

# Power BI Mastering the Art of Data Intelligence Handout

## What Is Power BI?

Power BI is a business analytics service that enables users to visualize and analyze data with greater efficiency.

## Complex Data Modelling

- Power BI allows you to create complex table relationships between datasets.
- By establishing these relationships, you can create more accurate and detailed reports.
- There are a variety of different relationship types available in Power BI, including one-to-one, one-to-many, and many-to-many.

### Example of an Active Relationship:

**Tip:** Use a DAX formula in order to build that relationship

**Edit relationship** ✕

Select tables and columns that are related.

**From table**  
Sales

CustomerKey	DueDateKey	Extended Am...	Order Quantity	OrderDateKey	Product Stan...	ProductKe
-1	20170717	419.4589	1	20170707	413.1463	322
-1	20170719	419.4589	1	20170709	413.1463	330
-1	20170719	419.4589	1	20170709	413.1463	334

**To table**  
Date

Date	DateKey	Fiscal Quarter	Fiscal Year	Full Date	Month	MonthKey
July-01-19	20190701	FY2020 Q1	FY2020	July-01-19	July-01-19	201907
July-02-19	20190702	FY2020 Q1	FY2020	July-02-19	July-01-19	201907
July-03-19	20190703	FY2020 Q1	FY2020	July-03-19	July-01-19	201907

**Cardinality**  
Many to one (\*:1)

**Cross-filter direction**  
Single

Make this relationship active

Apply security filter in both directions

Assume referential integrity

## Bi-Directional Cross Filtering in Power BI Desktop

- Bi-directional cross filtering allows you to filter data in both directions between two tables, creating more dynamic reports.
- This feature is useful when tables have a many-to-many relationship.
- May not work well in databases with large data sets.

## Dynamic Row-Level Security in Power BI

- Dynamic row-level security allows you to restrict access to specific rows based on user credentials.
- This feature is useful for maintaining data privacy and ensuring that sensitive information is accessible only to authorized users.
- Row-level security can be applied to both imported and DirectQuery data sources.

## Creating Custom Visuals with Power BI SDK Using R

- Power BI SDK allows developers to create custom visuals using R programming language.
- Custom visuals using R can be integrated into Power BI reports seamlessly.
- Developers can use R packages to create custom visuals with ease and flexibility.
- Custom visuals can be shared across Power BI workspaces and added to the marketplace.

## Creating Custom Visuals with Power BI SDK Using Python

- Power BI SDK allows developers to create custom visuals using Python programming language.
- Developers can use Python libraries to create custom visuals with ease and flexibility.
- Custom visuals can be integrated into Power BI reports seamlessly.

## Filtering Data with DAX

- DAX formulas can be used to filter data for specific time periods or other criteria.
- The FILTER function can be used to filter data based on specific criteria, such as dates or values.
- BEST Practices for Filtering data with DAX include using simple filters, defining relationships between tables, and avoiding circular references.

## Time-Series Analysis in Power BI

- Time-series analysis is used to identify patterns and trends in data over time.
- Power BI provides built-in functionality for time-series analysis, including forecasting and regression analysis.
- Time-series analysis can be used to make predictions about future trends in data.

## Overview of Advanced Sharing in Power BI

- Advanced sharing in Power BI allows users to share their reports and dashboards with internal and external users.

Watch the webinar replay [here](#). Want to know more about Power BI? Start with the [Fundamentals of Power BI](#) or explore our Power BI courses [here](#).