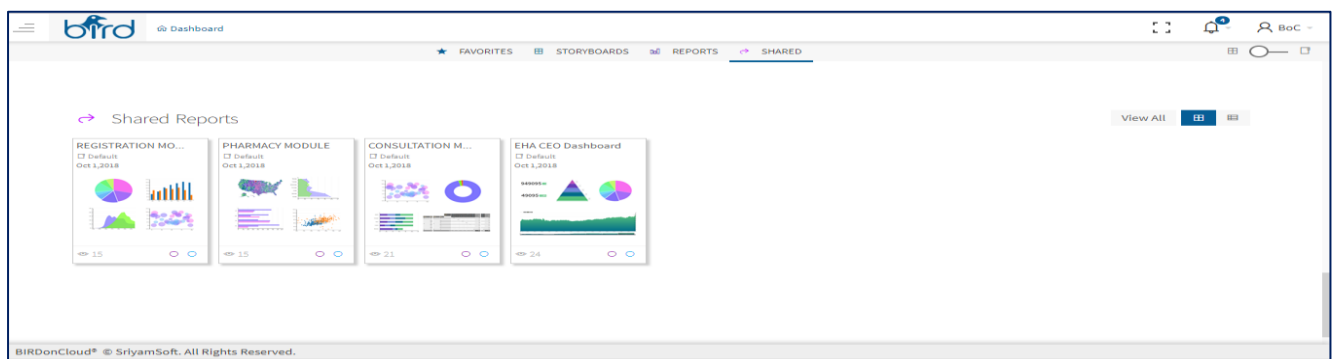
- From a storyboard, user has the option of maximizing a tile, and saving an individual report. This report will be displayed under My Reports section on the home page



# Business Intelligence Reporting & Data Visualization

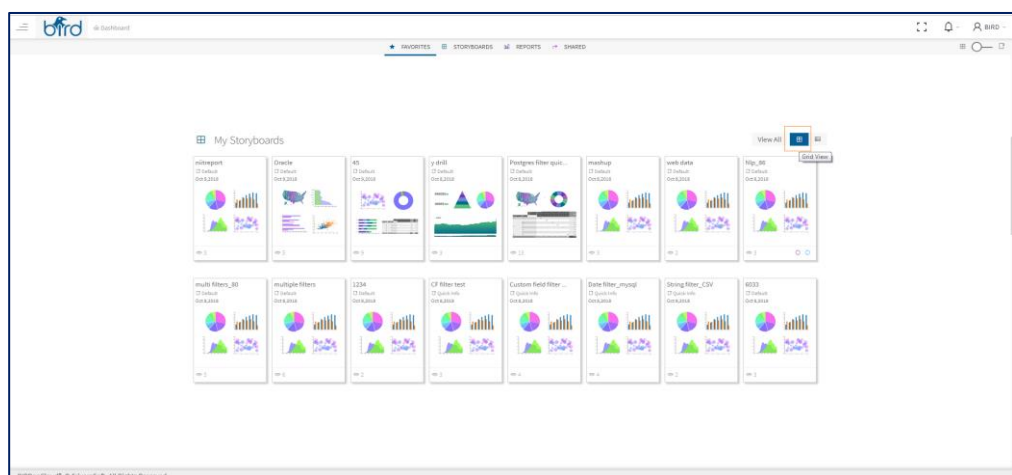
## Shared Reports

- Whenever a user receives a shared or collaborated report, the report will be displayed in the Shared Reports section.
- Based on permissions, the user can save the Shared Report and can make a copy for themselves. So, if a user who shared the report does any modification then the report which is shared with the other user will also be changed in the shared reports section and if a user saves a copy then the previously shared report will be saved in the Storyboard or reports section.



## Grid View and List View

- On clicking the 'windows' button which is displayed on the right-side top corner, the Dashboard by default will display the Reports/Storyboards in GRID VIEW as displayed in the screenshot displayed below.
- This GRID view can be changed to LIST VIEW by clicking the list button to have a quick access to the reports in tabular format (see next slide) all the information related to the reports will be displayed



# Business Intelligence Reporting & Data Visualization



**View** – To view the Report / Storyboard click on chart icon



**Delete** - On clicking the "Delete" icon the Report/ Storyboard is deleted from the user profile.

## Home Dashboard - Features



**EYE** icon helps the user to know how many times the report has been viewed either by the user or by any user who has permission to view this report



**SHARE** icon confirms if the specific data/storyboard/report has been shared with other users or not



**STAR** icon identifies a specific report/storyboard as a favourite report



**Clock/TIME** icon indicates a report or storyboard as scheduled



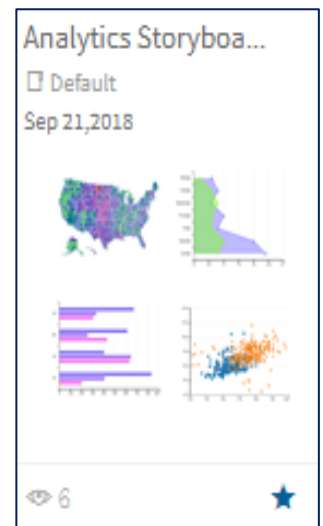
**Meta Data Audit Icon** indicates a report or storyboard as meta data configured



**Data Audit Icon** indicates a report or storyboard as data configured



The user can use the **Delete Icon** to delete a storyboard/report from the dashboard page



S.No.	Report Name	Description	Folder	Created Date	Report Type	View Report	Delete Report
1	Film Storyboard		Default	Sep 21, 2018	Storyboard		
2	Analytics Storyboard		Default	Sep 21, 2018	Storyboard		
3	Call Center Storyboard		Default	Sep 21, 2018	Storyboard		
4	Sales Storyboard		Default	Sep 21, 2018	Storyboard		
5	Banking Storyboard		Default	Sep 21, 2018	Storyboard		
6	Finance Storyboard		Default	Sep 21, 2018	Storyboard		
7	Health Care Storyboard		Default	Sep 21, 2018	Storyboard		
8	HR Storyboard		Default	Sep 19, 2018	Storyboard		

Showing 1 to 8 of 8 rows

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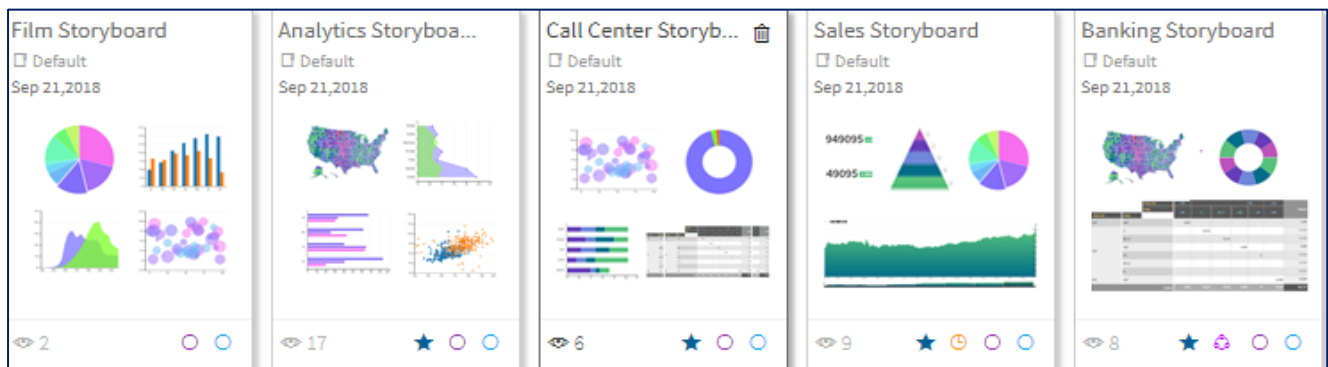
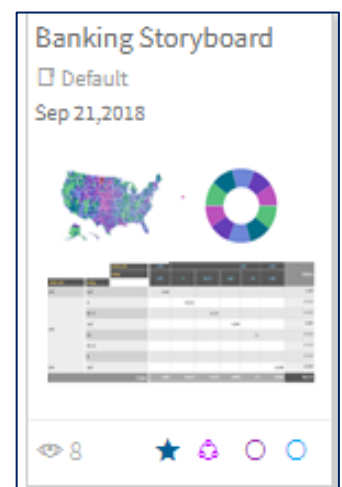
# Business Intelligence Reporting & Data Visualization



**Alert Icon** indicates that a report is configured for Alert and it will be displayed only for a MyReport.

## Storyboard on Home Page

- Click on any Report/Storyboard available on the Dashboard to view the respective Report / Storyboard. Upon Clicking, the Report/Storyboard gets opened and the Report Name of the Storyboard/Report is displayed on the respective screen
- "FOLDER" Icon specifies the folder in which the Storyboard or Report has been saved
- Any Storyboard or report can be deleted in the dashboard on clicking the TRASH or DELETE icon which gets highlighted when hovered over.
- Another way to delete the Storyboard or Report directly from home page is, by clicking on delete icon. On clicking the delete icon the specific storyboard or report would be deleted
- Report/Storyboard created date is displayed for easy and quick reference (note that the date is server date, where the application is hosted)
- For reports/storyboards that have long titles, on mouse hover, a tooltip is used to show the entire name of the report

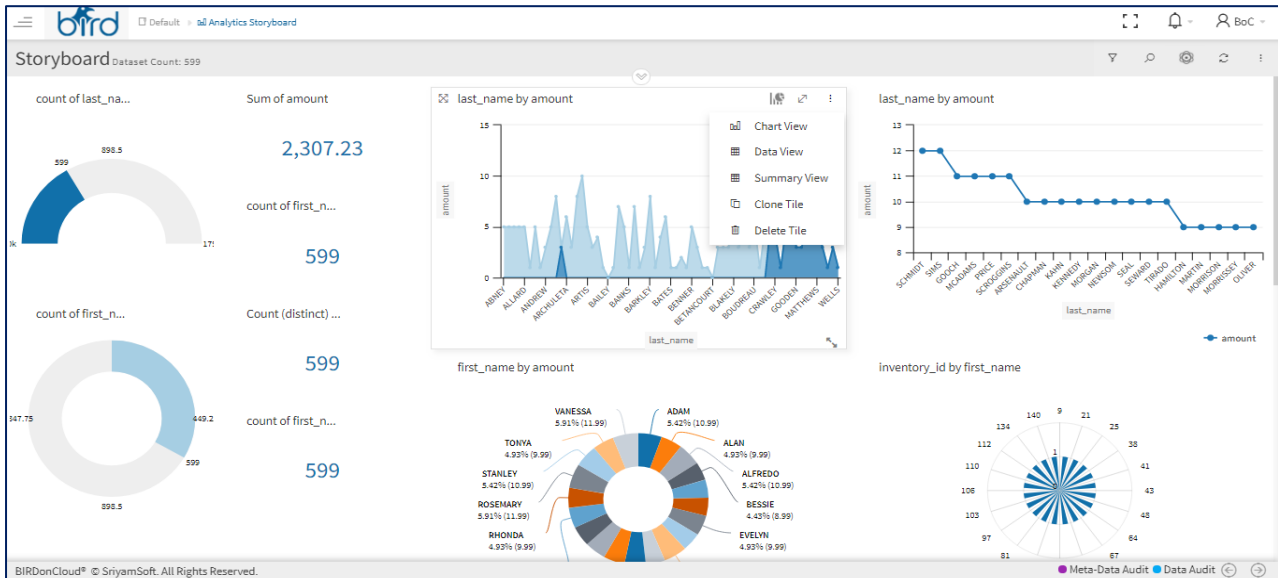




# Business Intelligence Reporting & Data Visualization

## Viewing a Saved Storyboard

- By loading a SAVED Storyboard and plotted Storyboard, a set of reports called as tiles are displayed, as shown in the screenshot below.



- The system creates 12 tiles in a storyboard. It is not recommended to put more than 12 tiles at a time, as it might impact the performance of the system
- If you want more than 12 tiles, we recommend to "CLONE" (using the clone feature) the storyboard from the Storyboard Header at the top right
- For every Storyboard created there is a toolbar on the top, where a user can apply the filters on the storyboard, search for the reports related to the specific Storyboard, Refresh the data, maximize the screen to full view where, a vertical dotted option is given with more options
- On clicking the dotted option, the user can see the storyboard toolbar window popped up.
- The user can use the different options listed as part of the toolbar, to save, clone, to change colour themes, share, Audit, drill down, schedule, embed, export, download etc. The same toolbar is listed when a tile from a storyboard is maximized as well, where in the user has the option to save the report as My Report

# Business Intelligence Reporting & Data Visualization

## Showing data table as default tile in storyboard

By default, when a user plots a Storyboard, twelve tiles will be created initially. Out of the twelve tiles, the last tile will be the Data Table, where raw data of the data source is showcased for the user's reference.

- If a user wants to add more tiles in the Storyboard, then the user can use the Add tile option from the "More Menu" **Dropdown**. User can add 'n' number of tiles in the Storyboard.

Please find the below screenshot for your reference. The below Storyboard is a default data table displayed initially.

Health Scores Summary Info

Show 10 entries

Search:

Department	PTNT_CITY	PTNT_GENDER	PTNT_ID	Aggregated Health Score	Cardiac Health Score	Kidney Health Score	Liver Health Score	Pulmonary Health Score	Diabetic Health Score	Hypertension Health Score
Human Resource	Hyderabad	Male	2	4.75	6.5	4	4	4	5	4
Human Resource	Kotdwar	Male	1	7	9	6	8	5	8	6
Human Resource	Pune	Female	2	5.83	6.5	5	5	8	5.5	3.5
Human Resource	Pune	Male	1	5.67	4	9	4	9	4	4
House keeping	Bangalore	Male	1	6.33	8	6	6	8	4	7
House keeping	Hyderabad	Female	1	4.33	4	5	5	5	3	4
House keeping	Kotdwar	Male	1	3.83	4	3	3	3	4	4
House keeping	Pune	Male	1	6.33	7	7	8	9	3	7
Admin	Pune	Female	3	5.83	6.33	5.33	5.33	7.33	4	5.33
Engineering	Bangalore	Female	1	5.17	4	6	6	8	3	4

Showing 1 to 10 of 131 entries

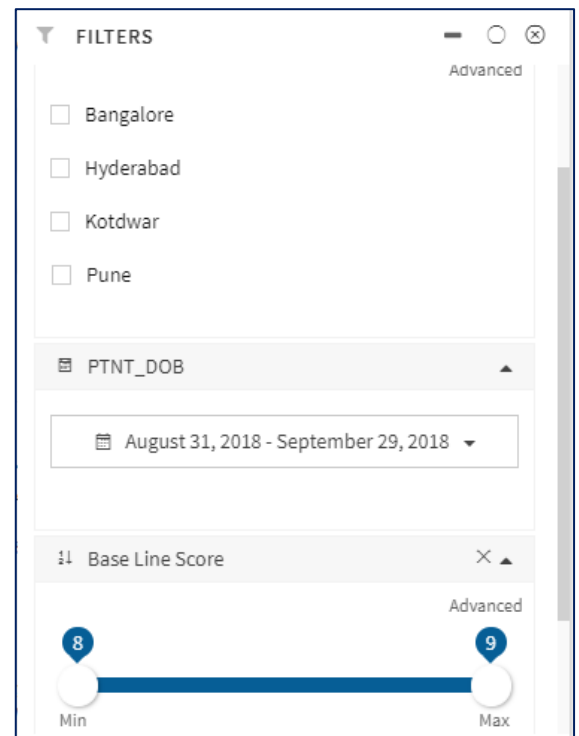
Previous 1 2 3 4 5 ... 14 Next

Now let us see below all the features and their functionalities used during creation of the Reports or Storyboards. On the Storyboard/Report header, there is a toolbar with Filters, NLP, Smart Insights, Refresh Browser and More option (which contains number of features), which is explained below.

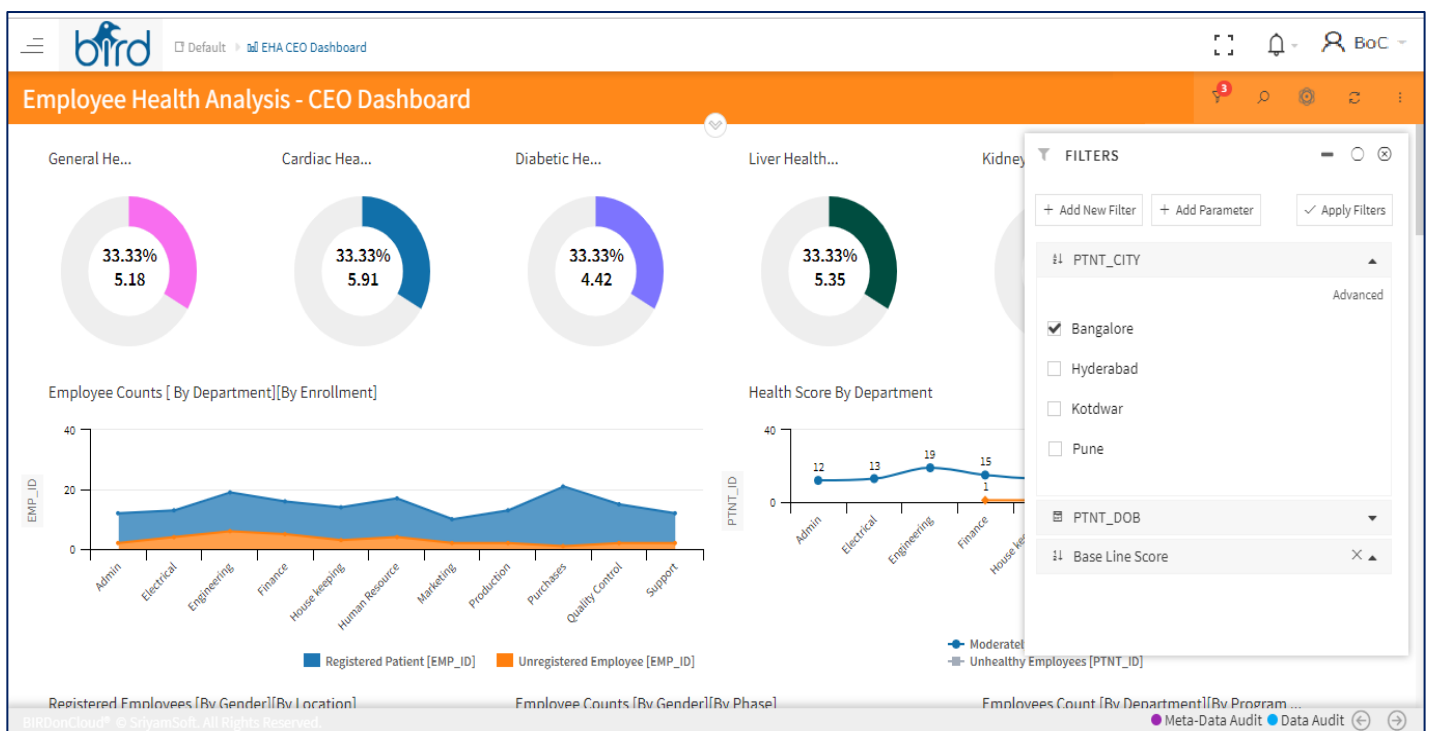
# Business Intelligence Reporting & Data Visualization

## Filters

The filter icon allows a user to select the required field(s) to apply filters on the data. The data type of each field is also shown next to the field name. Once the user wants to hide the filters window, then the user can click on the – button which is available on the filter widget. User can minimize or maximize the filter menu and can drag and drop wherever required.



As a reference, the above screenshot shared shows a filter in minimized state. When user clicks on “+” icon the filter window will be maximized.



# Business Intelligence Reporting & Data Visualization

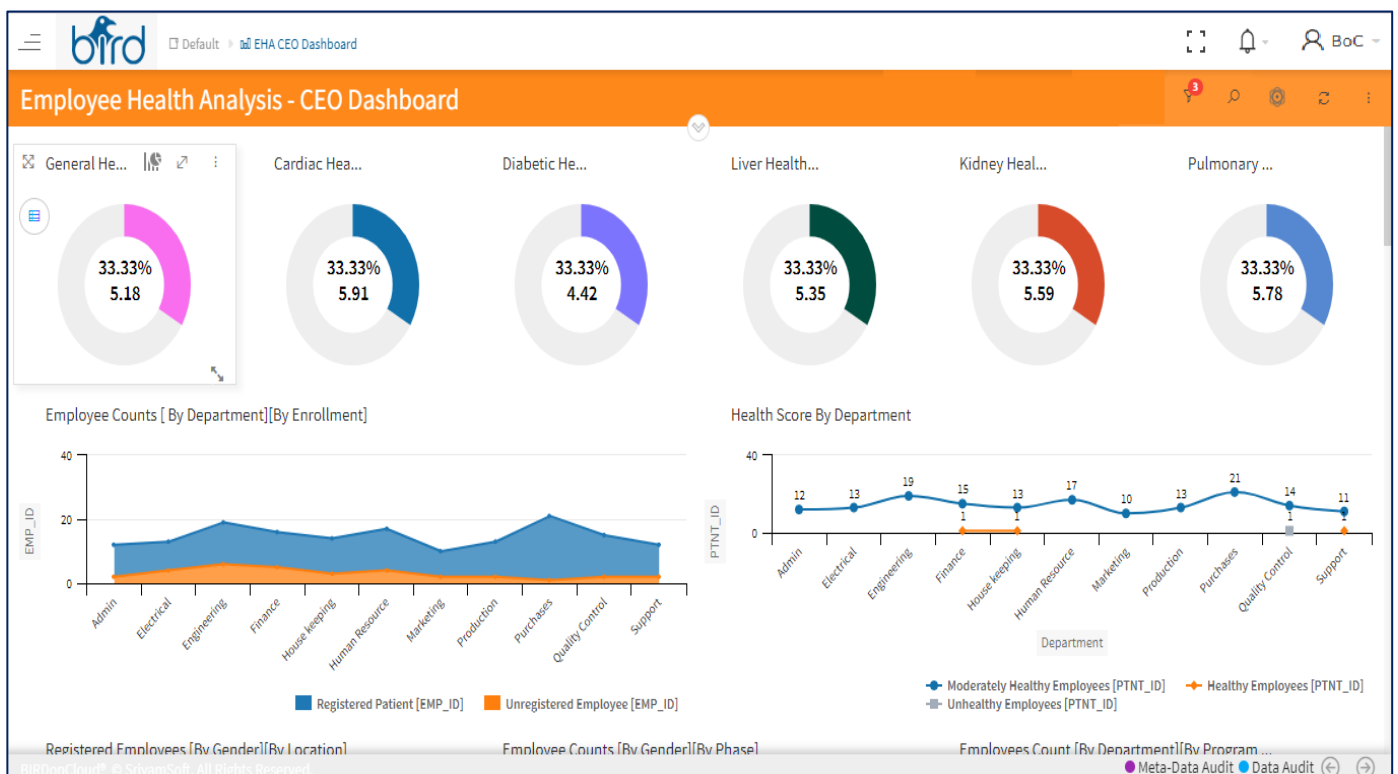
There are 3 types of filters as follows

- Numeric Filter
- Non-Numeric Filter
- Date Filter

Please find the screenshots for your reference.

A vertical stack of date filter buttons: Today, Yesterday, Last 7 Days, Last 30 Days (highlighted in blue), This Month, Last Month, and Custom. Below these are 'From' and 'To' date input fields with values 08/31/2018 and 09/29/2018 respectively, and Cancel and Submit buttons.

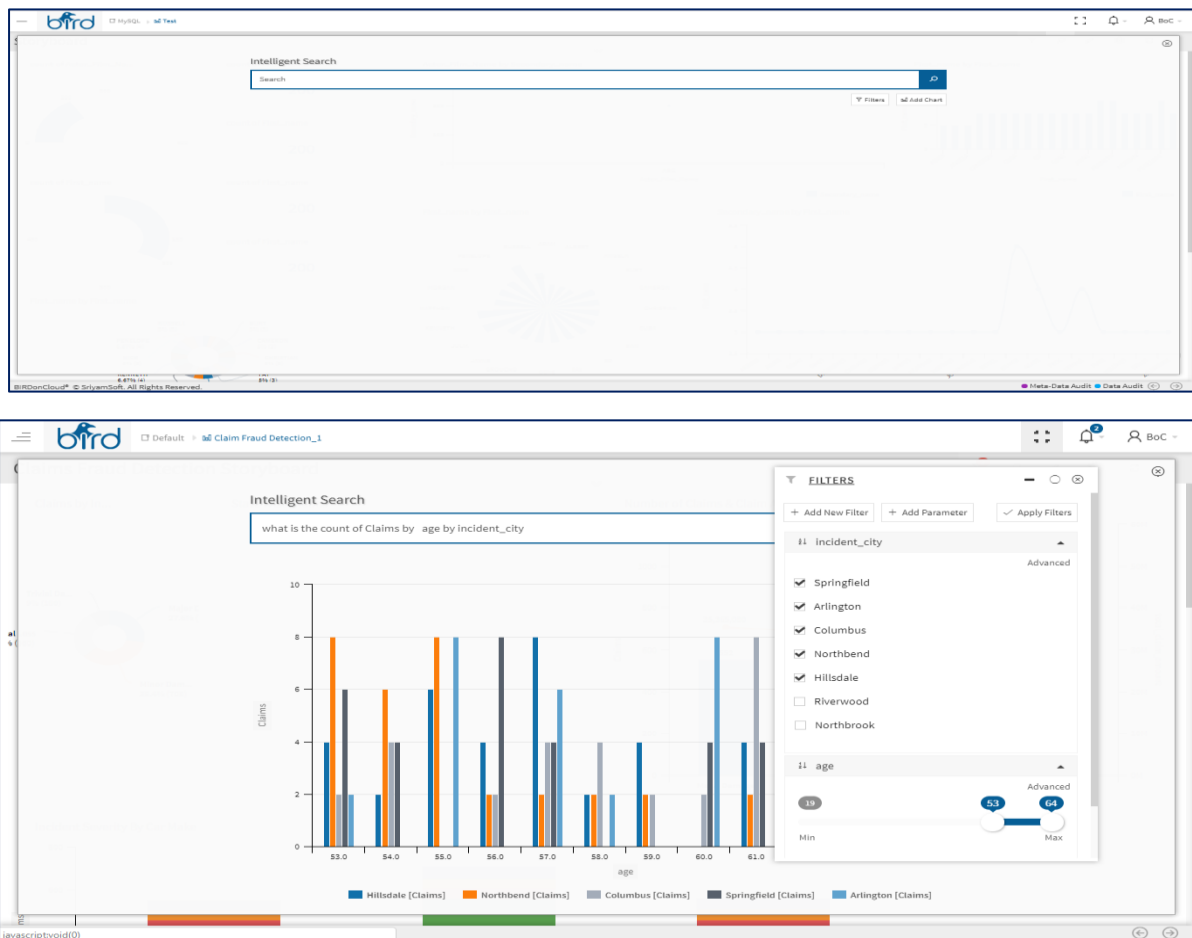
A 'FILTERS' panel with a search bar and buttons for '+ Add New Filter', '+ Add Parameter', and '✓ Apply Filters'. It shows two filters: 'PTNT\_CITY' with a list of cities (Bangalore, Hyderabad, Kotdwar, Pune) and 'PTNT\_DOB' with a date range slider from 8 to 9. A blue box highlights the 'PTNT\_DOB' filter.



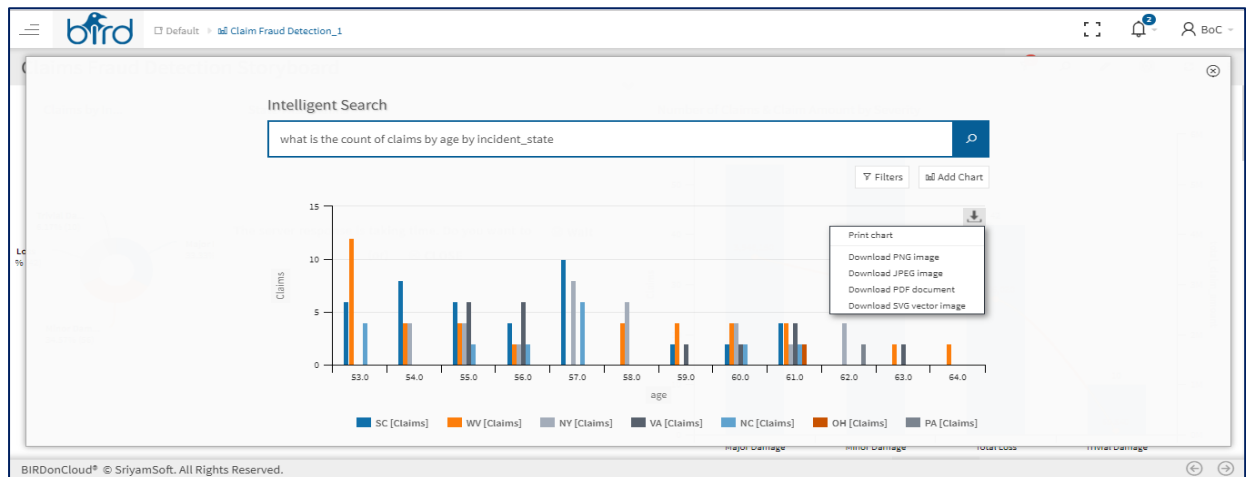
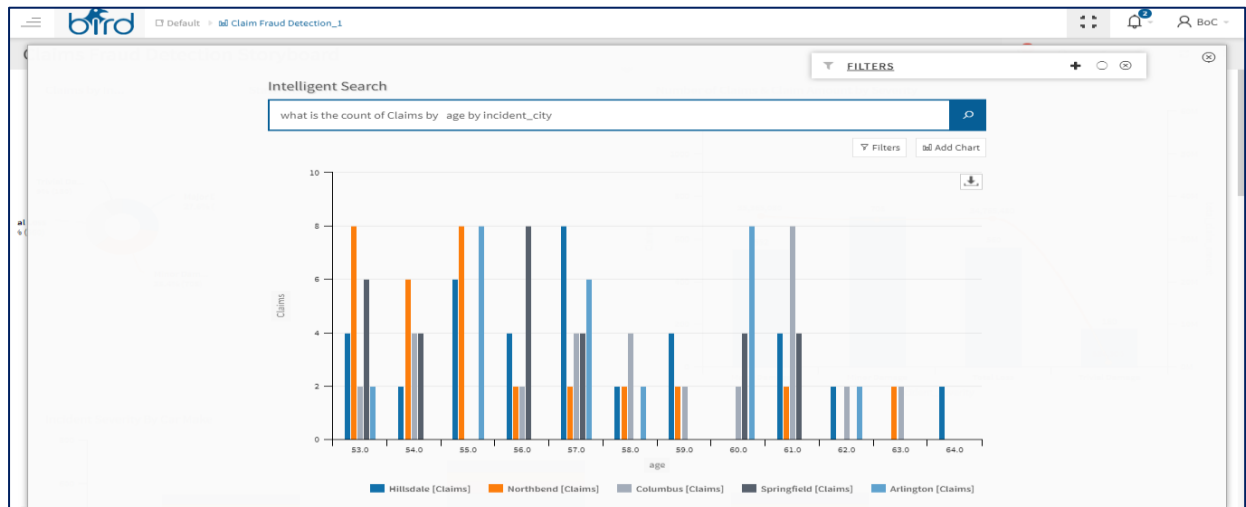
# Business Intelligence Reporting & Data Visualization

## Intelligent Search

- BIRDOnCloud has the option of NLP search (natural language processing). Using this option, any kind of question can be asked by the user on the dataset that is being used.
- To help the user, type-ahead questions come up while typing the questions. The user can start the questions by "What is the .....". If the user wants to add multiple fields during search, the user can separate the fields using the "by" option.
- For example, "What is the sum of days to manufacture by colour by name". A chart is displayed if the search criteria is met.
- An option of "Add Chart", Filter, Download options are given to the user to add the chart to the current storyboard, filter the data and to download the chart as shown in screenshot below



# Business Intelligence Reporting & Data Visualization



# Business Intelligence Reporting & Data Visualization

## Smart Insights

Smart insights is a powerful feature that uses machine learning to explore the data and uncover valuable insights.

This feature enables user to:

- Discover the key influencers driving your KPIs
- Gain insights about these influencers
- Identify outliers
- Analyze patterns in your data
- Use historical data to predict future outcomes
- Simulate 'what-if' scenarios

## How to generate Smart Insights with BoC on the Fly

If a user has a new dataset and not quite sure where to start with and how to plot the reports according to the business vertical and the user need to build a dashboard quickly, then user can look into the insights.

Run the smart insights to generate interesting interactive visualizations based on your data. Smart insights can be run on a dashboard tile (scoped insights).

The insights feature is built on a growing set of advanced analytical algorithms and it allows people to find insights on their data in new and intuitive ways.

## Using Smart Insights

Looking at a fictitious example, let's suppose we run a global software company that employs hundreds of people. We have sales managers, full-time employees, and contractors. We sell software licenses to three customer groups:

- Fortune 500

# Business Intelligence Reporting & Data Visualization

- Large enterprise
- SMBs

To get the most out of Smart Insights, user need to have questions in mind such as:

- What are the key influencers driving deal size?
- How do different regions impact the number of licenses sold?
- What correlation, if any, exists between supervisor and contractors' ratings?

In other words, what aspects of your business do you want to explore through your data?

We start our Smart Insights analysis with a question — **what are the key influencers driving deal value?** We are essentially trying to determine what factors contribute to the number of licenses companies purchase.

We login into the BIRDonCloud and upload our sales data. We choose to create a new storyboard and are presented with all the measures and dimensions from that dataset.

We can select a single measure or dimension, which we would like to keep it as a target value and start finding insights. For this example, we will select **Deal Value /Sales** from the list, then exclude all the measures and dimensions that we don't want to include in the analysis. Now we can run our Smart insights and begin our analysis.

After running Smart Insights, following sections are displayed with different cards, showing the insights to the user

- Smart Insights Overview
- Key Influencers
- What Influences Quantity
- Outliers



## How to Run Smart Insights on a Dashboard/ Storyboard dataset

Open a dashboard/storyboard, and then click on the smart insights option which is displayed on the top tool bar to get insights for the selected connection data.

Now it's your turn. Explore insights by selecting the column name, considering which factor you would like to see the visualizations.

1. BoC uses various algorithms to search for trends on your dataset.
2. Within seconds, your insights are ready. Select the insights to view the visualizations.  
**Note:** Some datasets can't generate insights because the data isn't statistically significant.
3. The visualizations display in a special **Smart Insights** canvas with separate insight cards. Each tile in the Storyboard consists of a chart or graph with the pre-defined headings.
4. Instead of searching for insights against an entire dataset, narrow your search to the data used to create a single dashboard tile. This too is often referred to as **scoped insights**.
  - Open a dashboard.
  - Click on Smart insights option
  - Select that insight card to dig further.
  - Continue digging into your data
  - Run insights on the card itself. This is often referred to as **scoped insights**.

Smart Insights in BIRDOnCloud searches for hidden insights. It makes easier to use the advanced analytics by allowing you to target specific data for discovering smart insights faster.

Simply view a dashboard tile, click on smart Insights, and BoC will search data related insights and the displayed insights are Quality Insights, Major Factors, Correlations, Outliers, Key Influencers, Insights on Quantity, Simulation.

# Business Intelligence Reporting & Data Visualization

The smart Insights feature is built on a growing set of advanced analytical algorithms. We're excited to continue building this functionality into more places in BIRDonCloud to allow more people to find insights on their data in new and intuitive ways.

Smart Insights will scan the related data based on the selected entity and display a list of potential insights you may want to explore further. To drill into a specific data point, you can even select the data column in the visual and smart Insights will focus on that data point when searching for insights. Here are some of the insights we can uncover in your data on the dashboard.

## Smart Insights Overview Section

An insight is the result and analytics is one way of gaining insight.

For example, if a user wants to select a superannuation fund, and user requires an insight about which one is better? Now, a user can gain this insight in multiple ways

- a) By collecting data on sales performance over years and perform analytics to workout which has the best and consistent investment return history or
- b) By diving employee years of experience in the industry and knowing/collecting information/data from many people.

So, based on the data, the insight is understood much more efficiently, and the key decision-making can be done on the information. While analytics is one of the most reliable way of getting to that insight from the available data...

1. In the overview section of the smart insights there are three graphs, such as
  - Insight Quality,
  - Insight Findings &
  - Correlated Columns

# Business Intelligence Reporting & Data Visualization

**i. Insight Quality:** The insights quality will be based on the Data quality. Data quality refers to the overall utility of a dataset(s) as a function of its ability to be easily processed and analysed for other uses, usually by a database, data warehouse, or data analytics system.

Quality data is useful data. To be of high quality, data must be consistent and unambiguous. Data that is not high quality can undergo data cleansing to raise its quality.

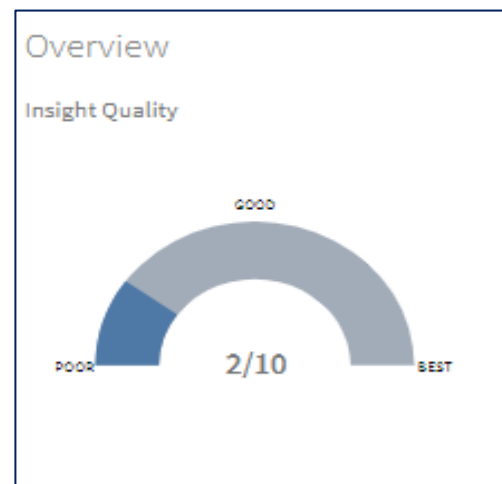
Data quality is a critical factor to the efficiency of horizontal business applications.

When data is of excellent quality, it can be easily processed and analysed, leading to insights that help the organization make better decisions. High-quality data is very essential to business intelligence efforts and other types of data analytics, as well as better operational efficiency.

In the chart displayed, it shows the insights quality on the uploaded dataset and it is represented in Gauge chart for easy understanding.

The quality of the data is indicated in three ways such as

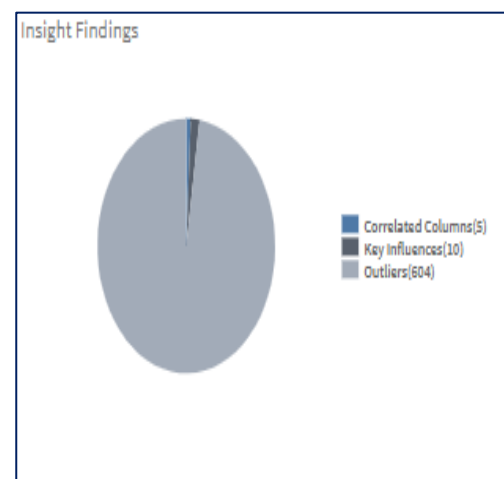
- Best,
- Good &
- Poor



## ii. Insight Finding (s)

Finds cases where majority of a total value can be attributed to a single factor when broken down by another dimension. User is provided with a facility to configure the dimension.

Sales representative accounts for the majority of Discount.



# Business Intelligence Reporting & Data Visualization

## Correlated Columns:

The term "correlation" refers to a mutual relationship or association between quantities. In almost any business, it is useful to express one quantity in terms of its relationship with others.

For example, sales might increase when the marketing department spends more on TV advertisements, or on a customer's average purchase amount on an e-commerce website might depend on a number of factors related to that customer.

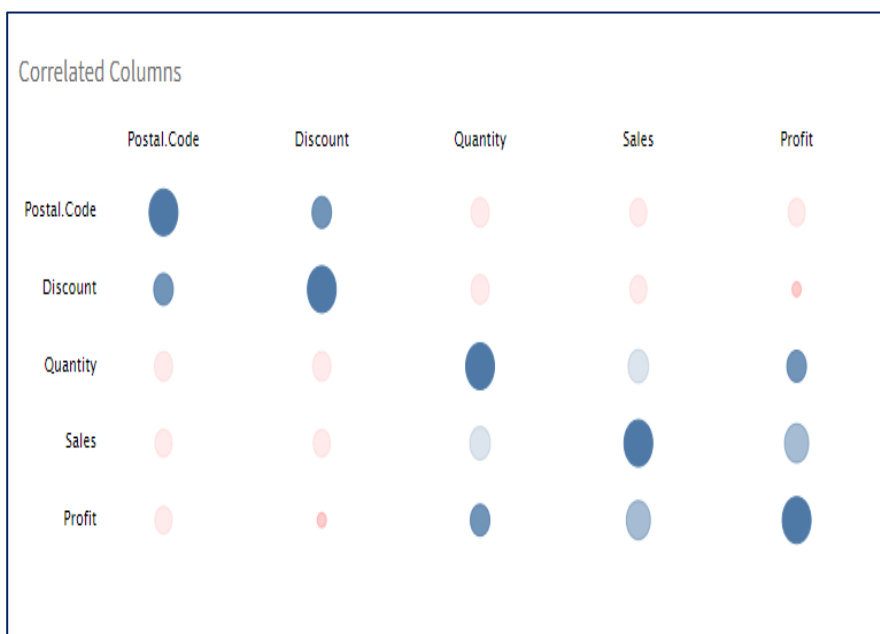
Often, correlation is the first step to understand the relationships and subsequently build better business and statistical models.

Correlation helps in the following aspects:

- Correlation can help in predicting one quantity from another
- Correlation can indicate the presence of a causal relationship
- Correlation is used as a basic quantity and foundation for many other modelling techniques

Correlation is a statistical measure that describes the association between random variables. There are several methods for calculating the correlation coefficient, each measuring different types of strength of association.

Correlated columns detect the cases where multiple measures show a correlation between each other when plotted against a dimension in the dataset.



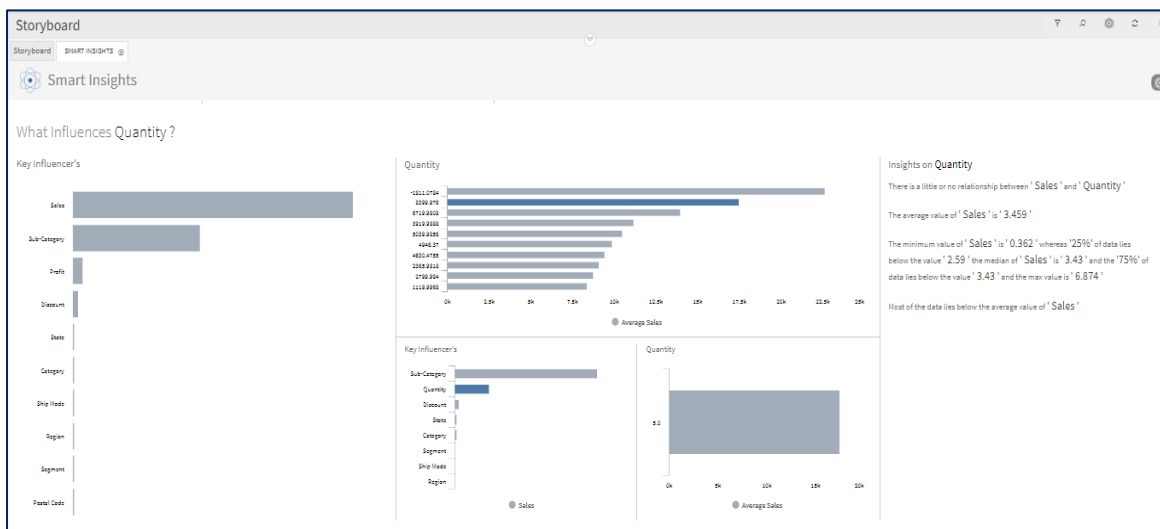
# Business Intelligence Reporting & Data Visualization

In the displayed screenshot above, there is a correlation between, Postal code, Discount, Quantity, Sales & Profit. Based on the correlated columns, user gets more insights.

## 2. What Influences Quantity:

- i. Key Influencer's - By selecting one of the key influencers, we can focus our analysis.

For example, if user selects Customer as Segment, which changes the display for the Deal Value Quantity or Size chart. Now the different **customer segments** are displayed: Fortune 500 companies, large enterprises, and small to mid-size businesses (SMB). We can see what percentage of our total customer base each of these segments make up, as well as see which ones are above and below the average deal value.



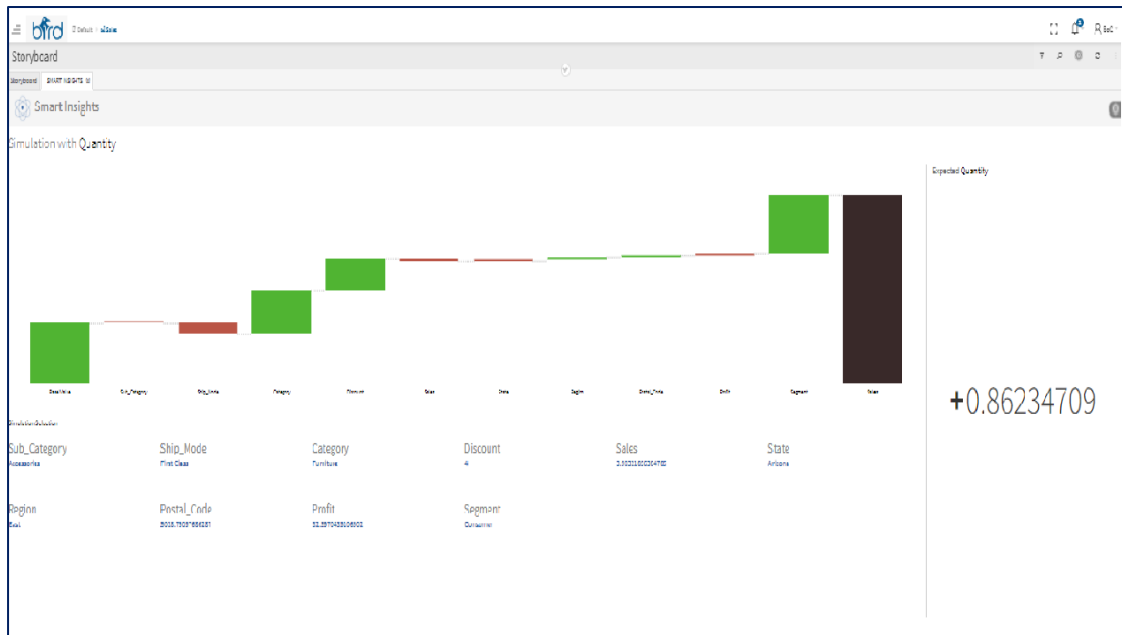
## ii. Quantity

- Key Influencer's — displays the measures and dimensions contributing to our success
- Quantity - displays the deal value size based on the key influencer user selects
- Insights on Quantity — displays key insights based on the measure or dimension we select

# Business Intelligence Reporting & Data Visualization

## 3. Simulation with Quantity

Running a simulation - We can also run a simulation using Smart Insights, which allows us to test hypothetical scenarios. The chart displays all the measure we selected and excludes all the ones we didn't select.



If we consider sales as a target value, then the chart is displayed as shown above

If we take the example of the license that we provide to the three types of organizations then above is the screenshot for reference.

Along the bottom of the chart, we have eight measures, which represents the following:

- **Base Value** — defines the expected value size excluding all variables. In this case, our base value is \$15,505.38. Any additional variable will either enhance this or detract from this base value.
- **Number of Licenses** — represents the expected value additional licenses will bring. All else remaining equal, if there are more licenses, then there will be more revenue added to the base value.
- **Customer Segment** — represents the additional value different customer segments bring. Here you can isolate each customer segment to refine your analysis.

# Business Intelligence Reporting & Data Visualization

- **Number of Customer Meetings** — represents the additional value customer meetings bring. Here you can determine how customer meetings contribute to revenue.
- **Length of Sales Cycle** — represents the additional value different stages in the sales cycle bring. Here you can determine which is the best sales cycle length.
- **Contract Level** — represents the additional value contract levels bring. Here you can determine which contract level contributes most to your revenue.
- **Country** — represents the additional value each country brings. Here you can determine which country contributes most to your revenue.
- **Deal Value** — represents the total deal value considering all selected measures and dimensions.

Suppose we want to know what, if any, correlation exists between revenue and the **Number of Customer Meetings** with Fortune 500 C-level clients in North America.

Some questions we may want to ask are:

- What impact do customer meetings have on revenue?
- Is there a point of dimensioning returns? What is the sweet spot, or optimal number, of customer meetings to have with C-level clients?



# Business Intelligence Reporting & Data Visualization

If we update the fields by clicking on the values displayed at the bottom of the chart in the blue color all the way to the right and increase it to the max, it dramatically increases revenue. Immediately, the accompanying chart adjusts.



But is this the optimal number of meetings? To determine the so-called sweet spot, we need to play around with the slider a bit more.

Factoring in all other variables, we determined that 40 meetings is the optimal number of



meetings to have with your Fortune 500 C-level clients in North America. Any more or any less will detract from our total revenue.

The results/ insights can be shared within your organization.



# Business Intelligence Reporting & Data Visualization



## 4. Outliers

Looking at Unexpected Values, we can dive deeper into Smart insights by looking at the unexpected values. This means that the system has predicted future values based on our data but has missed the mark in some way. These predictions happen automatically and are calculated in Smart insights without the need to run a separate predictive model.


If the actual deal was higher than what was predicted, we may similarly be curious to learn about the contributing factors so that we can potentially replicate this success in the future.

This is useful if we want to learn more about the outliers identified by the Machine Learning algorithm.

Actual	difference_Actual_predicted	percentage	Predicted_value	Profit	Sales	Quantity	Discount	Postal_Code	Region	Ship_Mode	State	Segment	Sub_Category	Category
1.0818812111111111	-0.4141111111111111	-44.0	1.0860223222222222	17.0001	88.88	1.0	0.0	47120.0	Central	Standard Class	Indiana	Consumer	Chairs	Furniture
1.0818812111111111	-0.8181111111111111	-80.0	1.0899923222222222	-11.138	71.714	1.0	0.1	58100.0	South	Standard Class	Tennessee	Consumer	Storage	Office Supplies
1.0818812111111111	-0.7141111111111111	-111.0	1.0817719111111111	98.1001	100.18	1.0	0.0	58811.0	South	First Class	Alabama	Corporate	Appliances	Office Supplies
1.0818812111111111	-0.1041111111111111	-10.0	1.0817719111111111	3.1104	6.48	1.0	0.0	80100.0	West	Standard Class	California	Corporate	Paper	Office Supplies
1.0818812111111111	-0.0001111111111111	-0.0	1.0818812111111111	-0.0000000000000000	0.001	1.0	0.7	87100.0	West	Standard Class	Oregon	Home Office	Binders	Office Supplies

# Business Intelligence Reporting & Data Visualization

## Refresh

- As the name indicates, if we need to see new refreshed/updated data from the source, we can always click on  this icon to get the updated data at the Storyboard & Report level.
- When the dataset is so vast, then the power user can use the refresh icon to sync the data in to the in-memory layer for the first time after saving the report.

## More

Upon clicking the dotted option, a more option would be displayed, which is categorized in to 3 sections. They are as follows, Please find the screenshot for reference.

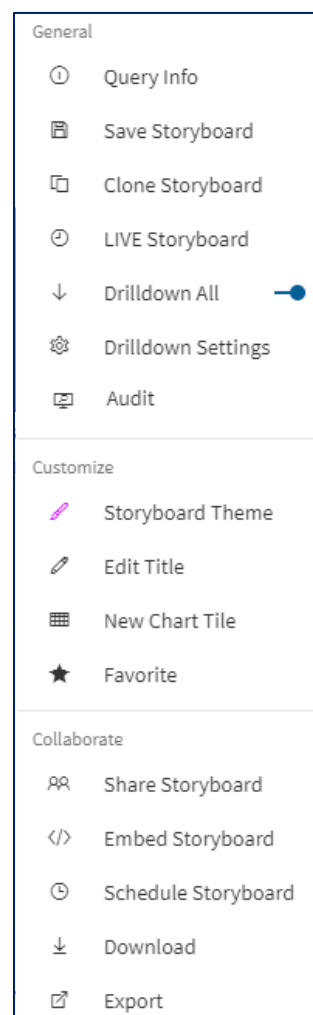
### General Section

From the general section the user can view the query info, save the report and can clone the report as well.

Please find below their functionalities and their screenshots

### Query Info

- On click of “**Query Info**” icon, the query behind (if applicable) the specific storyboard /Report is shown. Enables the user to reuse the query to plot a new report.
- Note that this option is permission driven, and if needed, we can control the access permission of to show/hide
- If shown, it's for read-only purposes and will be available only for the databases, to give an idea to the user on how the Storyboard has been created.



# Business Intelligence Reporting & Data Visualization

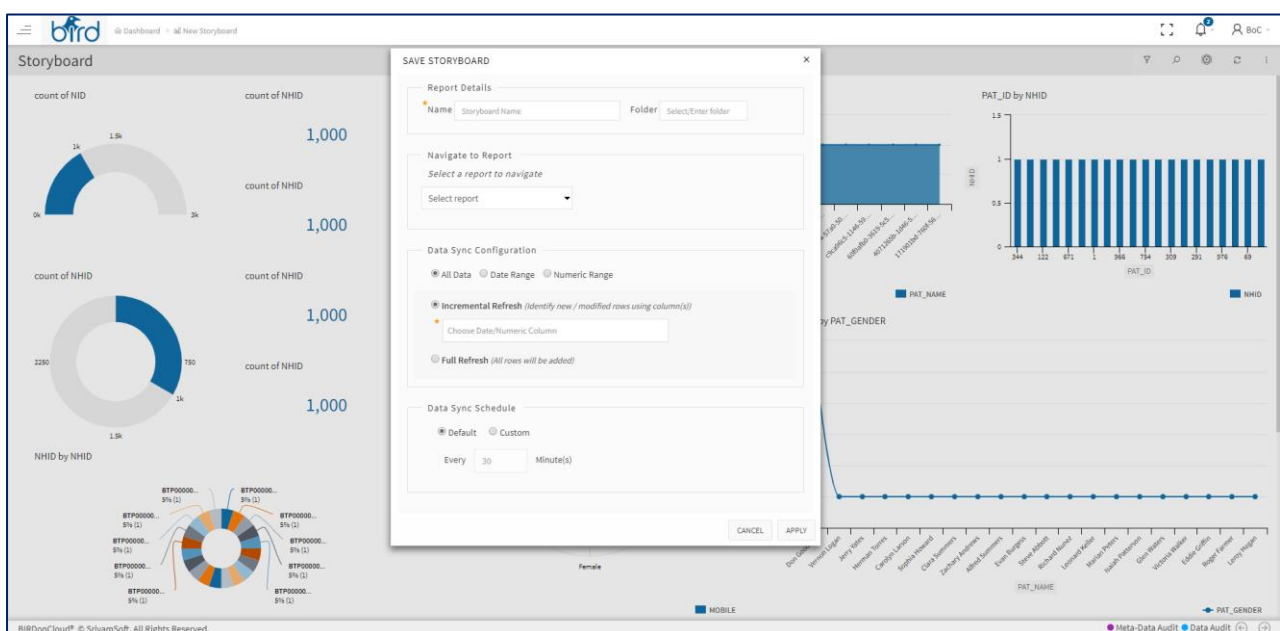


## Save Storyboard

- A Storyboard can be saved by providing the Name and Folder details
- Based on the selection the data will get synced and saved.

## Data Sync Configuration Functionality

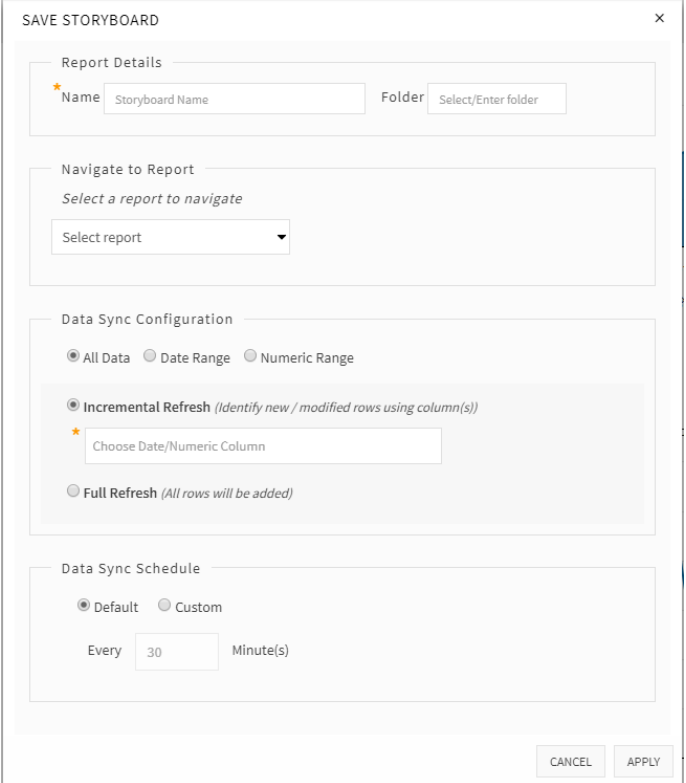
Data sync configuration functionality in the save Storyboard/ My Report modal is used to update the data sync type as per user requirement even after the Storyboard/My Report is saved.



# Business Intelligence Reporting & Data Visualization

- Earlier the user cannot change data sync configuration in Storyboard/ My Report once the data sync configuration is selected and saved. The user can change the data sync configuration from one type to other type, even after saving Storyboard/My Report.

- Earlier to BoC 2.5.5 versions, initially if a user selects the data sync configuration type as Full refresh and saves the storyboard/report and again if the user wanted to change to other Data sync type, the user was not having any option and the configuration section is disabled state. In the recent BoC 3.0 & 3.1 version s onwards, the data sync configuration functionality has been updated and the user can select any method before or after saving



The screenshot shows a 'SAVE STORYBOARD' dialog box with the following sections:

- Report Details:** Includes fields for 'Name' (Storyboard Name) and 'Folder' (Select/Enter folder).
- Navigate to Report:** Includes a dropdown menu labeled 'Select a report to navigate' and 'Select report'.
- Data Sync Configuration:** Includes radio buttons for 'All Data', 'Date Range', and 'Numeric Range'. The 'Incremental Refresh' option is selected, with a sub-label '(Identify new / modified rows using column(s))'. Below this is a text field labeled 'Choose Date/Numeric Column'. The 'Full Refresh' option is also visible with the sub-label '(All rows will be added)'.
- Data Sync Schedule:** Includes radio buttons for 'Default' and 'Custom'. The 'Default' option is selected. Below this is a section labeled 'Every' with a text field containing '30' and the label 'Minute(s)'.

At the bottom right, there are 'CANCEL' and 'APPLY' buttons.

the report. In the screenshot the data sync configuration has set up as "Incremental Refresh". In the Incremental Refresh date field is added, so that sync will be triggered based on the added Date field.

- If user wants to update the data sync configuration from date field to ID field, then user can update the sync configuration.

## Numeric Range Option in Save Storyboard/MyReport window

In the save window, under the Data sync configuration, numeric range functionality has been added. Please find the screenshot given below for your reference.

# Business Intelligence Reporting & Data Visualization

**Purpose:** If a user wants to apply the sync between a specific numeric range data of a column, then a user can simply select the numeric column and can provide the “from and to” range of the data. User can add ‘n’ number of numeric columns and can configure the range according to the data sync required.

The image displays two side-by-side screenshots of the 'SAVE STORYBOARD' dialog box, illustrating the configuration for data synchronization.

**Left Screenshot:** The 'Data Sync Configuration' section shows the 'Incremental Refresh' option selected. The 'Choose Numeric Column(s)' field contains 'last\_update'.

**Right Screenshot:** The 'Data Sync Configuration' section shows the 'Numeric Range' option selected. A red box highlights the 'Choose Numeric Column(s)' section, which shows 'PAT\_PIN\_ID' selected with a range from 1 to 1000000.

## Data Sync Schedule

- The user can schedule the data sync according to the user's choice. A data sync configuration option is provided to configure, the type of sync, namely incremental sync or full sync. Once the sync is fired, in the background a CRON job is created that takes care of the sync between the source and target systems.

## Default

- On selecting the default radio button, the data would be synced and saved every 30 minutes from the source to target.

# Business Intelligence Reporting & Data Visualization

## Custom

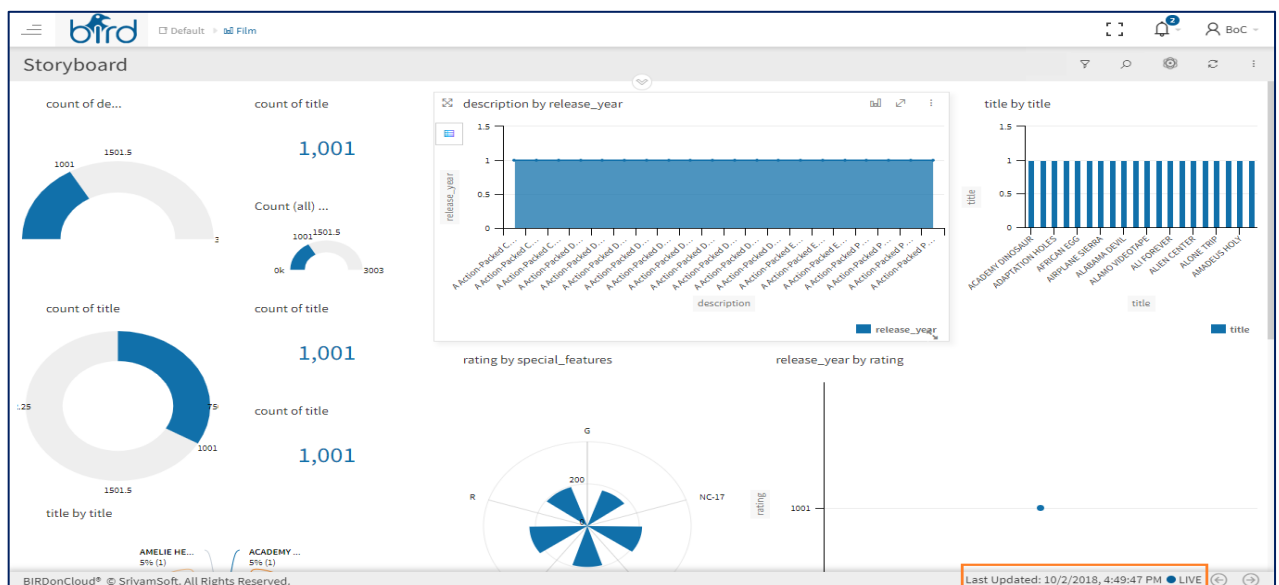
- On selecting the “custom” icon the user can customize the data sync in minutes, hours and days.

## Last updated Date & Time displayed on the status bar of My Storyboard & MyReport

Last updated date and time on the status bar of a MyStoryboard and MyReport has been added.

Please find the steps given below to view the Last updated date and time on the status bar of a report

- Open a Storyboard/MyReport and click on “More Menu” option at top right corner of the screen.
- Select MyStoryboard/MyReport theme option as shown in the screenshot below.
- Select the option “show” for the Data count as shown in the below screenshot below.
- After clicking on apply then at the top left corner ‘last update date & time’ will be appeared as shown in the screenshot below, which is highlighted in orange colour.



# Business Intelligence Reporting & Data Visualization

## Clone

- Clone is a special feature to reduce the effort of duplicating the query and to ease access of copying original data set which is used to plot a storyboard where in the data set is not duplicated to generate a new report. On click of clone, original dataset is not duplicated, only a reference link is created pointing to the original dataset
- Once we click on Clone button, we can generate a replica of the original Storyboard and can utilize it and when needed. A friendly pop up message will be displayed. The cloned Storyboard/MyReport can be viewed in the respective section with the Report name\_clone in the suffix.

## Live Storyboard

In the Storyboard/ MyReport toolbar menu, added "LIVE" option, to pump the real-time data.

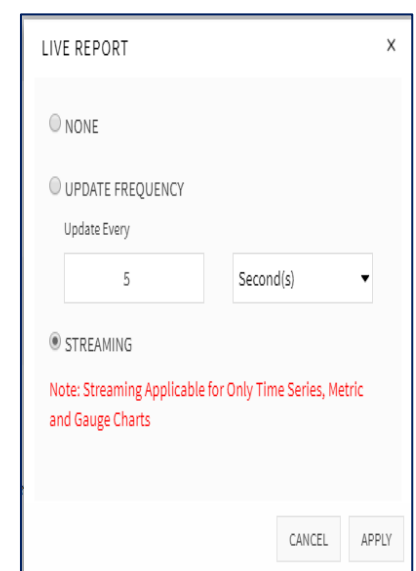
### Steps to Apply "Live" MyStoryboard/ MyReport

1. Open a Storyboard / MyReport.
2. Click on the "More Menu" option button which is present at top right corner of the screen.
3. Select "Live" Storyboard/ "Live" Report option from the displayed menu.

After selecting the "Live" Storyboard/MyReport option, user will get a pop up as shown in the screenshot.

Following are the three options in "LIVE" Window

- **None** - If a user wants to stop the "Live" data "**None**" option can be selected.
- **Update Frequency**- The data that the user would like to pull from the server can be configured.

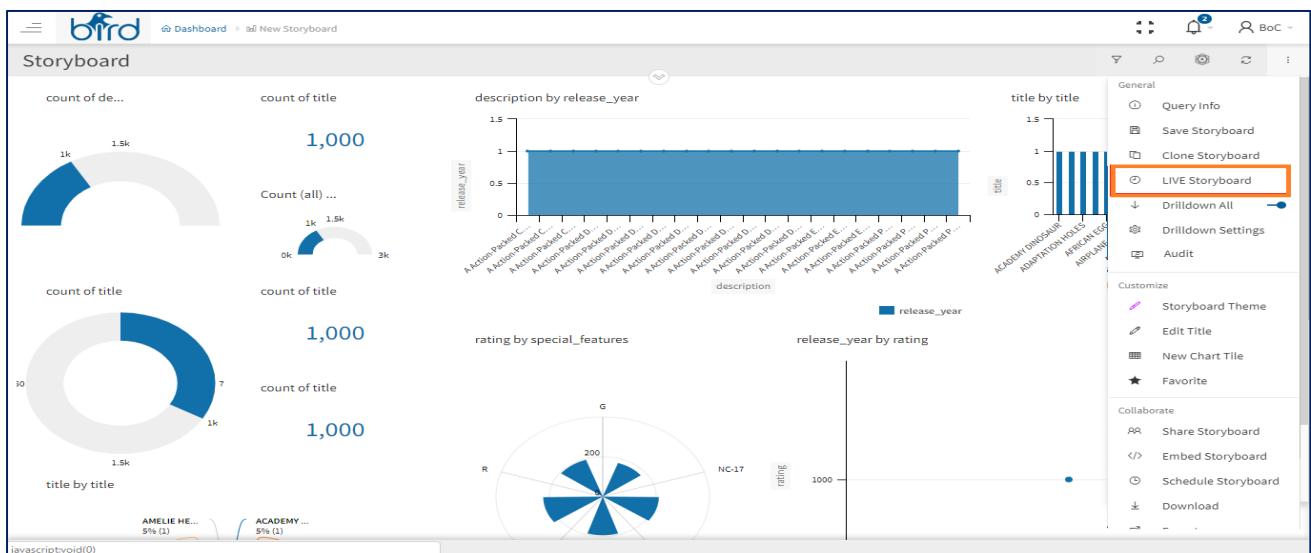


# Business Intelligence Reporting & Data Visualization

The frequency of the data, the user wants to refresh the user interface to see the latest real-time data can be configured. The frequency of the time can be configured in Seconds, Minutes and Hours.

- **Streaming** - If a user enables the Streaming option then the data will be displayed by the push mechanism from the server, as and when data gets updated.

If a user selects the Update Frequency option, then the data will be pulled from the server according to the configured Time frequency. If a user selects the Streaming option, then the data will be pushed from the server, whenever the data is updated.



Streaming is applicable only for the Charts available under the Streaming section under the Chart Styles and not applicable for flat files.

There is no time frequency for update of the data. As soon as the date is updated in the source, the same is updated in the Elasticsearch also.

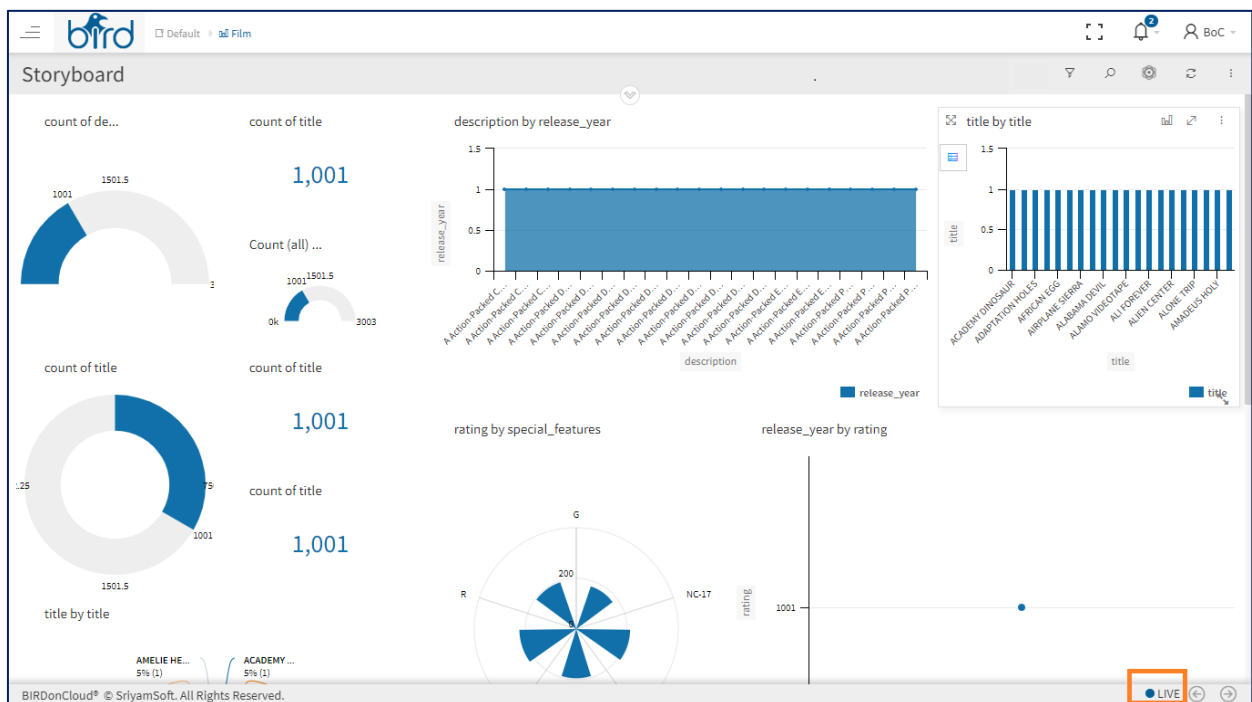
Once the "Live" data is initiated a notification will be displayed to the user at the right bottom of the MyStoryboard/ MyReport, to notify the user that they are in LIVE mode.



# Business Intelligence Reporting & Data Visualization

## LIVE Report - Showing Last Updated Date

“Last Updated Date” is a feature in the footer of the Storyboard/MyReport and if a user enables the “LIVE” option from the More Menu in MyStoryboard/MyReport, then the last updated data date will be shown beside the LIVE Icon at the bottom of the report.



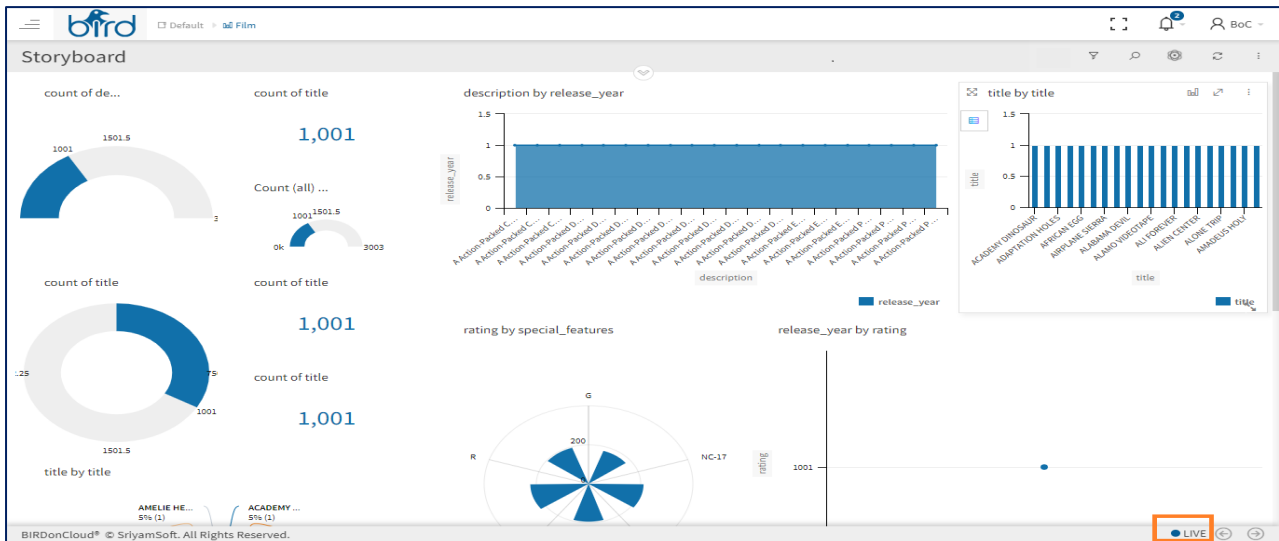
## Indicator on the LIVE MyStoryboards /MyReports

An indicator has been added on the MyStoryboards and MyReports on the home page to represent that the “LIVE” option has been enabled on the reports.

To view the “LIVE” Indicator on the reports available in the home page, the user need to follow thee below steps.

Firstly, enable the “LIVE” in MyStoryboards/MyReports. User needs to click on the LIVE Report option from the “More” menu.

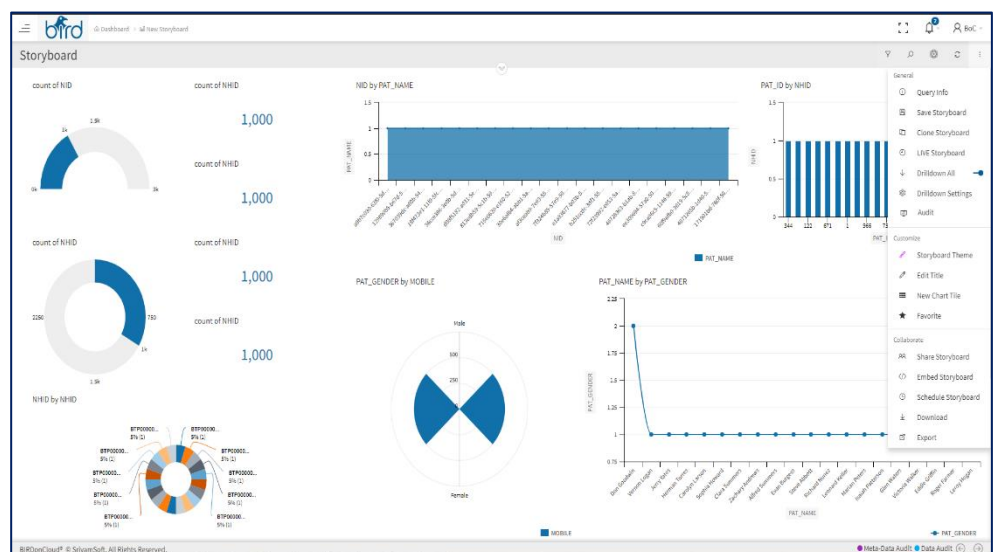
# Business Intelligence Reporting & Data Visualization



- By clicking on the “LIVE Report” option a window will be popped up.
- In the LIVE Report window, user can configure the Update frequency /Streaming of the report. Once the required options are configured, click on the apply button as shown in the below screenshot.
- Once the “LIVE” is configured and the Storyboard/MyReport is saved, then the report will available in the home page, showing an indicator to a user that it is a “**LIVE**” Report.
- Please find the above highlighted “LIVE” icon in the screenshot and it represents that the report is a LIVE MyReport/ MyStoryboard accordingly in their respective sections.

## Drilldown ALL

If a user enables the Drilldown option in the Storyboard's More Menu and drills down a single tile in the Storyboard, then all the tiles in the Storyboard will get drilldown



# Business Intelligence Reporting & Data Visualization

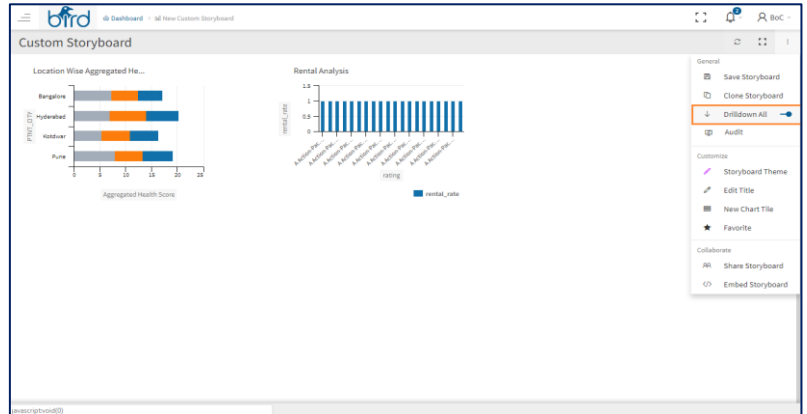
according to the user's selection. Please find the screenshot for reference.

## Added "Drill Down All" option in Custom Storyboard

If the user enables the "Drill Down All" option from the More options in the Custom Storyboard,

and Drill downs on a single tile in the Storyboard, then the entire Storyboard will get affected with the selected column data will be applied and drills down accordingly.

Note: If the selected column data is not



available in the other tiles in the Storyboard, then those tiles will remain unchanged. However, the Storyboard will get refreshed

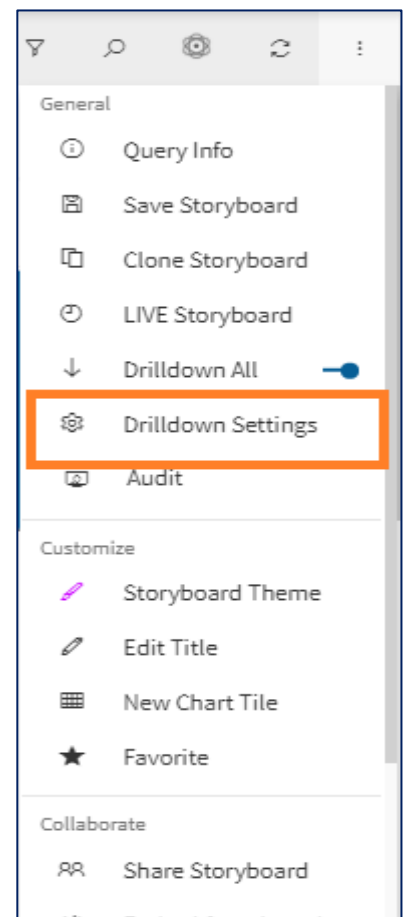
Please find the below screenshot for your reference.

## Drill Down Settings

Once a user clicks on the Drill down settings from the more menu, a popup window will be displayed . In the displayed pop-up window, there are two options in Drill down settings, they are as follows;

- Priority Columns
- Drill Through Reports List

The screenshot shows a 'DRILLDOWN SETTINGS' popup window. It has two main sections: 'PRIORITY COLUMNS' with a 'Select Columns' input field, and 'DRILL-THROUGH REPORTS LIST' with a 'Select Reports' input field. At the bottom, there are 'CANCEL' and 'APPLY' buttons.



## Priority Columns

On clicking the Drill down settings all the report columns will be displayed to the user and the user can select the priority columns to drill down according to the priority the user would like to do drill down .

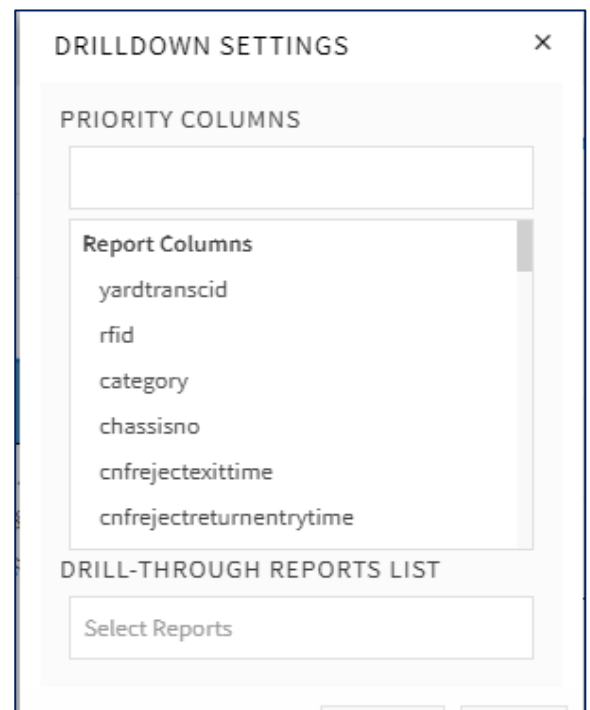
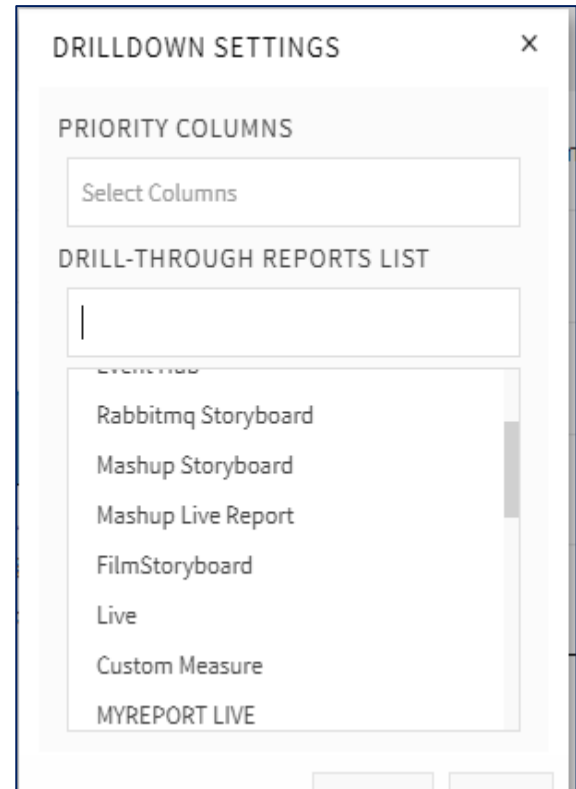
Once the priority columns are selected and the user drills down on the report, based on the priority columns defined, the user will be able to see the data on the report.

After completions of the priority column the user can drill down to the 'n' th level of data and can view the data accordingly.

The reference will be shown on the breadcrumbs of the report.

## Drill Through Reports List

With drill through, user can create a Report or Storyboard that focuses on a specific entity such as a supplier, customer, or manufacturer. Users can click on a data point on the report. Then they can drill through to the focused page to get details that are filtered to that context.



# Business Intelligence Reporting & Data Visualization

Create a report that has the visuals you want for the type of entity that you're going to provide drill through for and select the report that you would like to view the specific data.

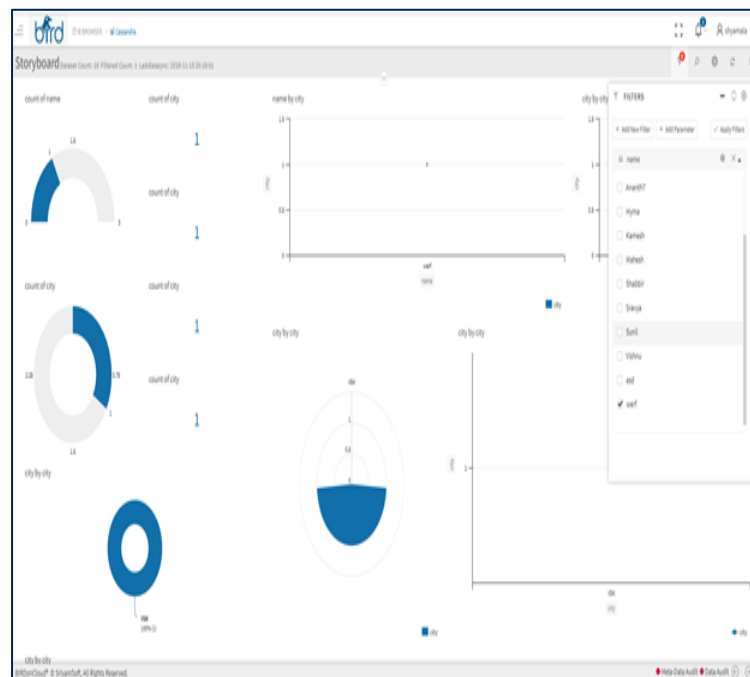
- A user needs to select from the available Storyboards and Reports created and the same will be displayed to the user, when a user clicks on Drill Through Report List.
- For example, let's say user want to provide drill through for manufacturers. Then user might create a drill through report with tiles that show total sales, total units shipped, sales by category, sales by region, and so on. That way, when you drill through to that page, the report will be specific to the manufacturer you selected.

When a user chooses to drill through, the report is filtered to show information about the data point on which they have created the report with the same entities or data . For example, let's say they clicked on a data point about Contoso (a manufacturer), and selected to drill through.

The drill through page they go to is filtered to Contoso.. data.

**Note:** ONLY if there is a matching and related/relevant data available in the other specified reports, then only the report with specific entity data will be opened in the other tab if a user clicks on the Drill through.

Please find the screenshot for your reference.



# Business Intelligence Reporting & Data Visualization

## Drill Down on Multiple Points/Series of X Axis

Drill down can be applied on multiple levels/columns of X axis by selecting the chaining points to series.

User can select multiple points and can drill down into their data, from Storyboard tiles or from individual reports to get an in-depth view of a selected value on bar, line, area and scatter charts.

When a user tries to drilldown on one or some set of columns, user would expect to see only that column/columns related specific data, to be displayed in separate columns. So that is the reason we have given a flexibility to the user, where the drilldown can be applied to one point or multiple points of a chart, which kind of makes sense and effectively drills down to selected points separately.

The user can do drill from a single bar, which affects the whole Storyboard/Report or the user can select the required data points/bars and can select "Drill -down", "Exclude", "Include" and "View Data" to drill down directly on the selected columns, if exclude selected, then the selected columns will not be displayed, if include is chosen by the user then the



# Business Intelligence Reporting & Data Visualization

selected columns will only be displayed and if a user clicks on View data then the data related to the selected columns will be displayed in the tabular format.

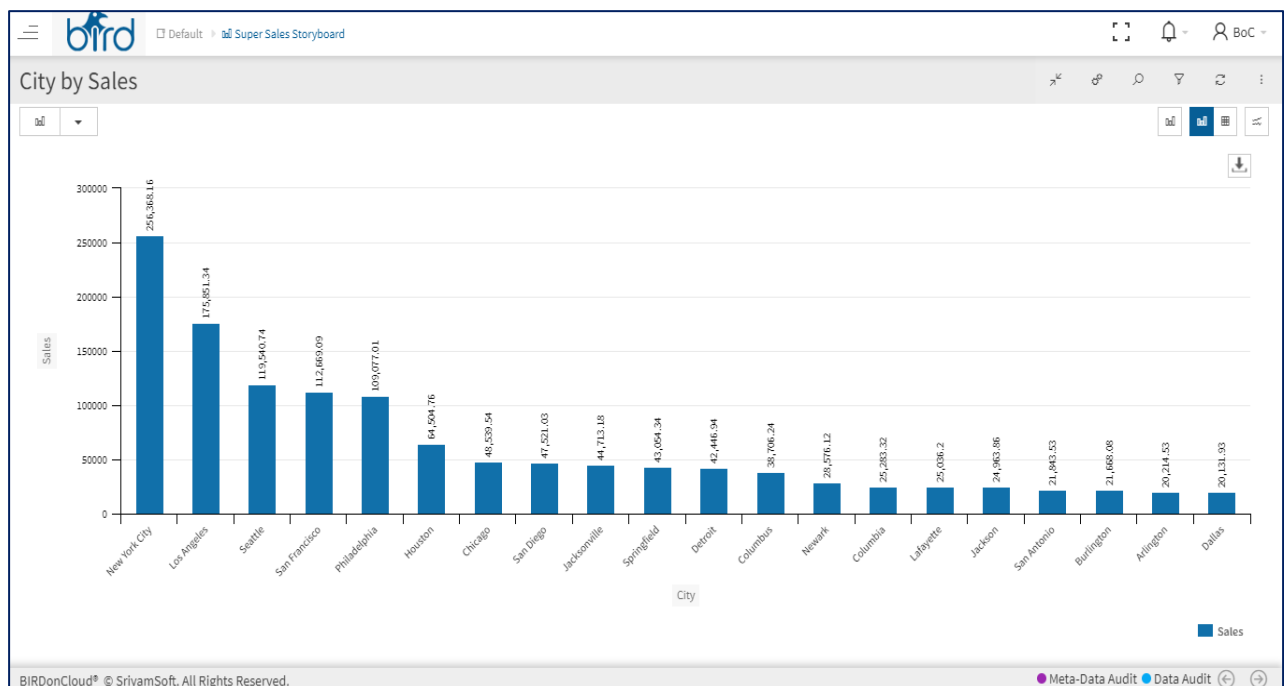
User can drill down from any field to any field, unless disabled by the admin or the Storyboard designer.

## How to drill down/ drill up in a chart:

1. Click on the data point on the widget/tile into which you want to drill down, view data, exclude and include.
2. To drill up to a higher level click on a breadcrumb and to go back to the existing chart click on the back button, which is displayed on right side of the chart.

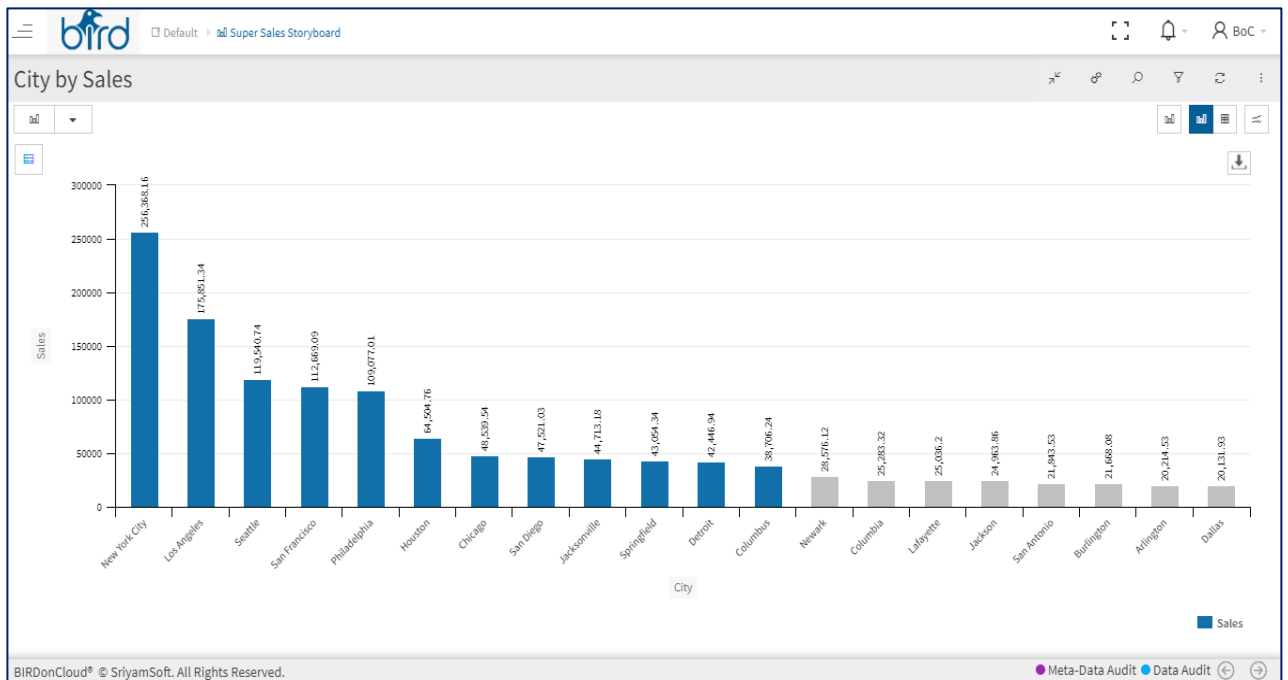
For ex: let's consider a Super Sales Storyboard and maximized a report "City by Sales" as shown in the below chart.

From a "City by Sales" MyReport, user is interested to see why the sales has been decreased



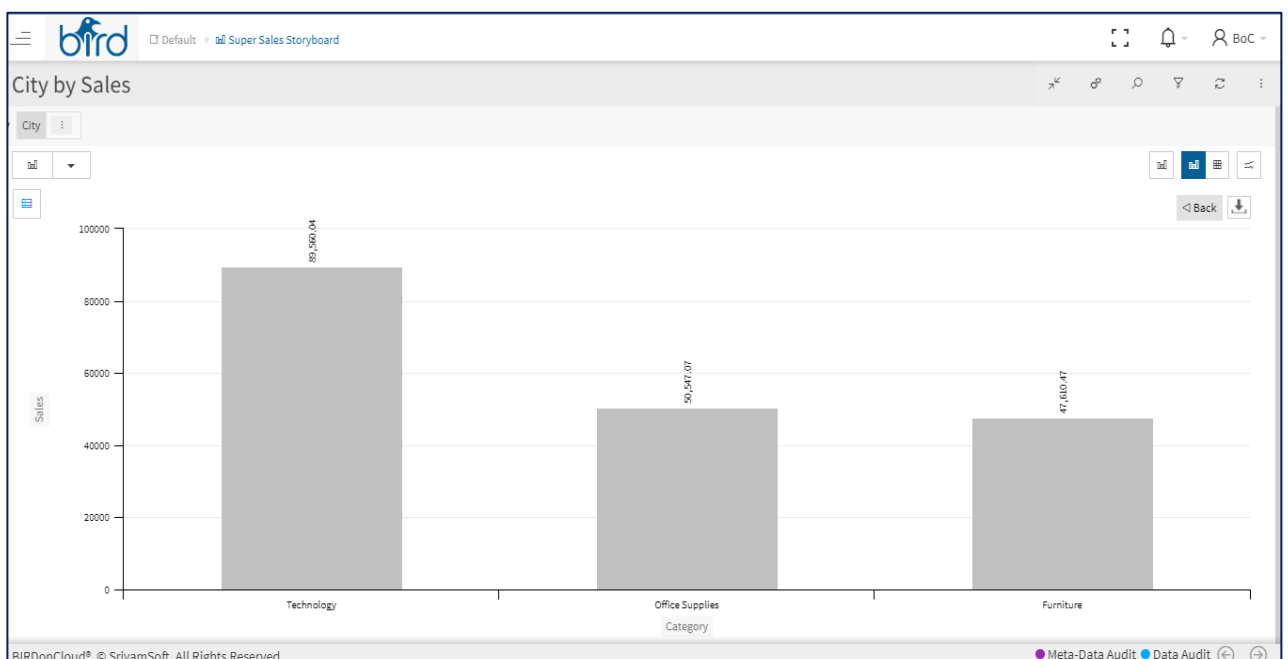
drastically from the city Houston and Newark. So, the user selected from the city Newark by

# Business Intelligence Reporting & Data Visualization



dragging top to bottom and the selected points will be displayed in grey colour as shown below

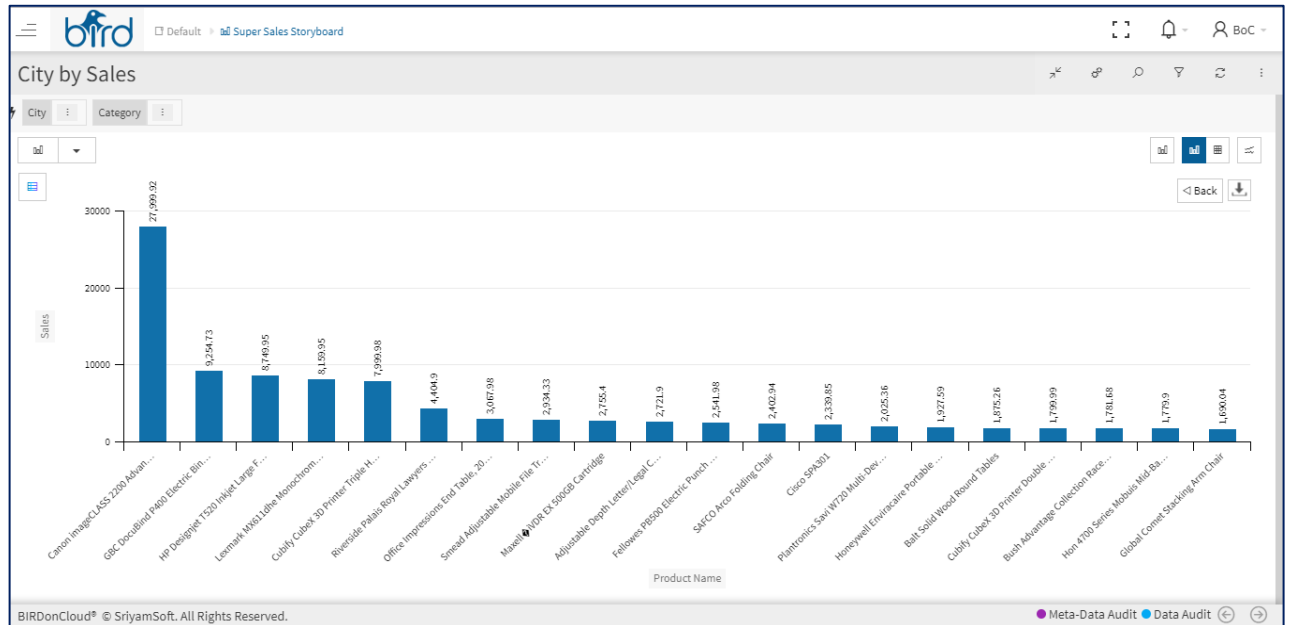
Now the user is interested to see on which category the sales are doing low for the above selected cities and then drills down to Category, where the below chart is displayed to the user, displaying the category only for the selected cities.



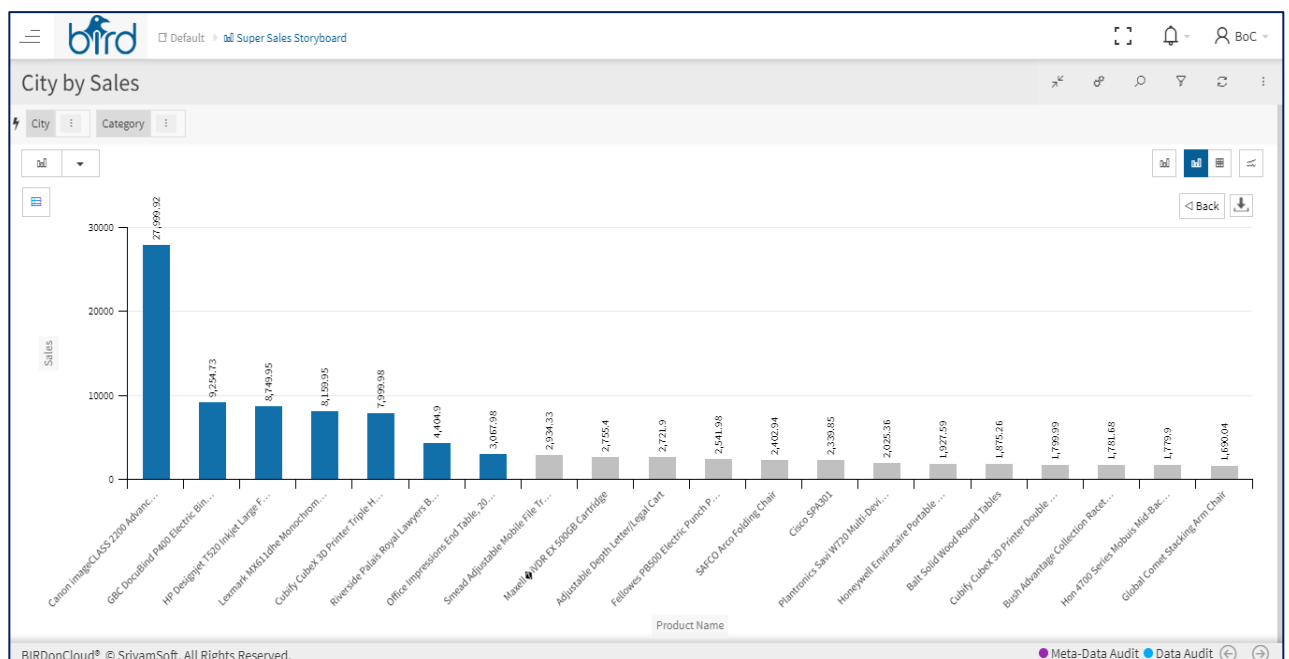


# Business Intelligence Reporting & Data Visualization

Now the user selects all the 3 categories and would like to see the product name for all the three and drills down to Product name and the below chart is displayed to the user with Product names

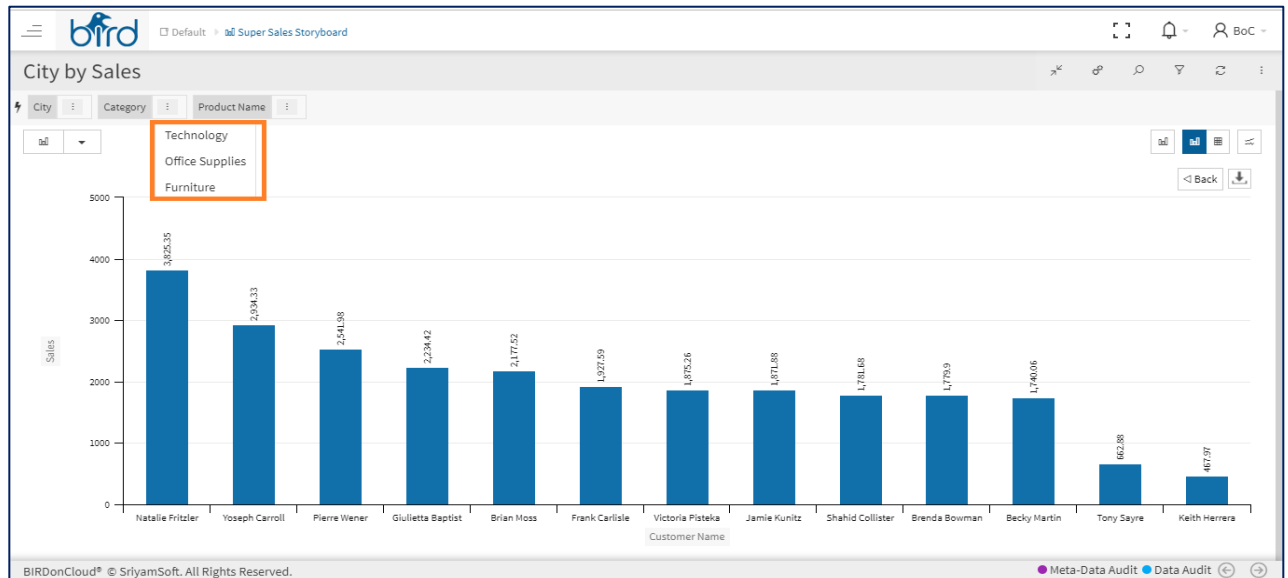


From the displayed products, the user can further drill down on the chart to understand which factor is affecting the sales of the product and can find out the actual root cause for the same.



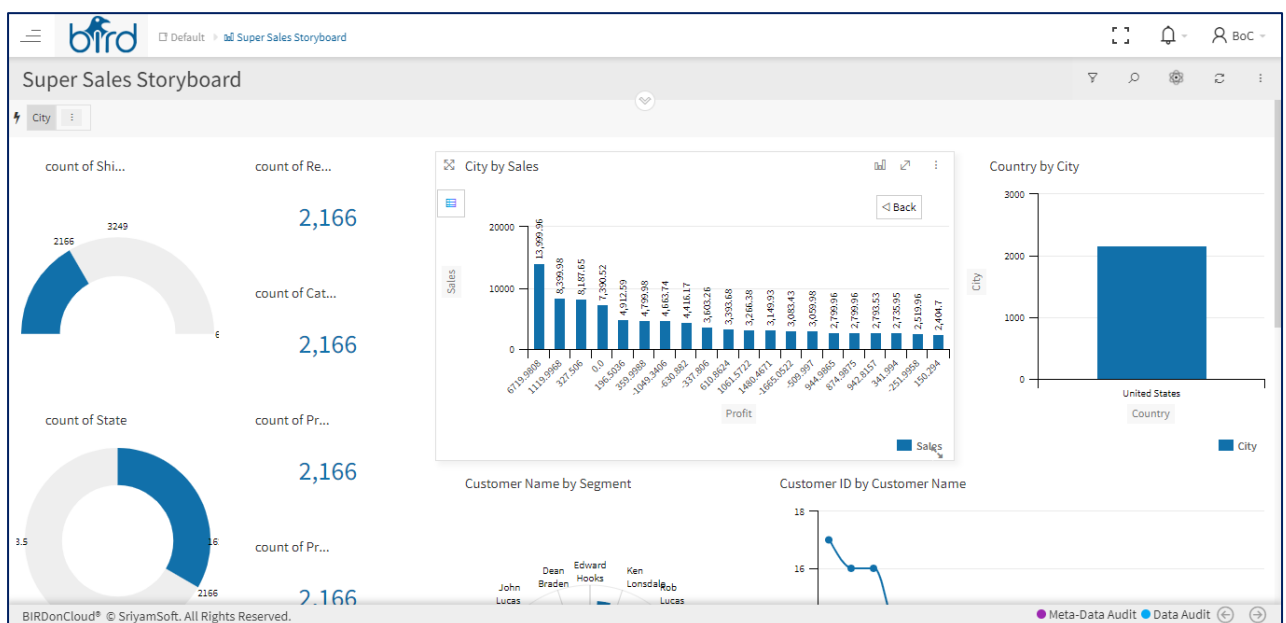
# Business Intelligence Reporting & Data Visualization

A user can click on the dotted lines of the column name, where a user can see the list of the data points that are considered during drill down on the bread crumb for easy reference as shown in the below screenshot.

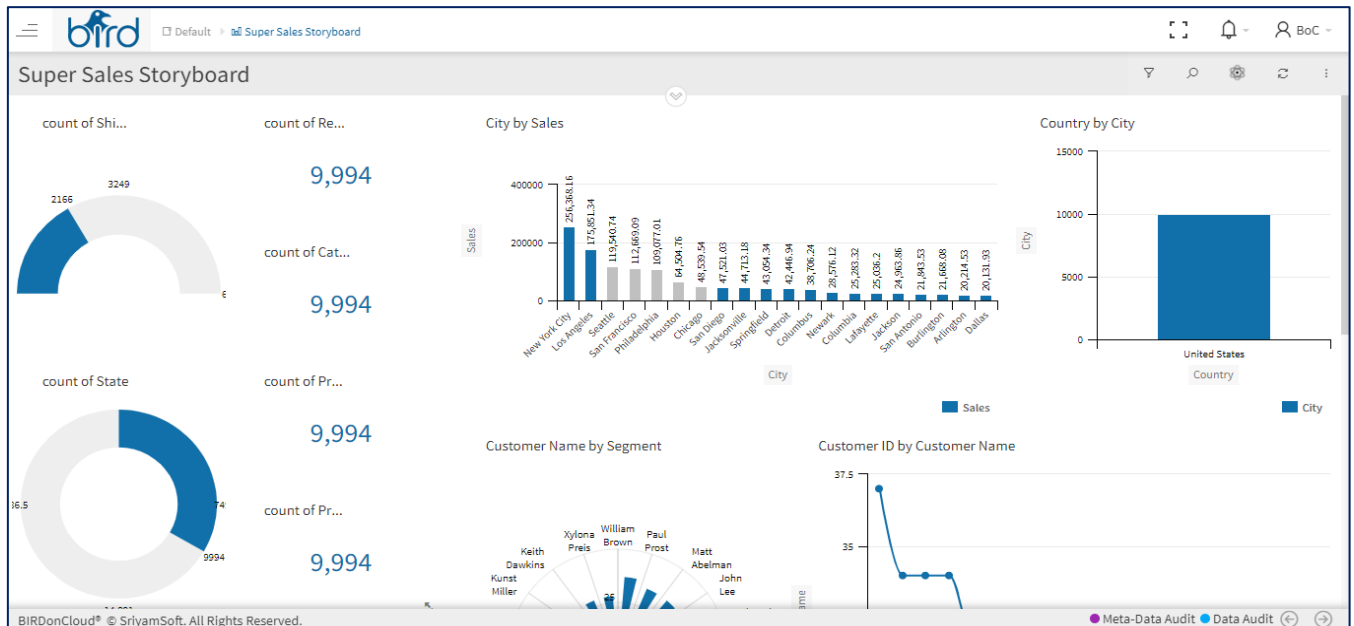


Similarly, by selecting the required data points from a single widget, the user can apply the Drill down, Include, Exclude and View Data on the Storyboard as well.

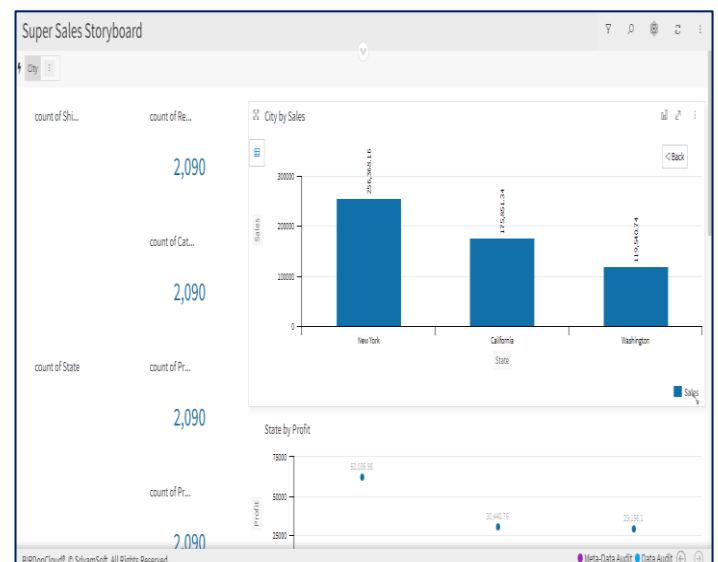
For example, from the below storyboard the user is interested to see the profit of the sales generated by the selected cities and drills down to Profit.



# Business Intelligence Reporting & Data Visualization



The below chart is displayed to the user by displaying the profit generated by the selected cities and the user is now interested to understand to which state the top 3 selected cities belongs to and drills down to state as displayed in the screenshot below.



# Business Intelligence Reporting & Data Visualization

## Audit

Auditing is categorized into two main categories they are as follows:

1. Data Audit
2. Meta Data Audit

## Data Audit & Meta Data Audit

- By enabling the data audit, the system captures the common events at reports/storyboards level, all the Reports related information (Storyboard/Reports data, etc.,)
- For all the reports related information we have implemented audit capability for all the common ongoing events.
- Only if Audit is enabled from the admin user, then all the events from across the reports are captured and displayed in the audit related pages
- For example, "Storyboard details" displays the whole information about the reports/storyboards, where all the events are being captured.
- Admin can use these reports to examine audit records for a specific area or to examine the audit records of a single user or multiple users.
- In a storyboard, if any data sync to be captured, only the event shall be created when the Meta data option is enabled in the Auditing section.
- For streaming connections, by default both the Data and Meta data options will be enabled and for non-streaming connections both the options are disabled

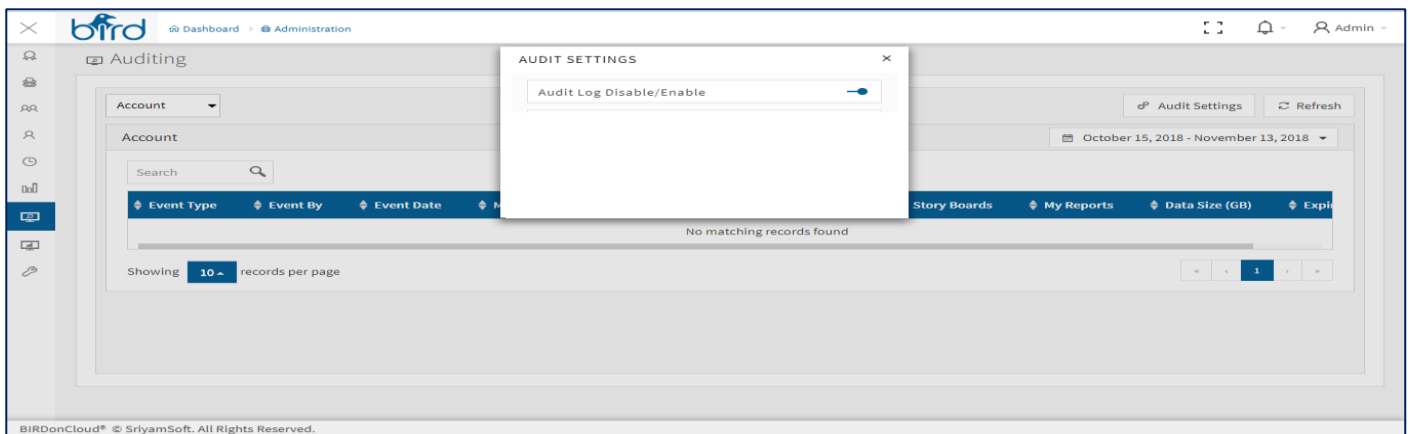
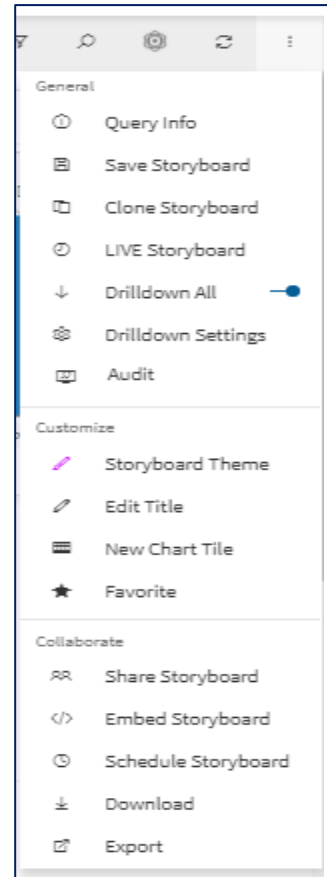
# Business Intelligence Reporting & Data Visualization

- For streaming connection if the user doesn't want to capture the sync records/events in the auditing then the user can uncheck the "data audit option"

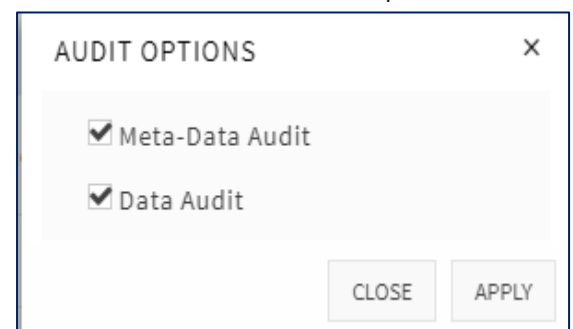
## Meta-Data Audit & Data Audit Configuration

**Step 1:** To enable the Data audit & Meta Data audit options at the storyboard and report level, first the user must enable the Auditing functionality in the Admin Section from the audit settings window as shown in the screenshot.

**Step 2:** When the user clicks on more menu the Audit option will be displayed as shown in the screenshot and when the user selects the audit option then the Audit window will be popped up.



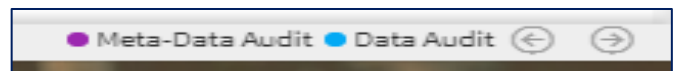
**Step 3:** Now at the storyboard/report level, the user can enable the Meta data audit or Data audit options as shown in the screenshot below.



# Business Intelligence Reporting & Data Visualization

Note: Based on the options selected in the storyboard and report level the user should save the report first in order to capture the auditing events.

**Step 4:** Once the User checks the required options from the Audit window, then the selected options will be displayed at the footer section to highlight that the auditing is enabled and to give an information to the user as shown in the below screenshot.



**Step 5:** If the (Meta data & Data options) are enabled then the events are captured and displayed on the storyboard/Report, in the auditing screen of the Admin page as shown in the below screenshot.

A screenshot of the 'Auditing' screen in the Admin page. The screen shows a table of audit events. The table has columns for Event By, Event Date, Report Name, Type, Cron Expression, Shared To Users, Shared To Groups, Connection Name, Triggered Time, Sync Type, Synced Records, and Sync Time Taken. The table contains 10 rows of data. The first row is highlighted. The table is titled 'Auditing' and has a search bar and a date range selector. The footer of the table shows 'Showing 10 records per page' and a pagination control.

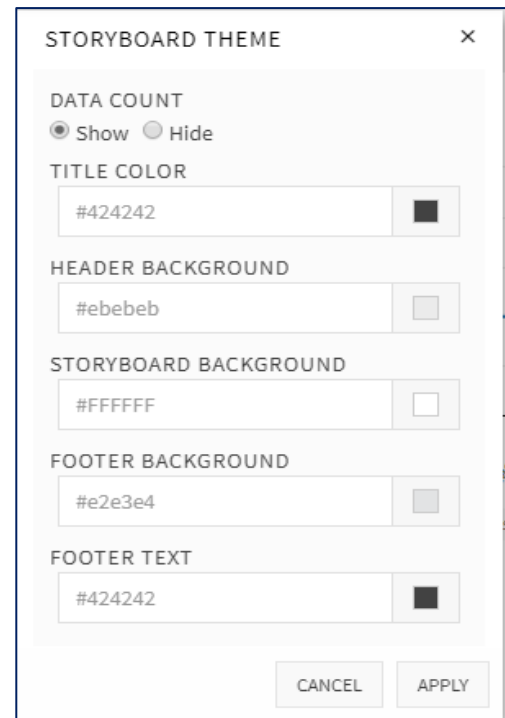
Event By	Event Date	Report Name	Type	Cron Expression	Shared To Users	Shared To Groups	Connection Name	Triggered Time	Sync Type	Synced Records	Sync Time Taken
System	2018-11-13 14:36:31.507293	Cassandra	Story Board	1/30 * * * * *	-	-	cassandra	2018-11-13 14:36:31	System	0	0 Hr 0 Min 0 Sec
Update	2018-11-13 14:36:31.491693	Cassandra	Story Board	1/30 * * * * *	-	-	cassandra	2018-11-13 14:36:01	System	0	0 Hr 0 Min 0 Sec
Update	2018-11-13 14:36:31.114891	film	Story Board	1/30 * * * * *	-	-	mysql_1_3	2018-11-13 14:36:01	System	1089	0 Hr 0 Min 0 Sec
Update	2018-11-13 14:36:31.114891	actor1	Report	1/30 * * * * *	-	-	mysql_1_3	2018-11-13 14:36:01	System	231	0 Hr 0 Min 0 Sec
Update	2018-11-13 14:36:31.099291	Cassandra	Story Board	1/30 * * * * *	-	-	cassandra	2018-11-13 14:36:01	System	0	0 Hr 0 Min 0 Sec
Update	2018-11-13 14:36:31.099291	nilit	Story Board	1/30 * * * * *	-	-	mysql	2018-11-13 14:36:01	System	0	0 Hr 0 Min 4 Sec
Update	2018-11-13 14:36:31.099291	city	Story Board	1/30 * * * * *	-	-	mysql_1_3	2018-11-13 14:36:01	System	621	0 Hr 0 Min 0 Sec
Update	2018-11-13 14:36:31.083691	city	Report	1/30 * * * * *	-	-	mysql_1_3	2018-11-13 14:36:01	System	621	0 Hr 0 Min 1 Sec
Update	2018-11-13 14:36:31.083691	HIVE TEST_incremental	Story Board	1/30 * * * * *	-	-	hive	2018-11-13 13:58:31	System	22	0 Hr 0 Min 0 Sec
Update	2018-11-13 14:36:05.798464	nilit	Story Board	1/30 * * * * *	-	-	mysql	2018-11-13 14:36:01	System	0	0 Hr 0 Min 4 Sec

With the Audit option, we have completed the general section of the more menu of the Storyboard and MyReport.

# Business Intelligence Reporting & Data Visualization

## Customize Storyboard Theme Feature

- On clicking on the brush icon in the toolbar, Storyboard Theme feature window will be displayed
- Option is provided to hide/show Data set count
- The User Can Edit the Title color, Header Background, Storyboard Background, Footer Background and Footer Text
- Look/feel of the storyboard/Report can be altered according to the user's preference using "Storyboard Theme" option



STORYBOARD THEME

DATA COUNT  
☒ Show ☐ Hide

TITLE COLOR  
#424242

HEADER BACKGROUND  
#ebebeb

STORYBOARD BACKGROUND  
FFFFFF

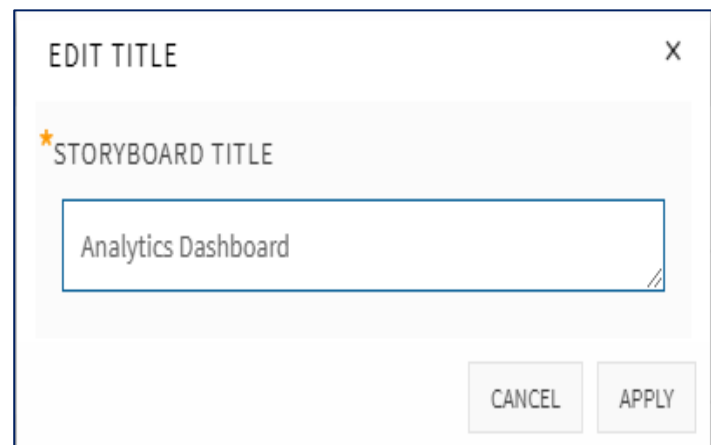
FOOTER BACKGROUND  
#e2e3e4

FOOTER TEXT  
#424242

CANCEL APPLY

## Edit Tittle

- On click of "Settings" Icon, the settings window is displayed, where in the user can edit a TITLE NAME to the storyboard/report



EDIT TITLE

\*STORYBOARD TITLE

Analytics Dashboard

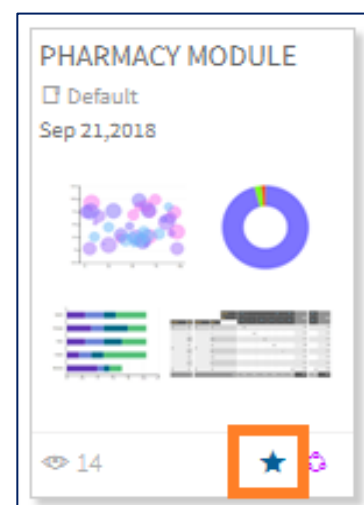
CANCEL APPLY

## New Chart Tile

- On clicking "New Chart Tile" icon, it allows to add a new tile in the same storyboard. The New Tile added by default is loaded with same attributes as of first tile including the Chart Type

## FAVOURITES

- As the name indicates, any storyboard or report can be made as favourite by clicking on the star shape icon. Once enabled the icon turns to yellow colour signifying that it is a favourite report for that user. We can toggle the button to add/remove favourite. If any Storyboard or a Report is marked



# Business Intelligence Reporting & Data Visualization

as a favourite, then that particular report is shown in blue colour in the home page to identify the reports easily and those reports would be saved under favourite section in the home page.

## Collaborate

### Share Report

- To share a Storyboard/Report it should be saved first.
- On clicking the "share" icon, the share report window is displayed as shown below
- It displays the USERS and the COMMENT fields.
- Sharing a report is possible with a "user(s)" and/or a "group".
- There is a COMMENT field to give user comments to be shared across the selected users/groups.
- User can share a Report/Storyboard within the users or groups available in the BIRDOnCloud application.
- User can also restrict the access on the columns that needs to be shared.
- Please find the below process and the screenshots for your reference.

SHARE REPORT

USERS

RSGroup

Groups

RSGroup

Users

vishal (vishal@sriyamsoft.com)

shyamala (shyamalab@sriyamsoft.com)

COMMENT

Enter Your Comment Here

Advanced Access Permissions

CANCEL APPLY

General

Save Storyboard

Clone Storyboard

Drilldown All

Drilldown Settings

Audit

Customize

Storyboard Theme

Edit Title

New Chart Tile

Favorite

Collaborate

Share Storyboard

Embed Storyboard

Schedule Storyboard

Download

Export



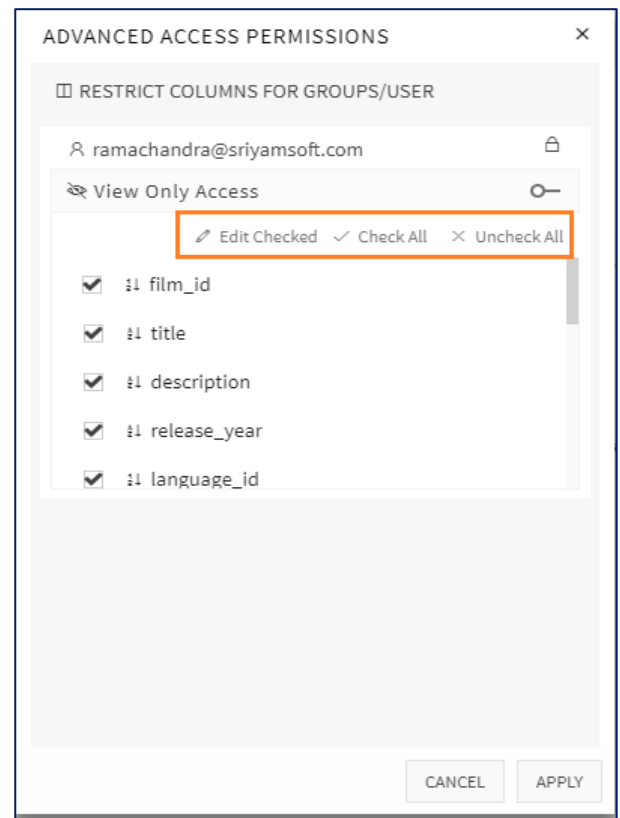
# Business Intelligence Reporting & Data Visualization

## Restrict Columns Data for Users/Groups in the Share Report Window

**Added Feature:** Added Restrict Columns Data for Users/Groups in the Advance Access permission in the Share report window. Firstly, User needs to select the Users/Groups to whom they would like to share the report with.

Then, if a user clicks on the Advance access permission, Restrict Columns for Users/Groups window is displayed (see below screenshot). Based on the User/Groups selection the available columns will be displayed under each User/Group as shown in the screenshot.

Under Each User/Group the following options are available



**Edit Checked** – Allows the user to filter the Column level elements/data and once the user clicks on apply the selected data will only be shared to the other User/Group.

Please find the below screenshot for reference.

User can select 'n' number of users and select the required columns data under each user that needs to be shared.

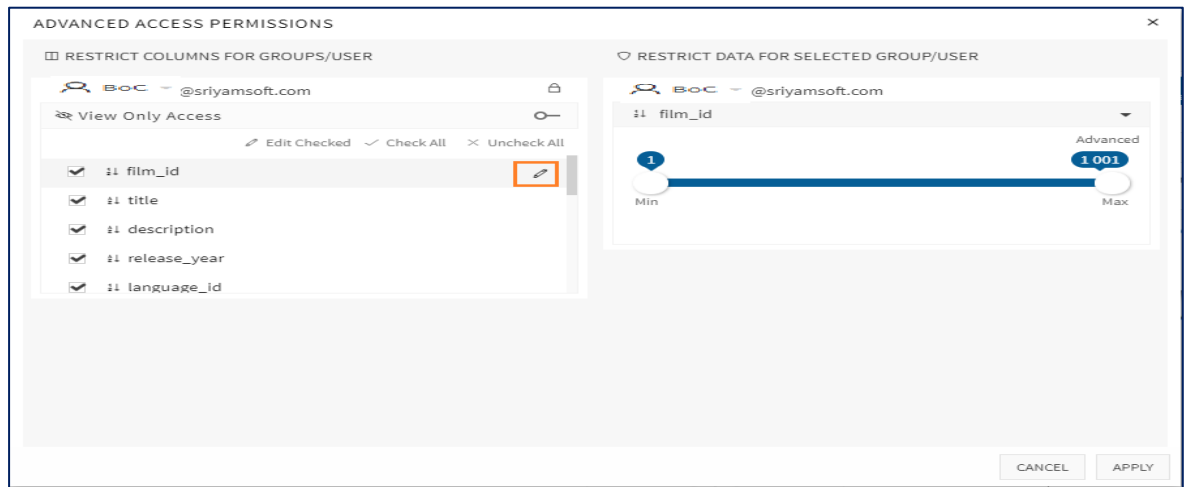
At least one Column needs to be checked while configuring the Advance access permissions.

**Check All** – Check the required columns that needs to be shared.

**Uncheck All** – User can uncheck the columns which are not required to be shared.

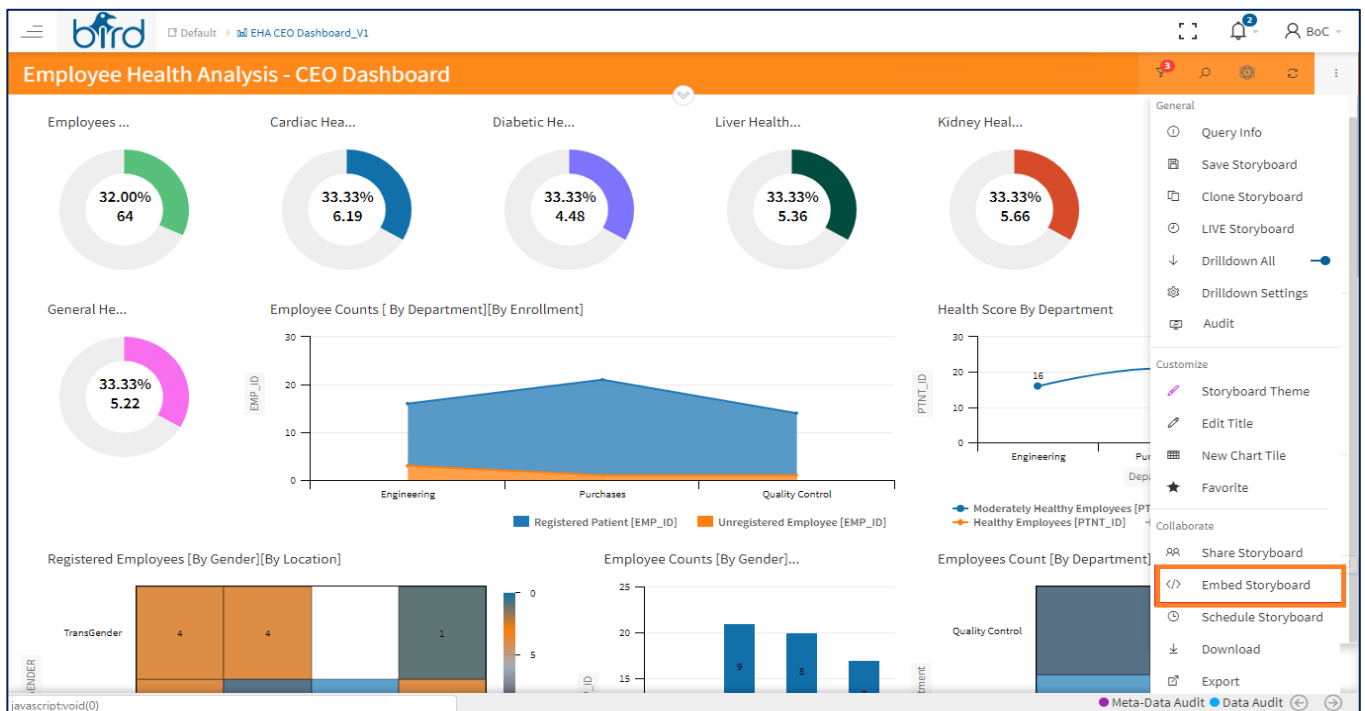
So that the unchecked columns data will not be shared.

# Business Intelligence Reporting & Data Visualization



## Embed Report

- On clicking the embed report's icon on the toolbar, Embed Report URL & Email window is displayed



- "Embedding a Report" is a permission driven by Admin User. Only an authorized user can embed a report
- We have two different set of permissions for embedding storyboard/report

# Business Intelligence Reporting & Data Visualization

- 1) Access with login
  - 2) Access without login
- After embedding, the user can access the report either by login or without login to the session with the help of URL
  - The URL can be without iframe or with iframe to embed the report part of other html pages. The user can copy the URL with the help of "copy to clipboard" option

## Embed Report URL & Email

- The user can email the report to the selected recipients by clicking on the checkbox "Email Report URL" While emailing the report URL, the options of "Access with Login" and "Access without Login" are applicable. The user also has the option of sending screen shot (static image) of the storyboard/report while emailing the report.

EMBED REPORT URL & EMAIL

ACCESS PERMISSION

☒ Access with Login

☐ Access without Login

URL EXPIRY

Date

Time

URL FOR ACCESSING THIS REPORT

☒ Without iframe ☐ With iframe

http://192.168.0.186:8080/Bird/login?embeddedreport=76

☐ EMAIL REPORT URL

CANCEL

EMBED REPORT URL & EMAIL

URL EXPIRY

Date

Time

☒ EMAIL REPORT URL

To

Subject

Message

Add Screen Shot ☐ Yes ☒ No

CANCEL SEND

# Business Intelligence Reporting & Data Visualization

## Embed Report URL Expiry

Embed Report URL Expiry option in the Embedded Storyboard/MyReport allows the user to embed a report URL then the user can configure the Date and time of the URL expiry. Once the provided date and time of the URL exceeds then it will not work and will get disabled in the user's portal.

## Filter Reports Via URL Parameters in Embed Report

BIRDOnCloud enables the embedding of reports in other web applications using iframe URL. These embedded reports can be filtered by URL parameters which are inserted into the iframe reference.

- Filtering by URL parameter
- Using multiple values
- Using Logical operators

Suppose let us take a simple report that shows Total Sales by Status

User can acquire the URL of the report from the iframe reference as shown in the below steps

- Open the MyStoryboard/MyReport and select the report you would like to Embed and click on the Embed option from the More menu.
- The below screen will be displayed to the user, select the access permissions and Copy the URL from the iframe's src attribute and paste it on the Web tab.
- Insert the iframe URL in the browser and the report appears in a separate tab as shown in the below screenshot.

### Filtering by URL parameter

Suppose you want to filter the report by the Sales Status attribute.

1. In the Web tab, click the Set URL Parameter Filters link

# Business Intelligence Reporting & Data Visualization

2. Select the attribute label to use and enter the attribute value that you wish to display
3. When the attribute name/value pair has been populated, the code snippet is automatically updated.
4. Copy the new URL from the code snippet above and paste it into a new tab in your browser
5. The report is now filtered by the specified reports.

Note: If the access permission is selected without login then the below screen will be displayed without the filter option, the user can apply the filters from the URL by using multiple values and logical operators.

The URL to the report is now the following.

## Using Logical operators

- Multiple conditions with different labels are combined using AND.

Note: If the access permission is selected with login access then the below screen will be displayed with the filter option, then the user can apply the filters from the displayed filter window and the user can apply the filters accordingly.

Please take note of these **limitations** to setting filter values via the URL.

- Only field filters support edits from URL parameters.
- Filter operators (like equals and greater than) can't be modified via URL parameters.
- You can't change the field being filtered via URL parameters.
- You can't add new filters to reports using filter value URL parameters. You can only modify existing filters. (When given with the access permission without login)
- OR logical operator is not supported when multiple parameters/conditions are passed.

## Filter Reports via URL Parameters in Embed Report Examples

Please find the below sample URL construction examples for your reference.

# Business Intelligence Reporting & Data Visualization

## Embed Without Login: Sample Report

<http://localhost:8080/Bird/public?cid=1#embeddedreport/1035>

**Single String Search:** Please find the below example Embed report URL for your reference

[http://localhost:8080/Bird/public?cid=1&first\\_name=Hedvig#embeddedreport/1035](http://localhost:8080/Bird/public?cid=1&first_name=Hedvig#embeddedreport/1035)

**Multiple String Search:** Please find the below example Embed report URL for your reference

- Comma Separated

[http://localhost:8080/Bird/public?cid=1&first\\_name=Hedvig,Ariel#embeddedreport/1035](http://localhost:8080/Bird/public?cid=1&first_name=Hedvig,Ariel#embeddedreport/1035)

- & Separated

[http://localhost:8080/Bird/public?cid=1&first\\_name=Hedvig&first\\_name=Ariel#embeddedreport/1035](http://localhost:8080/Bird/public?cid=1&first_name=Hedvig&first_name=Ariel#embeddedreport/1035)

**Combination of String & Number (One String field& One Number field):** Please find the below example Embed report URL for your reference

[http://localhost:8080/Bird/public?cid=1&first\\_name=Hedvig&ID=10#embeddedreport/1035](http://localhost:8080/Bird/public?cid=1&first_name=Hedvig&ID=10#embeddedreport/1035)

**Combination of Multiple Numbers:** Please find the below example Embed report URL for your reference

<http://localhost:8080/Bird/public?cid=1&ID=1,4,7#embeddedreport/1035>

**Number Range:** Please find the below example Embed report URL for your reference

[http://localhost:8080/Bird/public?cid=1&ID=\[1,4\]#embeddedreport/1035](http://localhost:8080/Bird/public?cid=1&ID=[1,4]#embeddedreport/1035)

**Date Range:** Currently we are supporting Data format in Long data type value in the Embed URL parameters. Please find the below link to convert (<https://www.epochconverter.com/>) date to long format and please find the below sample embedded URL for your reference.

[http://localhost:8080/Bird/public?cid=1&Birthdate=\[1477958400000,1494414670000\]#embeddedreport/1035](http://localhost:8080/Bird/public?cid=1&Birthdate=[1477958400000,1494414670000]#embeddedreport/1035)

# Business Intelligence Reporting & Data Visualization

## Combination of String & Number & Date Format

[http://localhost:8080/Bird/public?cid=1&first\\_name=Hedvig&id=10&birthdate=\[1494414670000,1525950670000\]&#embeddedreport/1035](http://localhost:8080/Bird/public?cid=1&first_name=Hedvig&id=10&birthdate=[1494414670000,1525950670000]&#embeddedreport/1035)

## Embed with Login: Report

<http://localhost:8080/Bird/private?buildnumber=2.6.27#embeddedreport/1035>

## Single String Search

[http://localhost:8080/Bird/private?buildnumber=2.6.27&first\\_name=Hedvig#embeddedreport/1035](http://localhost:8080/Bird/private?buildnumber=2.6.27&first_name=Hedvig#embeddedreport/1035)

## Multiple String Search

- Comma Separated

[http://localhost:8080/Bird/private?buildnumber=2.6.27&first\\_name=Hedvig,Ariel#embeddedreport/1035](http://localhost:8080/Bird/private?buildnumber=2.6.27&first_name=Hedvig,Ariel#embeddedreport/1035)

- & Separated

[http://localhost:8080/Bird/private?buildnumber=2.6.27&first\\_name=Hedvig&first\\_name=Ariel#embeddedreport/1035](http://localhost:8080/Bird/private?buildnumber=2.6.27&first_name=Hedvig&first_name=Ariel#embeddedreport/1035)

## Combination of String & Number (One String field& One Number field)

[http://localhost:8080/Bird/private?buildnumber=2.6.27&first\\_name=Hedvig&ID=10#embeddedreport/1035](http://localhost:8080/Bird/private?buildnumber=2.6.27&first_name=Hedvig&ID=10#embeddedreport/1035)

## Combination of Multiple Numbers

<http://localhost:8080/Bird/private?buildnumber=2.6.27&ID=1,4,7#embeddedreport/1035>

## Number Range

[http://localhost:8080/Bird/private?buildnumber=2.6.27&ID=\[1,4\]#embeddedreport/1035](http://localhost:8080/Bird/private?buildnumber=2.6.27&ID=[1,4]#embeddedreport/1035)

# Business Intelligence Reporting & Data Visualization

**Date Range:** Currently we are supporting Data format in Long data type value. Please find the below link to convert (<https://www.epochconverter.com/>) date to long format and please find the below sample embedded URL for your reference.

[http://localhost:8080/Bird/private?buildnumber=2.6.27&Birthdate=\[1477958400000,1494414670000\]#embeddedreport/1035](http://localhost:8080/Bird/private?buildnumber=2.6.27&Birthdate=[1477958400000,1494414670000]#embeddedreport/1035)

## Combination of String & Number & Date Format

[http://localhost:8080/Bird/private?buildnumber=2.6.27&first\\_name=Hedvig&id=10&birthdate=\[1494414670000,1525950670000\]&#embeddedreport/1035](http://localhost:8080/Bird/private?buildnumber=2.6.27&first_name=Hedvig&id=10&birthdate=[1494414670000,1525950670000]&#embeddedreport/1035)

## Schedule Report

- A Storyboard/Report can be scheduled by clicking on the "Schedule Report" option on the toolbar.
- A user can schedule the report Once, Daily, Weekly & Monthly
- Once the scheduled report is sent, the recipient will be receiving an URL in the inbox and based on the permission they can access the link to view the data

The screenshot shows a 'SCHEDULE REPORT' dialog box. On the left, there are fields for 'TO' (Email), 'SUBJECT' (Chenna), 'ACCESS PERMISSION' (With Login/Without Login), and 'MESSAGE' (a URL). On the right, there is a 'SCHEDULE' dropdown (set to 'Once'), a 'DATE FIELD' section, and a 'DATE' and 'TIME' section with input fields and icons. At the bottom right are 'CANCEL' and 'APPLY' buttons.

If Date field is selected, then while scheduling the report the comparison will be done and only the compared latest data will be shared to the user.



# Business Intelligence Reporting & Data Visualization

## Download Storyboard option

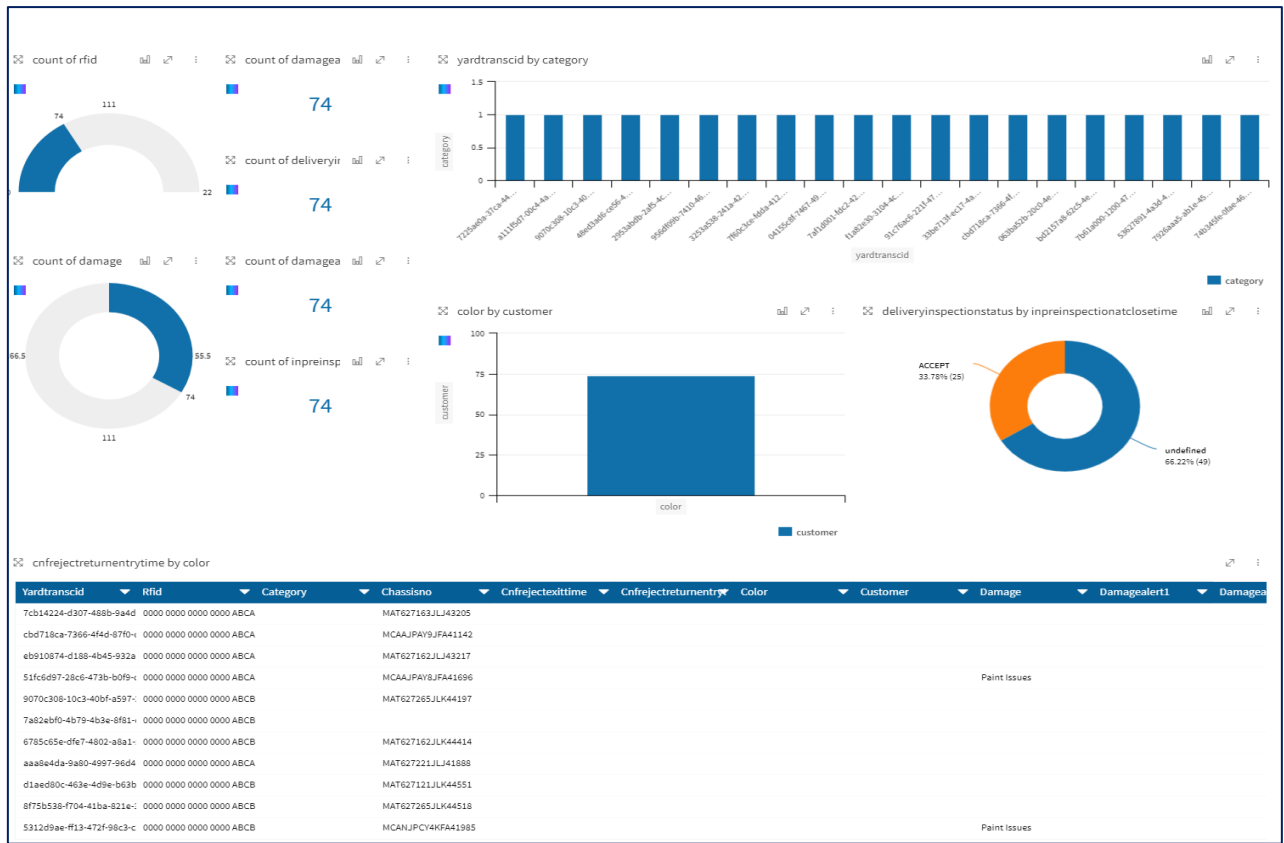
In the Storyboard/ MyReport toolbar menu, download option is available in the collaborate section, to download the entire Storyboard or a MyReport. For a MyReport the download option is also available below the top toolbar for easy access to download the report in JPEG, PNG, VECTOR or PDF Formats

### Steps to Download Storyboard

1. Open a Storyboard.
2. Click on "More Menu" option button which is present at the top right corner of the screen.
3. Once clicked on Download option, the report will be downloaded in PNG Format. As shown in the below screenshot.



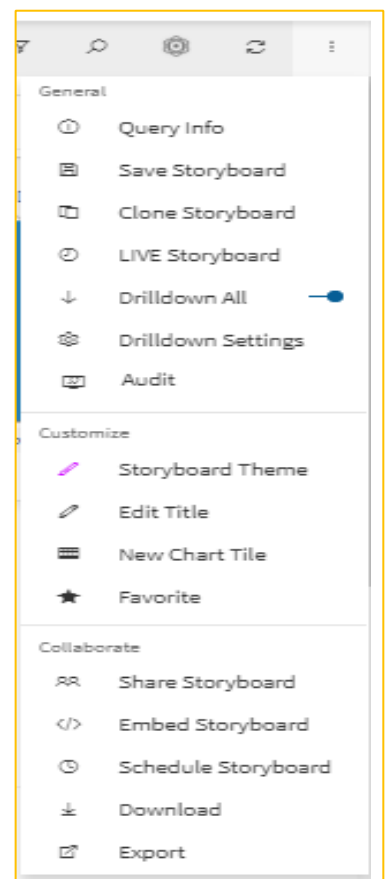
# Business Intelligence Reporting & Data Visualization



## Export My Storyboard/MyReport

User can export MyStoryboard/MyReport into a .CID file and also can import the same file by clicking on the import template option from the connections window which will be displayed upon clicking the "Create option".

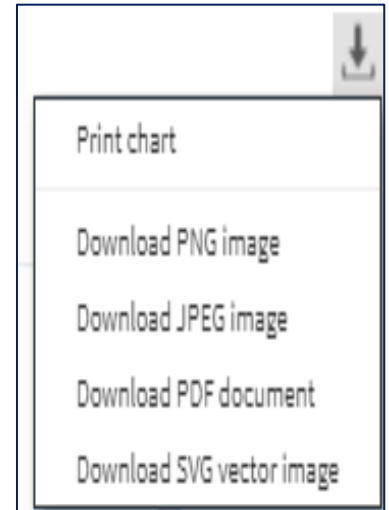
The export option is useful for a user to keep the structure of the Storyboard/MyReport the same. So that while sharing a report to other user the user can import the same report and can further modify based on the user's requirement. Details notes are provided in the connections document, please refer to it.



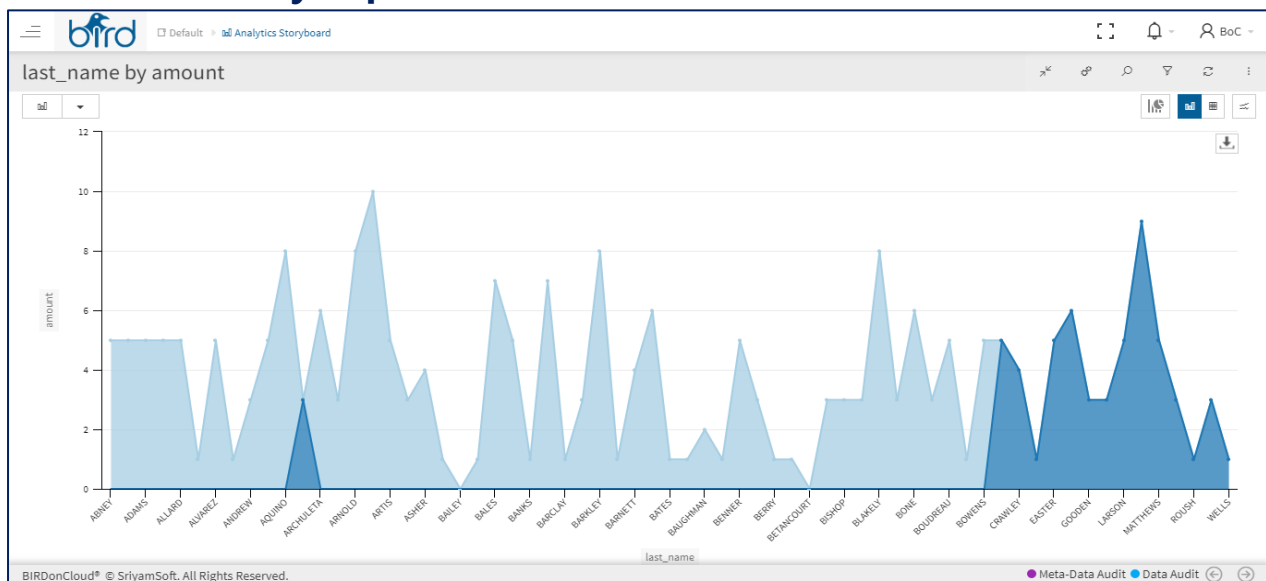
# Business Intelligence Reporting & Data Visualization

## Individual Report Download

- On clicking the **Download** button, a user can download an Individual report in PNG, JPEG, PDF and SVG vector image
- The user is allowed to take a print of an individual report as well
- The report can be in a pictorial representation, narrative form or in the tabular form
- User can download the image and showcase in the presentations for easy navigation



## Alert Icon for My Reports



An alert icon on the home page for the Alerts configured reports

- Firstly, to view the Alert icon on the home page, user needs to open a saved MyReport and need to configure the 'Alert' for a MyReport.
- Go to the More Menu options in the saved My Reports and click on the 'Alerts' option to configure the Alert. Below is the screenshot for your reference.
  - Once the user clicks on the Alerts option, a window will be popped as shown in the below screenshot.

# Business Intelligence Reporting & Data Visualization

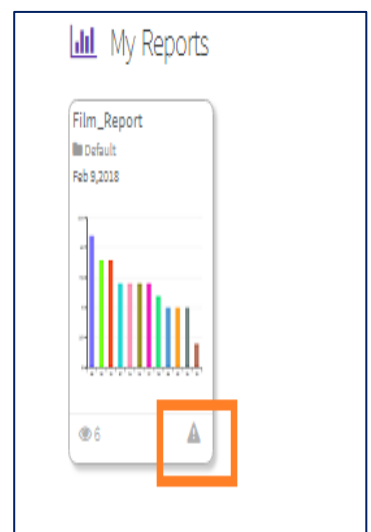
- In the pop-up window click on the 'Create Alert' option which is available on the top right corner of the page to configuring the alert.
- After clicking on the 'Create Alert', a window will be popped up and a user needs to set the Alert condition as shown in the below screenshot.
- User need to fill all the details like the 'Alert Title', 'Notify To', mandatory fields and the alert condition.
- Once an alert is created by clicking on the 'Add', Alert will be created and will be displayed in the Alert list as shown in the below screenshot.
- If user wants to send an alert to an email, then the user can enable the check box.

## Alert Configuration Window

Once the 'Alert' is created by the user, then the alert icon will be displayed on the My Reports in the home page of the application. The below report represents that, it is an Alert configured report.

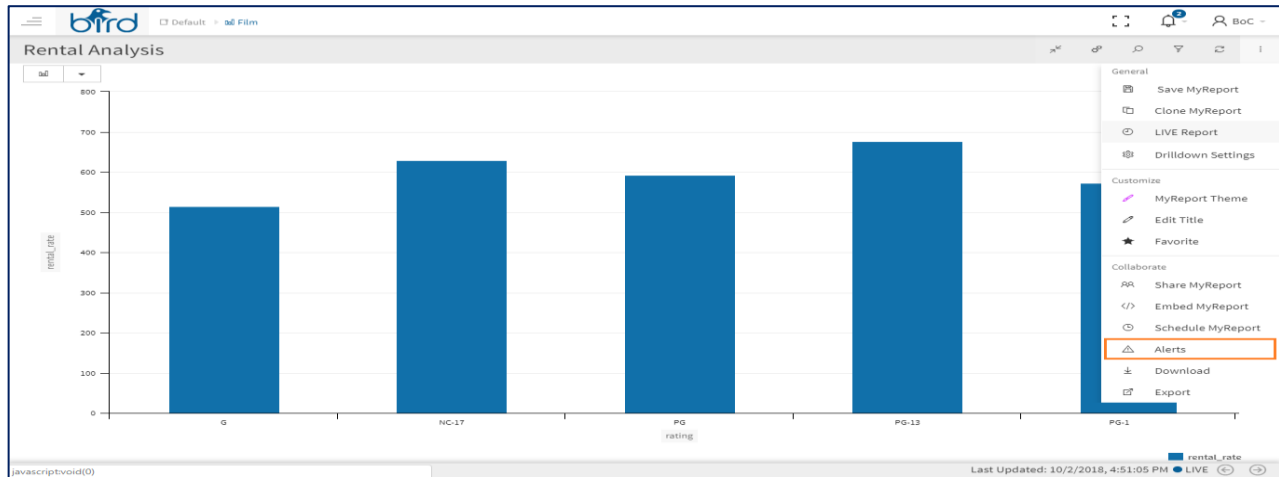
A user can create an alert for a specific report by defining certain business rules/thresholds and can notify the users accordingly to all the users. For Example, if a user defines an alert in the report mentioning if a Finance sales

margin goes below a certain level, all subscribed users to be notified. Alert can be configured only for MyReport. Then an automatic alert would be sent to the selected users or to whom the report has been sent. From the alert creation window, a user can select the report and also can mention to whom the alert has to be sent.



# Business Intelligence Reporting & Data Visualization

## Alerts Windows



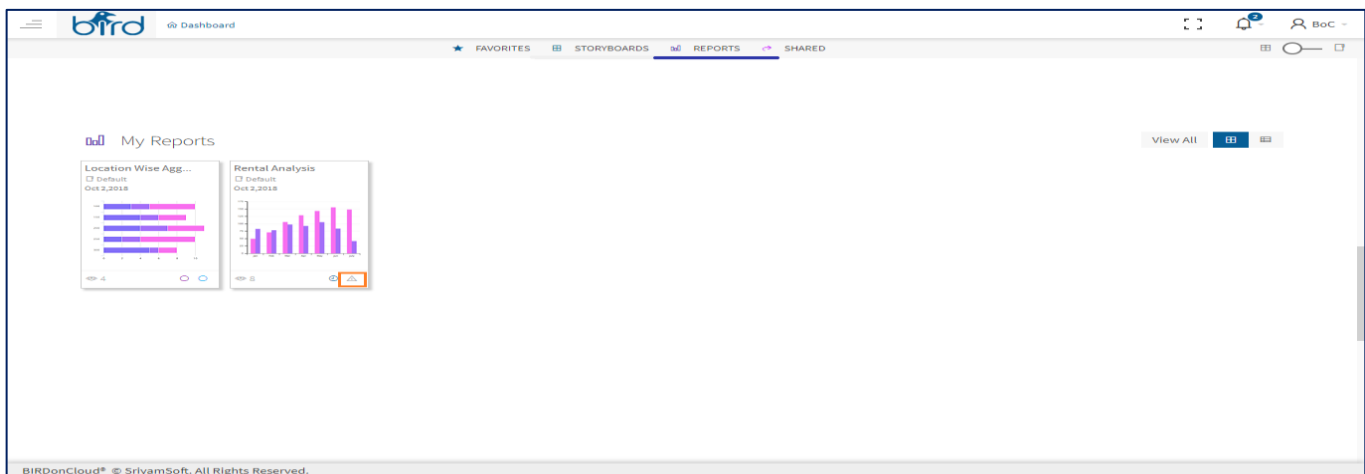
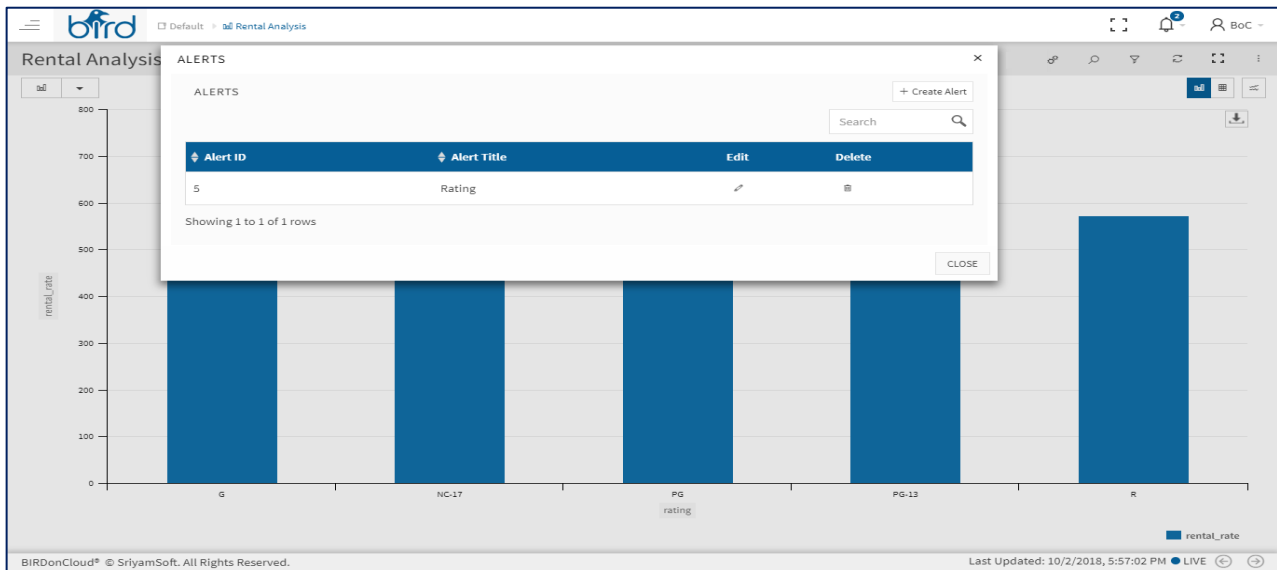
The screenshot shows the 'Alerts' window in BIRDOnCloud. The window has a form to create a new alert. The alert condition is set to 'rental\_rate[Sum] is Equal to'. The alert title is 'Highest Rating'. The window also shows a table of existing alerts.

Alert ID	Alert Title	Edit	Delete
4	Highest Rating		

The screenshot shows the 'Alerts' window in BIRDOnCloud. The window shows a table of existing alerts. The table is empty, indicating no matching records found.

Alert ID	Alert Title	Edit	Delete
----------	-------------	------	--------

# Business Intelligence Reporting & Data Visualization



- The configured alerts will be displayed, when we click on Alerts from the More menu and once the alerts are created and configured, an Alert symbol will be displayed on the tile of a MyReport which is displayed in the dashboard of BIRDOnCloud. Hereby the tool bar menu options explanation has been completed and the same toolbar will also be displayed to the individual MyReports, wherein the functionality remains same.

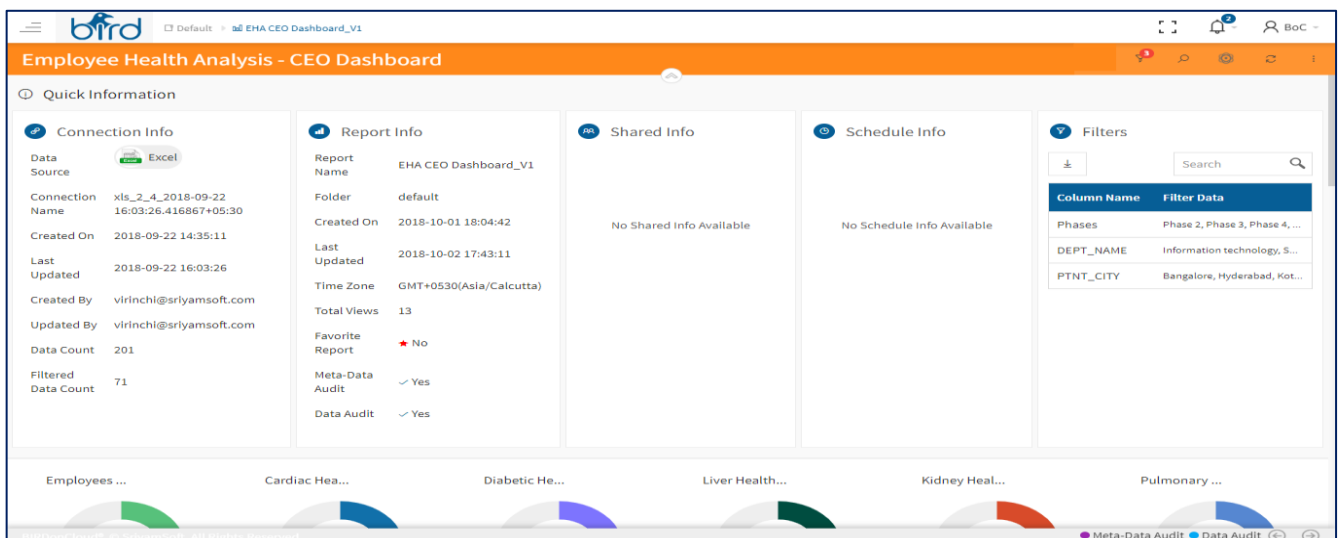
# Business Intelligence Reporting & Data Visualization

## Added Quick Info in the Storyboards/Reports

On the MyReport, MyStoryboard when a user clicks on the downward arrow, then the whole information or details regarding the report will be displayed.

The information of the Storyboard includes the following items:

- Connection Info
- Report Info
- Shared Info
- Scheduled Info
- Filters



### • Connection Info

In the connection Info section following are the elements that provides the information or details of the Data source connection that is used to create the Storyboard or MyReport

# Business Intelligence Reporting & Data Visualization

**Data Source:** It displays the data source name and its symbol which indicates that the Storyboard/Report is plotted using the displayed data source.

**Connection Name:** The connection name is the name given by the user while creating the connection.

**Created On:** The created on indicates, when the "Connection" is created

**Last Updated:** The last updated indicates, when the "Connection" is last updated

**Created By:** The Created By field displays by whom the "Connection" has been created

**Updated By:** The Updated By field displays by whom the "Connection" has been updated

**Data Count:** The dataset count of the source database on which the report is plotted will be displayed here

- **Report Info**

**Report Name:** It displays the name of the Storyboard/Report that is plotted

**Folder:** It displays the "Folder name" in which the Storyboard/Report is saved.

**Created On:** The created on indicates, when the Storyboard/Report is created

**Last Updated :** The last updated indicates, when the Storyboard/Report is last updated



# Business Intelligence Reporting & Data Visualization

**Next Data Sync Time :** It displays the "Next Data Sync Time" of the Storyboard/Report

**Time zone:** It displays the "Time Zone" configured by the user while creating the Storyboard/Report. In case if the user doesn't configure the "Time Zone" then by default the Server "Time Zone" will be displayed.

**Total views:** It displays how many times the Storyboard/Report has been viewed by the users.

**Favourite Report:** It displays whether the report has been marked as Favourite report or not. If the report is marked as favourite, then it displays Green star symbol and displays "Yes" else "No" with the star symbol in Red colour

**Meta data audit:** When a user enables the meta data audit in the Audit settings from the More menu, then 'yes' will be displayed else 'No' will be shown.

**Data Audit:** When a user enables the data audit in the Audit settings from the More menu, then 'yes' will be displayed else 'No' will be shown here.

- **Shared Info**

The Shared info section displays the below information in the "Quick Info" section

**Groups:** When a Storyboard/Report has been shared with a Group or multiple Groups then the "Groups" name will be displayed here

# Business Intelligence Reporting & Data Visualization

**Users:** When a Storyboard/Report has been shared with a user or multiple users then the "Users" name will be displayed here

- **Scheduled Info**

The Scheduled info section displays the below information in the "Quick Info" section

**Scheduled To:** To whom the report is Scheduled to

**Access Permissions:** The access permissions will be displayed here (which displays how many columns are given the access), while sharing the Storyboard/Report.

**Scheduled Count Times:** The number of times the Storyboard/Report has been scheduled. It displays whether the report is scheduled Once, Daily, Weekly or Monthly. According to the user's selection it will be displayed here.

**Scheduled Start Time:** The start time of the Scheduled Storyboard/Report will be shown here in this section.

That means the user configured time, when the report needs to be scheduled to the other user.

- **Filters Info**

The applied filters information will be displayed, and the user can also download the data.

# Business Intelligence Reporting & Data Visualization

Column Name: Selected filtered column names are displayed and the Filtered data is displayed accordingly.

## Reports:

Only for the individual MyReports, the Alerts information will be displayed in the Quick Info section.

**Note:** A report (tile) from the Storyboard need to be saved as an individual MyReport prior, to view the Quick info of the reports.

**Alert ID:** Alert ID will be displayed in the Alerts Info in the “**Quick Info**” section of the reports (Individual report)

**Notify To:** The user email address to whom the report has to be notified will be displayed here.

**Alert Title:** Alert title will be displayed in the Alerts Info in the “**Quick Info**” section of the reports (Individual report)

## Added Series individual colours in Storyboards/Reports

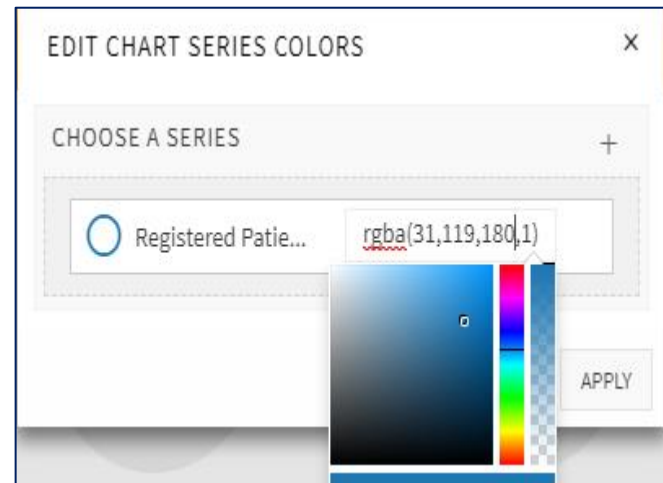
BIRDonCloud provides many ways to customize users Storyboards and MyReports, which makes BIRDonCloud visualizations more compelling, interesting, and customized according to user needs.

- Customize colours can be used in the colour scale or in the colour palette
- Use diverging colours scales from colour theme,
- User can change the colour themes from the Storyboard/MyReport by clicking on series colours.

# Business Intelligence Reporting & Data Visualization

Open your **Storyboard/MyReport**, then select **Series Colour Option** which is displayed on the top left area in a tile or MyReport on hover of mouse, as shown in the image.

When the colour pane window appears on clicking the series individual colours then the user is ready to start customizing their report. Please find the series individual colours pane for your reference which is displayed in the above page.



When a user creates a chart with multiple Y axes fields, then the colours to represent the various data series involved will be automatically assigned to your chart. This will be picked from the colour palette assigned to your chart. However, you can change the default colours of the data series from the series colours.

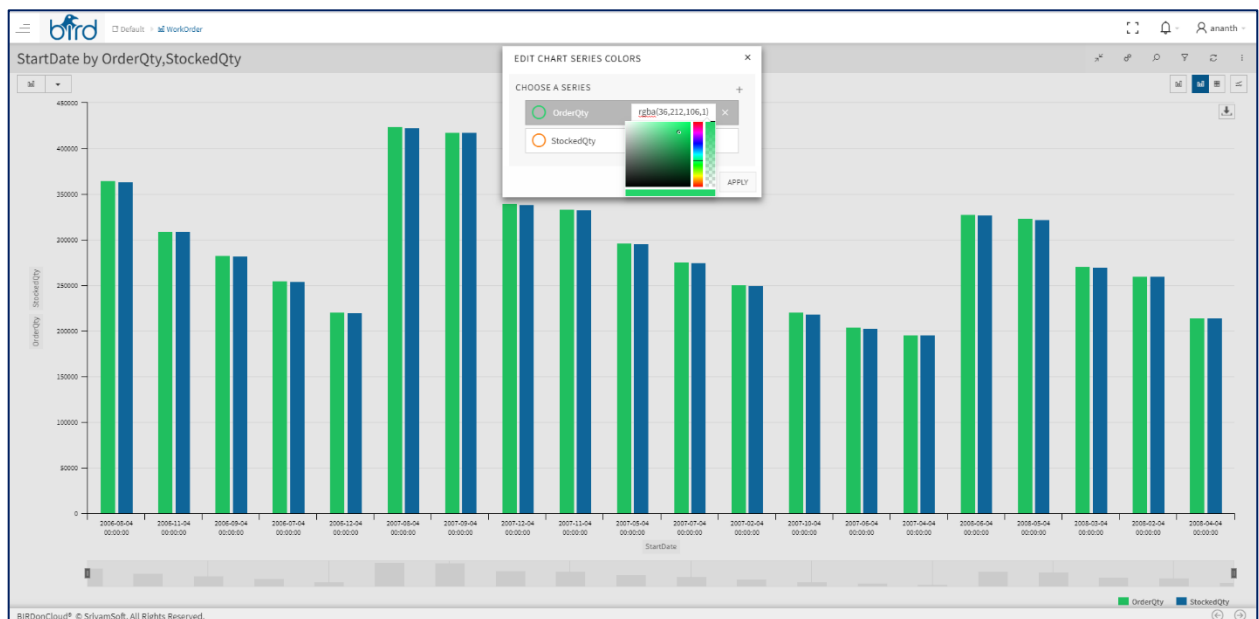
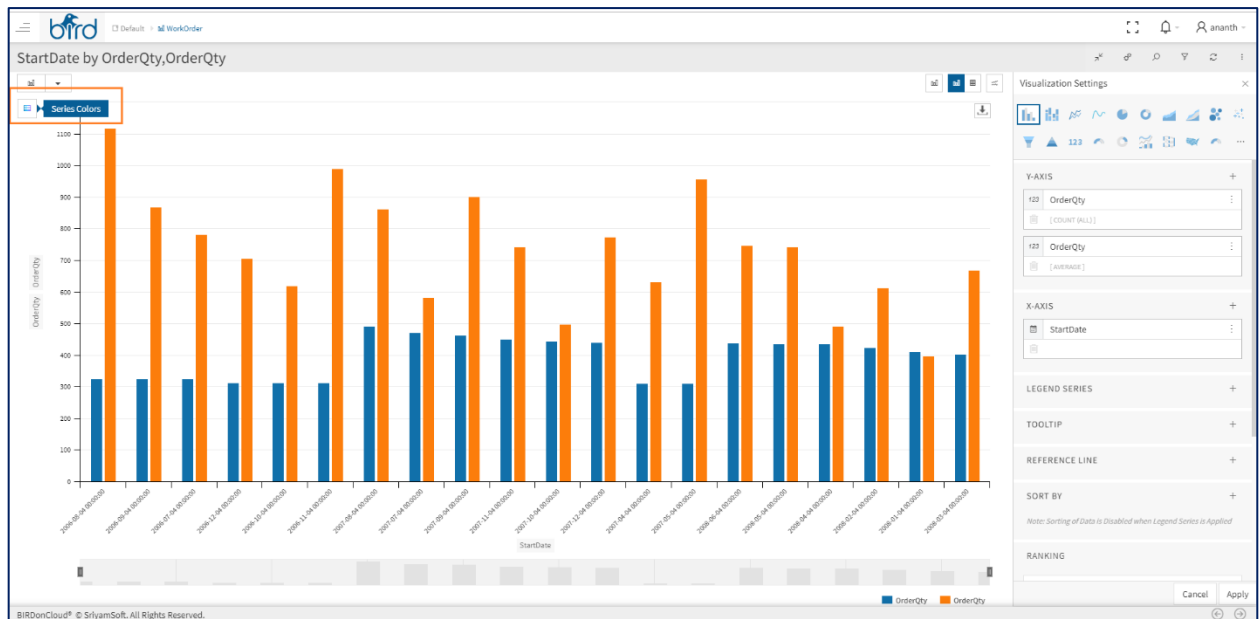
To customize the data series colours in your chart:

- Open your Storyboard or MyReport.
- On hovering on the Storyboard tile or MyReport, a series individual colors will be displayed on the left side of the chart.
- A color picker dialog opens and click on the colour box
- Choose/select the required colour from the full range of colors available in the palette for which you want to change the colour.
- You can also specify the color by specifying the RGB value or the Hexadecimal value in the corresponding fields provided or choose a color from the listed colour palette.
- Click OK after choosing the required color.

# Business Intelligence Reporting & Data Visualization

- The newly chosen colour will show up in your chart for the corresponding data series as shown below.

We have now seen how to customize the chart colours for a single chart. It is also possible to change the chart colours for all the charts in your Storyboard.




# Business Intelligence Reporting & Data Visualization

## Storyboard - Individual Tile Features


On hovering on each tile on the storyboard, 4 (four) options are displayed. They are as follows:

- Anchor,
- Maximize,
- Dotted option,
- Drag,
- Visualization Settings



- On clicking on the anchor icon, the tile can be moved, aligned and can be placed according to the user's preference.
- On clicking the maximize icon  on the storyboard tile, an individual tile changes in to an individual report from a storyboard.

An individual report can be configured according to the user's business case and when once the report is saved, then the report would be saved under My Reports section in the BIRD homepage.

- There is an icon  at the bottom of the tile which is used to drag the tile as per user preference.
- **Note:** Saving the Report is mandatory, if we want to see your changes, when you visit the storyboard next time. On clicking on the dotted option, multiple tile related features would be displayed below like the following:

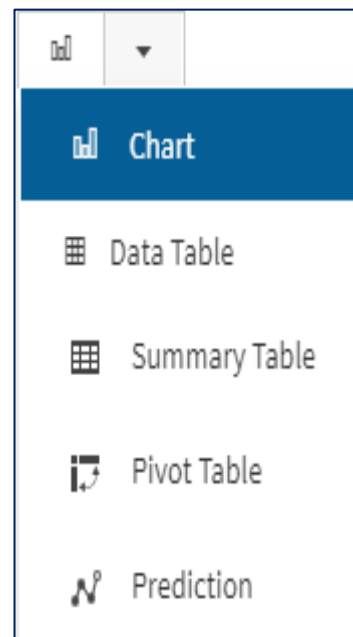
# Business Intelligence Reporting & Data Visualization

- **Chart View** Once the report is plotted, the visualization will be in Chart view by default. When the user selects any other view and again wants to switch to the chart view then the user can select the chart view option.
- **Data View** On clicking on Data icon, the data table will be displayed. The data table will show the data for the chart.
- **Summary View** On clicking on Summary view icon, the data will be displayed in the summary table view
- **Clone Tile** On clicking on Clone button we can generate a replica of the specific tile and can utilize as and when needed. So, that the configurations of the tile remain same when replicated.
- **Delete Tile** The user can delete the required individual tile from the storyboard on clicking the delete icon.
- **Visualization Settings:** If the user prefers to Change the chart styles, Configure X & Y axis, Sorting, Ranking, Legend Series, Reference Line, Colour theme settings, Chart Settings, Tool tip, Advance Visualizations perform some chart settings and Parameters can be configured. The user can perform from the storyboard itself, on clicking the Visualization settings option, which is available on each tile of the Storyboard.

# Business Intelligence Reporting & Data Visualization

## Individual Maximized Report

- When the user maximizes a tile by clicking on the expand/maximize icon on the given Storyboard, a new individual report is loaded in the maximized screen as shown below
- The toolbars help the user to understand the respective features available for the report in detail
- Once a report is saved under maximized view of the tile, the report is saved under "My Reports"



## Drop-down Menu MyReport

**Chart** This option allows the user to see the data in a chart view based on user selection under attributes window

**Data Table** This option holds raw data that was used to plot the reports and is shown by clicking on this Data Icon. The End User can always export, filter, group, sort, etc. on the available retrieved data. The Data table can be Download in CSV format by clicking on the CSV Download option which is available outside of the table and also available inside the table features to download the entire Data Table.

**Summary Table** This option holds aggregated data that was used to plot the reports. By default, the data is shown in the form of summary table and by clicking on any cell value, the data behind the cell is shown in tabular format



# Business Intelligence Reporting & Data Visualization

**Pivot Table** This option works much similar to EXCEL PIVOT. It allows End User to select the required fields and compare values against different categories. Pivot tables are also useful for quickly creating matrix reports.

**Prediction** This option is used to select various predictive models by defining the parameters. The different types of predictive functions available such as linear, polynomial etc. For the Prediction to work the "RServe" should be Up & Running.

## Visualization Settings

- On selecting the attributes option on the toolbar, a visualizations settings window will be displayed which is shown below.
- The settings window is partitioned in to sections which includes Chart Styles, Y-Axis, X- Axis, Legend series, Tool Tip, Reference Line, Sorting, Ranking, Colour Theme, Advanced Chart Settings Chart settings and Parameters.

## Chart Styles

- Bar Chart
- Line Chart
- Pie Chart
- Area Chart

Visualization Settings

LEGEND SERIES +

TOOLTIP +

REFERENCE LINE +

SORT BY +

Note: Sorting of Data is Disabled when Legend Series is Applied

RANKING

Top

20

published\_units (count)

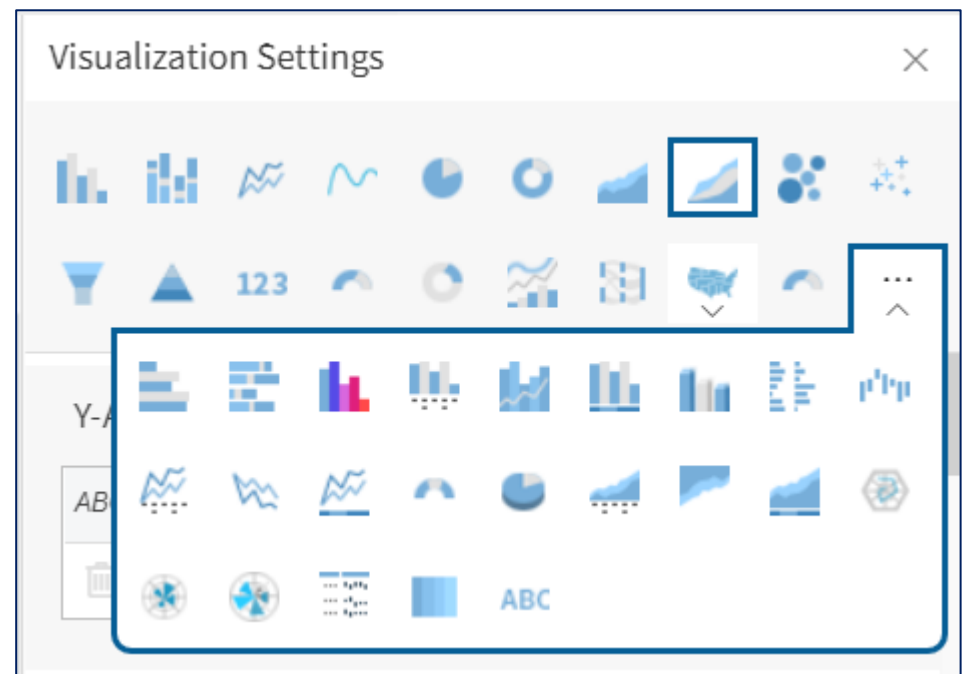
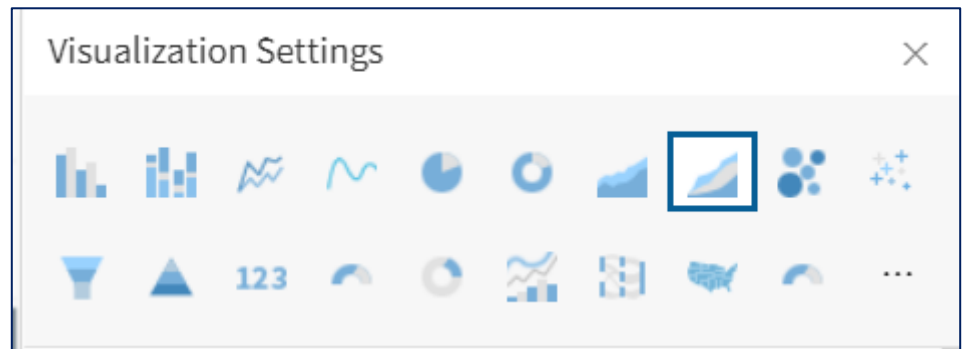
THEME SETTINGS +

PARAMETERS Create Parameter +

Cancel Apply

# Business Intelligence Reporting & Data Visualization

- Bubble Chart
- Scatter Chart
- Funnel Chart
- Pyramid Chart
- Radar Chart
- Polar Chart
- Combinational Chart
- Wind Rose Chart
- Map Chart
- Metric Chart
- Gauge Chart
- Sparkline Chart
- Heat map Chart
- Text Chart
- Advanced Visualizations



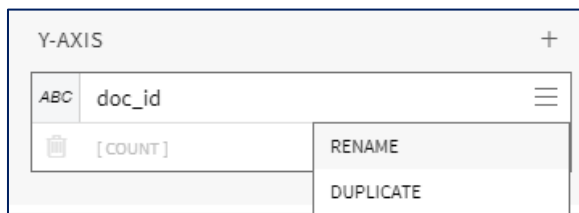
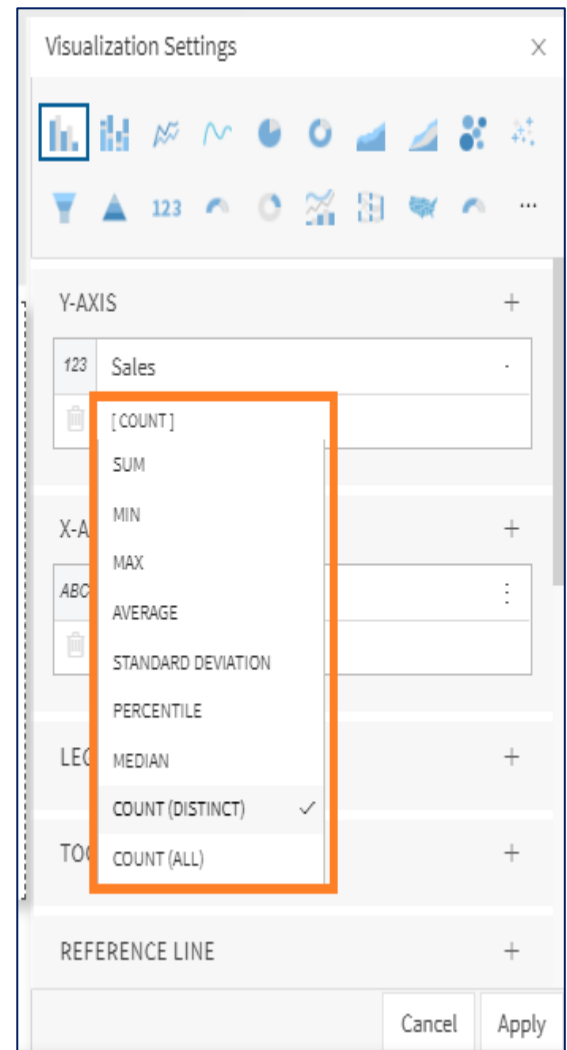
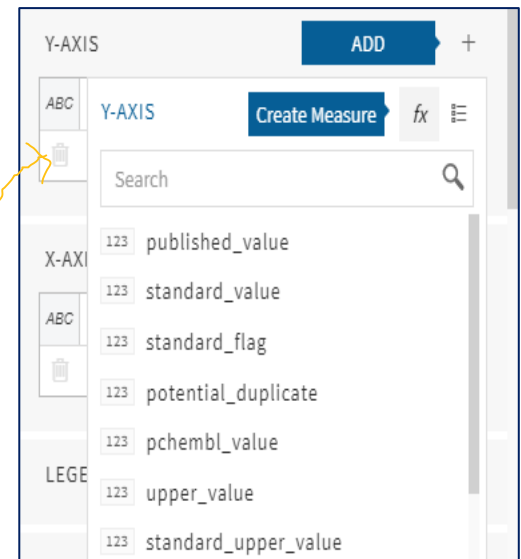
- Streaming : When the Streaming is enabled in the LIVE window, then the user can select the streaming supported chart styles.

The supported charts for Streaming are Bar Time Series, Line Time Series, Area Time Series, Metrics and Gauge Charts.

# Business Intelligence Reporting & Data Visualization

## Y-Axis

- The fields / columns loaded under this section are Number (or) Numeric values. Technically called as Integers, Decimals, etc.
- Aggregations can be applied against the numeric fields in Y-Axis. The configured field can also be deleted through delete option.
- A few Aggregations are displayed below: Sum, Min, Max, Average, Standard Deviation, Percentile, Median, Count (distinct) and Count (all).
- The field name can be renamed by clicking on the dotted line
- Also Y- axis fields can be duplicated by clicking on the dotted line or three lines on the field as shown in the screenshot below
- **Note:** A string type of field (Ex: X- Axis field "CityName") if converted to Y axis field, then the particular field will have only two options under Aggregations, that is Count (all) and Count (distinct).



# Business Intelligence Reporting & Data Visualization

## Create Custom Measure

By clicking on the "+" symbol, which is available on the right side of the Y axis, user can create the custom measure.

The user can perform aggregations on the numeric fields and can consider the created custom measure field in the Y axis.

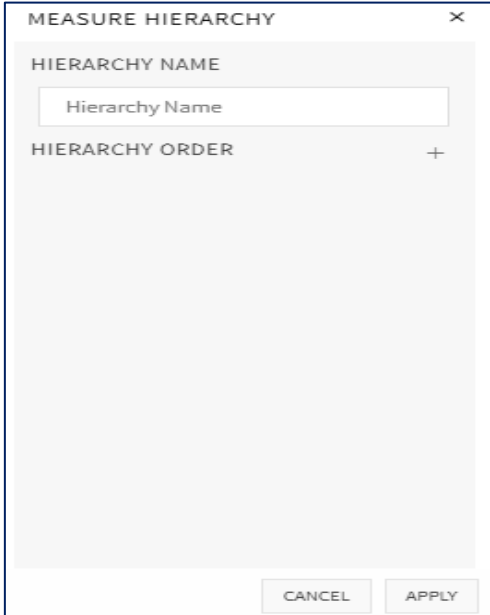
For example, If we would like to sum any numeric field and to divide the field by another numeric field, that is possible through the custom measure. Aggregation on the aggregation field is possible.

## Measure Hierarchy

A measure hierarchy can be defined for the Y axis or numeric fields where only the numeric fields are applicable.

A user can define the path and the field can be considered in the y axis to plot the chart or the field can be taken in the aggregated columns in the summary table to drill down the measure values.

**Note that any Y axis field/ X Axis field name can be renamed by clicking on the Rename option.**



MEASURE HIERARCHY

HIERARCHY NAME

Hierarchy Name

HIERARCHY ORDER +

CANCEL APPLY

Measure Hierarchy can be used in the Summary tables.

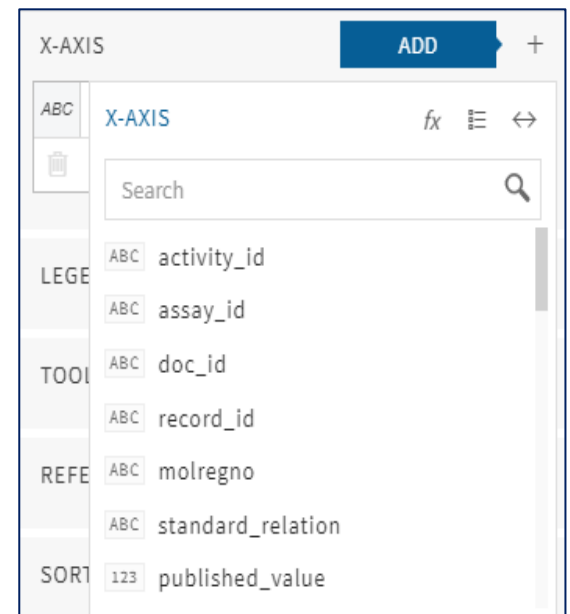
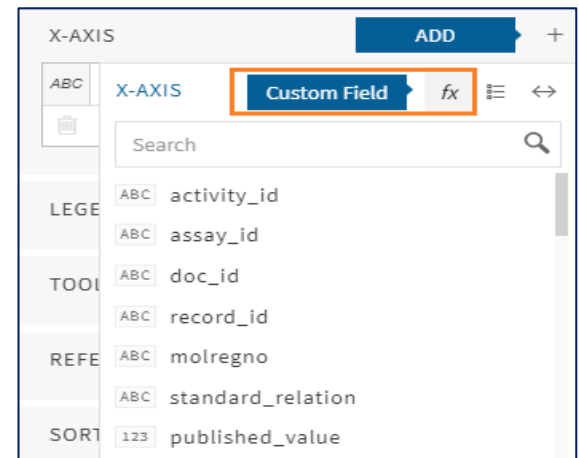
If measure hierarchy is created and configured in the Y axis, then the no field has to be configured in the X- Axis for the Y drill down to work as expected.

From the y-axis and x-axis drop-downs large/multiple number of columns can be added and supported.

# Business Intelligence Reporting & Data Visualization

## X -Axis

- On clicking the X- Axis option all the fields/columns are listed by default. Note that BIRD shows both numeric, non-numeric and date data types under X -Axis.
- The list of fields displayed shows the data type of each field - namely String, Number and Date fields as an indication.
- An X-Axis field can be converted into Measure, and field can be renamed.
- The configured X- Axis field can be deleted by clicking on the delete option.
- From the X- axis fields user can create Custom Field, Custom Hierarchy and Custom Range.



## Custom Field

- A Custom field can be created under X-Axis. By Clicking on "+" symbol right to the X- axis and the pop up will be displayed with all the fields listed and the options to add Custom field, Custom hierarchy and Custom Range.

Click on "Create Custom Field" **fx** and give a Name to the Custom Field.

- Select "Function Type" (Date, String, Logical, Number)
- With appropriate selection, in the Formula window, against the function - place the cursor and type the required columns, following the recommended/help format.

# Business Intelligence Reporting & Data Visualization

- Note that the system validates the formula before creating

CREATE CUSTOM FIELD

CUSTOM FIELD

Custom Name

AVAILABLE FIELDS

Search

customer\_id

store\_id

first\_name

last\_name

email

address\_id

active

OPERATORS

+  
-  
/

FUNCTION TYPES

String

Concat

lowercase

uppercase

HELP

FORMULA EDITOR

CLEAR VALIDATE

CANCEL APPLY

## Custom Hierarchy

- Custom hierarchy is used to define the hierarchy for drill-downs as per the business & user's requirement.
- Custom Hierarchy is an optional feature that the user can opt, for pre-defined hierarchy path during drill-down option in charts or summary table.
- If Custom Hierarchy is not defined, and if permissions are set properly, a user can drill-down from any level to any level.
- Based on the order of fields selected, hierarchy path is determined. Once hierarchy is defined, a new field icon under

X-AXIS

ADD

X-AXIS

Custom Hierarchy

Search

activity\_id

assay\_id

doc\_id

record\_id

molregno

standard\_relation

published\_value

LEGEND

TOOL

REFERENCE

SORT

# Business Intelligence Reporting & Data Visualization

the Dimension list is created with the name given to the hierarchy. User can also edit the hierarchy if needed at any time, by clicking on the field edit icon.

## Custom Range

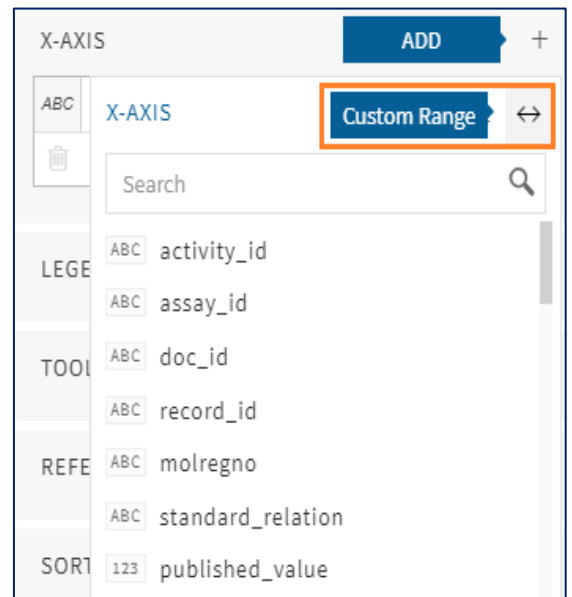
Custom range is used to define the range of a particular element to display on the graph.

For example, if a user wants to showcase only two fields with a specific range that could be accomplished from the custom range feature.

Select the custom range by clicking on the “+” symbol from the X-axis and define the range for each element separately by selecting a range element and then create a custom range by applying the conditions.

A custom range is created under the X axes field, choose from the X axes filed and once applied it shows only the selected elements range data.

In the above chart created custom range by using age in days’ field is taken in the X axis and the working count and the record status is taken in the Y axis. Which displays only the custom range values instead of all the values of the two fields.



User can delete the configured Y axis field and X- Axis field by clicking on the delete button, which is displayed in the screenshot below.

## Date Histogram

- Date histogram option is enabled when Date field is selected in the X-axis displays the number of items that fall within a year

# Business Intelligence Reporting & Data Visualization

**Example:** Years, Quarters, months, weeks, days, Hours, Minutes, Seconds

The date histogram can also be done in the Tabular reports, The date can be shown in yearly, quarterly, monthly, weekly, hourly, minutes and seconds.

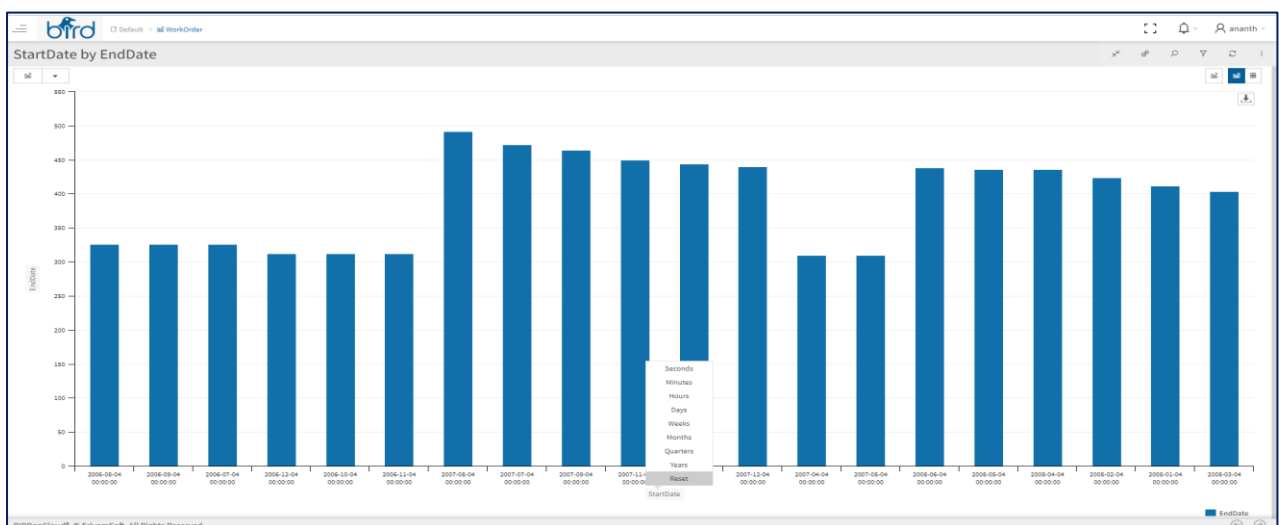
In the pop-up window added Reset option at the bottom of the menu. Now, if the user wants to view the original state of the chart, then the user can click on the Reset option to view the chart in the default state.

## Date Histogram Reset Option

Reset option in the Date Histogram Pop up menu helps a user to make a graph reset to the original state after drill down on multiple parameters. For example, If a user plots a graph with Date field in the X -axis and clicks on the X- axis label the Date Histogram pop up will be displayed.

In the pop-up window there is a Reset option at the bottom of the menu.

- For example, a chart is plotted with Date Histogram with a date field on the X- Axis
- In the chart user clicks on the X- Axis label and the Date Histogram Pop up will be displayed, and user selects the Years option to see the Year wise data





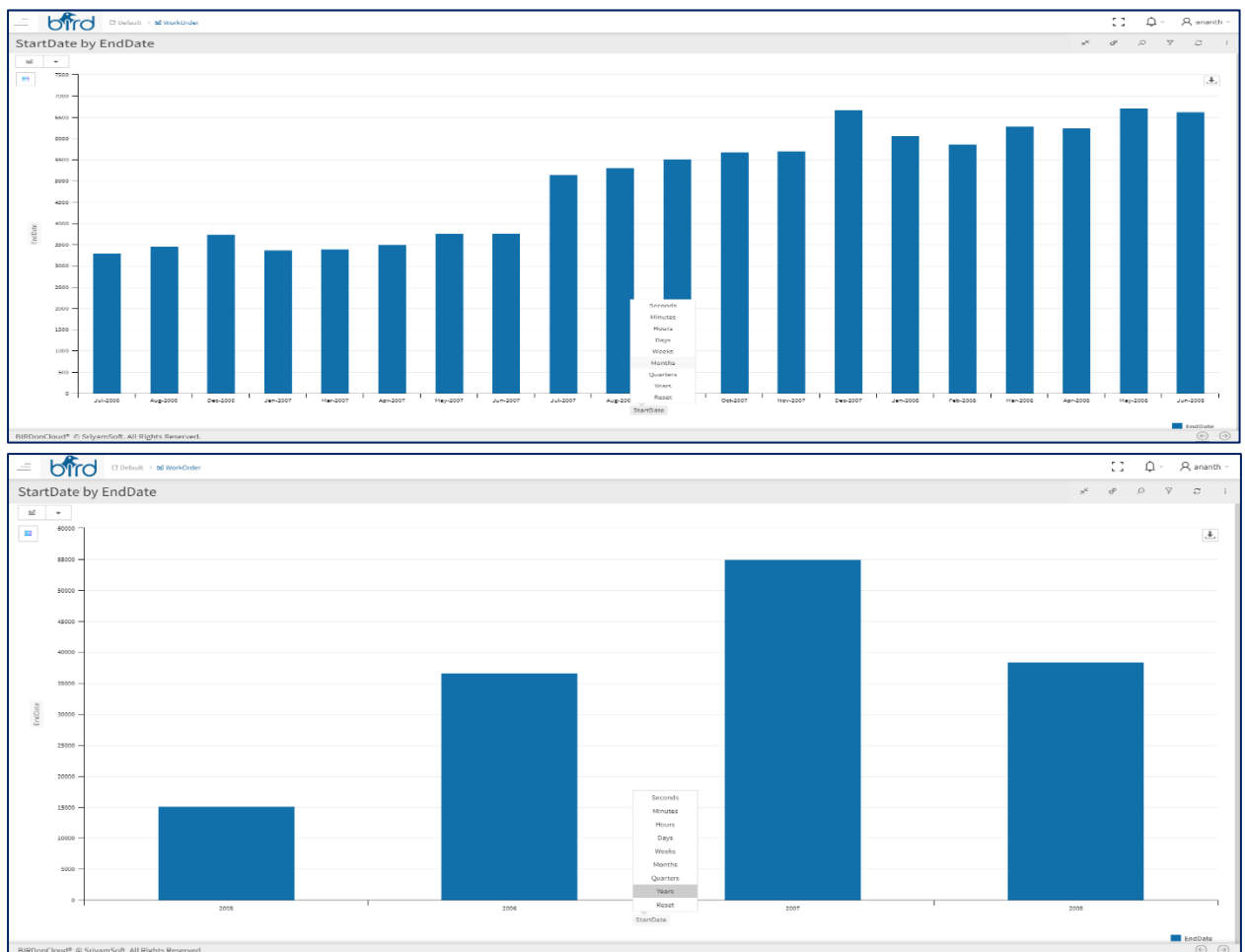
# Business Intelligence Reporting & Data Visualization

- Now, if the user wants to view the original state of the chart, then the user can click on the Reset option to view the chart in the default state as shown in the screenshot

## Save State of Date Histogram

If a user creates a date histogram report and changes the date histogram parameters (seconds, minutes, hours, days, weeks, months, quarter, years) and saves it then the state of the report remains constant once saved by the user.

Once the user reopens the report, then the state of the configured date histogram report will be displayed.



# Business Intelligence Reporting & Data Visualization

## Ability to have more than one aggregation on one field

- **Added Feature:** User can add the same numerical/measure fields multiple times in the Y-Axis section and can apply multiple aggregations on the same field to compare the values easily through the graphical representation.

## Legend Series

- When the user would like to apply a different series on top of the selected X/Y-Axis, user can opt for Legend series.. user cannot perform any aggregations on the legend series.

Visualization Settings

Y-AXIS

ABC doc\_id

[COUNT]

X-AXIS

ABC assay\_id

LEGEND SERIES

TOOLTIP

Cancel Apply



LEGEND SERIES

ADD

LEGEND

Search

activity\_id

assay\_id

doc\_id

record\_id

molregno

standard\_relation

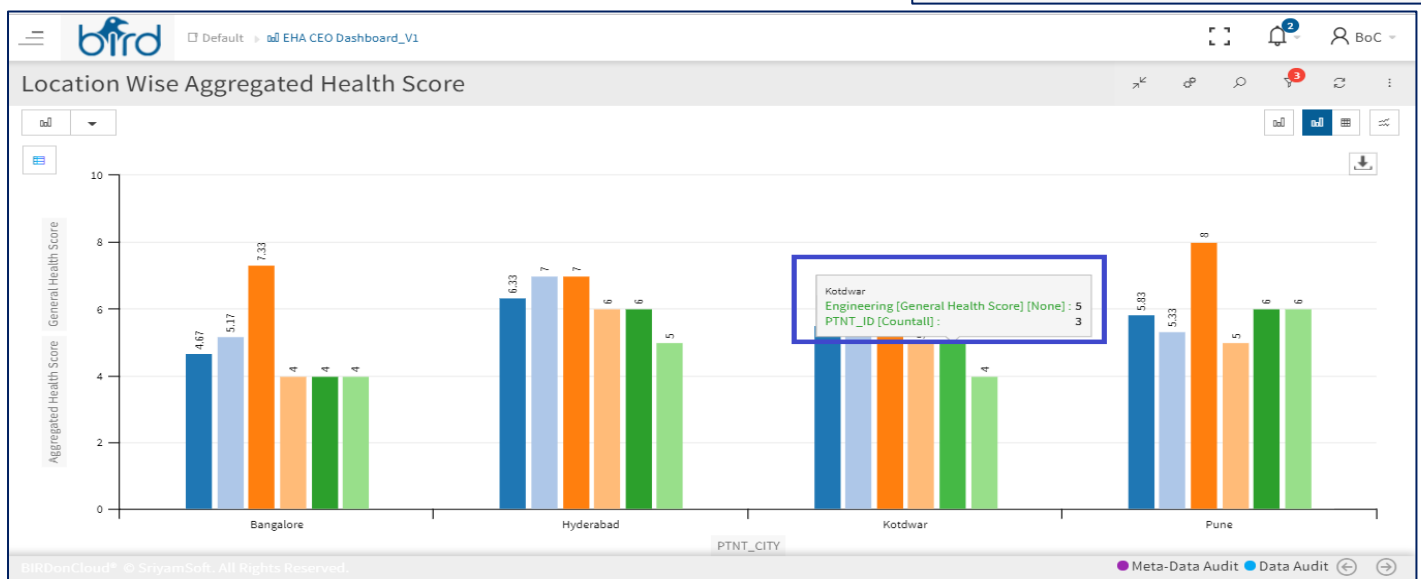
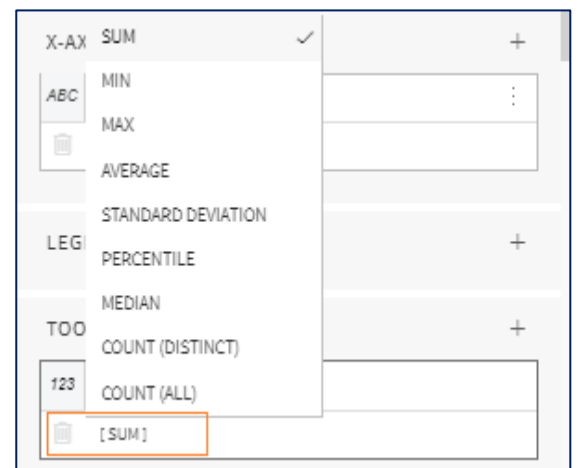
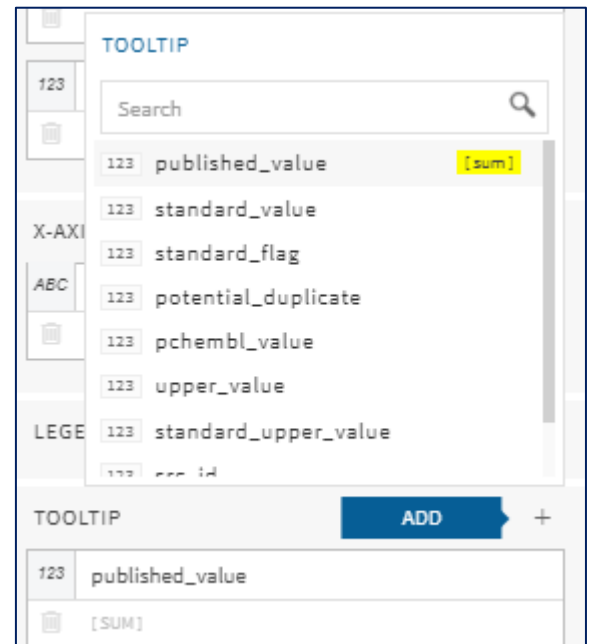
published\_value

published\_units

# Business Intelligence Reporting & Data Visualization

## Tool Tip

- The user can configure entities, so that while hovering the mouse it displays the value on the chart in the tooltip.
- The **tooltip** or info tip or a hint is a common graphical user interface element
- It is used in conjunction with a cursor, usually a pointer
- The user hovers the pointer over an item, without clicking it, and a **tooltip** may appear as a small "hover box" with information about the item being hovered over
- Aggregations can be performed under / using tooltips

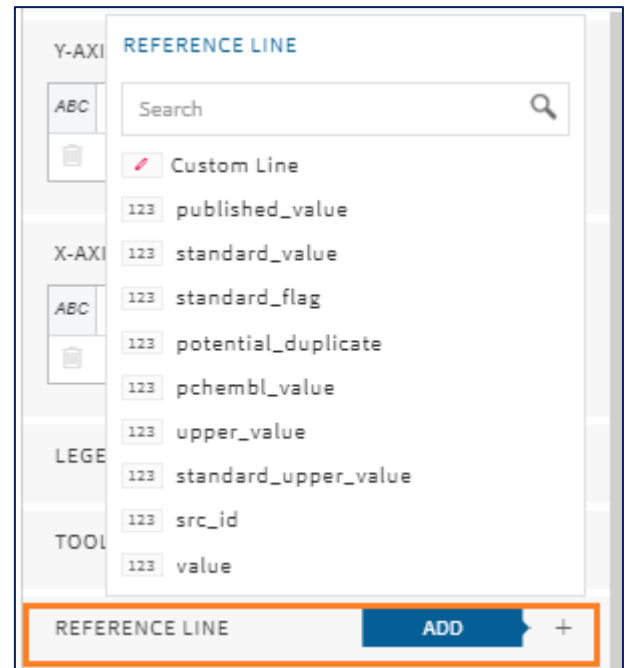


# Business Intelligence Reporting & Data Visualization

## Reference Line:

A user can create multiple data bound reference lines on clustered column and bar charts, line charts, scatter charts, etc., These new reference lines are calculated based on the max, min, median, average, or different percentiles of a selected measure.

You can add as many reference lines as you need. For each line you can control name by providing the line label in the text box, what measure it is based on, a specific value can be provided to the line, the style and colour of the line can be defined.



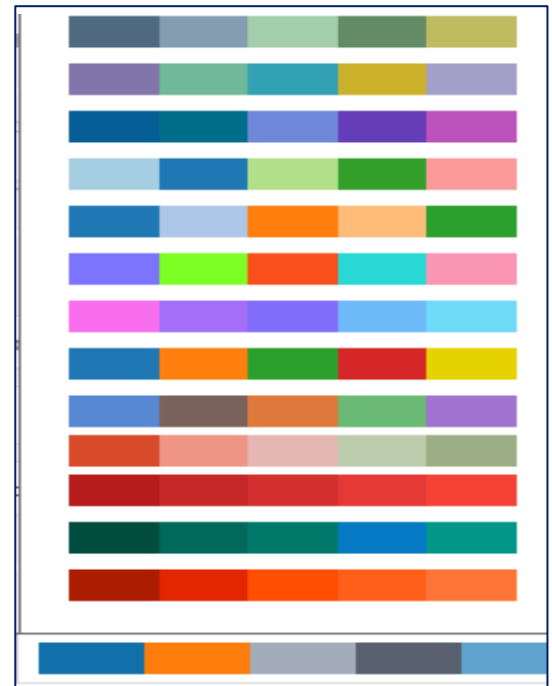
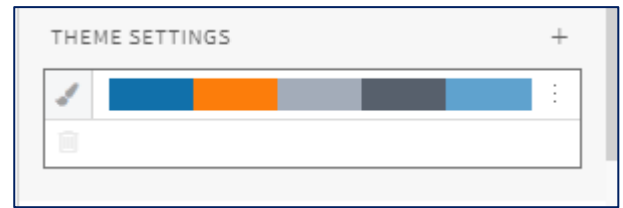
The user can configure the reference line and provide the name, values, style of the line. So that a line would be displayed on the chart based on the max value given. To apply the reference line, user need to enable the Reference line from the chart settings, then only the reference line will be applied on the chart.

A screenshot of a 'REFERENCE LINE' configuration dialog box. It contains several input fields: 'NAME' with the value 'published\_value', 'LABEL' (empty), 'VALUE' with a dropdown menu showing 'Min', 'STYLE' with a dropdown menu showing 'Solid', and 'COLOR' with a text box showing 'rgba(255,0,0,1)' and a red color swatch. At the bottom right are 'Cancel' and 'Apply' buttons.A screenshot of a dropdown menu for selecting line styles. The menu is open, showing a list of options: 'Solid' (highlighted in blue), 'ShortDash', 'ShortDot', 'ShortDashDot', 'ShortDashDotDot', 'Dot', 'Dash', 'LongDash', 'DashDot', 'LongDashDot', and 'LongDashDotDot'. Below the list is a search bar and a 'Cancel' button.

# Business Intelligence Reporting & Data Visualization

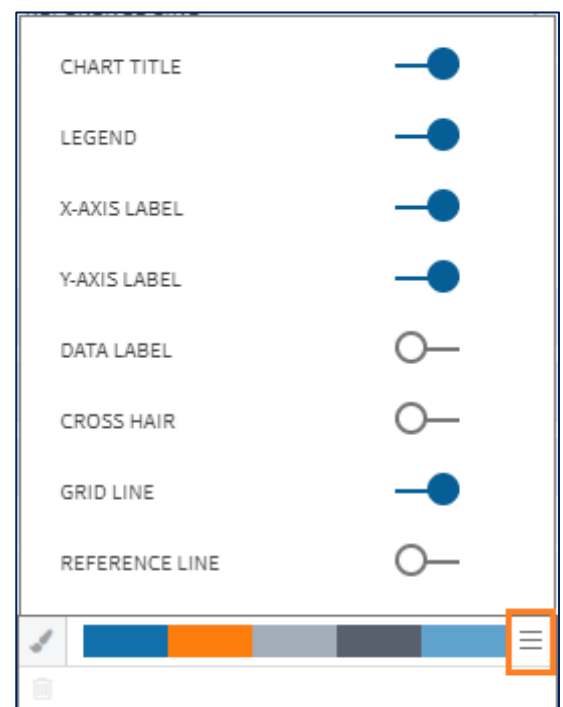
## Colour Theme

- There are different types of colour themes available
- Once the user selects the settings from the storyboard level or the report level the colour palette will be displayed.
- The user can select the required colour theme and can modify the chart according to the user's preference.
- The selected colour palette will be applied across the entire storyboard or at report level.
- If the user is not interested with the colour combination then the user has the flexibility to define their own customized colours using the series individual colours functionality.



## Chart Settings

- The screen shot shown beside displays the chart settings, where a user can enable or disable the Title names, legend, axes labels, data labels, Grid lines and Reference line which shows the average value of the measure value that the user has took in the Y axis.
- The settings can be modified from the attribute settings window or directly from the tiles displayed on the storyboard.
- By clicking on the more option on hovering on each tile, there is a chart styles option available.

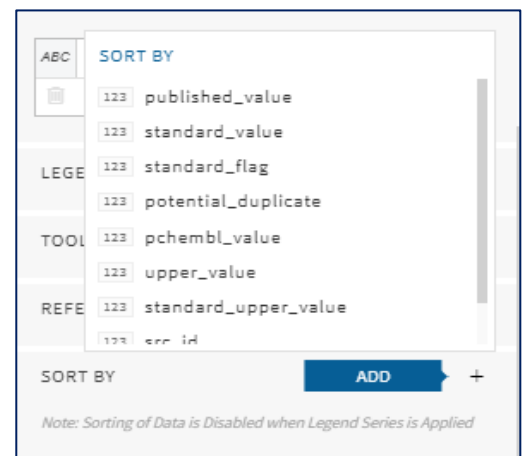
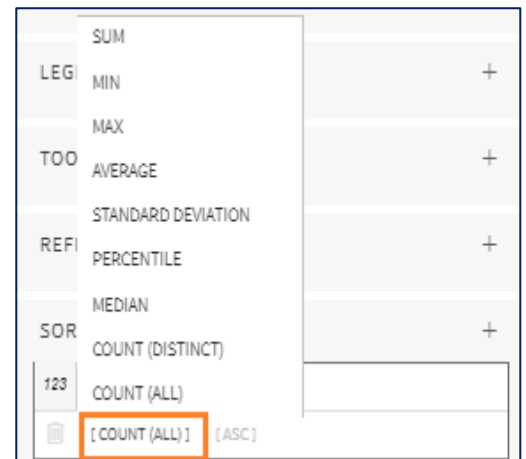
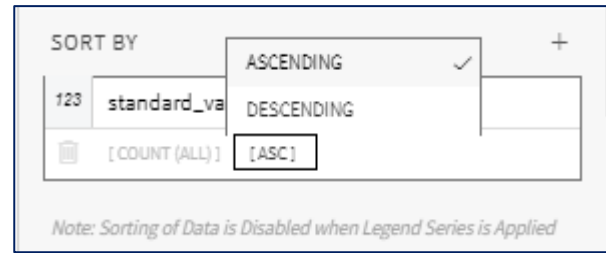


# Business Intelligence Reporting & Data Visualization

- Hence by using the chart style option user can modify the chart styles and the chart settings on
- The fly related to that particular tile, where the same window will be popped up when using the attribute settings option from the toolbar in an individual report.
- User can toggle the chart settings using the slide

## Sorting

- Select the Field or Column Name in the Sort by drop down as shown.
- There is 'None' option available in the drop down, which does not take any value, but displays the data as it is.
- Select whether the Data should be in Ascending order or Descending Order
- Sorting option is applicable for all fields listed in the drop-down.
- Sorting is disabled when Legend Series is applied.
- Sorting will be applicable only on the Measures fields.



## Alpha Numeric Sorting for the Charts (With Legend Series and Without Legend Series)

**Added Feature:** Alpha Numeric Sorting enables the user to apply the sorting with or without the Legend series. The data will be sorted as per the alphanumerical order.



# Business Intelligence Reporting & Data Visualization

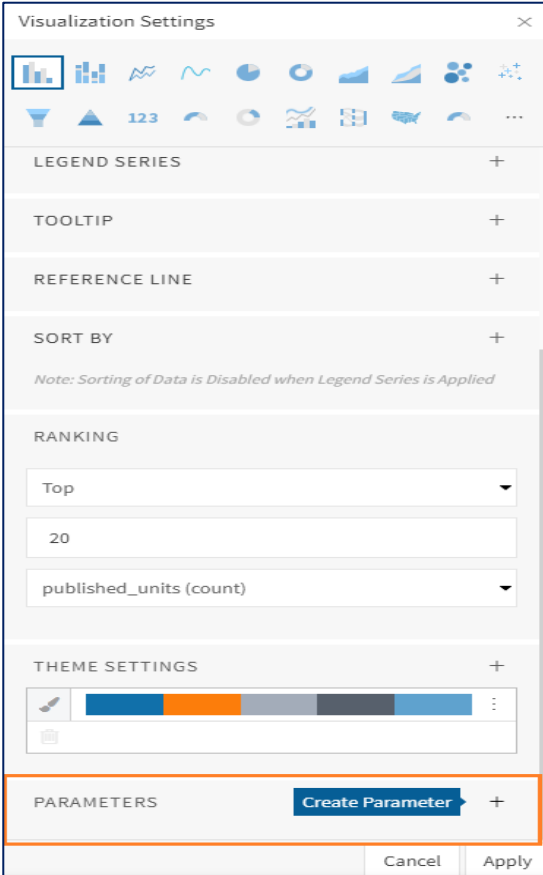
## Parameters

Parameter should be used in the custom field to perform the calculations. Parameters are used to perform “What-IF” analysis.

The allowable values are All, List and Range.

Once parameters are defined, they are to be used in the custom field in the calculations. Created Parameters can be modified from filters window on the fly on the storyboard.

Parameters can be used while creating a custom field with the parameter value.



Visualization Settings

LEGEND SERIES +

TOOLTIP +

REFERENCE LINE +

SORT BY +

*Note: Sorting of Data is Disabled when Legend Series is Applied*

RANKING

Top

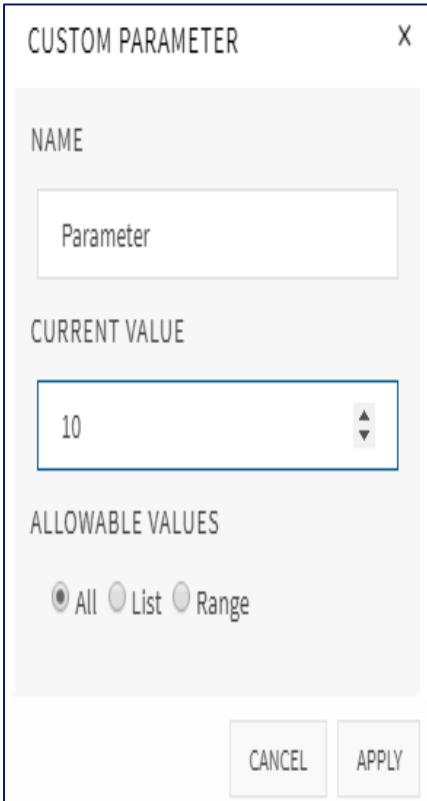
20

published\_units (count)

THEME SETTINGS +

PARAMETERS **Create Parameter** +

Cancel Apply



CUSTOM PARAMETER X

NAME

Parameter

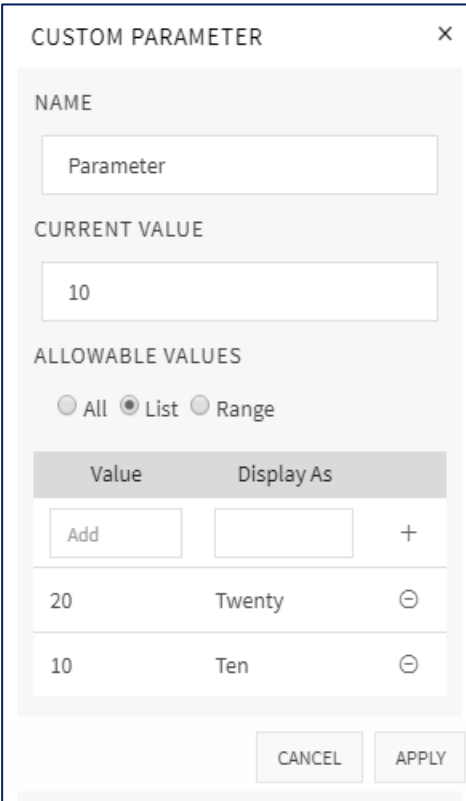
CURRENT VALUE

10

ALLOWABLE VALUES

☒ All ☐ List ☐ Range

CANCEL APPLY



CUSTOM PARAMETER X

NAME

Parameter

CURRENT VALUE

10

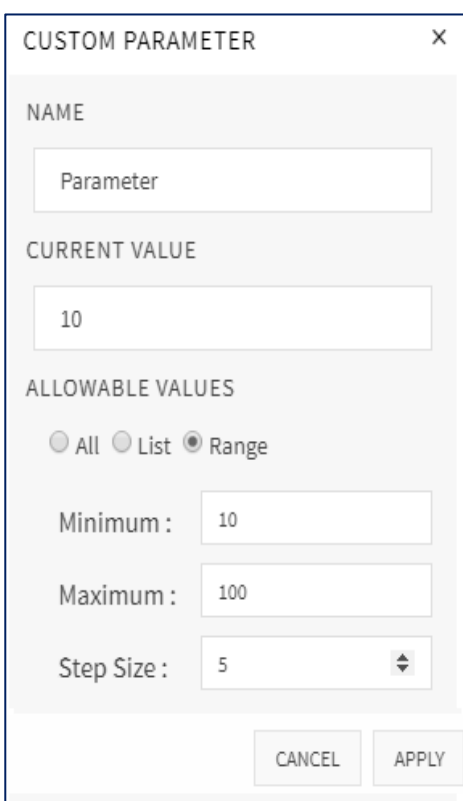
ALLOWABLE VALUES

☐ All ☒ List ☐ Range

Value	Display As
20	Twenty
10	Ten

Add

CANCEL APPLY



CUSTOM PARAMETER X

NAME

Parameter

CURRENT VALUE

10

ALLOWABLE VALUES

☐ All ☐ List ☒ Range

Minimum : 10

Maximum : 100

Step Size : 5

CANCEL APPLY



# Business Intelligence Reporting & Data Visualization

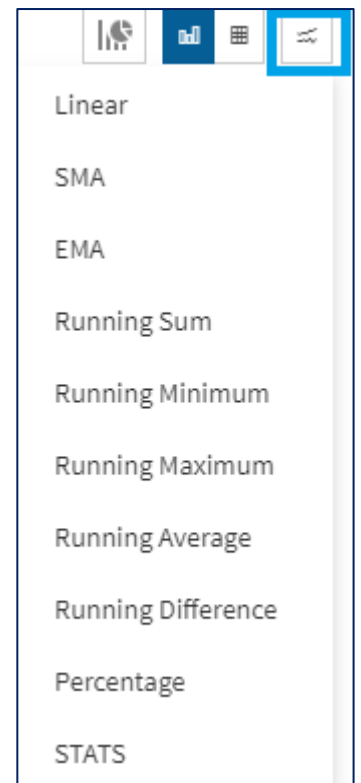
The graph shows when a parameter p2 is taken during creation of custom field and the custom field is considered in the Y axes field, where the chart shows what IF ELSE scenario to the user.

## Trend Analysis

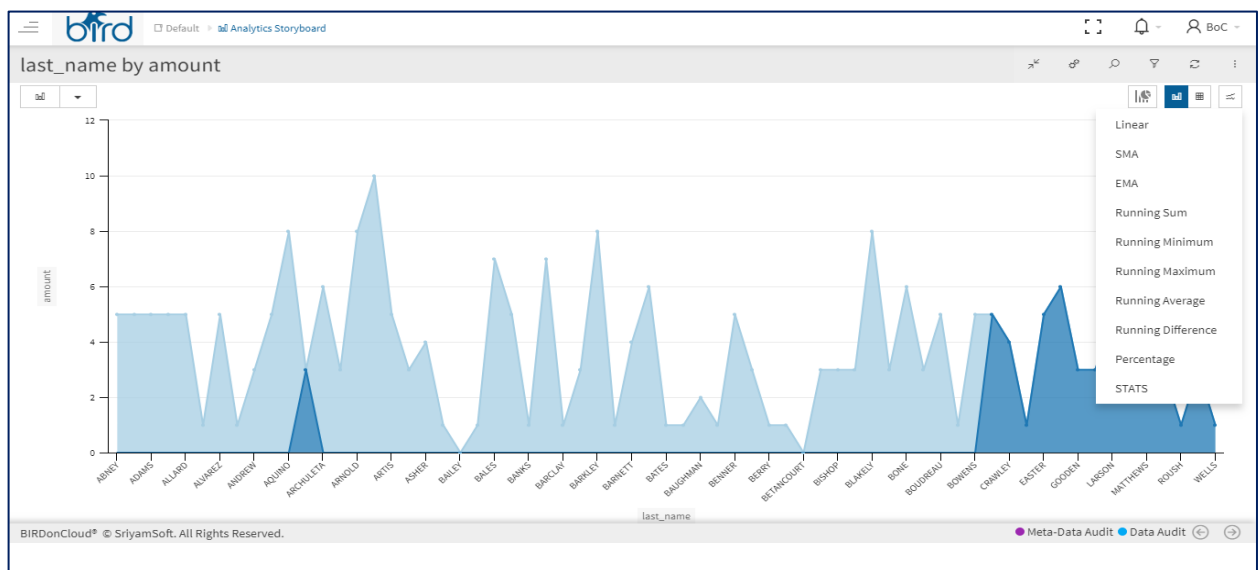
Trend Analysis is aimed at projecting both current and future movement of events through use of time series data analysis which involves comparison of data over a sequential period to identify a pattern or trend.

Moving averages (MA) are one of the most popular and often-used technical indicators. The moving average is easy to calculate and, once plotted on a chart, is a powerful visual trend-spotting tool.

There are three types of moving averages they are as follows: simple, exponential and linear trend. Similarly the Running difference, running sum and average are calculated. If a user would like to see the percentage of the Y axes values the user can opt for the percentage option and also the stats of the report is displayed.



Please find the below screenshot for your reference.



# Business Intelligence Reporting & Data Visualization

## Data View

The user will be able to view the data in data view and also in summary view when the user clicks on the Data view/Data table option

last\_name by amount

Show 10 entries

first_name	last_name	address_id	customer_id
staff_id: 1			10/599
AARON	SELEY	380	1
ADAM	GOOCH		1
ADRIAN	CLARY		1
ALEXANDER	FENNELL		1
ALFRED	CASILLAS		1
ALICE	STEWART	55	1
ALLAN	CORNISH	554	1
ALLEN	BUTTERFIELD	417	1
ALLISON	STANLEY	232	1
AMANDA	CARTER	44	1

Showing 1 to 10 of 599 entries

Previous 1 2 3 4 5 ... 60 Next

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Location Wise Aggregated Health Score

Data View Summary View

PTNT_CITY	Aggregated Health Score	PTNT_ID	Department
Kotdwar	4.5	12,386	Purchases
Hyderabad			Quality Control
Hyderabad	4.33	12,396	Engineering
Hyderabad	4.66	12,401	Engineering
Hyderabad			Purchases
Bangalore	7.16	12,410	
Kotdwar	5.5	12,430	Quality Control
Bangalore			Engineering
Bangalore	6.66	12,447	Purchases
Pune	4.33	12,458	Engineering
Pune	5.83	12,459	
Kotdwar	4.33	12,466	Purchases
Kotdwar	6.33	12,468	Purchases

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## Measure Hierarchy

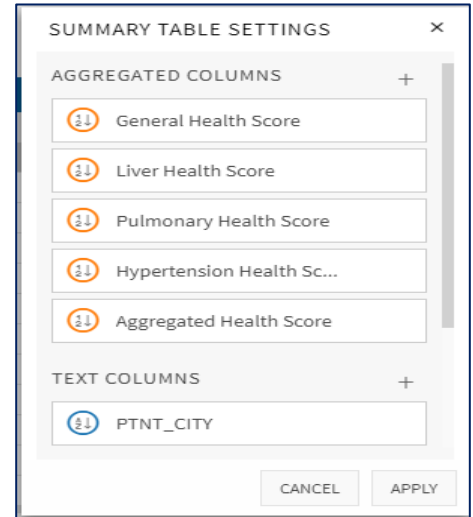
- A user can define the measure hierarchy path and can use the field in the aggregated columns in order to drill down the aggregated columns as well, which is similar to the text columns drill down. Where a user can drill down by selecting a custom hierarchy field in text column. Measure hierarchy is used to understand the break- down of the data.

# Business Intelligence Reporting & Data Visualization

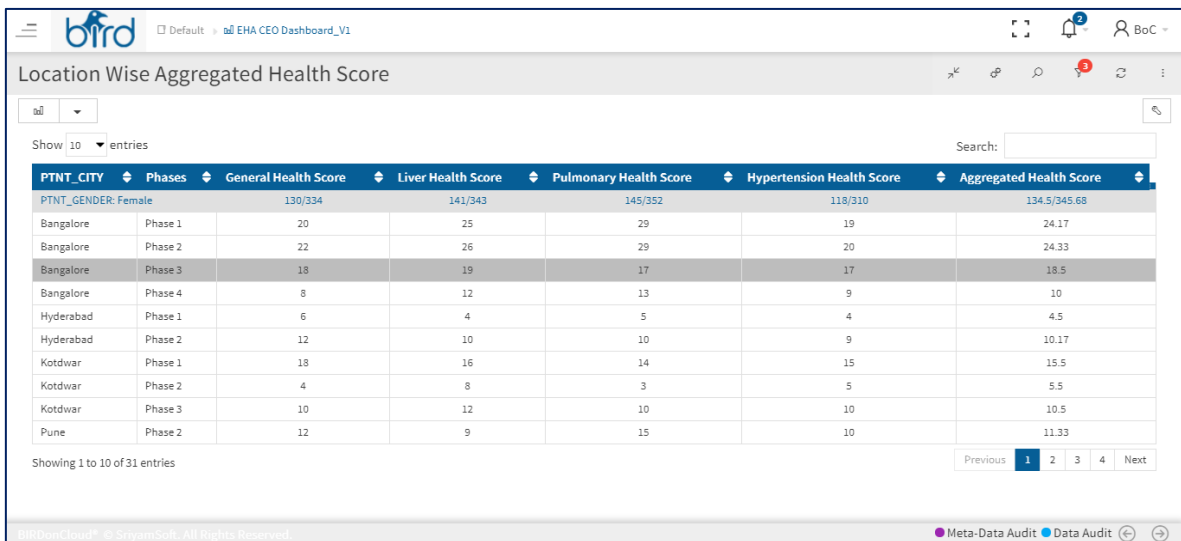
A hyperlink is provided to the values, by clicking on the hyperlink the system shows the whole data related to that particular entities and values.

## Summary Table

- Summary Table is a visualization that displays data in tabular grouped format with aggregated values.
- While creating summary table, user needs to select TEXT columns (Dimensions or Custom Hierarchy) and AGGREGATED columns (Measures). Group by selection is optional.
- If custom hierarchy is selected, on click of a cell value, user can further drill-down based on the hierarchy path defined.



The 'SUMMARY TABLE SETTINGS' dialog box is shown. It has two main sections: 'AGGREGATED COLUMNS' and 'TEXT COLUMNS'. The 'AGGREGATED COLUMNS' section contains five items: 'General Health Score', 'Liver Health Score', 'Pulmonary Health Score', 'Hypertension Health Sc...', and 'Aggregated Health Score'. The 'TEXT COLUMNS' section contains one item: 'PTNT\_CITY'. At the bottom right, there are 'CANCEL' and 'APPLY' buttons.

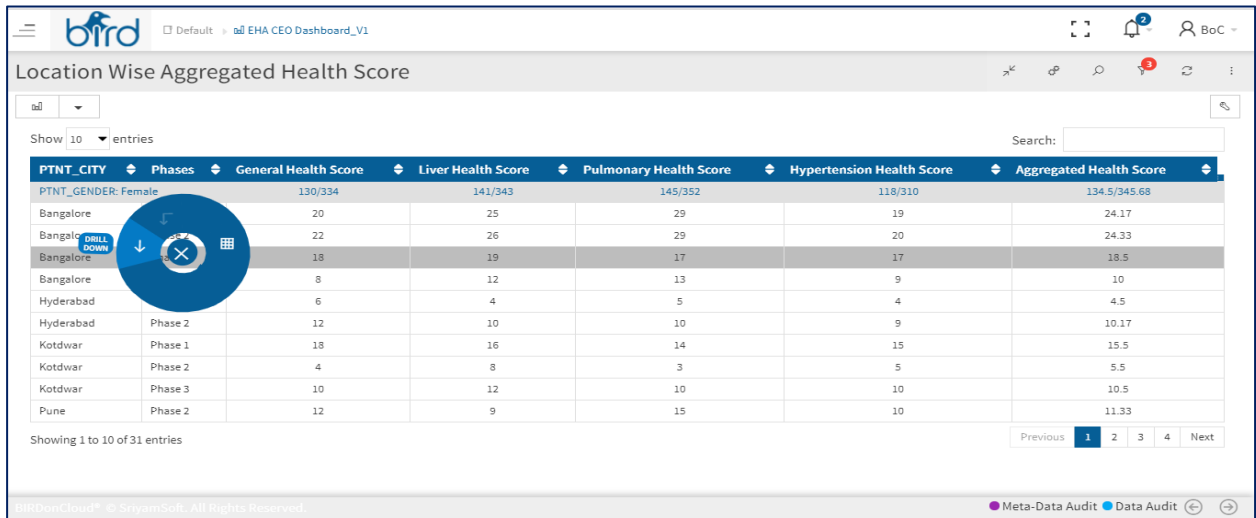


The dashboard shows a table titled 'Location Wise Aggregated Health Score'. The table has columns for 'PTNT\_CITY', 'Phases', 'General Health Score', 'Liver Health Score', 'Pulmonary Health Score', 'Hypertension Health Score', and 'Aggregated Health Score'. The data is grouped by 'PTNT\_CITY' and 'Phases'. The table shows data for Bangalore, Hyderabad, Kotdwar, and Pune across different phases. The 'Aggregated Health Score' column shows the average score for each group.

PTNT_CITY	Phases	General Health Score	Liver Health Score	Pulmonary Health Score	Hypertension Health Score	Aggregated Health Score
PTNT_GENDER: Female		130/334	141/343	145/352	118/310	134.5/345.68
Bangalore	Phase 1	20	25	29	19	24.17
Bangalore	Phase 2	22	26	29	20	24.33
Bangalore	Phase 3	18	19	17	17	18.5
Bangalore	Phase 4	8	12	13	9	10
Hyderabad	Phase 1	6	4	5	4	4.5
Hyderabad	Phase 2	12	10	10	9	10.17
Kotdwar	Phase 1	18	16	14	15	15.5
Kotdwar	Phase 2	4	8	3	5	5.5
Kotdwar	Phase 3	10	12	10	10	10.5
Pune	Phase 2	12	9	15	10	11.33

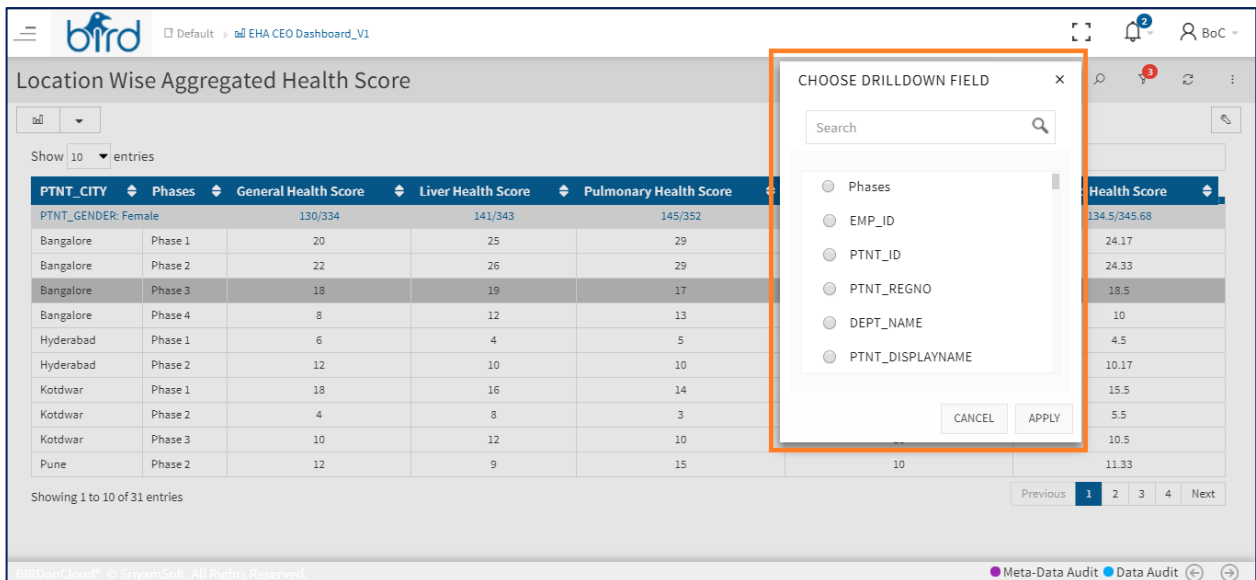
- On click of a cell value, user also has the option of viewing the data behind the cell. The cell value clicked is passed as filter.

# Business Intelligence Reporting & Data Visualization



The screenshot shows the BIRDOnCloud dashboard with the title "Location Wise Aggregated Health Score". A table displays health scores for various locations and phases. A blue circular icon with a drilldown symbol is overlaid on the table.

PTNT_CITY	Phases	General Health Score	Liver Health Score	Pulmonary Health Score	Hypertension Health Score	Aggregated Health Score
PTNT_GENDER: Female		130/334	141/343	145/352	118/310	134.5/345.68
Bangalore		20	25	29	19	24.17
Bangalore		22	26	29	20	24.33
Bangalore		18	19	17	17	18.5
Bangalore		8	12	13	9	10
Hyderabad		6	4	5	4	4.5
Hyderabad	Phase 2	12	10	10	9	10.17
Kotdwar	Phase 1	18	16	14	15	15.5
Kotdwar	Phase 2	4	8	3	5	5.5
Kotdwar	Phase 3	10	12	10	10	10.5
Pune	Phase 2	12	9	15	10	11.33



The screenshot shows the BIRDOnCloud dashboard with the title "Location Wise Aggregated Health Score". A table displays health scores for various locations and phases. A dialog box titled "CHOOSE DRILLDOWN FIELD" is open, showing a list of fields to select for drilling down.

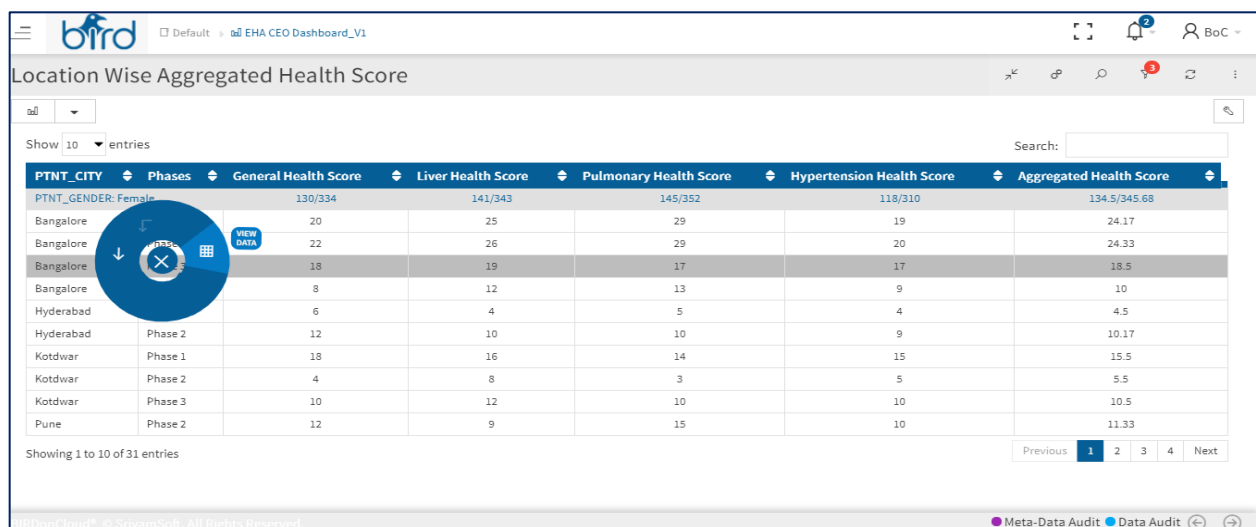
PTNT_CITY	Phases	General Health Score	Liver Health Score	Pulmonary Health Score	Hypertension Health Score	Aggregated Health Score
PTNT_GENDER: Female		130/334	141/343	145/352	118/310	134.5/345.68
Bangalore	Phase 1	20	25	29	19	24.17
Bangalore	Phase 2	22	26	29	20	24.33
Bangalore	Phase 3	18	19	17	17	18.5
Bangalore	Phase 4	8	12	13	9	10
Hyderabad	Phase 1	6	4	5	4	4.5
Hyderabad	Phase 2	12	10	10	9	10.17
Kotdwar	Phase 1	18	16	14	15	15.5
Kotdwar	Phase 2	4	8	3	5	5.5
Kotdwar	Phase 3	10	12	10	10	10.5
Pune	Phase 2	12	9	15	10	11.33

CHOOSE DRILLDOWN FIELD

Search

- ☐ Phases
- ☐ EMP\_ID
- ☐ PTNT\_ID
- ☐ PTNT\_REGNO
- ☐ DEPT\_NAME
- ☐ PTNT\_DISPLAYNAME

CANCEL APPLY



The screenshot shows the BIRDOnCloud dashboard with the title "Location Wise Aggregated Health Score". A table displays health scores for various locations and phases. A blue circular icon with a drilldown symbol is overlaid on the table.

PTNT_CITY	Phases	General Health Score	Liver Health Score	Pulmonary Health Score	Hypertension Health Score	Aggregated Health Score
PTNT_GENDER: Female		130/334	141/343	145/352	118/310	134.5/345.68
Bangalore		20	25	29	19	24.17
Bangalore		22	26	29	20	24.33
Bangalore		18	19	17	17	18.5
Bangalore		8	12	13	9	10
Hyderabad		6	4	5	4	4.5
Hyderabad	Phase 2	12	10	10	9	10.17
Kotdwar	Phase 1	18	16	14	15	15.5
Kotdwar	Phase 2	4	8	3	5	5.5
Kotdwar	Phase 3	10	12	10	10	10.5
Pune	Phase 2	12	9	15	10	11.33

# Business Intelligence Reporting & Data Visualization

**Dataview**

Dataset Count: 201 | Filtered Count: 13

Filter Values:  
PTNT\_GENDER: Female, PTNT\_CITY: Bangalore

Phases	EMP_ID	PTNT_ID	PTNT_REGNO	DEPT_NAME	PTNT_DISPLAYNAME	PTNT_DOB
Phase 2	EMP-66	12,410	CTS-001-BEL001-KK-24614	Information technology	Female-EMP-66	1989-02-09 00:00:00
Phase 3	EMP-103	12,447	CTS-001-BEL001-JN-24614	Sound and vision broadcast	Female-EMP-103	1987-01-17 00:00:00
Phase 4	EMP-143	12,487	CTS-001-BEL001-KK-24614	Central acquisition radar	Female-EMP-143	1989-02-09 00:00:00
Phase 1	EMP-27	12,371	CTS-001-BEL001-JN-24614	Central acquisition radar	Female-EMP-27	1987-01-17 00:00:00
Phase 1	EMP-30	12,374	CTS-001-BEL001-KK-24614	Tank electronics	Female-EMP-30	1989-02-09 00:00:00
Phase 3	EMP-106	12,450	CTS-001-BEL001-KK-24614	Tank electronics	Female-EMP-106	1989-02-09 00:00:00
Phase 1	EMP-23	12,367	CTS-001-BEL001-JN-24614	Tank electronics	Female-EMP-23	1987-01-17 00:00:00
Phase 2	EMP-63	12,407	CTS-001-BEL001-JN-24614	Sound and vision broadcast	Female-EMP-63	1987-01-17 00:00:00
Phase 2	EMP-64	12,408	CTS-001-BEL001-JK-24614	Sound and vision broadcast	Female-EMP-64	1975-05-08 00:00:00
Phase 3	EMP-108	12,452	CTS-001-BEL001-JK-24614	Information technology	Female-EMP-108	1975-05-08 00:00:00

## Pivot Table/Chart

- In pivot table, user can select the column, rows & values as shown in the above screenshot.

**Location Wise Aggregated Health Score**

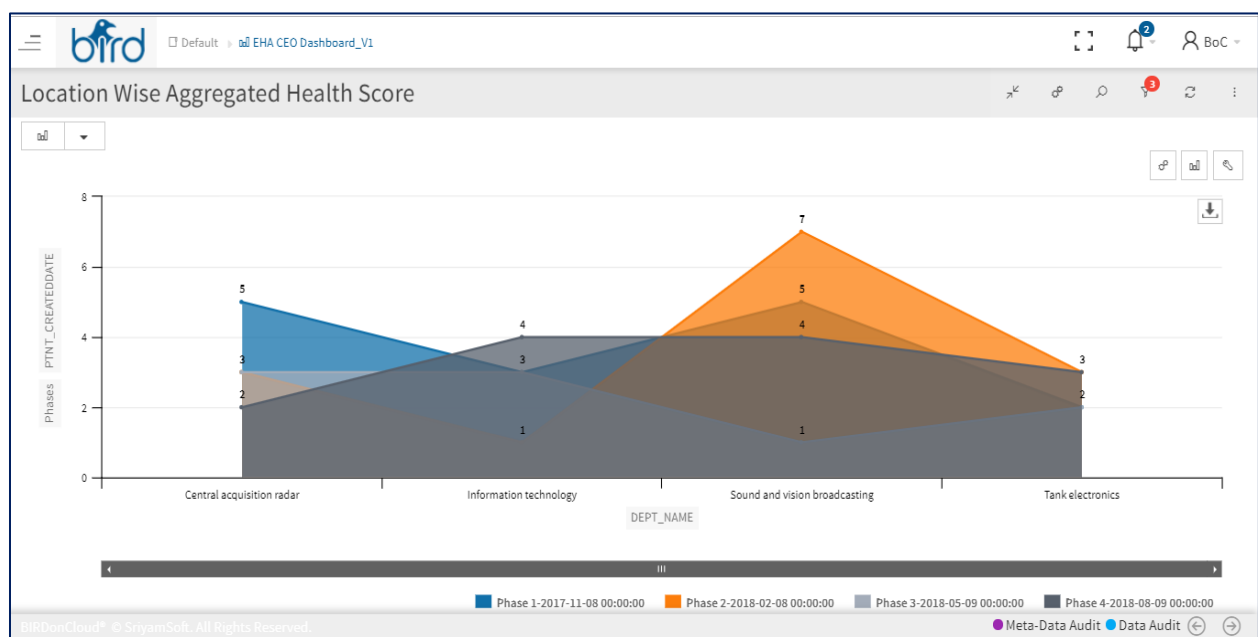
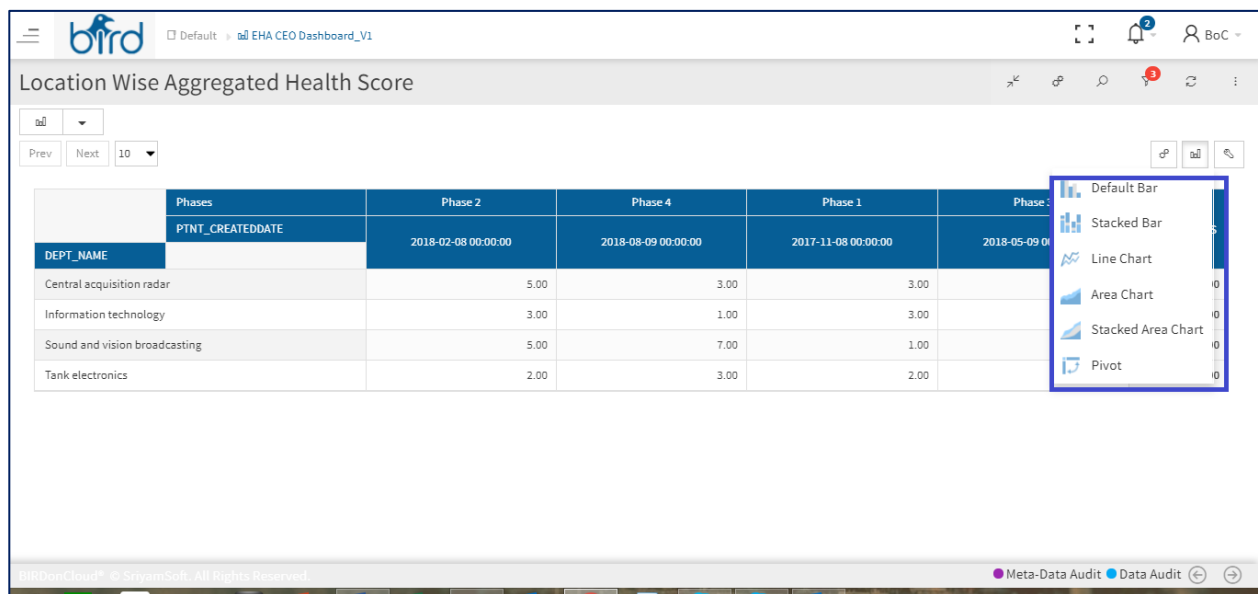
DEPT\_NAME: Central acquisition radar, PTNT\_CITY: Bangalore

DEPT_NAME	PTNT_CITY	PTNT_CREATEDDATE	2018-02-08 00:00:00	2018-08-09 00:00:00	2018-02-08 00:00:00	2018-05-09 00:00:00	2017-11-08 00:00:00	2018-05-09 00:00:00	2017-11-08 00:00:00	2018-08-09 00:00:00	Totals
		Phases	Phase 2	Phase 4	Phase 2	Phase 3	Phase 1	Phase 3	Phase 1	Phase 4	
		PTNT_GENDER	Male	Female	Male	Female	Female	Male	TransGender	TransGender	
Central acquisition radar	Hyderabad		21.17								21.17
	Pune			5.33	5.50	5.50	4.33				20.67
	Bangalore			4.83			5.17				10.00
	Kotdwar						5.50	5.00	4.33		14.83
Information technology	Bangalore		11.50		7.17	5.33	5.67		4.67	5.50	39.83
	Kotdwar			4.50			4.50	4.67	8.50		22.17
	Hyderabad				4.50		4.50	6.33			15.33
	Pune			5.50			5.83		4.67		16.00

# Business Intelligence Reporting & Data Visualization

In Pivot view one more option is available for the user i.e. Chart Settings, where it has Default Bar, Stacked Bar, Line chart, Area Chart, and Stacked Area Charts to Pivot & where user can convert the pivot table to anyone of these charts. As shown below in the displayed chart

## Pivot Chart Settings



# Business Intelligence Reporting & Data Visualization

User can select the different chart settings by clicking on pivot chart **settings** icon, as shown in the below screenshot.



Below screenshot is view data in pivot, where user can filter, sort, group and aggregate the values of his choice.

- For View data facility to Pivot cell values, click on the value and a data table will be popped up.

The screenshot shows a data table titled "Location Wis: Dataview". The table has three columns: PTNT\_GENDER, PTNT\_CITY, and Phases. The data is as follows:

PTNT_GENDER	PTNT_CITY	Phases
Male	Kotdwar	Phase 2
TransGender	Hyderabad	Phase 2
Male	Hyderabad	Phase 2
Male	Hyderabad	Phase 2
TransGender	Hyderabad	Phase 2
Female	Bangalore	Phase 2
Female	Kotdwar	Phase 3
TransGender	Bangalore	Phase 3
Female	Bangalore	Phase 3
Female	Pune	Phase 3
Female	Pune	Phase 3

The table is part of a larger interface with a sidebar on the left showing filters for PTNT\_CITY and PTNT\_GENDER. The bottom of the interface shows "Showing 1 to 31 of 31 entries" and navigation buttons for "Previous", "1", and "Next".

# Business Intelligence Reporting & Data Visualization

## Session Expiry Friendly Message

If the BIRDonCloud Application session is about to expire then a friendly warning message is displayed to the user, whether the user would like to extend the session or not as shown in the below screenshot.

If the user would like to extend the session and clicks on 'Yes', then the system will display a pop-up window, where a user needs to enter the Login Credentials, once the details are validated then the session will be continued from the same page.

## Contact Support Team

In case of any queries/ assistance required, please contact our projects or support team at [projects@sriyamsoft.com](mailto:projects@sriyamsoft.com) or [support@sriyamsoft.com](mailto:support@sriyamsoft.com) for immediate help.

Assuring the best of our services all the times.

\*\*\*\*\*End of Document\*\*\*\*\*