

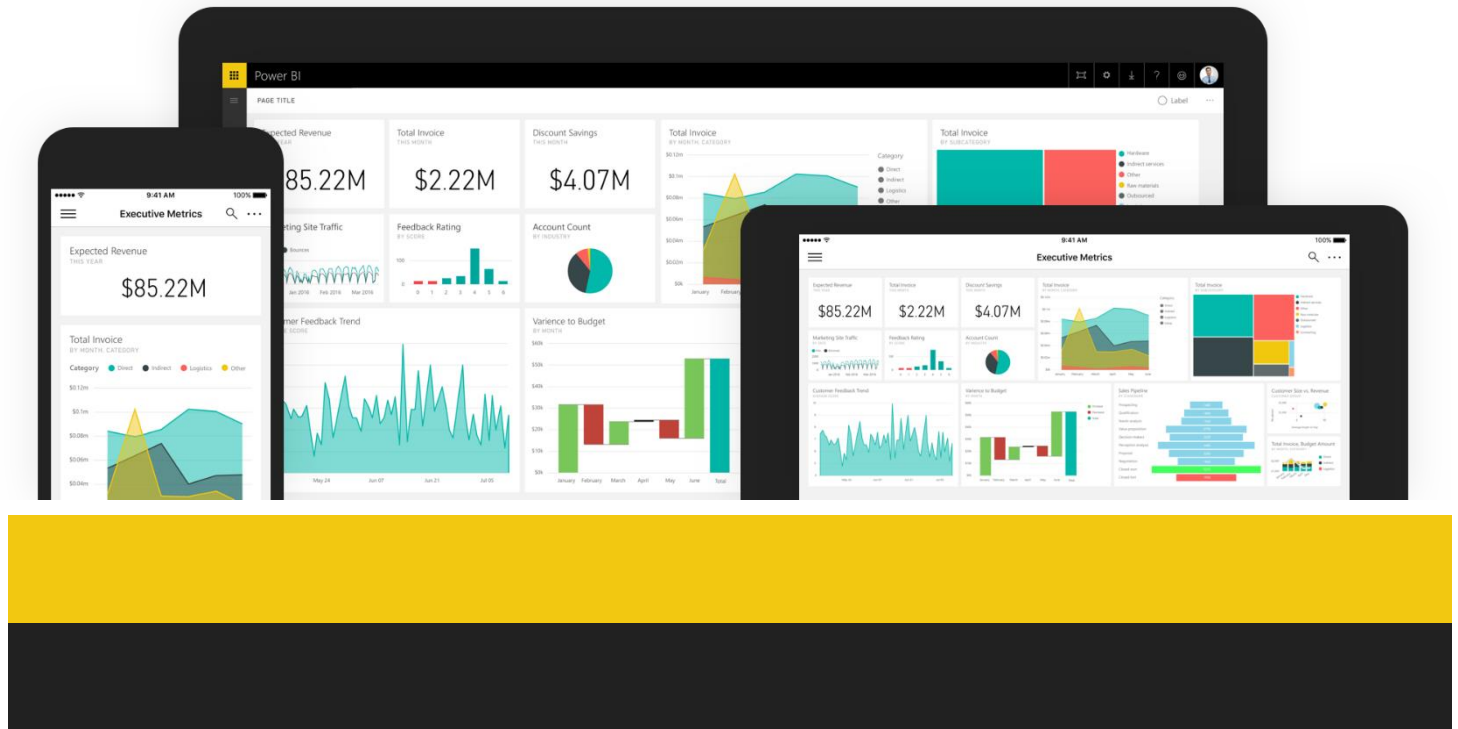
Data Visualization

Mr. Ali Haider
Institute Of Management Sciences

Using Microsoft Power BI to Explore and Visualize Data

Power BI

Power BI is a suite of business analytics tools to analyze data and share insights, with tools for business users to gain access to their most important metrics in a single location across all devices and platforms.

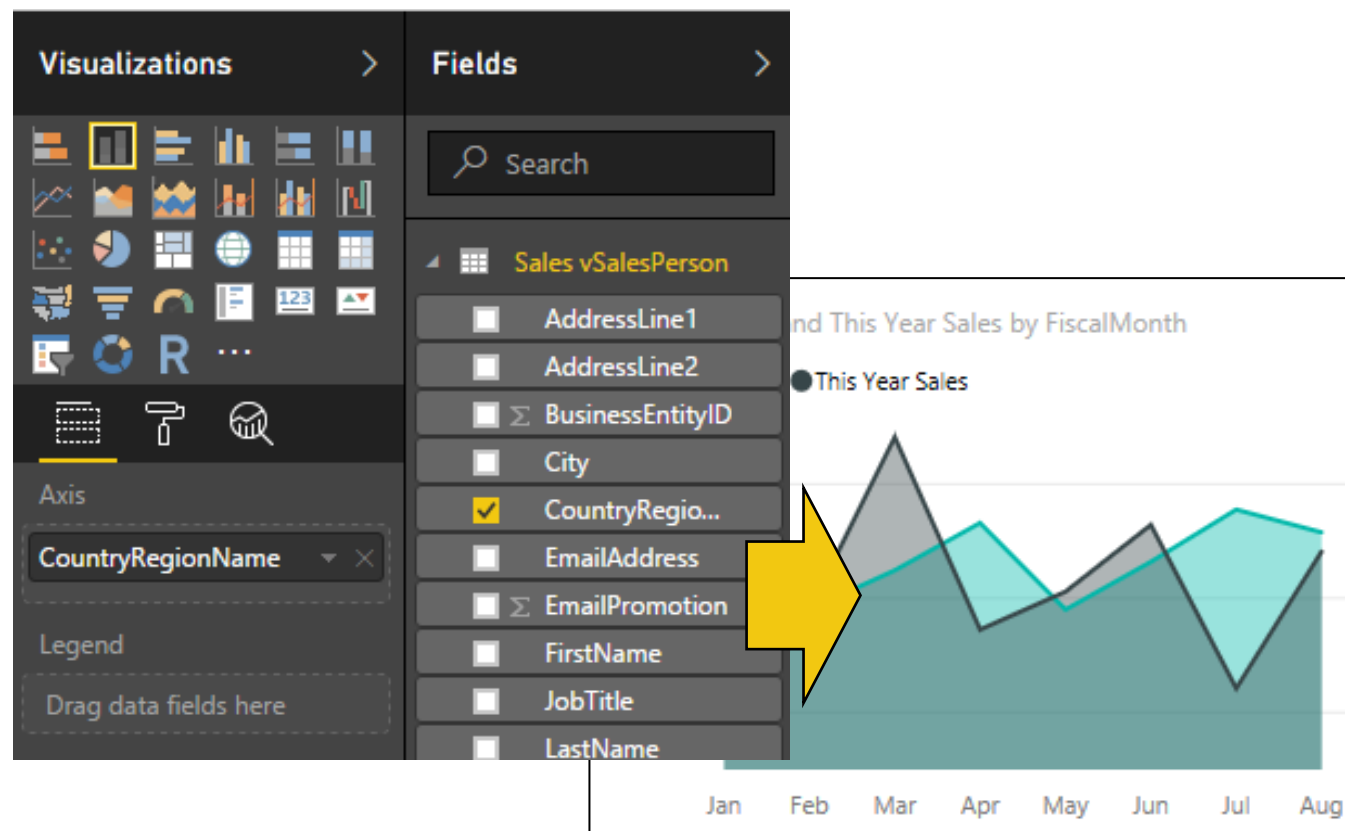


Tools & Platforms

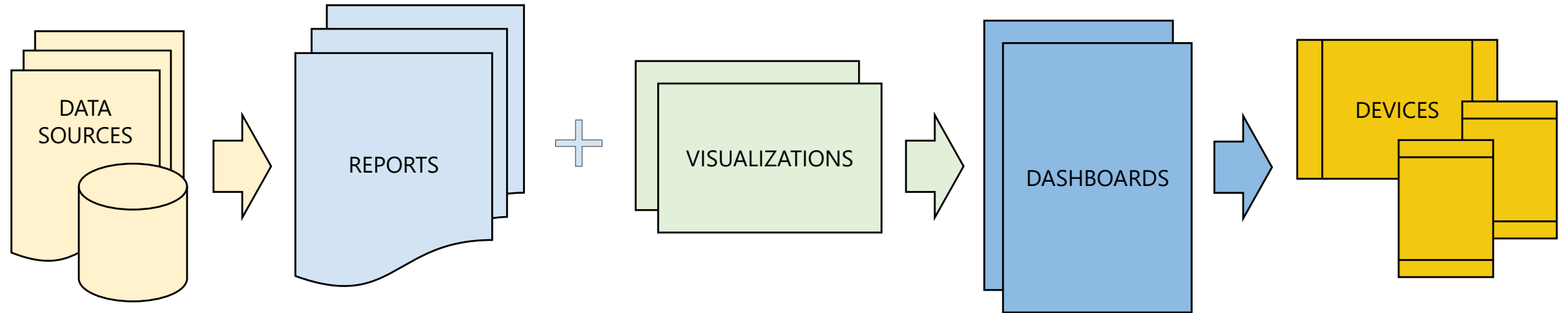
Services	Desktop	Mobile	Embedded
<ul style="list-style-type: none">• Web-based• All platforms• Limited design tools• Limited data sources• Dashboards• Publishing	<ul style="list-style-type: none">• Windows only• Robust design tools• Query and modeling tools	<ul style="list-style-type: none">• Cross-platform• Report viewers	<ul style="list-style-type: none">• Report integration• REST services• Create custom visualizations

Power BI Building Blocks

- Visualizations
- Datasets
- Reports
- Dashboards
- Tiles



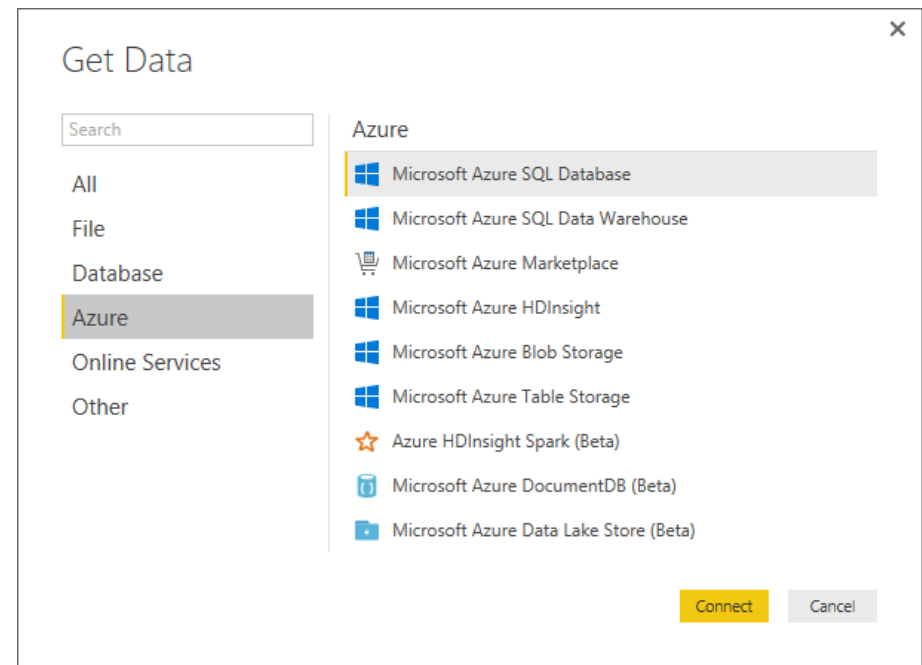
Building Block Associations



Getting Data

Power BI can connect to wide variety of data sources, including on-premises databases, Azure storage, Excel worksheets and a large number of 3rd party services.

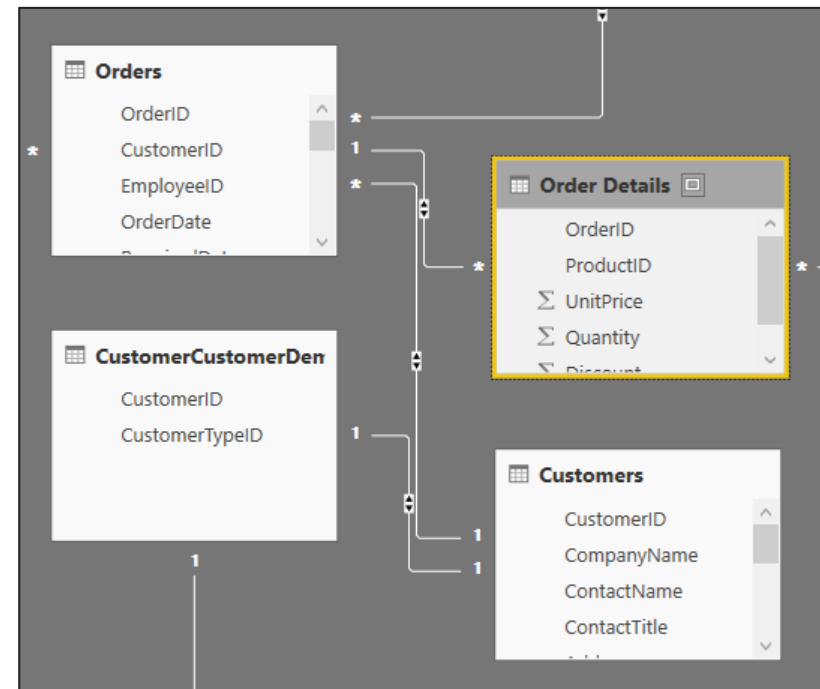
- Clean and transform data with the Query Editor
- Connect to advanced data sources and create transformations
- “Massage” irregularly formatted data



Modeling

Modeling is the technique of creating a logical connections and relationships between data sources.

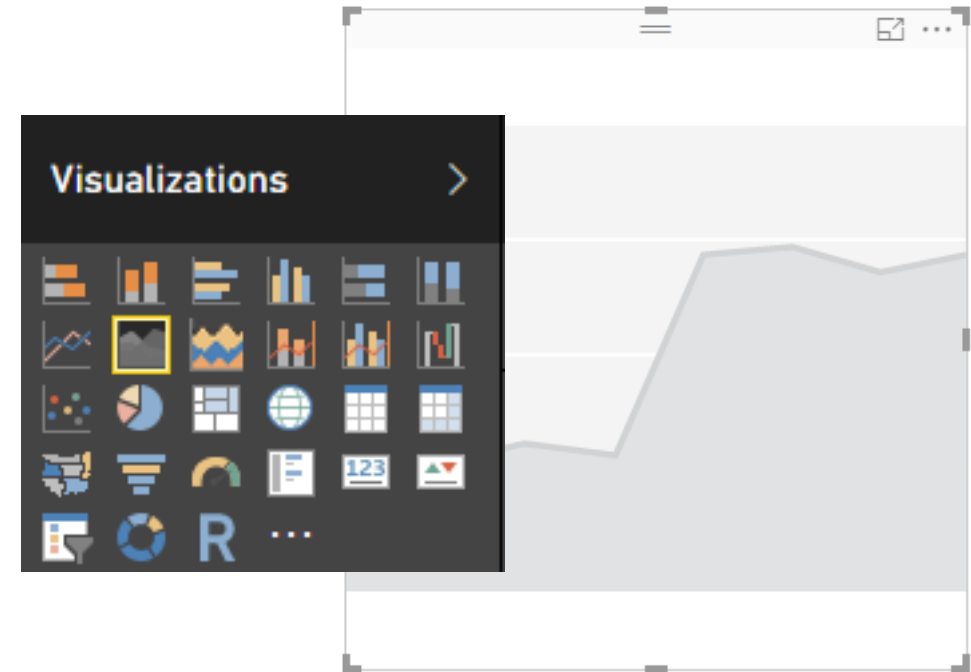
- Create Calculated Columns
- Optimize data models for better visuals
- Create Measures and work with time-based functions
- Create Calculated Tables



Visualizations

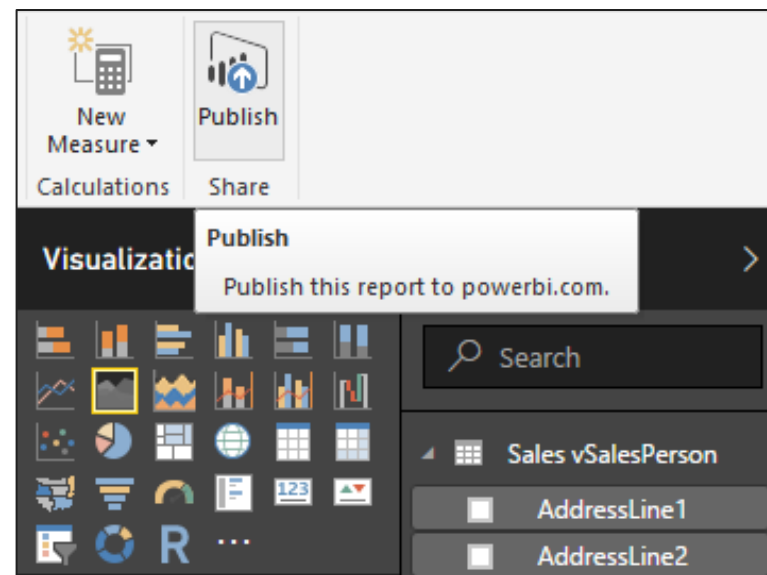
A **visualization** is a visual representation of data, such as a chart, graph, map, or other “visual” representations of data.

- Line, bar, pie, stacked
- Matrix/pivots
- Key performance
- Tree maps
- Geo and filled maps
- Slicers/filters
- Custom visualizations



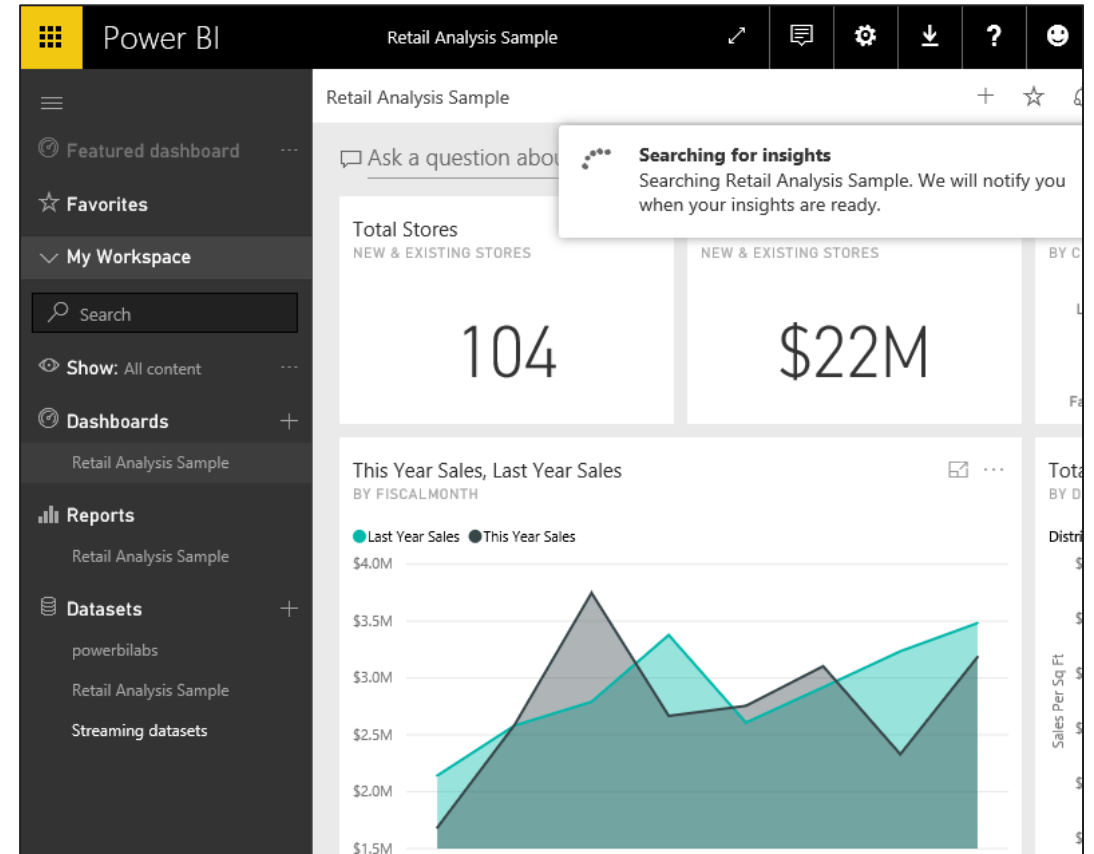
Publishing & Sharing

- Publish reports from Power BI Desktop to the Power BI Service
- Print and export dashboards
- Manually republish and refresh data
- Create and connect to content packs
- Integrate OneDrive for Business



Exploring Data

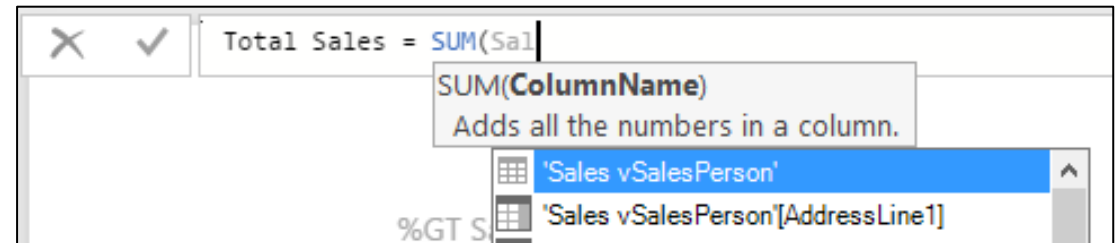
- Use Quick Insights
- Ask questions using natural language
- Create custom Q&A suggestions
- Share Dashboards with your organization
- Edit Tile details



Data Analysis Expressions

DAX is a collection of functions, operators, and constants that can be used in a formula, or expression, to calculate and return one or more values.

- **Measure**
Calculation on a collection of rows AFTER aggregation.
- **Calculated Column**
Calculation on each individual row BEFORE aggregation.



Power BI Service Integration

Power BI Service integration is facilitated via **Power BI Embedded**. Power BI Embedded is an **Azure service** that enables developers to surface Power BI data experiences within their applications.

