

Tech Saksham

Case Study Report

Data Analytics with Power BI

“Real-Time Analysis of Bank”

“Customers”

“College Name”

GOVERNMENT ARTS AND SCIENCE COLLEGE,

AUNDIPATTI, THENI.

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ABSTRACT

In the digital age, data has become an invaluable asset for businesses, particularly in the banking sector. The proposed project, “Real-Time Analysis of Bank Customers,” aims to leverage PowerBI, a leading business intelligence tool, to analyze and visualize real-time customer data. This project will enable banks to gain deep insights into customer behavior, preferences, and trends, thereby facilitating data-driven decision-making and enhancing customer satisfaction. The real-time analysis will allow banks to respond promptly to changes in customer behavior or preferences, identify opportunities for cross-selling and up-selling, and tailor their products and services to meet customer needs. The project will also contribute to the broader goal of digital transformation in the banking sector, promoting efficiency, innovation, and customer-centricity.

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INTRODUCTION

1.1 Problem Statement

In today's competitive banking landscape, understanding customer behavior and preferences is crucial for customer retention and revenue generation. However, banks often face challenges in analyzing customer data due to the sheer volume and velocity of data generated. Traditional data analysis methods are time-consuming and often fail to provide real-time insights. This lack of real-time analysis can lead to missed opportunities for customer engagement, cross-selling, and up-selling, impacting the bank's revenue generation and customer satisfaction. Furthermore, the complexity and diversity of customer data, which includes transaction history, customer feedback, and demographic data, pose additional challenges for data analysis.

1.2 Proposed Solution

The proposed solution is to develop a PowerBI dashboard that can analyze and visualize real-time customer data. The dashboard will integrate data from various sources such as transaction history, customer feedback, and demographic data. It will provide a comprehensive view of customer behavior, preferences, and trends, enabling banks to make informed decisions. The dashboard will be interactive, user-friendly, and customizable, allowing banks to tailor it to their specific needs. The real-time analysis capability of the dashboard will enable banks to respond promptly to changes in customer behavior or preferences, identify opportunities for cross-selling and up-selling, and tailor their products and services to meet customer needs.

1.3 Feature

- **Real-Time Analysis:** The dashboard will provide real-time analysis of customer data.
- **Customer Segmentation:** It will segment customers based on various parameters like age, income, transaction behavior, etc.
- **Trend Analysis:** The dashboard will identify and display trends in customer behavior.

- **Predictive Analysis:** It will use historical data to predict future customer behavior.

1.4 Advantages

- **Data-Driven Decisions:** Banks can make informed decisions based on real-time data analysis.
- **Improved Customer Engagement:** Understanding customer behavior and trends can help banks engage with their customers more effectively.
- **Increased Revenue:** By identifying opportunities for cross-selling and up-selling, banks can increase their revenue.

1.5 Scope

The scope of this project extends to all banking institutions that aim to leverage data for decision-making and customer engagement. The project can be further extended to incorporate more data sources and advanced analytics techniques, such as machine learning and artificial intelligence, to provide more sophisticated insights into customer behavior. The project also has the potential to be adapted for other sectors, such as retail, healthcare, and telecommunications, where understanding customer behavior is crucial. Furthermore, the project contributes to the broader goal of digital transformation in the banking sector, promoting efficiency, innovation, and customer-centricity.

POWER BI

Power BI consists of several elements that all work together, starting with these three basics:

- A Windows desktop application called *Power BI Desktop*.
- An online software as a service (SaaS) service called the *Power BI service*.
- Power BI Mobile apps for Windows, iOS, and Android devices.

These three elements—Power BI Desktop, the service, and the mobile apps—are designed to let you create, share, and consume business insights in the way that serves you and your role most effectively.

Beyond those three, Power BI also features two other elements:

- **Power BI Report Builder**, for creating paginated reports to share in the Power BI service. Read more about [paginated reports](#) later in this article.
- **Power BI Report Server**, an on-premises report server where you can publish your Power BI reports, after creating them in Power BI Desktop. Read more about [Power BI Report Server](#) later in this article.

How Power BI matches your role

How you use Power BI depends on your role in a project or on a team. Other people, in other roles, might use Power BI differently.

For example, you might primarily use the Power BI service to view reports and dashboards. Your number-crunching, business-report-creating coworker might make extensive use of Power BI Desktop or Power BI Report Builder to create reports, then publish those reports to the Power BI service, where you view them. Another coworker, in sales, might mainly use the Power BI Mobile app to monitor progress on sales quotas, and to drill into new sales lead details.

If you're a developer, you might use Power BI APIs to push data into semantic models or to embed dashboards and reports into your own custom applications. Have an idea for a new visual? Build it yourself and share it with others.

You also might use each element of Power BI at different times, depending on what you're trying to achieve or your role for a given project.

How you use Power BI can be based on which feature or service of Power BI is the best tool for your situation. For example, you can use Power BI Desktop to create reports for your own team about customer engagement statistics and you can view inventory and manufacturing progress in a real-time dashboard in the Power BI service. You can create a paginated report of mailable invoices, based on a Power BI semantic model. Each part of Power BI is available to you, which is why it's so flexible and compelling.

Explore documents that pertain to your role:

- Power BI for [business users](#)
- Power BI Desktop for [report creators](#)
- Power BI Report Builder for [enterprise report creators](#)
- Power BI for [administrators](#)
- Power BI for [developers](#)
 - [What is Power BI embedded analytics?](#)
 - [Create your own visuals in Power BI](#)
 - [What can developers do with the Power BI API?](#)

The flow of work in Power BI

One common workflow in Power BI begins by connecting to data sources in Power BI Desktop and building a report. You then publish that report from Power BI Desktop to the Power BI service, and share it so business users in the Power BI service and on mobile devices can view and interact with the report.

This workflow is common, and shows how the three main Power BI elements complement one another.

Use the deployment pipeline tool

In the Power BI service, you can use the [deployment pipeline tool](#) to test your content before you release it to your users. The deployment pipeline tool can help you deploy reports, dashboards, semantic models, and paginated reports. Read about how to [get started with deployment pipelines](#) in the Power BI service.

How Microsoft Fabric works with Power BI

[Microsoft Fabric](#) is an offering that combines data + services in a unified environment, making it easier to perform analysis and analytics on various sets of data. **Power BI** is an example of one of the *services* that's integrated with Microsoft Fabric, and your organization's **OneLake** data store is an example of the *data* that can be used, analyzed, or visualized. Large organizations find Microsoft Fabric particularly useful, since it can corral and then bring greater value to large stores of data, then using services (like Power BI) to bring such data to business life.

Administration of Power BI is now handled by Microsoft Fabric, but your favorite tools like the **Power BI service** and **Power BI Desktop** still operate like they always have - as a service that can turn your data, whether in OneLake or in Excel, into powerful business intelligence insights.

Paginated reports in the Power BI service

Another workflow involves paginated reports in the Power BI service. Enterprise report creators design paginated reports to be printed or shared. They can also share these reports in the Power BI service. They're called *paginated* because they're formatted to fit well on a page. They're often used for operational reports, or for printing forms such as invoices or transcripts. They display all the data in a table, even if the table spans multiple pages. Power BI Report Builder is the standalone tool for authoring paginated reports.

Read more about [paginated reports](#) in the Power BI service.

On-premises reporting with Power BI Report Server

What if you need to keep your reports on premises, say, behind a firewall? Read on.

You can create, deploy, and manage Power BI reports in Power BI Desktop, and paginated reports in Report Builder, with the ready-to-use tools and services that Power BI Report Server provides.



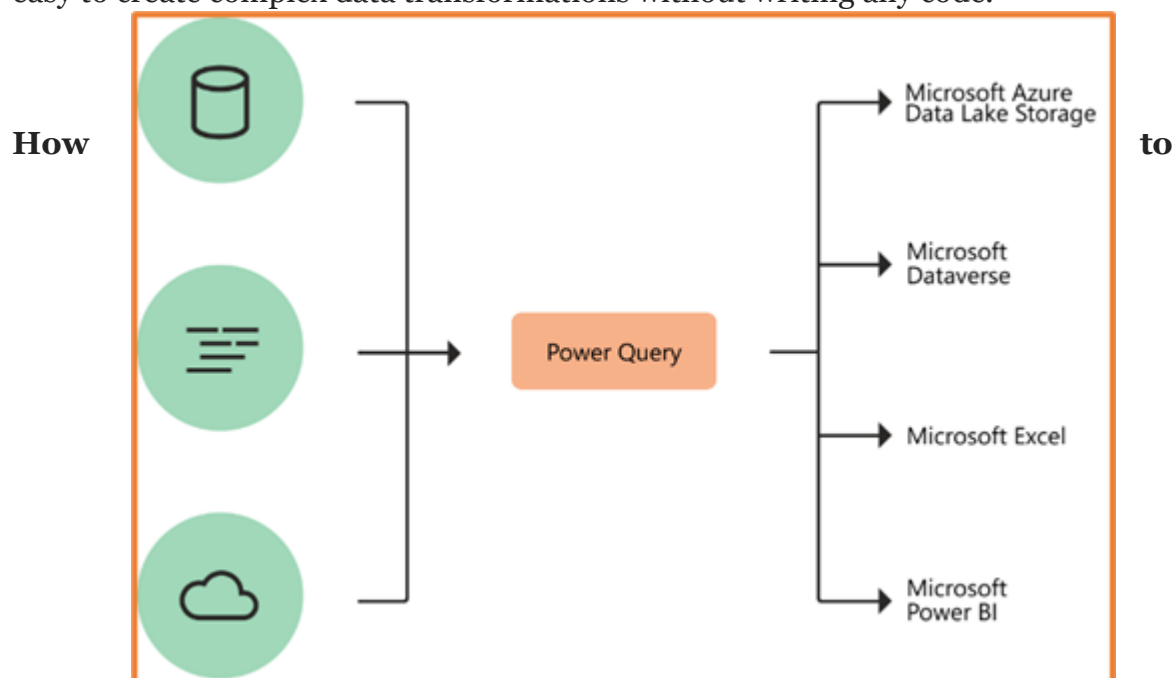
Power BI Report Server is a solution that you deploy behind your firewall and then deliver your reports to the right users in different ways, whether that's viewing them in a web browser, on a mobile device, or as an email. And because Power BI Report Server is compatible with Power BI in the cloud, you can move to the cloud when you're ready.

POWER QUERY EDITER

Power Query is a data transformation and data preparation engine, where you can connect to a wide range of data sources and apply hundreds of different data transformations by previewing data and selecting transformations from the UI.

As the name suggests, Power Query is the most powerful data automation tool found in Excel 2010 and later. Power Query allows a user to import data into Excel through external sources, such as Text files, CSV files, Web, or Excel workbooks, cloud, SQL to list a few. The data can then be cleaned and prepared for our requirements. Using Power Query, you can perform the extract, transform, and load (**ETL**) processing of data.

Power Query Editor is a powerful tool that allows you to transform and clean data before importing it into Power BI. It provides a user-friendly interface that makes it easy to create complex data transformations without writing any code.



Access Power Query Editor in Power BI

1. Open Power BI Desktop.
2. In the 'Home' tab, click on Get data (or) Excel work book (or) SQL server data to load the data.
3. Here we get the data from the related source we selected and then it shows to 'Load' and 'Transform data', where we can click on transform data to clean data, merge tables, remove duplicate columns (or) null values and its go on.

The Basics of Power Query Editor in Power BI

The tool offers a wide range of data transformations, including filtering data rows, merging columns, removing duplicates, and pivoting tables. One of the key features of Power Query Editor is its ability to handle large datasets. The basics of Power Query involve importing, transforming, and combining data from various sources in Excel, allowing users to clean, reshape, and analyze data without complex formulas, the four phases of Power Query are:

1. Connect:

In this phase, users connect to the data source(s) from which they want to extract data. Power Query supports many data sources, including databases, files, web pages, and more.

2. Transform:

Once the data is loaded into Power Query, users can use various data transformation tools to clean, reshape, and transform the data to meet their specific needs. Common data transformation tasks include removing duplicates, filtering data, merging data, splitting columns, and pivoting data.

3. Combine:

Power Query also allows users to combine data from multiple sources using various techniques. Users can merge tables, append, or join data using a common key.

4. Load:

Finally, in the Load phase, users specify to load the transformed data by clicking on **Close & Apply**. They can load the data into an Excel worksheet or a Power BI

report or create a connection to the data source so that the data is automatically refreshed whenever the source data changes.

There are six main sections of the Power Query Editor are as follows:

- **Query Editor Ribbon:** This ribbon is similar to the one on the Excel interface.

Various commands are organized in separate tabs.

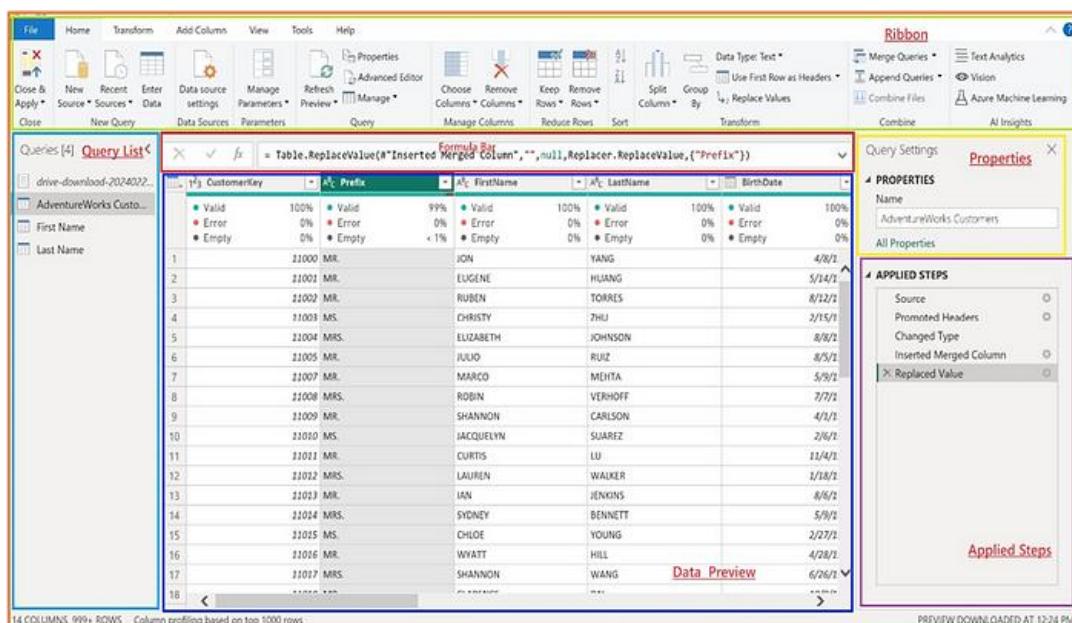
- **Query List:** This section lets you browse through a list of all queries in your current workbook.

- **Formula Bar:** The current transformation's formula will be specified here in the M language.

- **Data Preview:** You can see the preview of your data based on the current transformation step..

- **Properties:** This section consists of a list of query steps. Here, you will be able to name your query. Naming a query is an important step to identify a query easily.

- **Applied steps:** Each transformation step you take will be recorded here in chronological order. You can add, remove, edit, or reorder the steps if required.



What Basic Transformations Can You Perform Using Power Query?

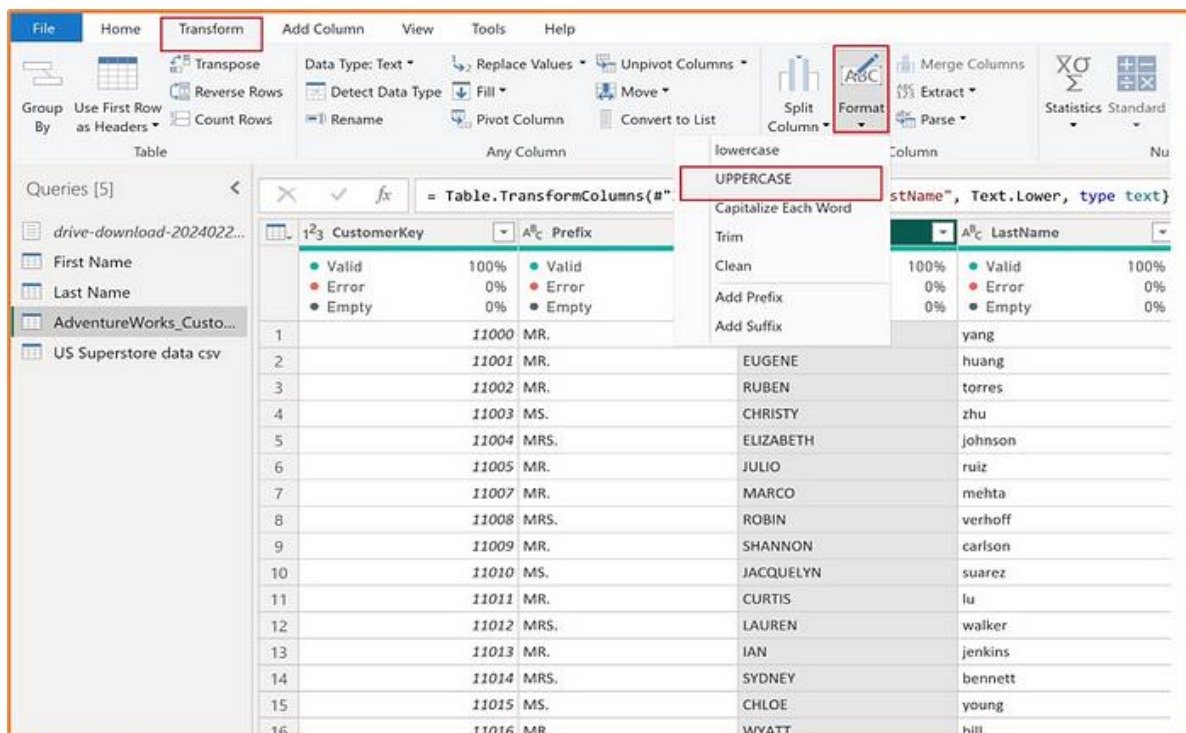
In this section, let's look at various transformation functions that can be performed easily with the help of a few mouse clicks.

1. Text Formatting Functions

In this section, you will learn how to format text in Uppercase, Lowercase, and understand how to use the Trim operation.

UPPERCASE:

Click on the column name and then go to the "Transform" tab, which will display a variety of options. Clicking on the option to Format text will open up a drop-down menu with a text edit option of 'UPPERCASE'. On selecting the UPPERCASE edit option, all the text in the given column will be converted to uppercase.



The screenshot shows the Microsoft Power Query Editor interface. The 'Transform' tab is active, and the 'Format' dropdown menu is open, showing the 'UPPERCASE' option selected. The data table below shows columns for CustomerKey, Prefix, and LastName. The 'Prefix' column contains values like 'MR.', 'MS.', 'MRS.', and 'MR.'. The 'LastName' column contains values like 'yang', 'huang', 'torres', 'zhu', 'johnson', 'ruiz', 'mehta', 'verhoff', 'carlson', 'suarez', 'lu', 'walker', 'jenkins', 'bennett', 'young', and 'hill'.

CustomerKey	Prefix	LastName
11000	MR.	yang
11001	MR.	huang
11002	MR.	torres
11003	MS.	zhu
11004	MRS.	johnson
11005	MR.	ruiz
11007	MR.	mehta
11008	MRS.	verhoff
11009	MR.	carlson
11010	MS.	suarez
11011	MR.	lu
11012	MRS.	walker
11013	MR.	jenkins
11014	MRS.	bennett
11015	MS.	young
11016	MR.	hill

LOWERCASE:

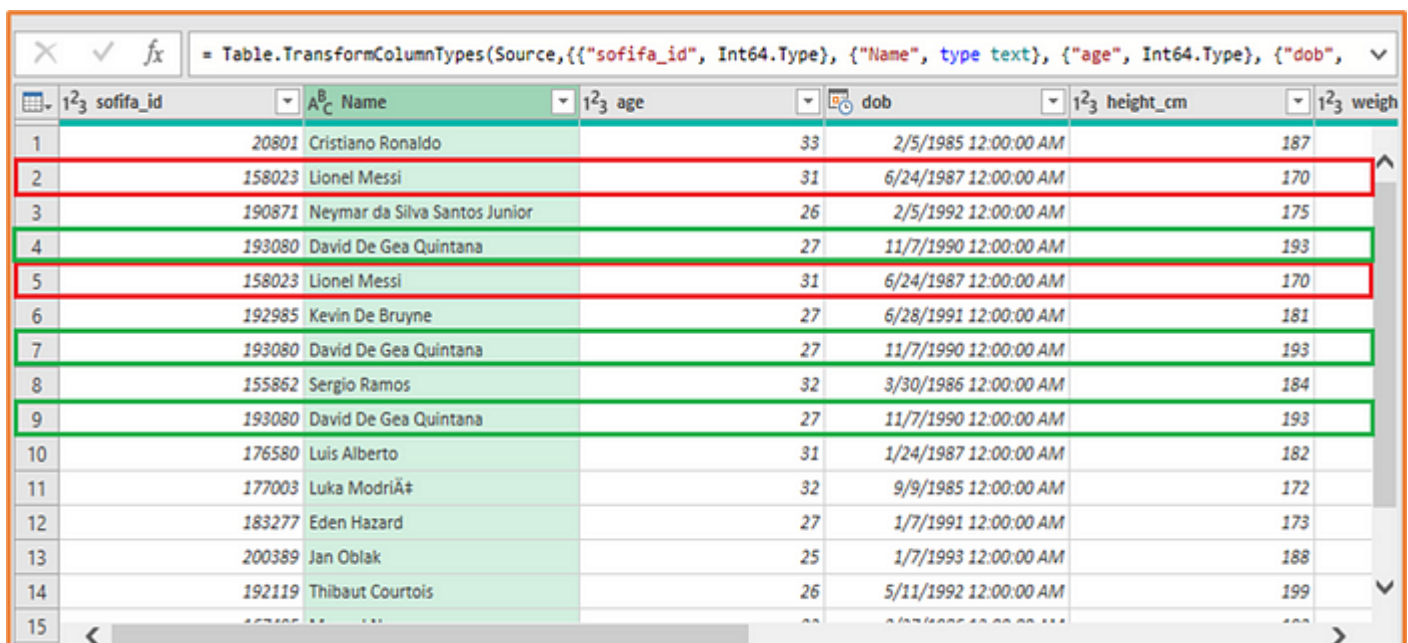
Clicking on the option to Format text will open up a drop-down menu with a text edit option of 'LOWERCASE'. As you can see, all the text from the selected column will be converted to lowercase.

TRIM:

To remove all the extra white spaces from the data, click on the column name, and then select the 'Transform' tab, displaying various options. Clicking on the 'Format' option will display a drop-down menu with a text edit option called 'Trim'. On selecting the Trim edit option, all the extra white spaces in the given column will be removed.

2. Merging 2 or more columns:

For merging 2 or more columns first select columns using **SHIFT** and go to **TRANSFORM** menu and click on MERGE Columns, then a pop window will where we need to select Space in **separator** as it is a naming convention and need to be separated by space and new column name should be defined as per the column is a Full name then click OK.



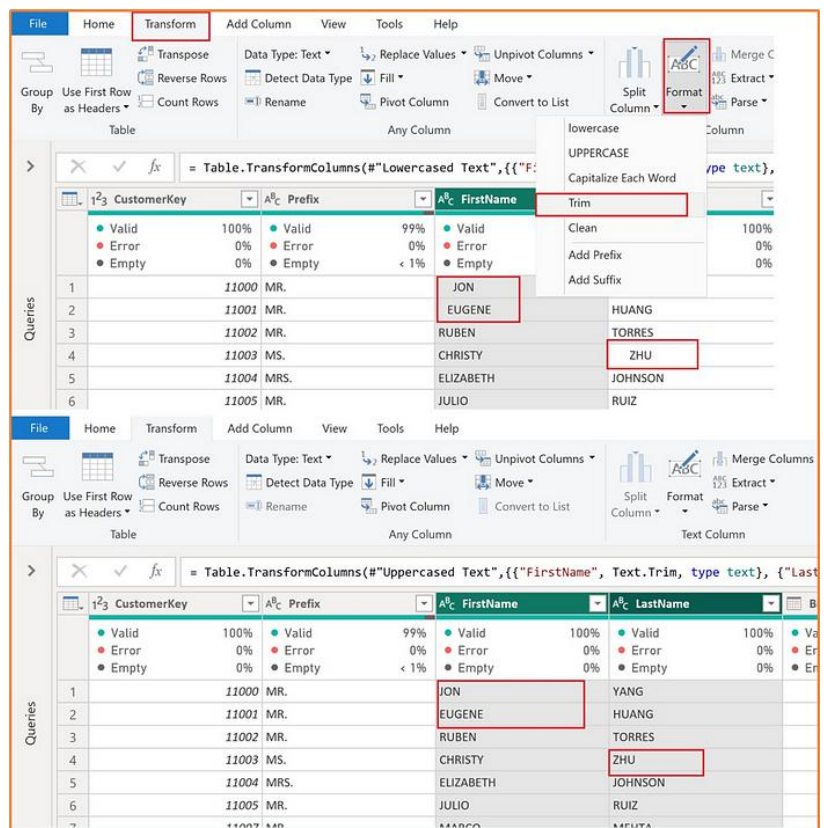
	sofifa_id	Name	age	dob	height_cm	weigh
1	20801	Cristiano Ronaldo	33	2/5/1985 12:00:00 AM	187	
2	158023	Lionel Messi	31	6/24/1987 12:00:00 AM	170	
3	190871	Neymar da Silva Santos Junior	26	2/5/1992 12:00:00 AM	175	
4	193080	David De Gea Quintana	27	11/7/1990 12:00:00 AM	193	
5	158023	Lionel Messi	31	6/24/1987 12:00:00 AM	170	
6	192985	Kevin De Bruyne	27	6/28/1991 12:00:00 AM	181	
7	193080	David De Gea Quintana	27	11/7/1990 12:00:00 AM	193	
8	155862	Sergio Ramos	32	3/30/1986 12:00:00 AM	184	
9	193080	David De Gea Quintana	27	11/7/1990 12:00:00 AM	193	
10	176580	Luis Alberto	31	1/24/1987 12:00:00 AM	182	
11	177003	Luka Modrić	32	9/9/1985 12:00:00 AM	172	
12	183277	Eden Hazard	27	1/7/1991 12:00:00 AM	173	
13	200389	Jan Oblak	25	1/7/1993 12:00:00 AM	188	
14	192119	Thibaut Courtois	26	5/11/1992 12:00:00 AM	199	
15						

3. Splitting a Column Using Delimiters:

To split the column with the help of a delimiter from the data, click on the ‘Transform’ tab followed by the ‘Split column’ option. This will display a drop-down menu with an option to **split the column By Delimiter**. Now, we can see that the data is split into two columns concerning the delimiter.

4. Removing Duplicates Using Power Query:

After loading the data from different sources, there might be some duplicates which will be updated by mistake, and to remove the duplicates we can click on to **Home tab** — -> **Remove Rows** option — -> click onto **Remove duplicates**.

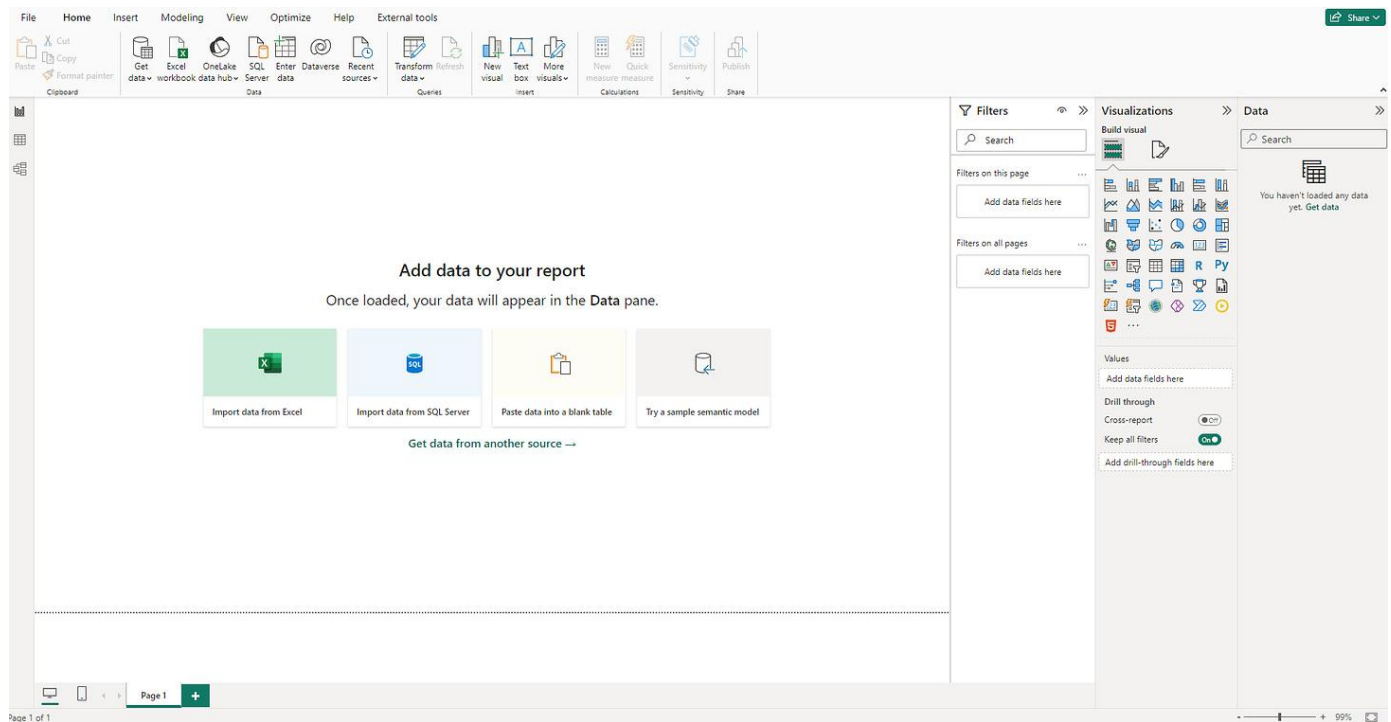


5. Using Conditional Column:

With **Power Query**, you can add a **conditional column** to your query. You can define IF-THEN-ELSE conditions in your query. When the conditions are fulfilled.

USER INTERFACE

THE CANVAS; The canvas is the large white space in the middle. This is where all the visuals on our report will live.



Subscribe to HOW TO USE POWER BI:

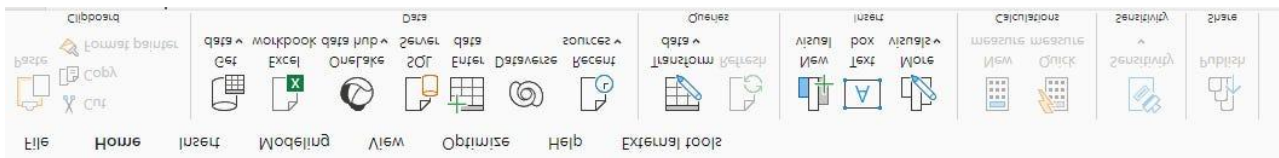
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THE RIBBON:

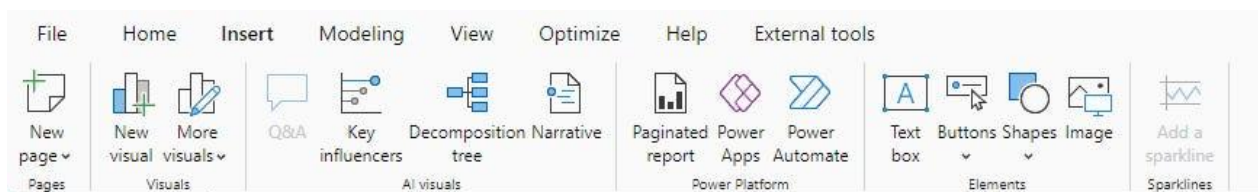
At the top we have the familiar Microsoft Ribbon. Just like the ribbons in Microsoft Excel and Word and Powerpoint, the Power BI ribbon is filled with tools split up into different tabs.

RIBBON TABS:

The **HOME** tab has tools for adding data sources, accessing Power Query Editor (used for cleaning and transforming data) via the “Transform data” buttons, and adding in visuals and more.

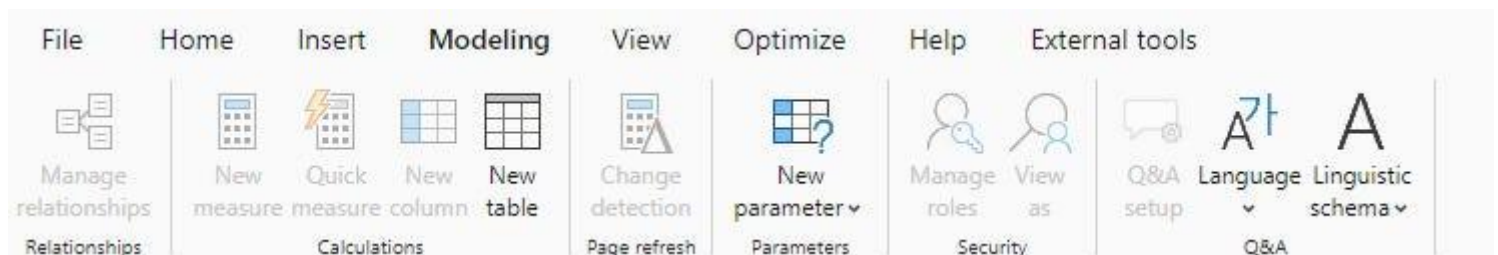


The **INSERT** tab lets us insert different visuals, text boxes, buttons, shapes, and images.

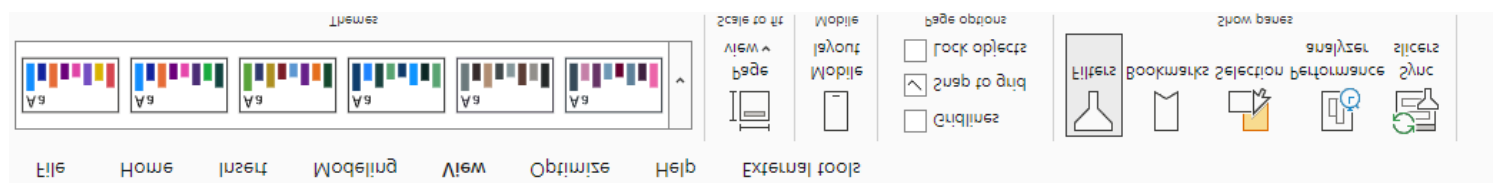


The **MODELING** tab lets us create DAX measures, or even new columns and tables, and also lets us set up a security model if we need some users to only see some data.

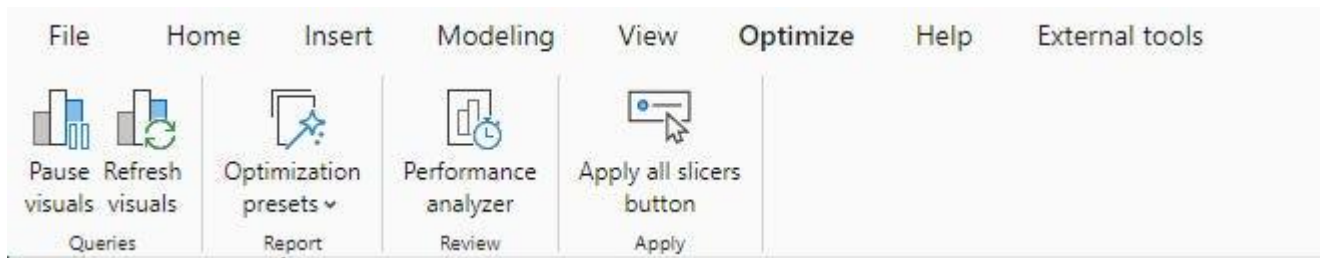
The **VIEW** tab lets us set a theme for our reports, set up mobile layouts, and access other



panes that don't show up by default.



The **OPTIMIZE** tab has tools to check the efficiency of our reports... as in if they are loading really slow, we can analyze what parts of the report are loading really slowly.



The **HELP** tab has links to things like Microsoft forums and the Power BI blog which has news about new features.



The **EXTERNAL TOOLS** tab is where 3rd-party tools live. There are only a few of these okay'd by Microsoft, and if you haven't downloaded one, this tab doesn't show up.

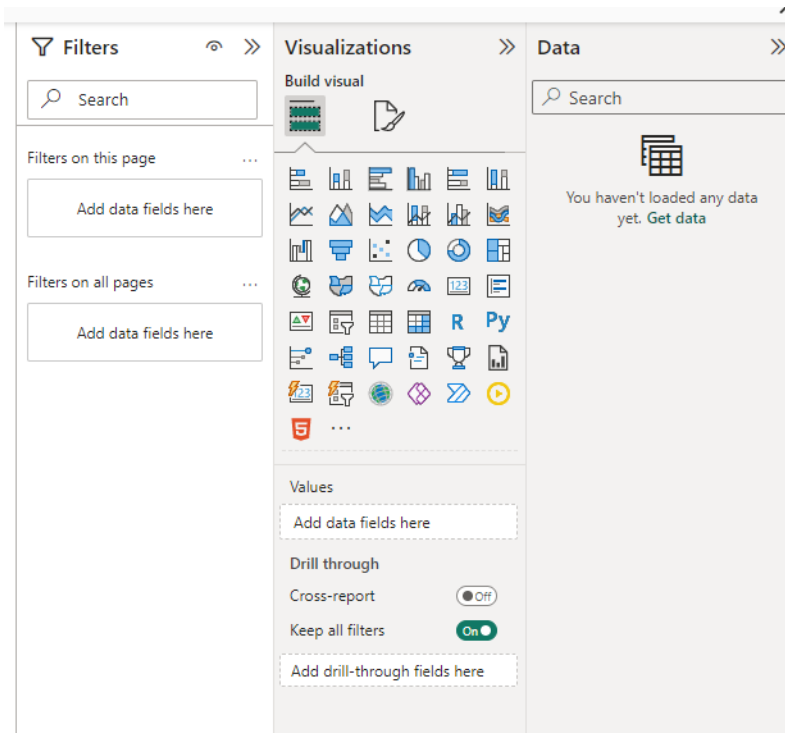
PANES:

On the right side of the Power BI interface are 3 panes that appear by default.

The **DATA** Pane is where we see the tables and columns of data we've added.

The **VISUALIZATION** Pane is where we can choose what visual we want to make, and it also has formatting tools.

The **FILTERS** Pane is where we can create filters and control what data is making it from our data to the visuals on our Canvas.



VIEWS:

The **REPORT** View is the default view of our report. It shows the Canvas,

The **TABLE** View shows us our data in a table form. Just like Excel.

The **MODEL** View show us our data tables and how they are linked together, and where we can create those links.

Let me know in the comments below if you have a question about the Power BI User Interface.

ABOUT MY PROJECT

The last project focused on using advanced data analytics tools. The aim was to help create targeted marketing campaign by using customer income data and purchase trends to analyze and provide recommendations on what products to advertise for which customers in which locations.

Features/Functions used:

The dataset included only sales data of the customers and average income data from an open source, so the requirement was to create a [#regression](#) formula and regression table to predict customer income based on historical purchase data. In addition, a histogram was used to create income bins and make appropriate recommendations for targeted product advertisements. Regression table and R-squared measures were created using [#dax](#) and [#powerquery](#).

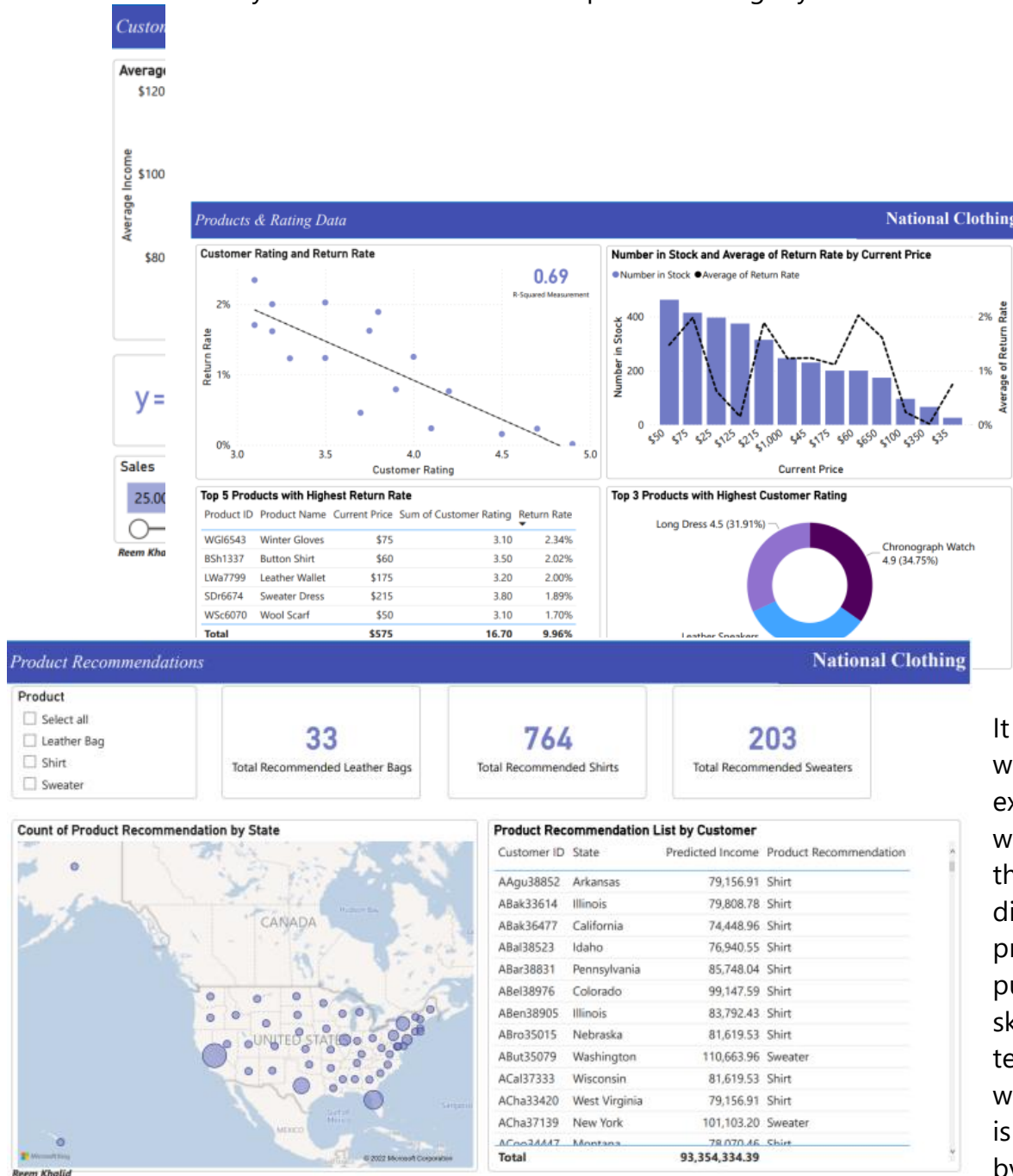
Challenges:

This project was by far the most challenging, I had to re-visit my knowledge from college days to remember statistical concepts. Another challenge I faced was creating

the bins using IF function for all the categories, I later realized that Power BI introduced the option to automatically create a similar outcome - but it was still good to practice the formula.

Learnings:

Since this was the last project, I came with a good foundation of data analysis from the previous lessons. Yet, this project taught me more about historical and predictive analysis, histograms and definitely introduced more complex DAX functions and Power Query transformations which helped advancing my overall data analytics skills.



It was a wonderful experience working on those different projects and putting my skills into test! the best way to learn is definitely by doing, and

those projects helped me advance my skills.

I had to watch several different tutorials, look at best practices and find the best way to achieve the desired outcome. Here are some helpful resources I used while working on those projects:

DATA SHEET

When you're modeling your data, sometimes you want to see what's actually in a table or column without creating a visual on the report canvas. You might want to see right down to the row level. This ability is especially useful when you're creating measures and calculated columns, or you need to identify a data type or data category.

Let's take a closer look at some of the elements found in Data view.

State	Overall ranking	Quality of life	Housing cost	Healthcare	Crime rate rate	Public health/COVID	Sales taxes	Non-housing costs
Maine	1	78	57	59	81	68	43	39
Mont	2	71	58	56	75	77	39	69
New Hampshire	3	59	49	51	82	56	69	39
Kentucky	4	59	75	29	63	44	39	38
West Virginia	5	64	82	19	54	49	38	39
Iowa	6	50	76	67	60	15	39	44
Wisconsin	7	44	68	61	60	33	44	39
Nebraska	8	42	71	56	47	34	39	36
Rhode Island	9	61	49	51	68	43	36	46
Wyoming	10	48	62	29	68	38	46	67
Oregon	11	59	39	52	35	58	41	33
Virginia	12	36	55	34	67	46	33	38
Ohio	13	46	74	44	49	40	33	68
Pennsylvania	14	53	67	50	60	27	38	41
Delaware	15	32	58	53	29	45	68	34
Michigan	16	49	70	52	40	37	41	34
Mississippi	17	72	79	6	44	16	34	34

1. Data view icon.

Select this icon to enter Data view.

2. **Data Grid.** This area shows the selected table and all columns and rows in it. Columns hidden from the **Report** view are greyed out. You can right-click on a column for options.

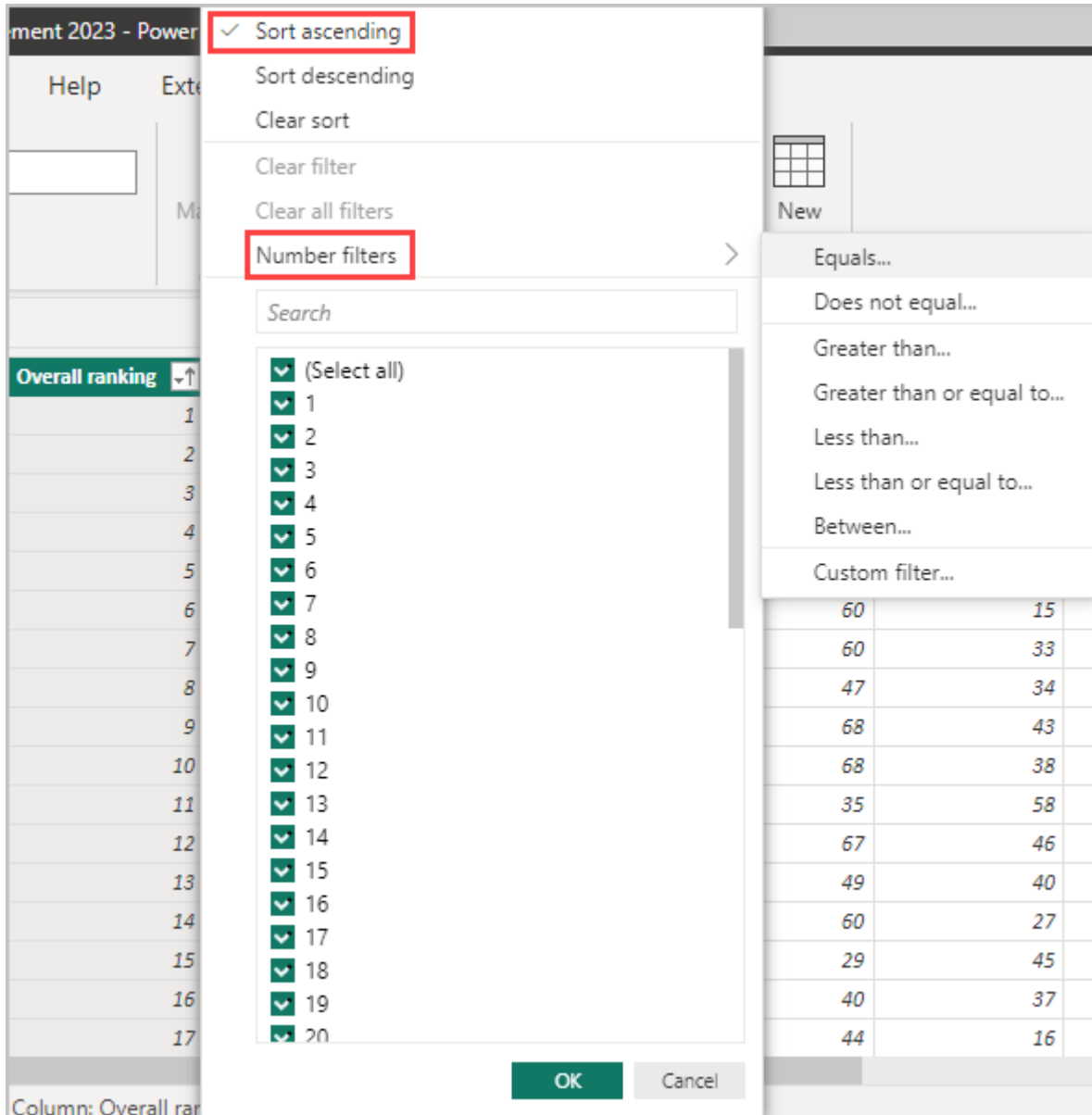
3. **Formula bar.** Enter Data Analysis Expression (DAX) formulas for Measures and Calculated columns.

4. **Search.** Search for a table or column in your model.

5. **Fields list.** Select a table or column to view in the data grid.

Filtering in Data view

You can also filter and sort data in Data view. Each column shows an icon that identifies the sort direction, if applied.



The screenshot shows the Power BI Desktop interface. The 'Data' ribbon is active, and the 'Sort ascending' and 'Number filters' options are highlighted with red boxes. The 'Number filters' dropdown menu is open, showing a list of numbers from 1 to 20, each with a green checkmark. The 'Search' box is empty. The 'OK' button is visible at the bottom of the dropdown.

You can filter individual values, or use advanced filtering based on the data in the column.

Note

When a Power BI model is created in a different culture than your current user interface, the search box doesn't appear in the Data view user interface for anything other than text fields. For example, this behavior would apply for a model created in US English that you view in Spanish.

VISUALIZATION

Project overview:

In this project, I had to wear the business intelligence analyst hat to present and visualize ready dataset in order to help convince the CEO that the new product is either the next big thing or a costly mistake to be avoided.

The project came with clean imported data and the aim was to create a report using [#datavisualization](#) by including key findings to help make the business decision.

Features/Functions used:

The project required using a custom theme that aligned with the company's color palette. I had to use advance [#visualization](#) tools to create bookmarks, action-based buttons, drill-through summary page and navigation buttons that moved the user between report pages and changed text while hovering over it.

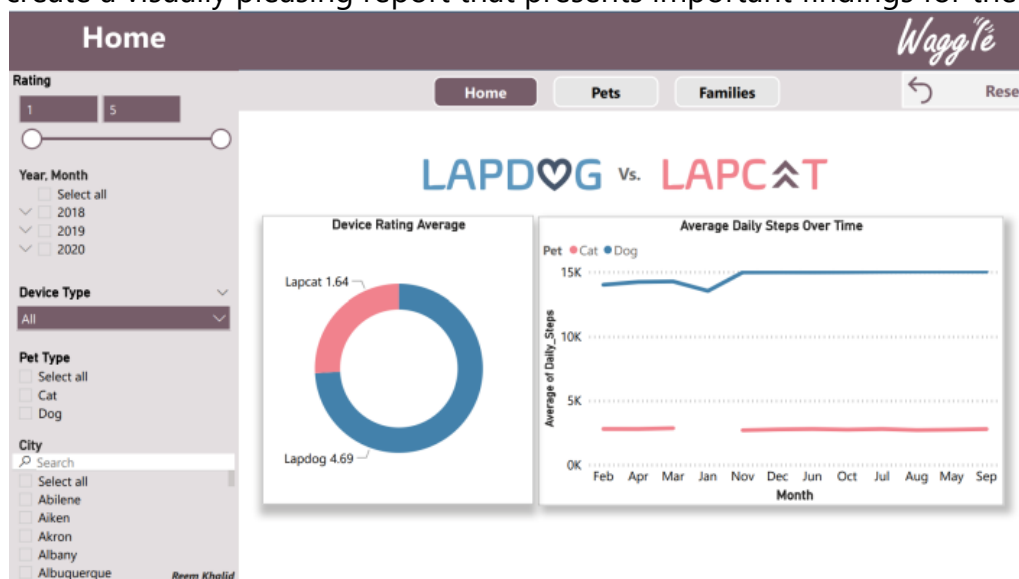
Challenges:

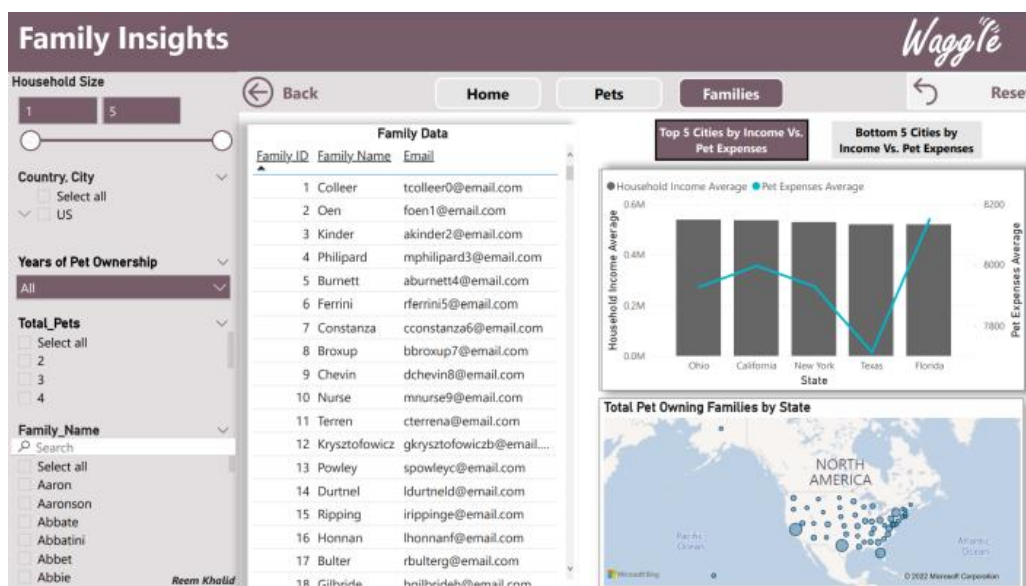
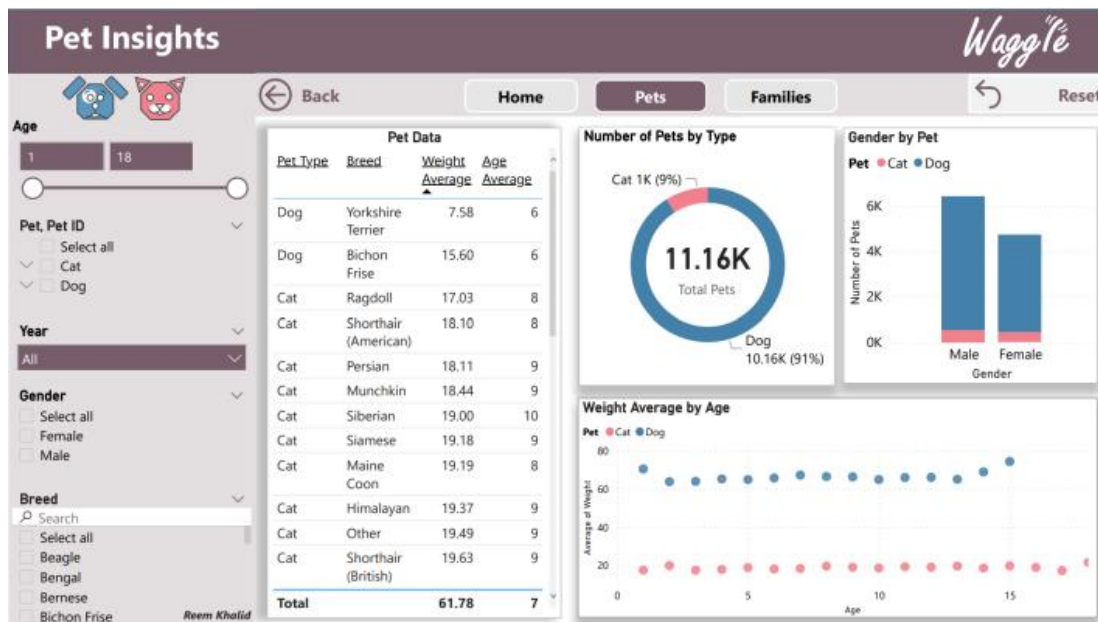
Data visualization is absolutely an enjoyable and exciting experience, rarely did I face major challenges while working on the project. However, I have to say that color-coordinating is unfortunately not my forte! It was a bit of a struggle trying to make the report [#userfriendly](#) and presentable without going overboard with the colors.

Learnings:

I would have loved to share a live version of this report so you can experience the journey that was created. It was really fun using the logos and the cat/dog icons as buttons to filter the data based on the product.

I think another important lesson I learned in this project was to keep things simple, there was no need to add a lot of colors, so I don't distract the user. At the same time, create a visually pleasing report that presents important findings for the stakeholders.





Project 3 (Advanced Data Analysis)

Project overview:

The last project focused on using advanced data analytics tools. The aim was to help create targeted marketing campaign by using customer income data and purchase trends to analyze and provide recommendations on what products to advertise for which customers in which locations.

Features/Functions used:

The dataset included only sales data of the customers and average income data from an open source, so the requirement was to create a **#regression** formula and regression table to predict customer income based on historical purchase data.

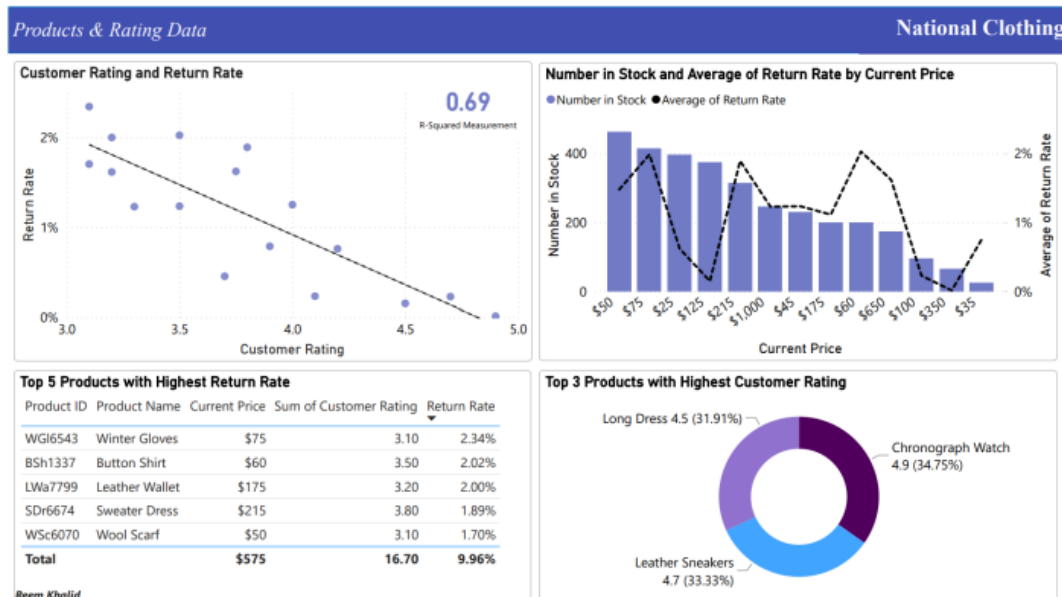
In addition, a histogram was used to create income bins and make appropriate recommendations for targeted product advertisements. Regression table and R-squared measures were created using **#dax** and **#powerquery**.

Challenges:

This project was by far the most challenging, I had to re-visit my knowledge from college days to remember statistical concepts. Another challenge I faced was creating the bins using IF function for all the categories, I later realized that Power BI introduced the option to automatically create a similar outcome - but it was still good to practice the formula.

Learnings:

Since this was the last project, I came with a good foundation of data

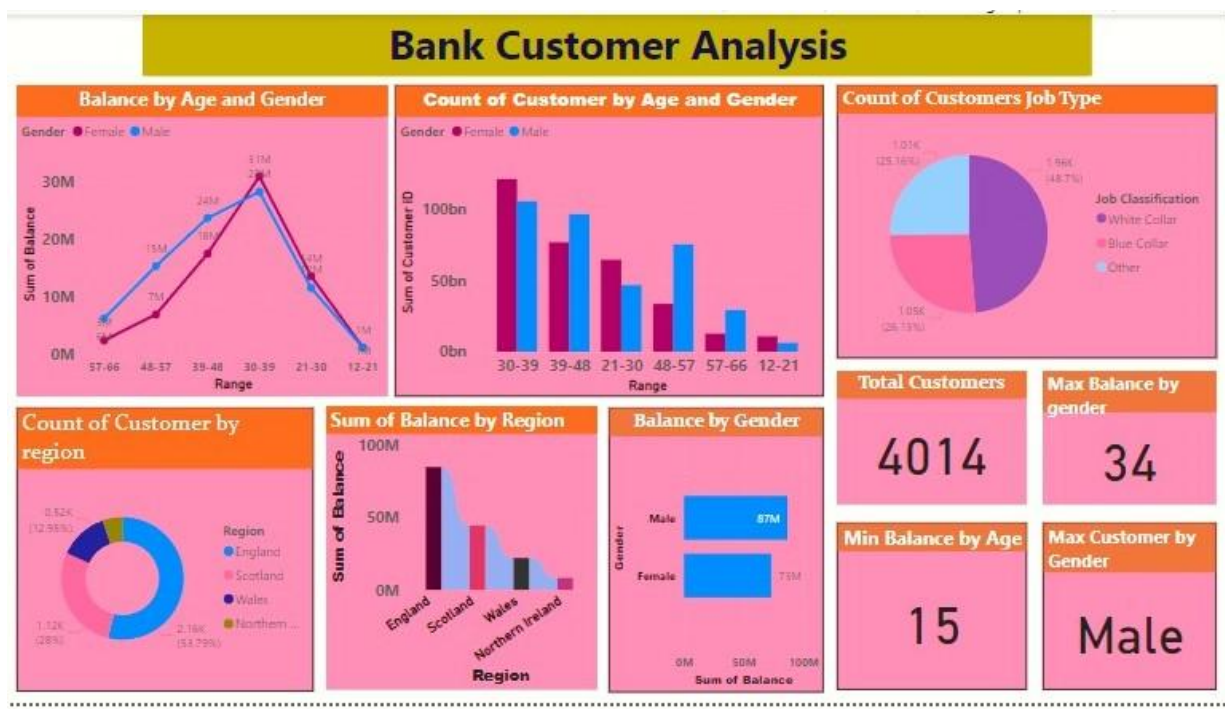


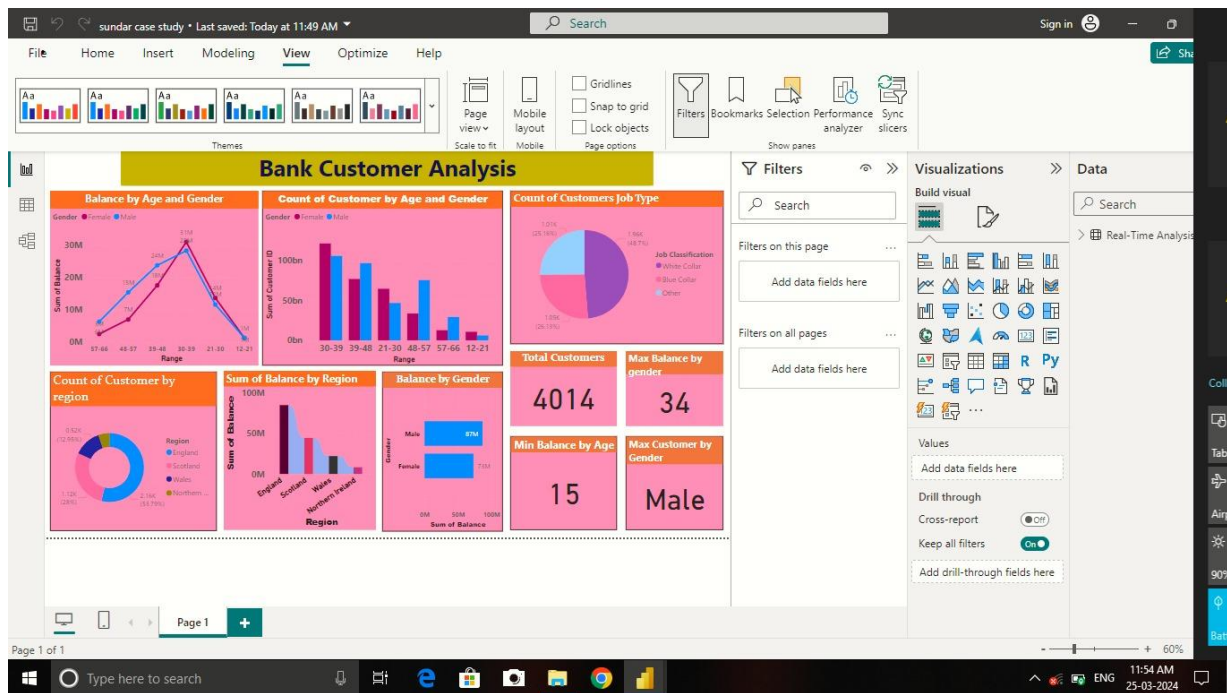
analysis from the previous lessons. Yet, this project taught me more

about historical and predictive analysis, histograms and definitely introduced more complex DAX functions and Power Query transformations which helped advancing my overall data analytics skills.

It was a wonderful experience working on those different projects and putting my skills into test! the best way to learn is definitely by doing, and those projects helped me advance my skills. I had to watch several different tutorials, look at best practices and find the best way to achieve the desired outcome. Here are some helpful resources I used while working on those projects:

DASHBOARD





REPORT

You can use a dataset that you create in Power BI Desktop as a data source for Power BI Report Builder paginated reports. Picture this scenario: You've created a Power BI report in Power BI Desktop. You spent a lot of time designing the data model, then created a beautiful Power BI report with all sorts of great visuals. Your report has a matrix with many rows, so you have to scroll to see them all. Your report readers want a report they can print out, that will show all the rows in that matrix.

A Power BI paginated report can do that: print a table or matrix that runs to multiple pages, with page headers and footers and a perfect page layout that you design. It will complement the Power BI Desktop report. You want them to be based on the exact same data, with no discrepancies, so you use the same dataset.

Here's a list of what you need and don't need to use a shared dataset in Power BI Report Builder.

- Download and install [Power BI Report Builder](#).
- The dataset can be in any workspace, and you don't need to be a member of that workspace.
- To access a Power BI semantic model, you need to have *Build permission* for the dataset. Read about [Build permission](#).
- You need a [Power BI Pro](#) license or [Premium Per User \(PPU\)](#) license to publish your paginated report.

You don't need a Power BI Pro or PPU license to create a paginated report in Power BI Report Builder. You have several formatting options to make your table fit on one page.

1. You can narrow the page margins in the Properties pane. If you don't see the Properties pane, on the **View** ribbon, select the **Properties** check box.
 2. Select the report, not the table or title.
 3. In the **Report Properties** pane, under **Page**, expand **Margins** and change each one to **0.75in**.
- - You can publish to *My Workspace*. For any other workspace, you need at least a [Contributor role](#).

CONCLUSION

The project “Real-Time Analysis of Bank Customers” using PowerBI has successfully demonstrated the potential of data analytics in the banking sector. The real-time analysis of customer data has provided valuable insights into customer behavior, preferences, and trends, thereby facilitating informed decision-making. The interactive dashboards and reports have offered a comprehensive view of customer data, enabling the identification of patterns and correlations. This has not only improved the efficiency of data analysis but also enhanced the bank’s ability to provide personalized services to its customers. The project has also highlighted the importance of data visualization in making complex data more understandable and accessible. The use of PowerBI has made it possible to present data in a visually appealing and easy-to-understand format, thereby aiding in better decision-making.

REFERENCES

LINK