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| , RD Dep.  **POWER BI** |
| Advanced Reporting Concepts |

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# Row Level Security

Power BI enables you to go from data to insight to action quickly, yet you must make sure the data in your Power BI reports and dashboards is recent. Knowing how to refresh the data is often critical in delivering accurate results.

You can define roles and rules within Power BI Desktop. In Power BI Service you can add a member to the role by typing in the email address, or name, of the user, security group or distribution list you want to add. You cannot add Groups created within Power BI.

You can see more interesting and useful information on an [official Microsoft site](https://learn.microsoft.com/en-us/power-bi/enterprise/service-admin-rls).

# Using Bookmarks to Improve User Experience

You can use the Bookmarks, Buttons, and Selections features in Power BI Desktop to make your report more compelling, interactive, and simpler for users to navigate.

**Bookmarks** - Capture the currently configured view of a report page so you can quickly return to that view later. You can use bookmarks for different reasons. For example, you can use them to keep track of your own progress when creating reports. You can also use them to build a PowerPoint-like presentation that goes through the bookmarks in order, thereby telling a story with your report.

**Selections** - Allow you to determine what items in the report are visible and what items are hidden. Selections are used alongside bookmarks and buttons.

You can see more interesting and useful information on an [official Microsoft site](https://learn.microsoft.com/en-us/power-bi/create-reports/desktop-bookmarks?tabs=powerbi-desktop).

# Using Buttons to Improve User Experience

You can use the Bookmarks, Buttons, and Selections features in Power BI Desktop to make your report more compelling, interactive, and simpler for users to navigate.

**Buttons** - Create a more interactive experience for the report users. With the addition of buttons that have assigned actions, your report behaves similar to an app, where users can hover, select, and interact more with the content.

The options for the button action types are as follows:

1. **Back**
2. **Bookmark**
3. **Drill through**
4. **Page navigation**
5. **Q&A**
6. **Web URL**

You can see more interesting and useful information on an [official Microsoft site](https://learn.microsoft.com/en-us/power-bi/create-reports/desktop-buttons?tabs=powerbi-desktop).

# Creating tooltips based on report pages

You can create visually rich report tooltips that appear when you hover over visuals, based on report pages you create in Power BI Desktop. By creating a report page that serves as your tooltip, your custom tooltips can include visuals, images, and any other collection of items you create in the report page.

There are all sorts of interesting things you can do with report tooltips.

You can see more interesting and useful information on an [official Microsoft site](https://learn.microsoft.com/en-us/power-bi/create-reports/desktop-tooltips?tabs=powerbi-desktop).

# FIELD PARAMETERS

Field parameters allow users to dynamically change the measures or dimensions being analyzed within a report. This feature can help your report readers explore and customize the analysis of the report by selecting the different measures or dimensions they're interested in.

You can see more interesting and useful information on an [official Microsoft site](https://learn.microsoft.com/en-us/power-bi/create-reports/power-bi-field-parameters) or using this [link](https://www.sqlbi.com/articles/fields-parameters-in-power-bi/).

# DECOMPOSITION TREE

The decomposition tree visual in Power BI lets you visualize data across multiple dimensions. It automatically aggregates data and enables drilling down into your dimensions in any order. It's also an artificial intelligence (AI) visualization, so you can ask it to find the next dimension to drill down into based on certain criteria. This tool is valuable for ad hoc exploration and conducting root cause analysis.

You can see more interesting and useful information on an [official Microsoft site](https://learn.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-decomposition-tree).

# CONDITIONAL FORMATTING

Conditional formatting in Power BI Desktop allows you to specify customized cell colors, including color gradients, that are based on field values. Additionally, you can use conditional formatting to represent cell values with data bars, KPI icons, or active web links. Conditional formatting allows you to draw attention to, or highlight, data in text or numeric fields using color, icons or data bars.

You can see more interesting and useful information on an [official Microsoft site](https://learn.microsoft.com/en-us/power-bi/create-reports/desktop-conditional-table-formatting).

# PARAMETERS FOR DATA SOURCE

Parameters in Power Query are a useful way to change values dynamically in your Get Data and Transform process. Parameters can be used to change values without opening the Power Query (Transform Data) window in the Power BI Desktop, and they are helpful even in the Power BI Service in a way that you can change values manually without the need to open PBIX file in the Desktop and re-publish it.

You can see more interesting and useful information on an [official Microsoft site](https://learn.microsoft.com/en-us/power-query/power-query-query-parameters).

*You can find more detailed explanation on those topics with examples in* **PowerBI\_courseware5\_Advanced\_Reporting\_Concepts** *file.*

# Create lab report

Create a report on test data from your previous home tasks with following artefacts:

1. Configure RLS based on a chosen security pattern. Give short description of your security groups and make screenshots of how it was configured in Power BI Desktop and Power BI Online Service.
2. Using bookmarks and buttons create a functionality to switch between bar chart and a map visual that are positioned in the same area. Give short description of you work.
3. On the page with YTD calculation created in previous lab work, add the possibility to switch between MTD, QTD and YTD views for the user. You can use different ways of implementation, so add a description of the method you used and specify why you choose this logic.
4. Create a decomposition tree visual with at least 3 independent variables. Give short description of you work.
5. Add a tooltip for the selected visual. Give short description of you work.
6. \*Try to **create** Custom visual in Power BI Desktop. Add description of the method you choosed and explain what the usage of your visual is and what opportunities the visual you created gives you in comparison with the default visuals.

Also try to add all those artefacts in your project report.

Create lab report and commit to gitlab the below artifacts:

1. Word document with screenshots and progress description
2. PBIX file with the resulting report.