



UNLOCKING DATA INSIGHTS

An Introduction to Power BI

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AGENDA

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2 Types of Data

3 What is Business Intelligence (BI)?

4 Why Do We Need BI Tools?

5 Introducing Power BI

6 Installing Power BI Desktop

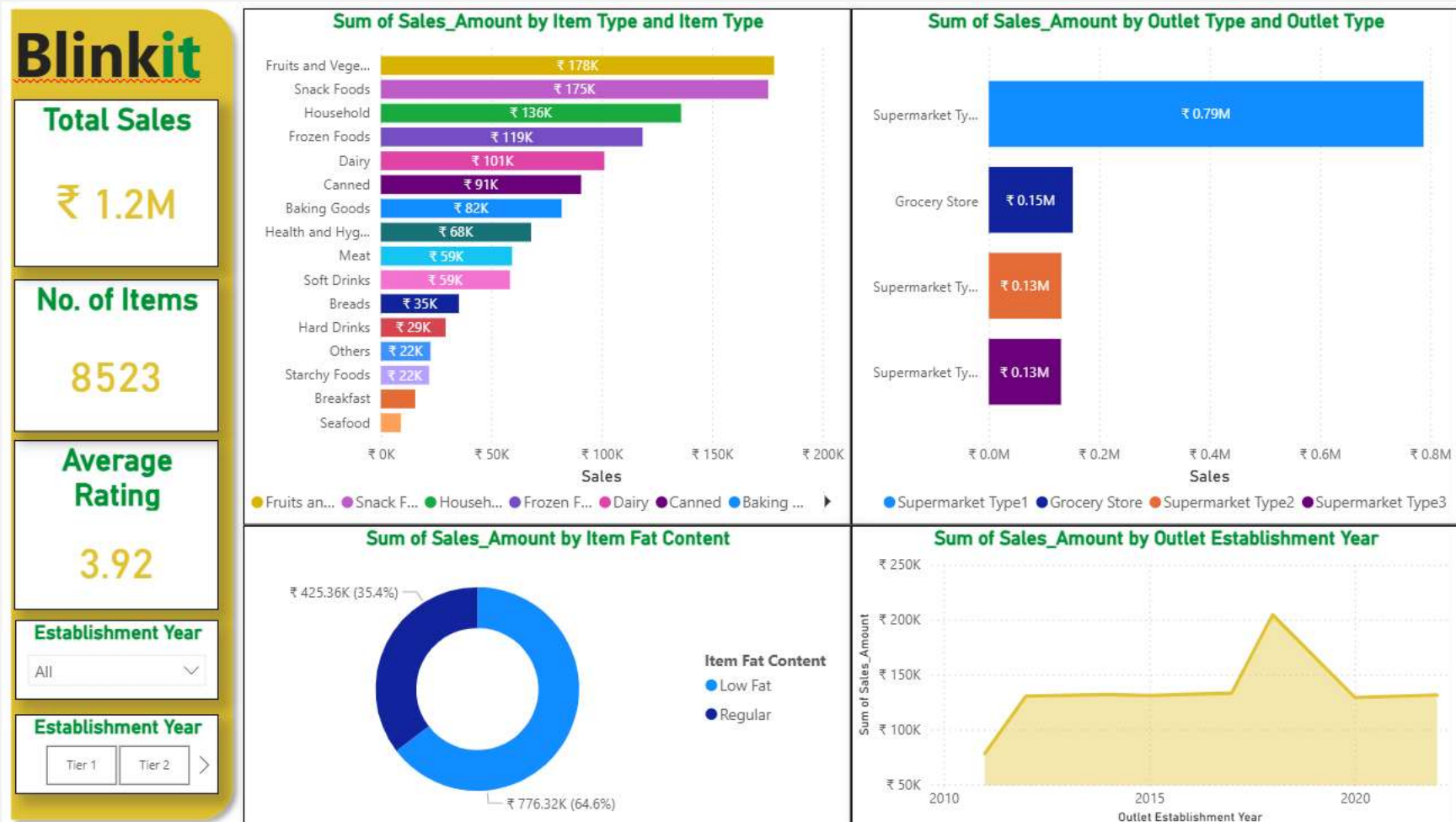
7 Getting Data into Power BI

8 Loading and Transforming Data

9 Creating Calculated Columns

10 Designing a Dashboard

BLINKIT SALES ANALYSIS DASHBOARD



WHAT IS DATA?



At its core, data is raw information – facts, figures, or symbols – that we collect to analyze, reference, and use for decision-making.

Raw Data (Unprocessed)

vs

Processed Data

Think of this as unprocessed information, like individual sales figures, customer names, or sensor readings, waiting to be organized.

This is data that has been organized, analyzed, and transformed into valuable insights, such as monthly sales trends or customer demographics.

TYPES OF DATA

Structured Data

Highly organized and easily searchable data, typically found in relational databases (like SQL tables) with predefined formats.

Examples: Customer names in a spreadsheet, transaction dates.

Unstructured Data

Information that doesn't fit into a predefined data model, making it harder to process and analyze.

Examples: Emails, social media posts, audio recordings, images, video files.

Semi-structured Data

A hybrid of both, it has some organizational properties but doesn't conform to a strict relational database structure.

Examples: XML files, JSON documents, web pages.

WHAT IS BUSINESS INTELLIGENCE (BI)?



Business Intelligence transforms vast amounts of raw data into actionable insights, helping organizations make informed decisions.

Data Mining

Discovering patterns and trends in large datasets.

Data Warehousing

Centralizing and storing data for reporting and analysis.

Data Analytics

Examining data to draw conclusions.

Dashboards

Visualizing key performance indicators for quick insights.

WHY DO WE NEED BI TOOLS?

1

Overcoming Data Overload

Unstructured data is dispersed globally, making it difficult for companies to handle and monitor.

2

Driving Quick Decisions

Powerful BI tools enable rapid, data-driven decisions to boost sales and operational efficiency.

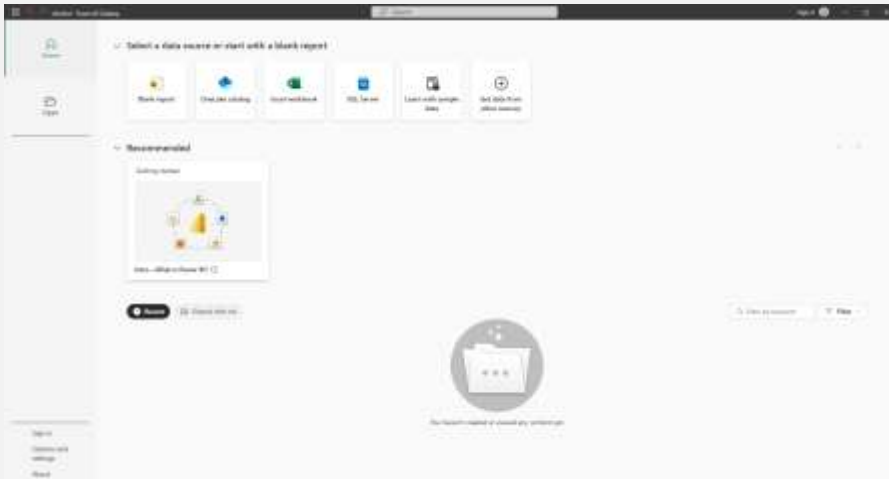
3

Enhancing Operations

They increase structured data availability, generate comprehensive reports, manage customers, and track employee performance.

INTRODUCING POWER BI

Power BI is a leading Business Intelligence tool for data visualization, transforming disparate data sources into interactive dashboards and reports.



- Converts raw data into interactive dashboards.
- Empowers business users to build and consume BI reports.
- Used for creating dynamic reports and data visualizations.
- It allows users to explore data visually and gain insights quickly.

INSTALLING POWER BI DESKTOP

Get started with Power BI by following these simple installation steps on Windows.

Step 1: Download Power BI

Visit the official Microsoft Power BI Desktop download page: [Link](#)

Step 2: Advanced Download

Click "Advanced download options," select your preferred language (e.g., English), and click "Download."

Step 3: Run Installer

Once downloaded, locate the executable file in your Downloads folder and run it.

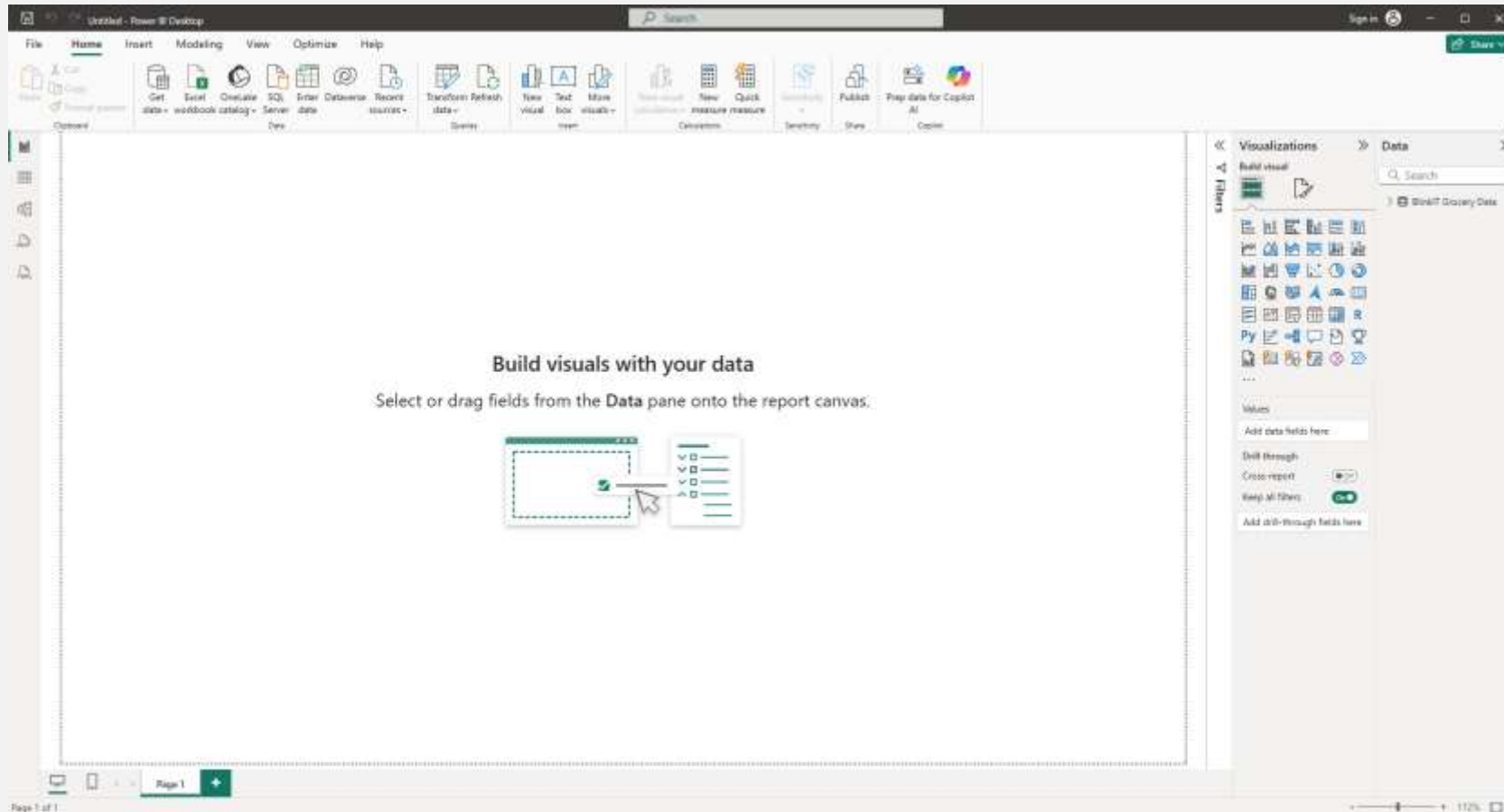
Step 4: Installation Wizard

Follow the on-screen prompts, click "Next," accept the license agreement, and continue until you reach the "Install" button.

Step 5: Complete Setup

Click "Install" to begin, and then "Finish" once the installation is successfully completed.

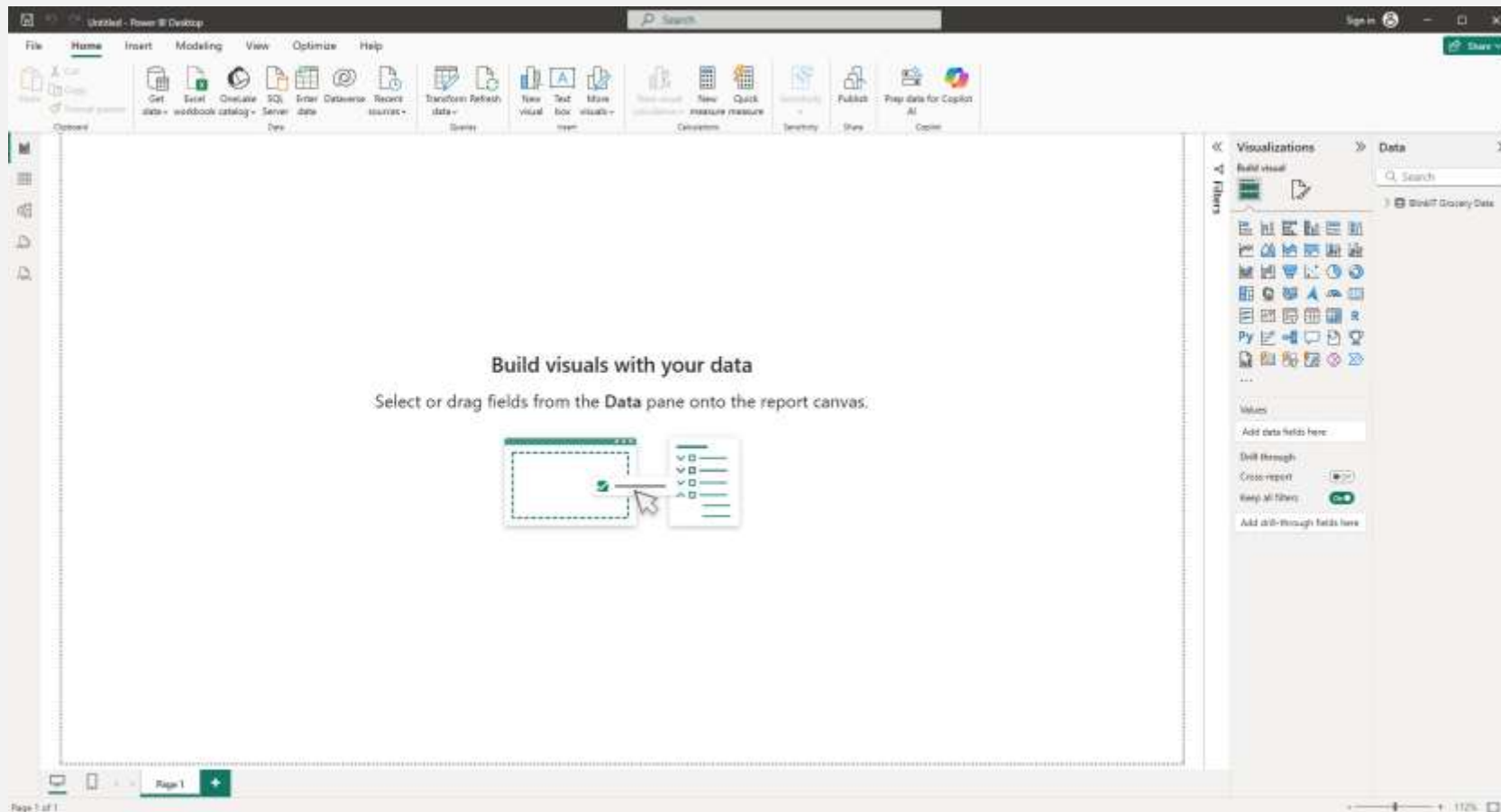
POWER BI



Ribbon (Top Menu Bar)

- Home: Get Data, Transform Data, Refresh, Enter Data, Publish
- Insert: Add visuals, buttons, text boxes, shapes, etc.
- Modeling: Define relationships, change data types, and create measures/columns.
- View: Adjust layout, themes, and formatting.
- Optimize / Help – For performance tuning and assistance.

POWER BI



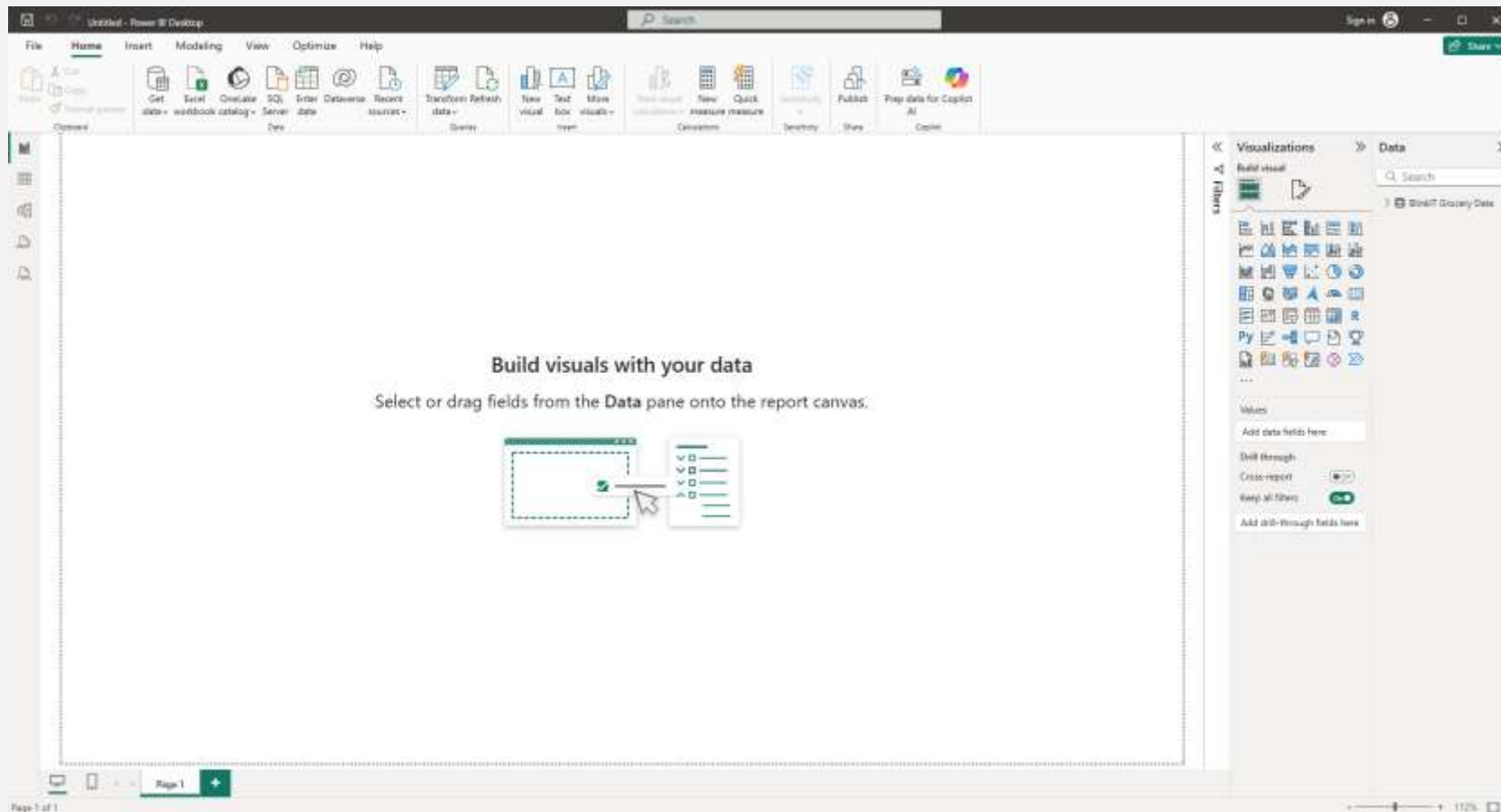
Report Canvas (Center Area)

- This is the main workspace where you drag visuals and build dashboards.
- It's prompting you to drag fields from the Data pane to start creating visuals.

Data Pane (Right Sidebar – Bottom)

- This is where all your tables and fields (columns) live.
- You'll drag these fields into the report canvas or visual fields to create visuals.

POWER BI



Visualizations Pane (Right Sidebar – Top)

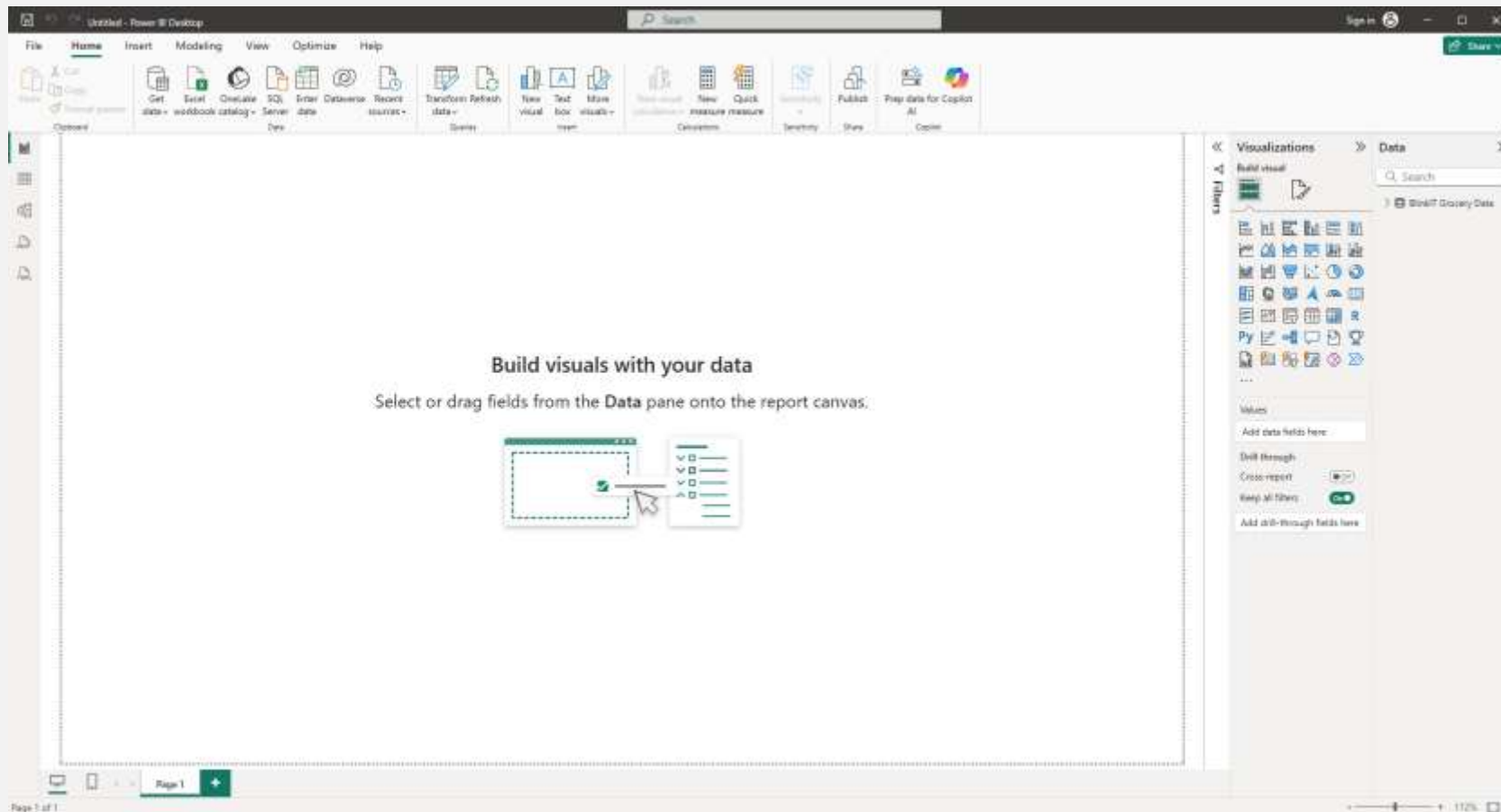
- Shows all available visual types: bar chart, line chart, pie chart, table, matrix, map, etc.
- Also contains field wells like: Values, Axis, Legend, Tooltips.
- You can customize visuals here.

Left Navigation Pane

There are three icons:

- Report View
- Data View
- Model View

POWER BI

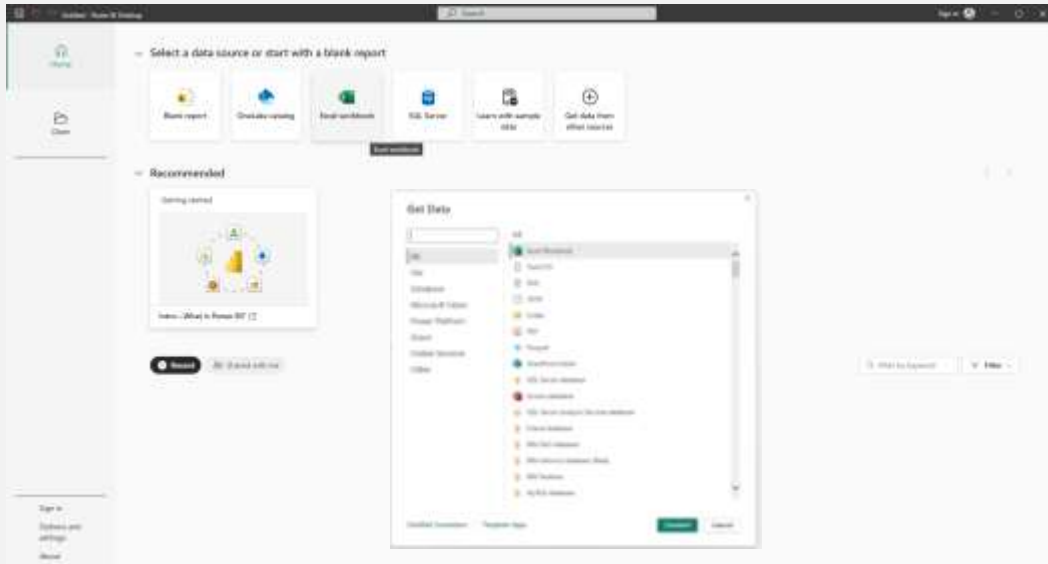


Filters Pane (Middle Right – collapsible)

- This pane lets you add filters: Report-level, Page-level, Visual-level.
- Useful for narrowing down data shown in visuals.

GETTING DATA INTO POWER BI

Power BI offers diverse options to connect to your data sources, whether they are local files or cloud services.



Clicking "Get Data" allows you to connect to various sources.

Choose from options like Azure, Microsoft Fabric, local files (e.g., Excel), or databases to meet your business needs.

This step is crucial for bringing your raw information into Power BI for transformation and visualization.

We are using: *BlinkIT Grocery Data.xlsx* for this project

LOADING AND TRANSFORMING DATA

Navigator

Display Options *

BlinkIT Grocery Data.xlsx [2]

Table1

BlinkIT Grocery Data

BlinkIT Grocery Data

Item Type	Item Visibility	Item Weight	Sales	Rating
permarket Type1	0.0000135	15.1	245.4788	5
permarket Type2	0.008796051	11.8	125.3452	5
permarket Type1	0.025896485	18.85	185.0221	5
permarket Type1	0.041277967	12.25	126.5046	5
permarket Type1	0.033670195	19.6	55.1614	5
permarket Type1	0.025505481	8.89	162.4018	5
permarket Type1	0.088112421	11.8	81.4618	5
permarket Type1	0.026603714	19.7	96.0726	5
permarket Type1	0.024129332	20.75	134.173	5
permarket Type0	0.101581368	nu	182.0292	5
permarket Type0	0.084554569	nu	169.8912	5
permarket Type1	0.052044976	18.85	192.1846	5
permarket Type0	0.258857661	17.1	112.0886	5
permarket Type1	0.090486828	16.33	285.212	5
permarket Type0	0.01292824	nu	178.1798	5
permarket Type1	0.018801348	20.25	222.1772	5
permarket Type2	0.147023834	17.83	81.7436	5
permarket Type1	0.077628059	18.3	187.6121	5
permarket Type0	0.282514881	nu	98.77	5
permarket Type2	0.018895283	12.1	278.588	5
permarket Type0	0	nu	80.2194	5
permarket Type0	0.026916794	nu	50.9607	5
permarket Type2	0.022676487	6.83	261.6394	5

Use

Transform Data

Cancel

The screenshot displays the Microsoft Query Editor interface. The top menu bar includes File, Home, Transform, Add Column, View, Tools, and Help. The ribbon contains various options for data manipulation and analysis. The main area shows a table titled 'Table: TransformColumnTypes(K'Promoted Headers', (('Item Fat Content', type text), ('Item Establishment', type text), ('Item Type', type text), ('Shaded Establishment Year', type text), ('Order Identifier', type text), ('Order Location Type', type text), ('Order Size', type text), ('Order Status', type text)). The table has 8 columns: Item Name, Item Identifier, Item Type, Shaded Establishment Year, Order Identifier, Order Location Type, Order Size, and Order Status. The data is organized into rows, with the first row being a header row. The table lists various grocery items, including Regular, Low Fat, and Organic products, with their respective identifiers and types. The bottom status bar indicates '10 COLUMNS, 994 ROWS - Column profiling based on top 1000 rows'.

LOADING AND TRANSFORMING DATA

- Remove unnecessary columns: e.g., Item Identifier ID not required) [Right Click → Remove Column]
- Rename fields for clarity (e.g., rename Sales to Sales_Amount) [Right Click → Rename]
- Change data types for correctness:
 - Change Abbreviations to full forms (Lf → Low Fat, etc.).
 - Item Visibility → Decimal Number
 - Sales → Currency (Fixed Decimal Number)
- Check Column Quality (View → Column Quality)
- Filter out nulls and errors in important columns
- Click Close & Apply to save changes

CREATING CALCULATED COLUMNS

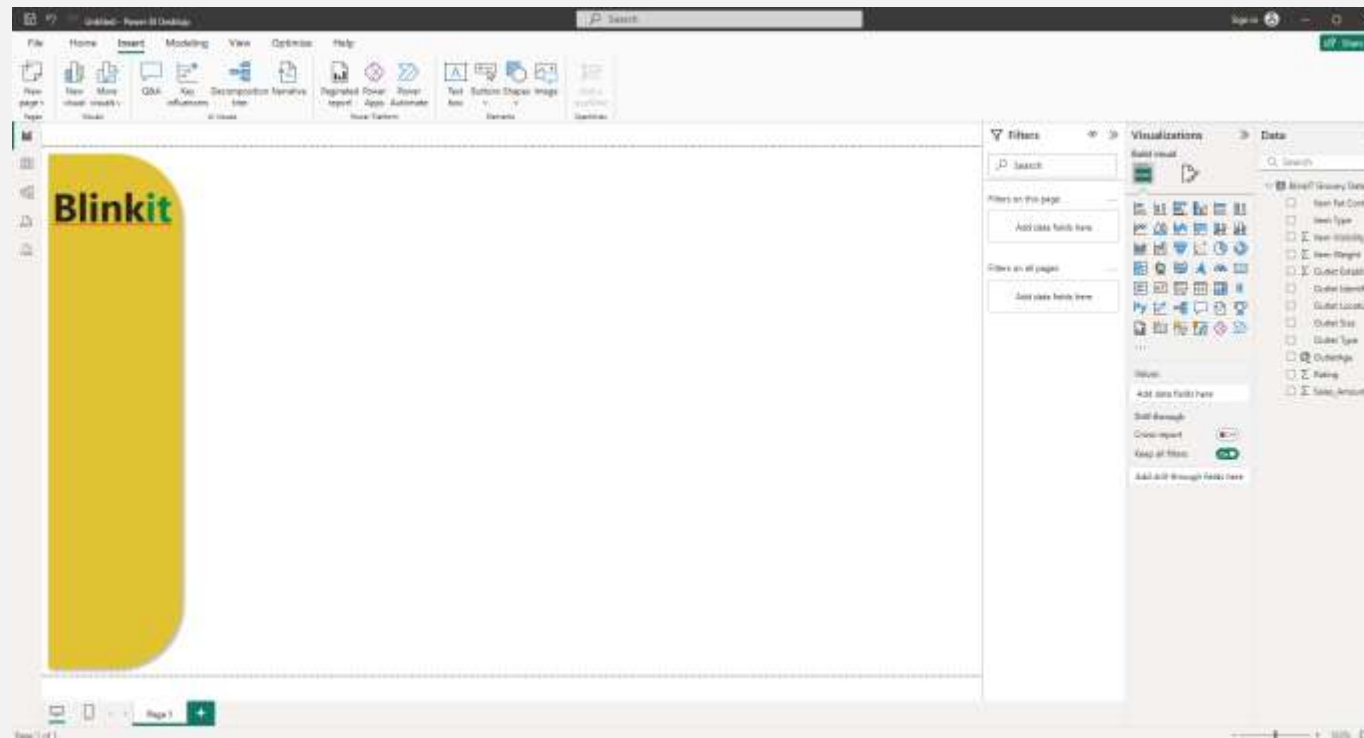
The screenshot shows the Power BI Desktop interface. The 'Data' view is active, displaying a table with columns: Item Fat Content, Item Type, Outlet Establishment Year, Outlet Identifier, Outlet Location Type, Outlet Size, Outlet Type, Item Visibility, Item Weight, Sales Amount, Rating, and OutletAge. The 'OutletAge' column is highlighted in green. The formula bar at the top shows the calculation: $\text{OutletAge} = 2025 - [\text{Outlet Establishment Year}]$. The 'Columns' pane on the right shows the 'OutletAge' column selected. The 'Data' pane on the right shows the 'OutletAge' column selected. The 'Columns' pane on the right shows the 'OutletAge' column selected.

Item Fat Content	Item Type	Outlet Establishment Year	Outlet Identifier	Outlet Location Type	Outlet Size	Outlet Type	Item Visibility	Item Weight	Sales Amount	Rating	OutletAge
Regular	Canned	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.011852802		\$ 164.5184	4	7
Low Fat	Household	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.058778237		\$ 221.7842	4	7
Low Fat	Breads	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.066783425		\$ 216.8185	4	7
Low Fat	Breads	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.08139148		\$ 177.857	4	7
Low Fat	Dairy	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.05121862		\$ 196.7788	4	7
Low Fat	Dairy	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.065289791		\$ 265.2884	4	7
Low Fat	Frozen Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.085272284		\$ 256.1648	4	7
Low Fat	Frozen Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0		\$ 225.3062	4	7
Low Fat	Frozen Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.067462048		\$ 137.562	4	7
Low Fat	Health and Hygiene	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.077079177		\$ 61.5536	4	7
Low Fat	Household	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.142588757		\$ 25.518	4	7
Low Fat	Household	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.091940277		\$ 162.6894	4	7
Low Fat	Household	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.052047808		\$ 180.823	4	7
Low Fat	Household	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.072117217		\$ 160.732	4	7
Low Fat	Household	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.059117748		\$ 181.5878	4	7
Low Fat	Household	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.093705568		\$ 252.8896	4	7
Low Fat	Others	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.0311888		\$ 38.348	4	7
Regular	Baking Goods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.02524767		\$ 81.8834	4	7
Regular	Canned	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.048408328		\$ 133.2988	4	7
Regular	Frozen Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.06799548		\$ 78.5618	4	7
Regular	Frozen Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.041273391		\$ 91.8804	4	7
Regular	Frozen Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.042270751		\$ 162.521	4	7
Regular	Fruits and Vegetables	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.028842332		\$ 81.498	4	7
Regular	Snack Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.012851504		\$ 199.8084	4	7
Regular	Soft Drinks	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.044787032		\$ 172.7054	4	7
Low Fat	Baking Goods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.057315469		\$ 50.9034	4	7
Low Fat	Breads	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.044070817		\$ 102.8332	4	7
Low Fat	Health and Hygiene	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.028876483		\$ 133.7942	4	7
Regular	Dairy	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.067824438		\$ 120.844	4	7
Low Fat	Snack Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.026490954		\$ 87.6198	4	7
Low Fat	Baking Goods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.078362484		\$ 177.837	4	7
Low Fat	Frozen Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.026749991		\$ 106.538	4	7
Regular	Fruits and Vegetables	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.063130099		\$ 108.9274	4	7
Low Fat	Snack Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.115978122		\$ 183.4286	4	7
Low Fat	Snack Foods	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.0350152		\$ 182.0318	4	7
Low Fat	Dairy	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.044787881		\$ 241.8854	4	7
Regular	Meat	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.130347867		\$ 83.1278	4	7
Regular	Meat	2018	OU1027	Tier 3	Medium	Supermarket Type3	0.130347867		\$ 83.1278	4	7

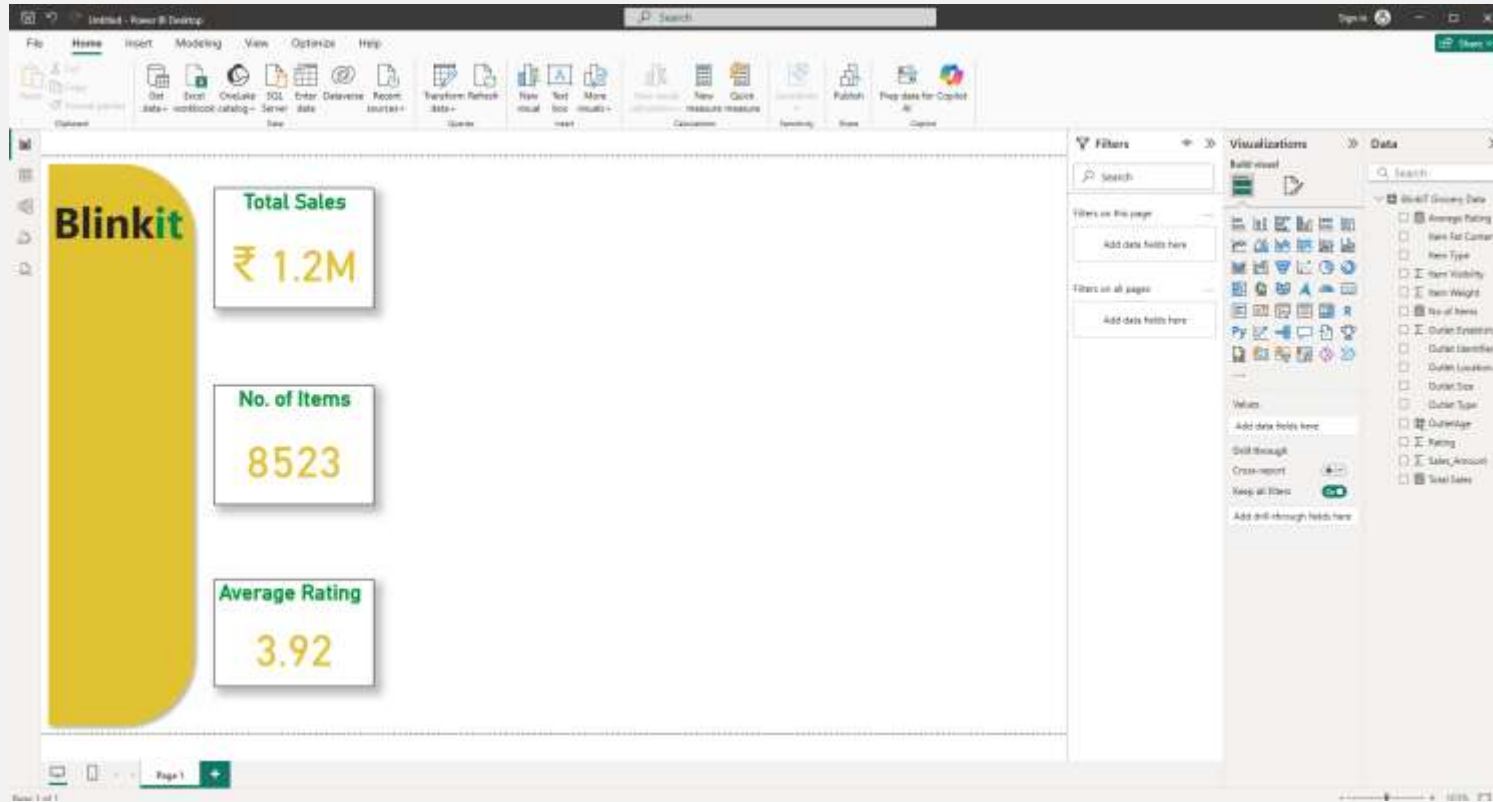
- Switch to Data view in Power BI Desktop
- Go to Modeling → New Column
- Example:
 - $\text{OutletAge} = 2025 - [\text{Outlet Establishment Year}]$

DESIGNING DASHBOARD

Add Title and Colors



CREATE KEY PERFORMANCE INDICATORS (KPI's)



Create New Measures

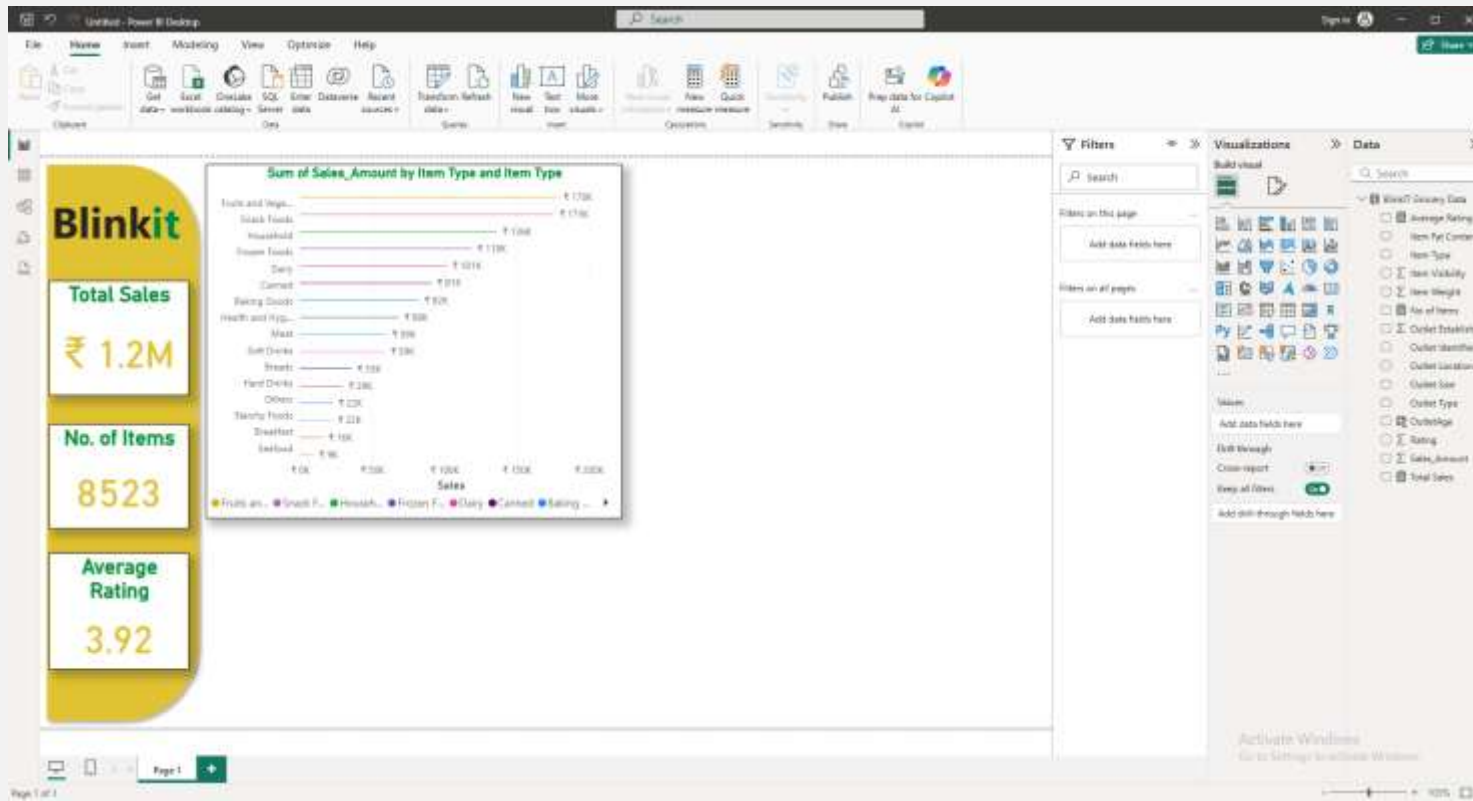
- Total Sales: SUM(Sales)
- Average Rating: AVERAGE(Ratings)
- Count of Items: COUNTROWS(Data)

Create Cards:

- Double Cards from Visualizations
- Drag: Total Sales, Average Rating, Count of Items

Change Colors

SALES BY ITEM TYPE

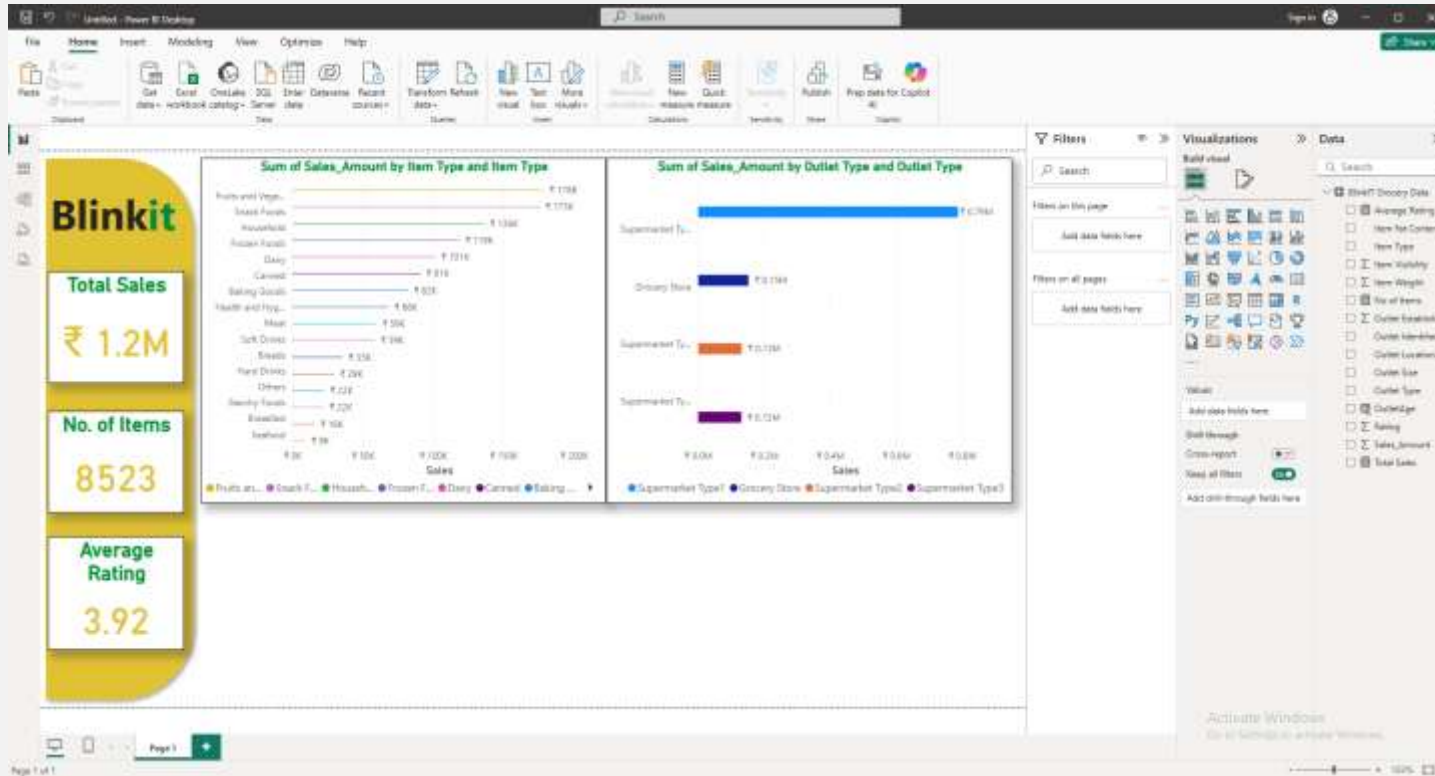


Insert a Stacked Bar Chart

- Item Type as Y-axis
- Sales Amount as X-axis
- Item Type as Legend

Change Colors and Designs

SALES BY OUTLET TYPE



Insert a Stacked Bar Chart

- Outlet Type as Y-axis
- Sales Amount as X-axis
- Outlet Type as Legend

Change Colors and Designs

SALES BY FAT CONTENT

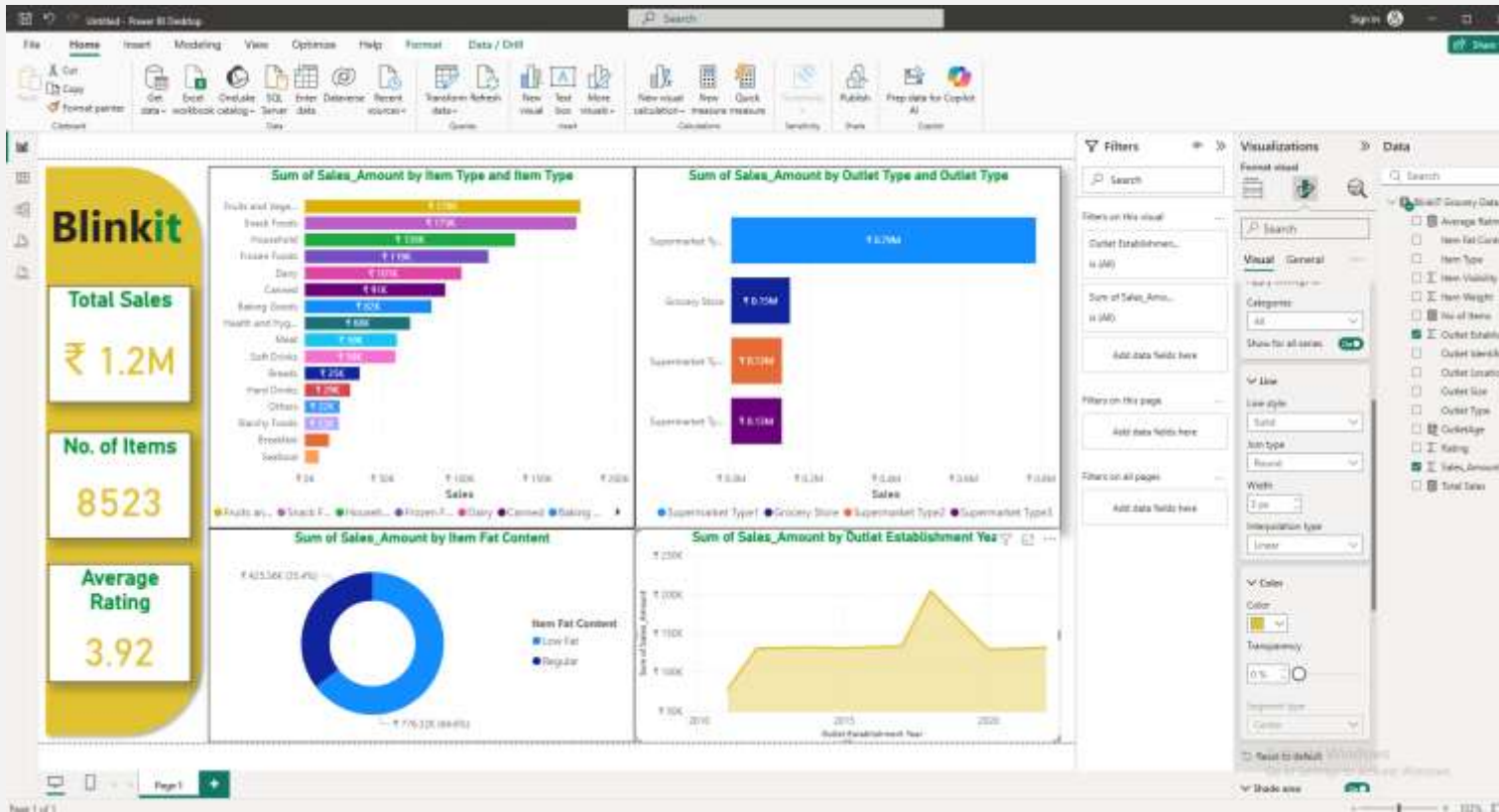


Insert a Donut Chart

- Sales Amount as Values
- Fat Content Item as Legend

Change Colors and Designs

SALES BY OUTLET ESTABLISHMENT



Insert a Line Chart

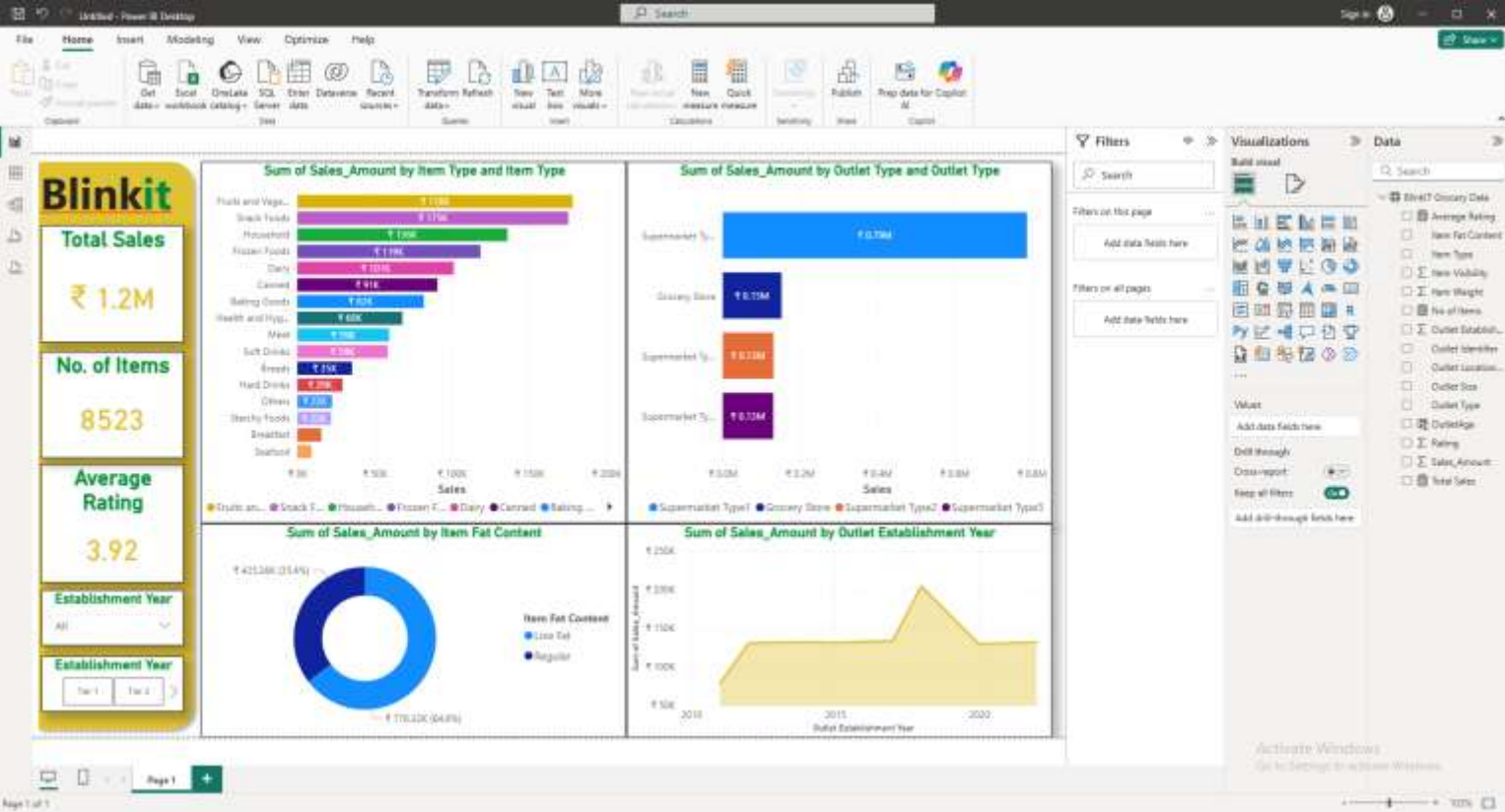
- Outlet Establishment as X-axis
- Sales Amount as Y-axis
- Outlet Type as Legend
- Tick Shade Area

Change Colors and Designs

MORE CHARTS

- Sales by Outlet Size
- Sales by Outlet Location
- Total Comparison Table
- And more...

CREATING SLICER



Insert a Slicer

- Outlet Establishment as Field or
- Outlet Location as Field

Change Colors and Designs

Change options of Slicers too

You can do for Item Type, Outlet Type, Size, etc.

THANK YOU

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