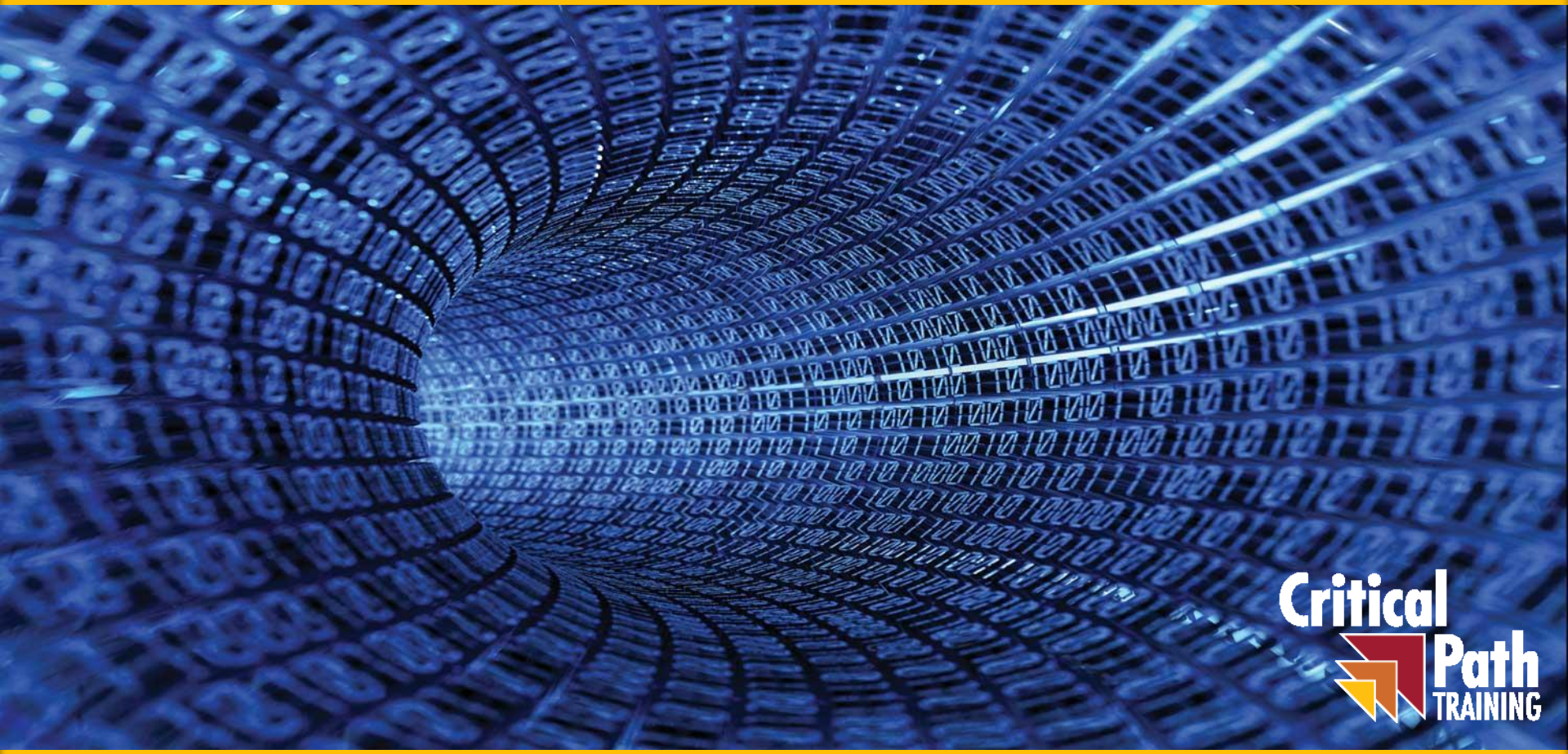
Getting Started with Power BI Desktop

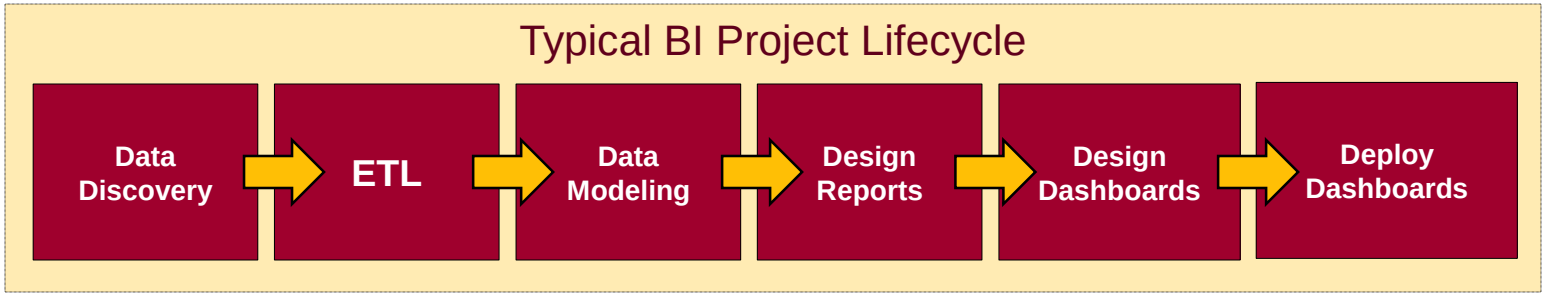


Agenda

- Getting Started with Power BI Desktop
- Creating Queries in Power BI Desktop
- Modeling Data in Power BI Desktop
- Designing Reports in Power BI Desktop
- Publishing Power BI Desktop Projects

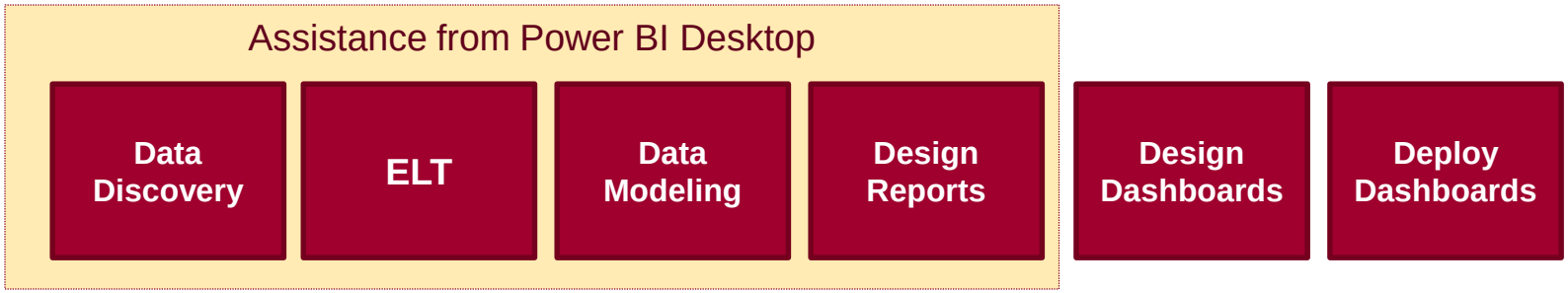
Project Lifecycle for a Custom BI Solution

- Lifecycle of a typical BI project includes...
  - Discover where the data lives
  - Extract, transform and load (ETL) data
  - Model data to create dataset for analytics and reporting
  - Design and implement reports on top of dataset
  - Consolidate reports into one or more dashboards
  - Package project artifacts for deployment
  - Deploy to production environment



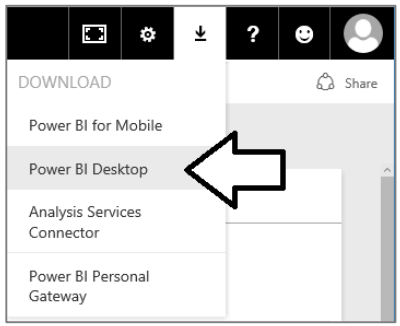
Working with Power BI Desktop

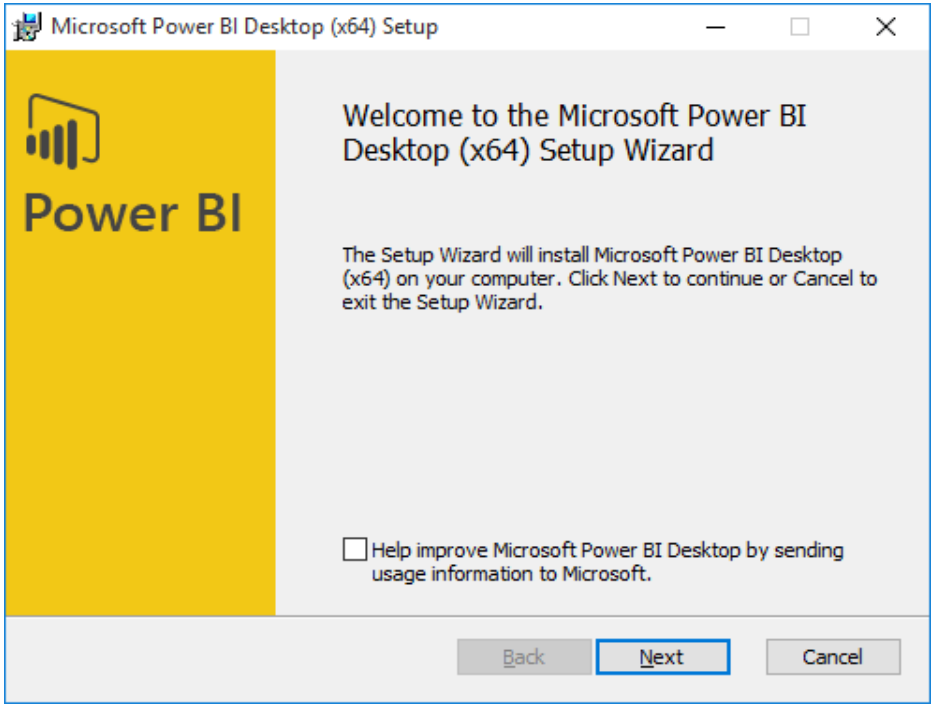
- Power BI Desktop focuses on first four phases
  - Query features for Data Discovery
  - Query features for ETL
  - Design features and DAX language for data modeling
  - Report design using a visual report designer
  - No support for designing dashboards
  - No support for packaging an entire solution



Installing Power BI Desktop

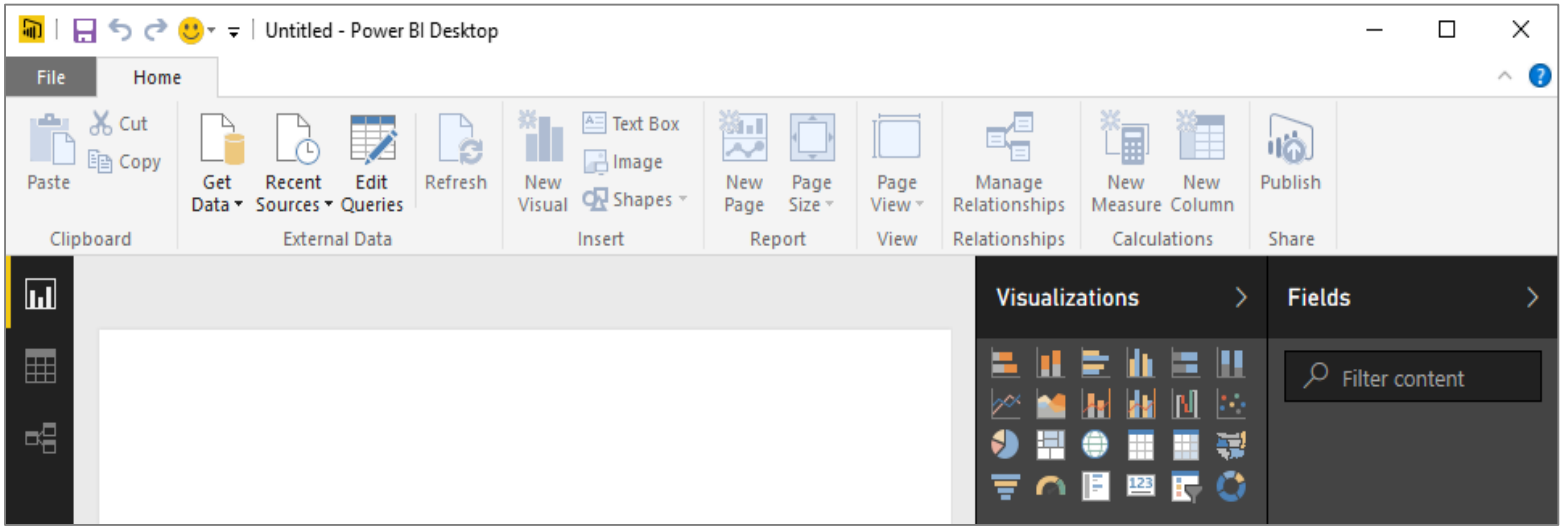
- Power BI Desktop quick & easy to install over the Internet
  - Select Power BI Desktop option from Power BI Download menu
  - Power BI Desktop downloads & installs in less than a minute





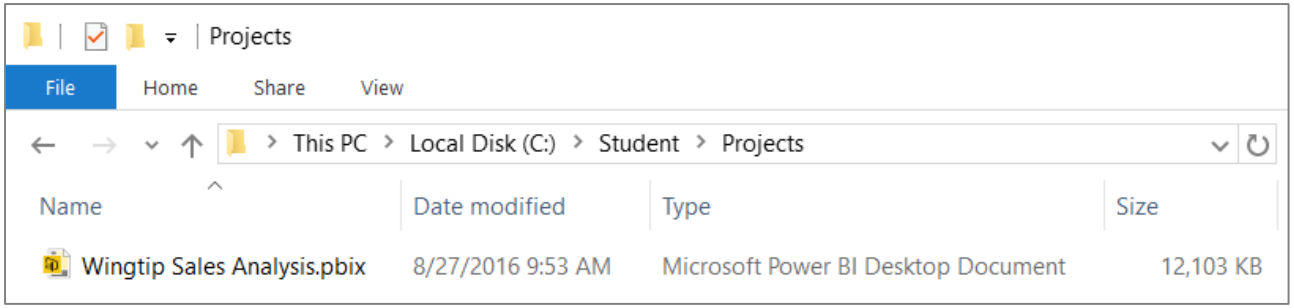
Working with Power BI Desktop

- Power BI Desktop is a Windows application
  - Work is saved and published in terms of projects
  - You can work on multiple projects at once
  - Each project runs in its own Power BI Desktop instance
  - Power BI Desktop can freeze up or act buggy
  - Quit & restart Power BI Desktop if it acts strangely



Projects and PBIX Files

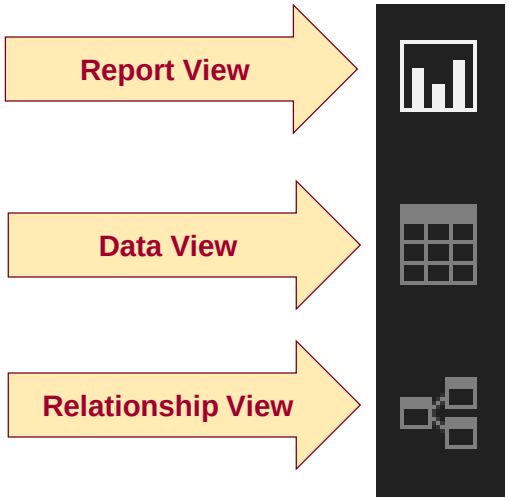
- Power BI Desktop projects saved using PBIX files
  - PBIX file contains data source definitions
  - PBIX file contains query definitions
  - PBIX file contains data imported from queries
  - PBIX file contains exactly one data model definition
  - PBIX file contains exactly one report
  - PBIX file never contains data source credentials

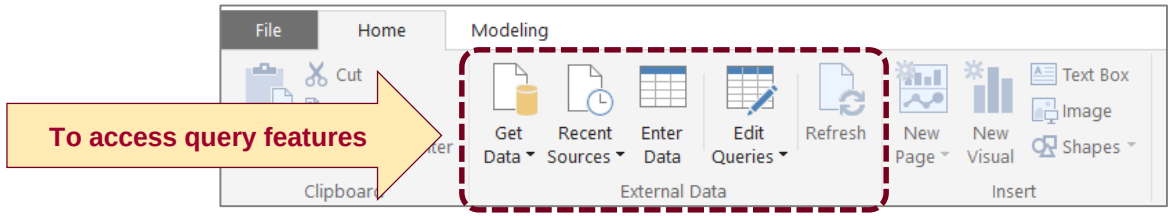


Getting Around in Power BI Desktop

- What do you need to learn to use Power BI Desktop?
  - Query features for importing data
  - Design features for modeling data
  - Report designer for creating reports

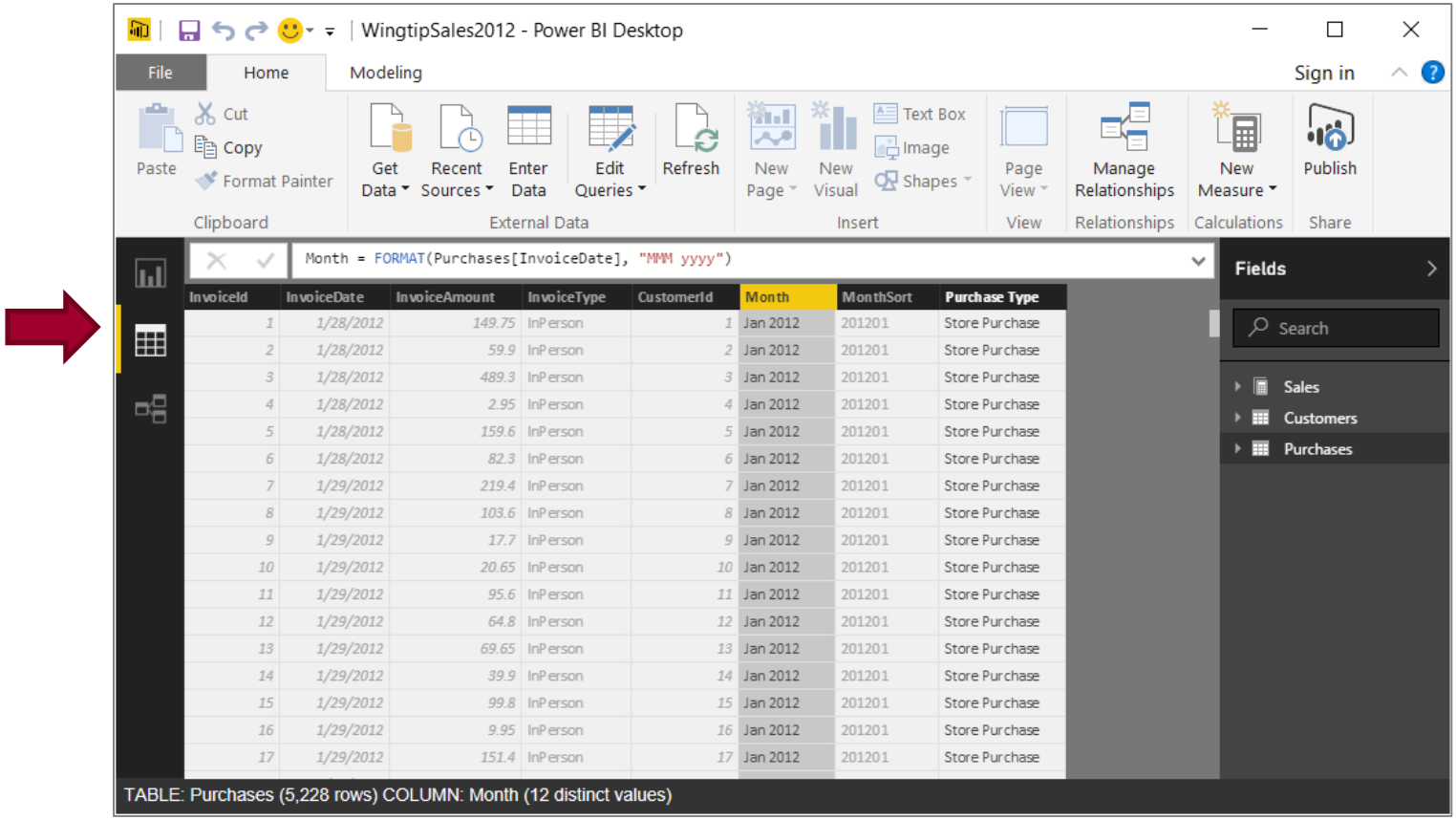
- Navigating between view modes





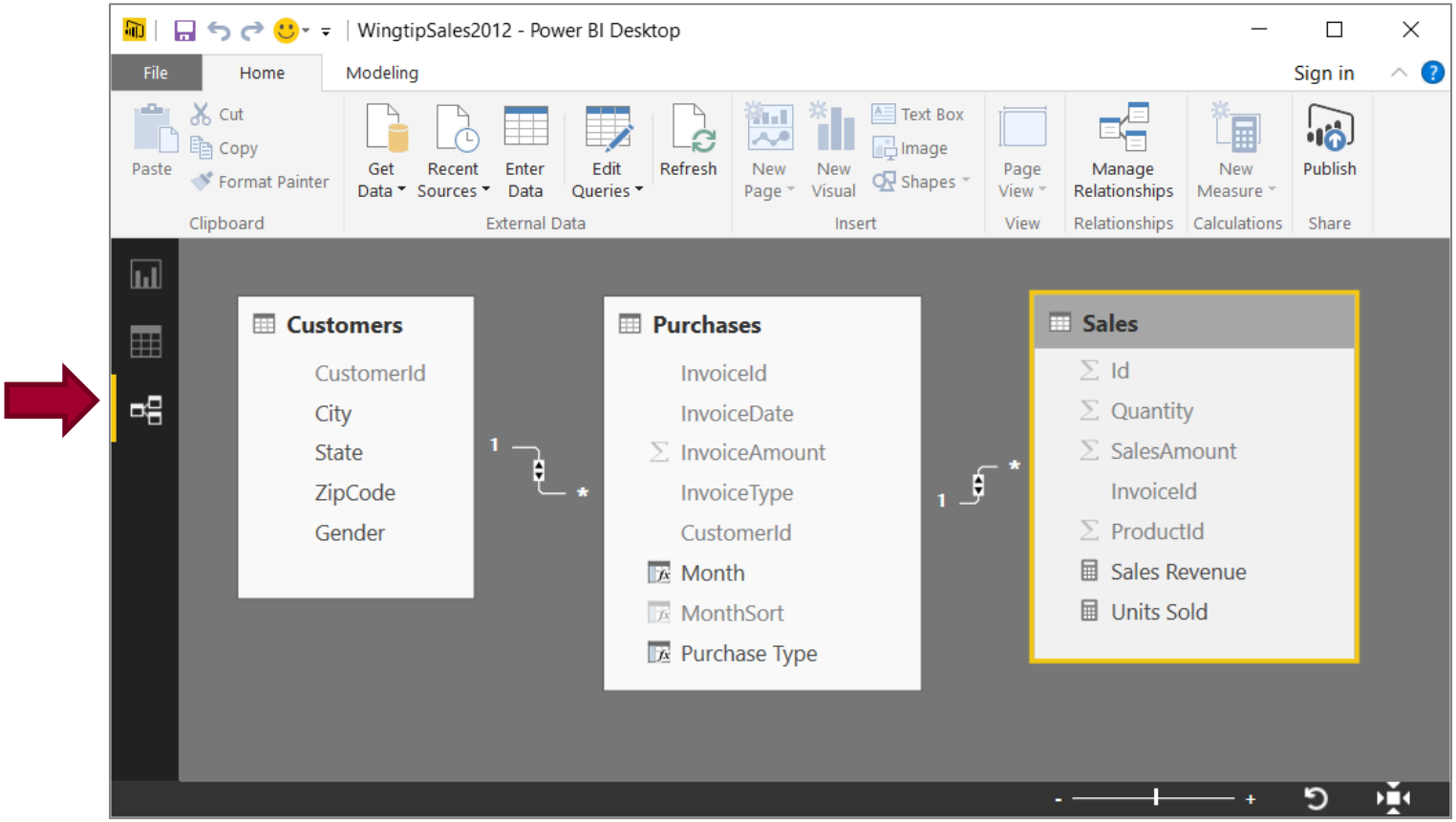
Data View

- Data view is used for data modeling
  - Data View displays columns and rows of data for each table
  - Data View used to create calculated columns and measures



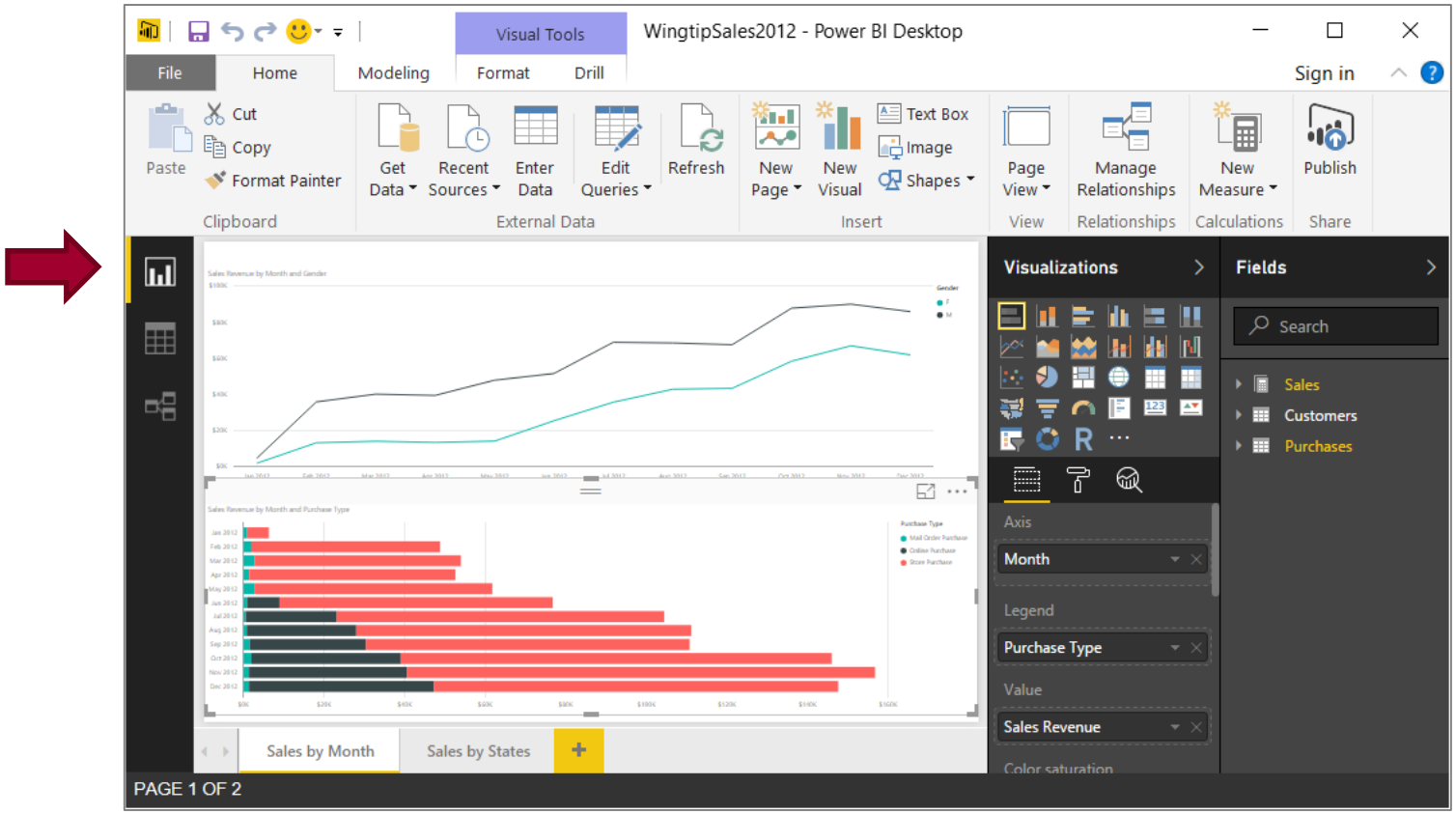
Relationship View

- Displays tables, fields and relationships
  - Used to view tables, fields and relationships in project's dataset
  - Used to create relationships when importing new tables



Report View

- Report view used to design report for current project
  - Report designer is very similar to Power BI service
  - Dataset can be simplified for Report View by hiding fields



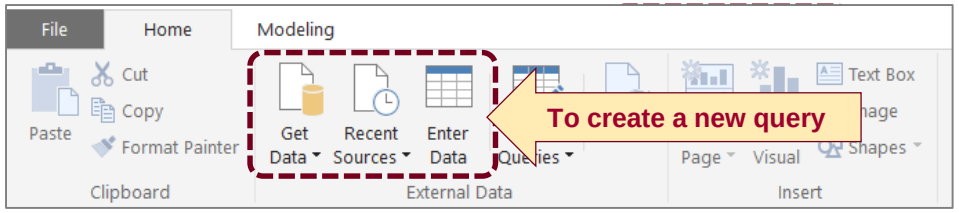

DEMO
Getting Up and Running
with Power BI Desktop

Agenda

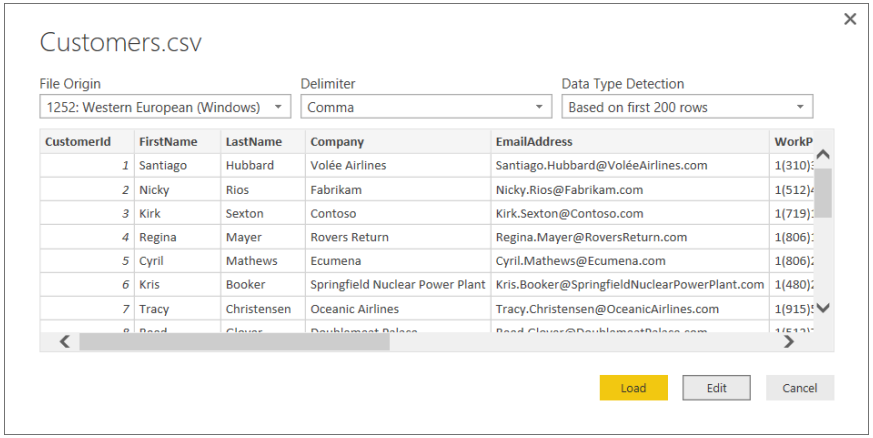
- ✓ Getting Started with Power BI Desktop
- ➢ Creating Queries in Power BI Desktop
- Modeling Data in Power BI Desktop
- Designing Reports in Power BI Desktop
- Publishing Power BI Desktop Projects

Creating Queries

- Power BI Desktop provides powerful query features
  - Get started by creating a new query

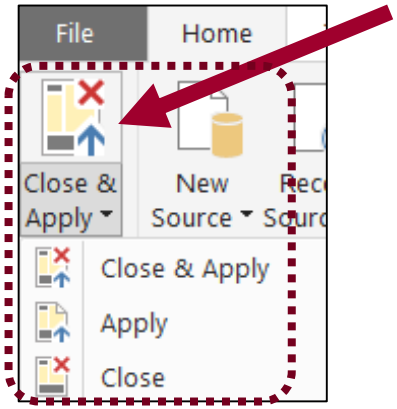


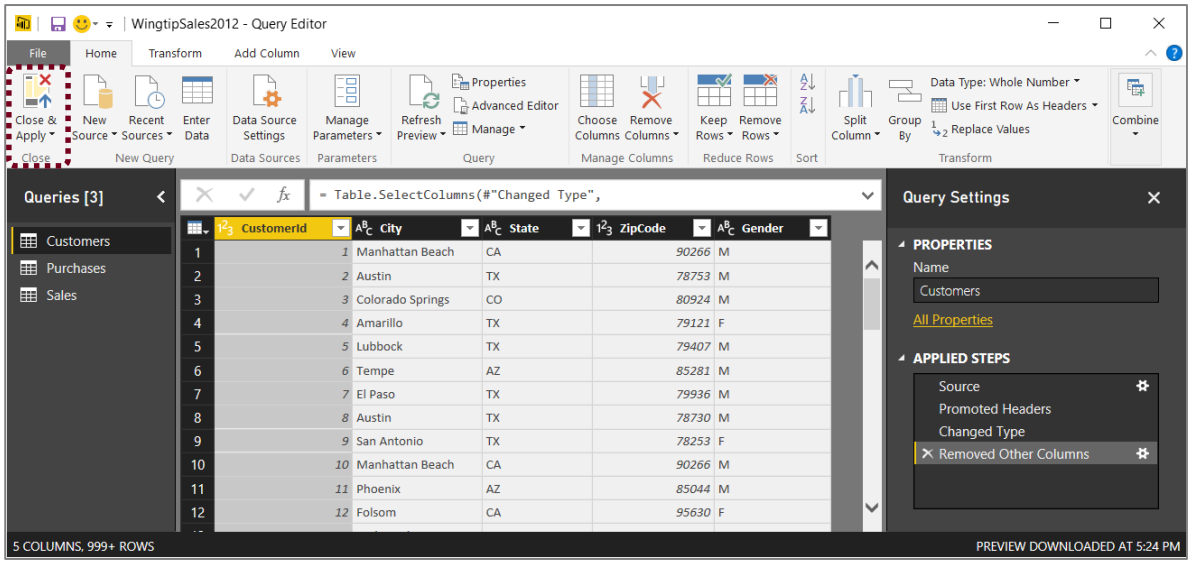
- The difference between Load versus Edit
  - **Load** command creates and execute new query without editing query
  - **Edit** command creates new query & opens it in Query Editor window



Query Editor Window

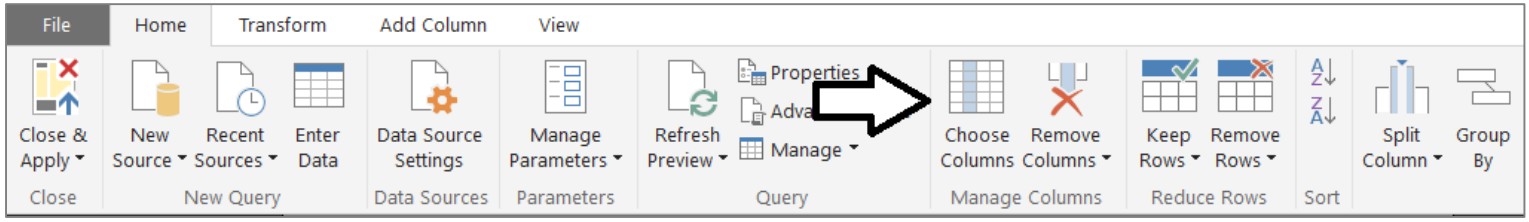
- Power BI Desktop provides separate Query Editor window
  - Provides powerful features for designing queries
  - Displays list of all queries in project on the left
  - Displays **Properties** and **Applied Steps** for selected query on right
  - Preview of table generated by query output shown in the middle
  - Query can be executed using **Apply** or **Close & Apply** command



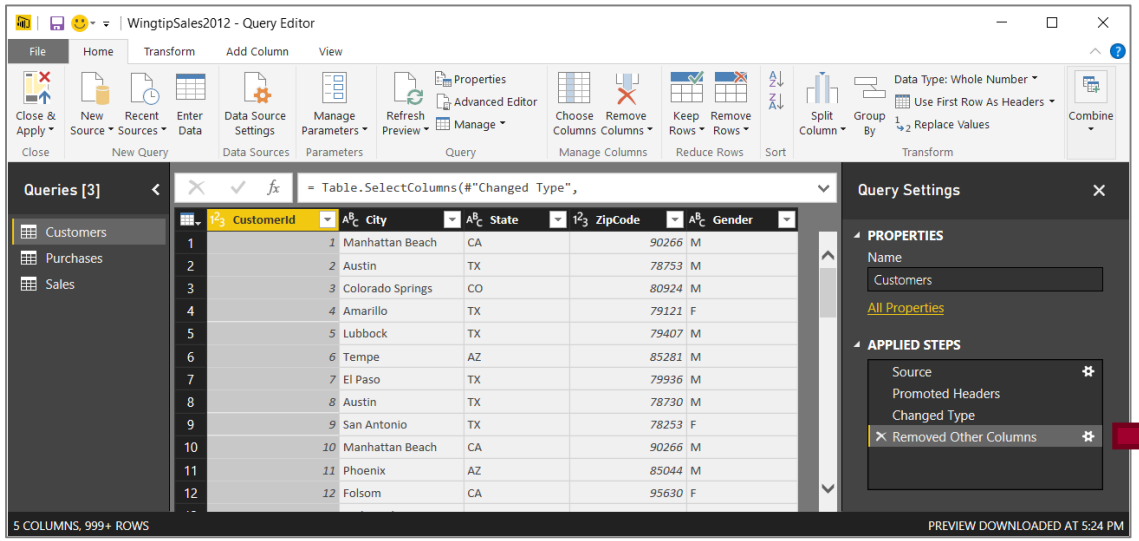


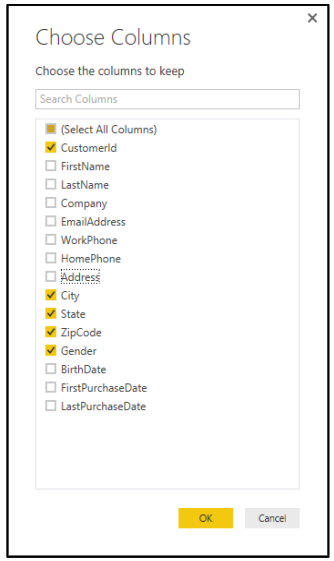
Queries Are Defined as Sequence of Steps

- Here is an example of adding a query step
  - Click a column header then click **Choose Column** button in ribbon



  - Query definition is modified by adding new step





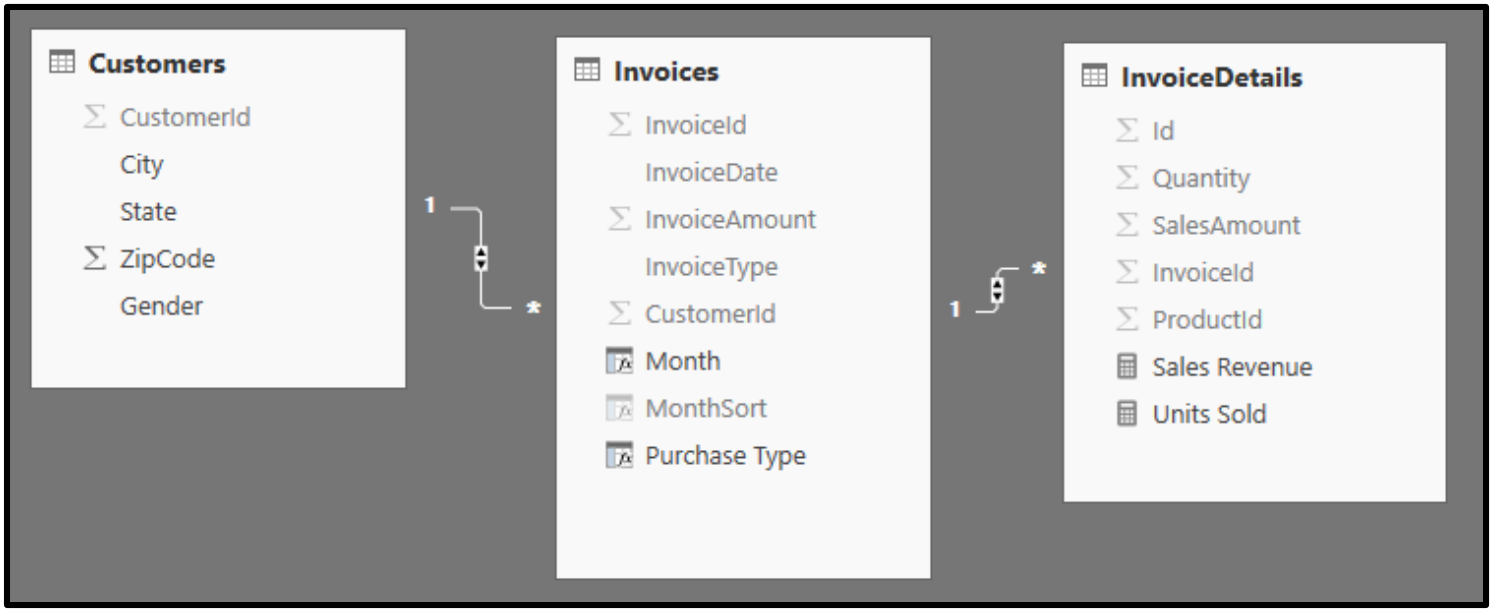

DEMO
Designing Queries to Import Data

Agenda

- ✓ Getting Started with Power BI Desktop
- ✓ Creating Queries in Power BI Desktop
- ➢ Modeling Data in Power BI Desktop
- Designing Reports in Power BI Desktop
- Publishing Power BI Desktop Projects

The Project's Data Model

- Each PBIX project defines a data model
  - Data model contains tables, fields and relationships
- Tables contain three different types of fields
  - Native columns
  - Calculated columns
  - Measures



Data Analysis eXpression Language (DAX)

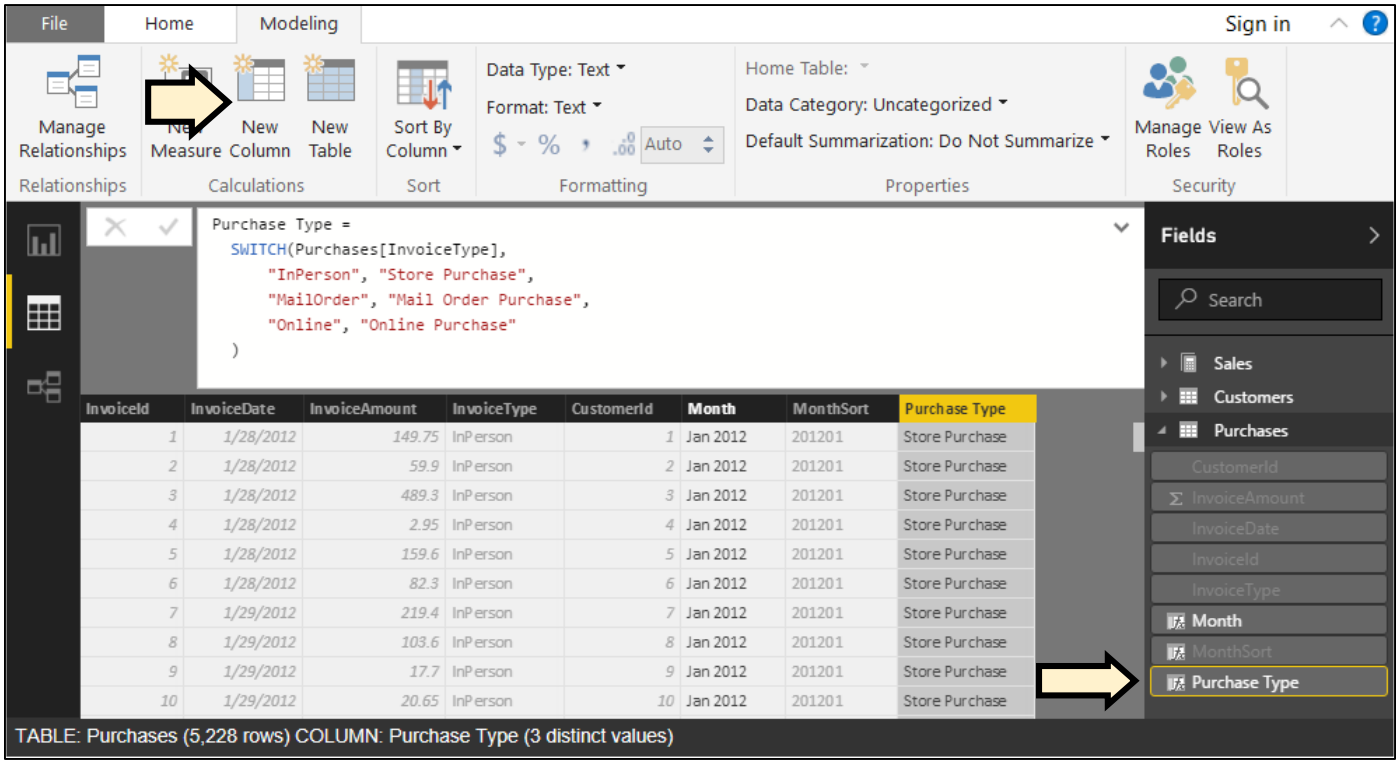
- Calculated columns and measures created using DAX
  - DAX is programming language used by tabular database model
  - Calculated columns and measures created with DAX Expressions

```
=SUM('Sales'[SalesAmount])
```

- DAX expressions are similar to Excel formulas
  - They always start with an equal sign (=)
  - DAX provides many built-in functions just like to Excel
- DAX Expressions are not the same as Excel formulas…
  - DAX expressions cannot reference cells (e.g. A1 or C4)
  - Instead DAX expressions reference columns and tables

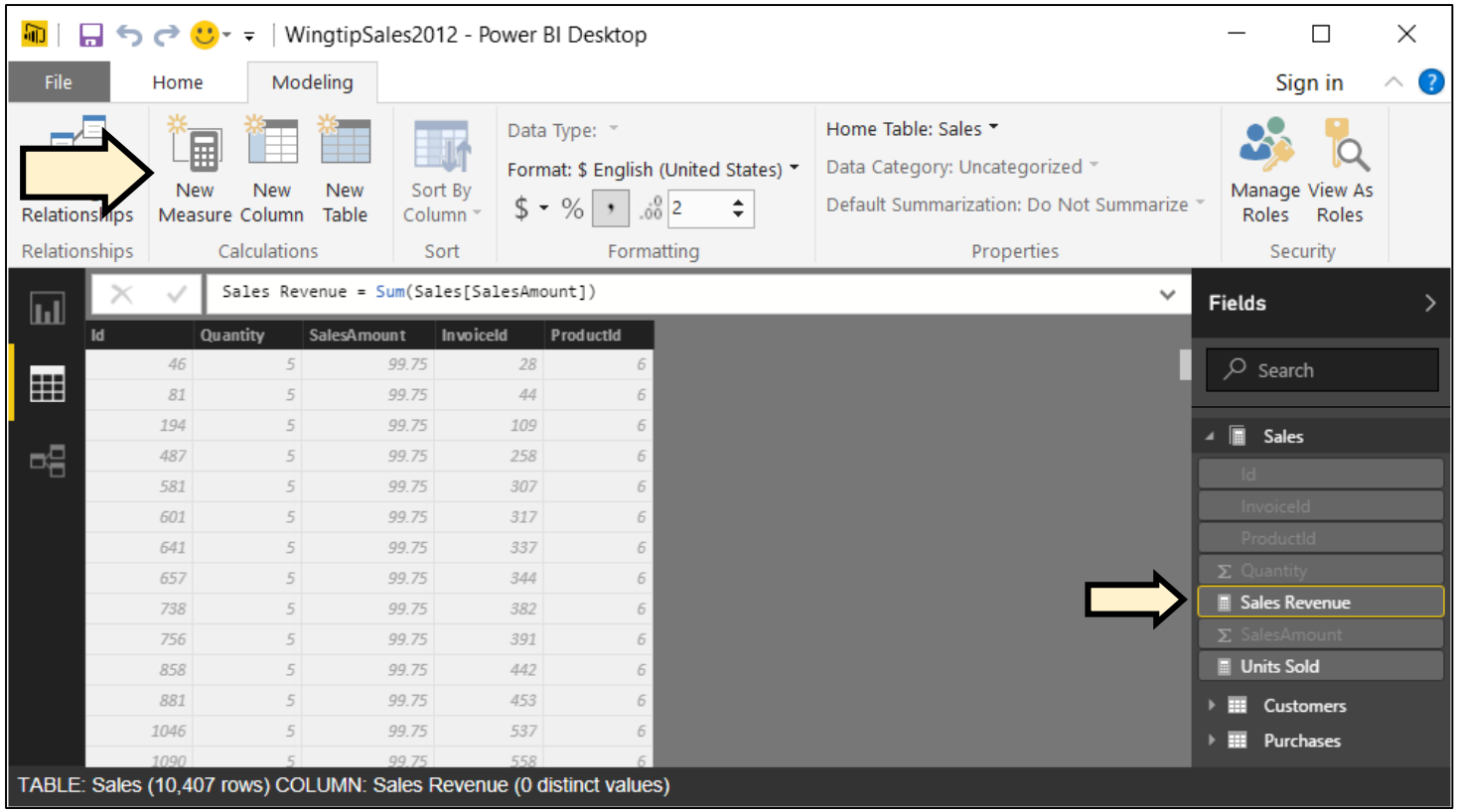
Creating Calculated Columns

- Calculated column can be added to table
  - Calculated column created by clicking **New Column** button
  - Calculated column created as named DAX expression
  - DAX expression for calculate column evaluated at table load time



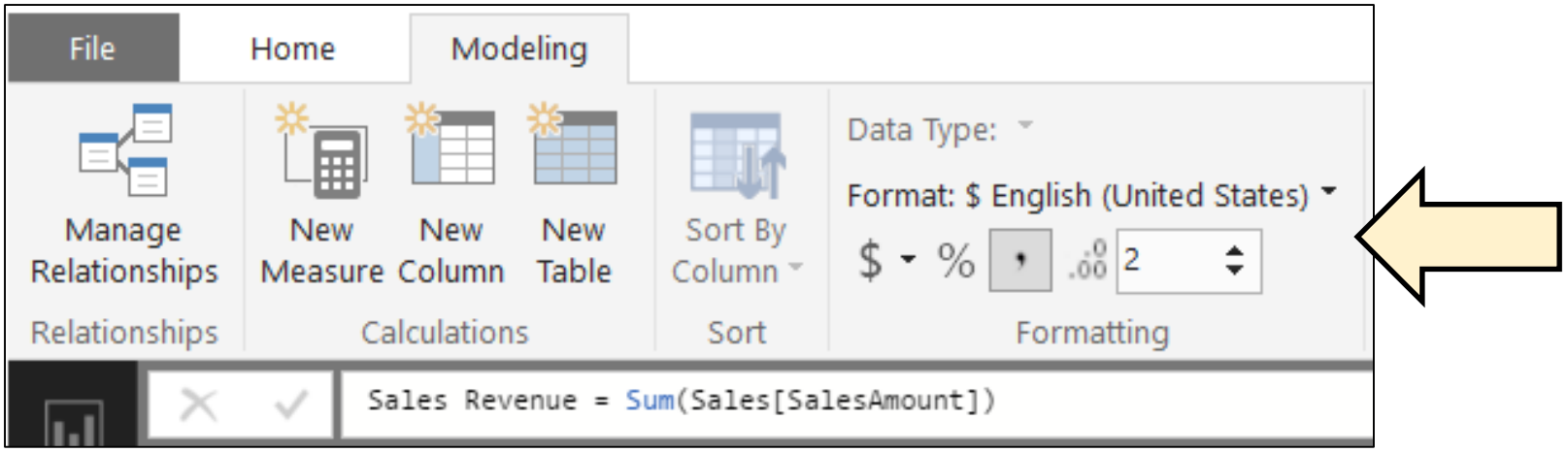
Creating Measures

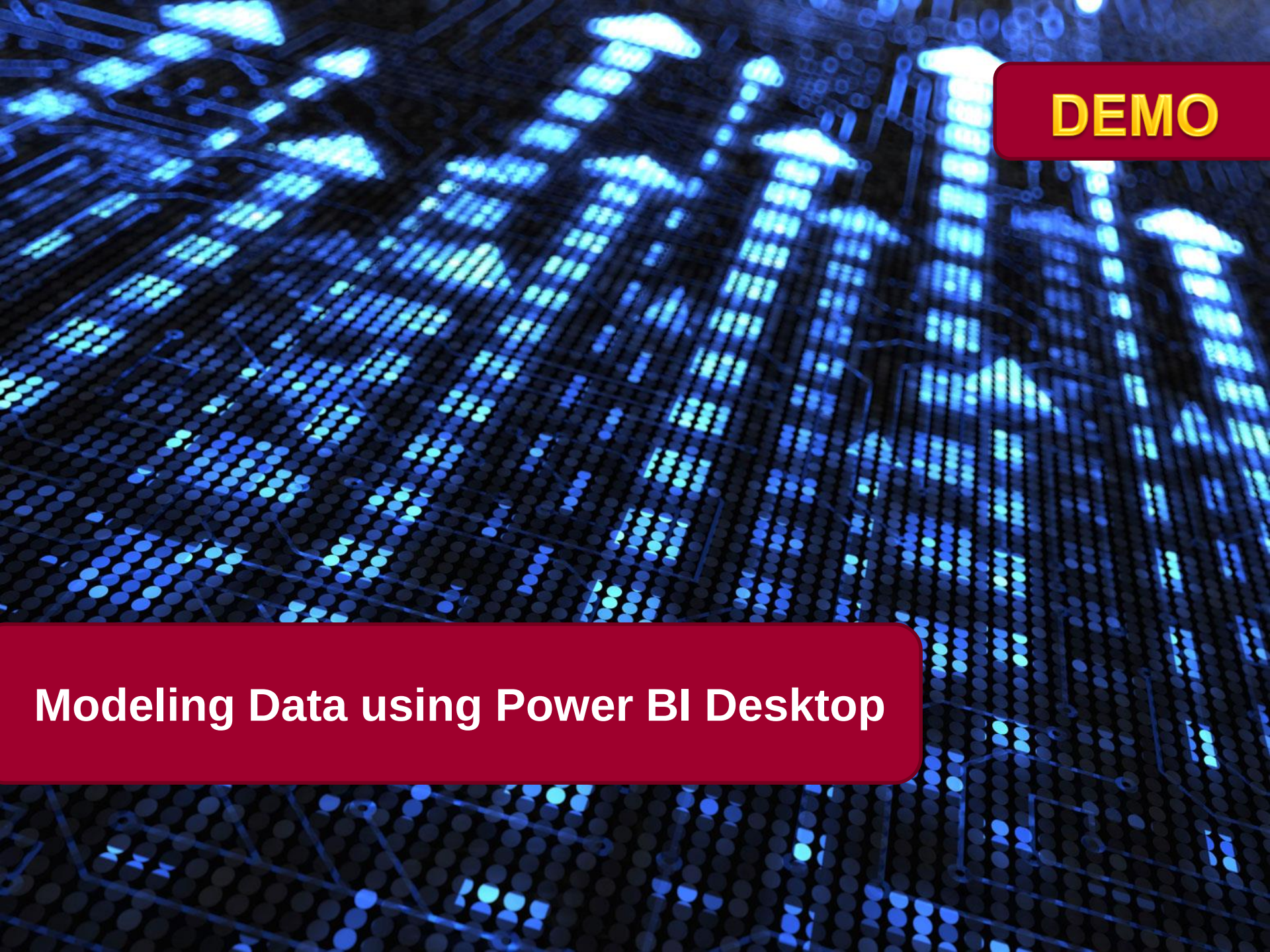
- Measure defined as named DAX expression
  - Measure created by clicking **New Measure** button in ribbon
  - Measure expression is evaluated at query time



Formatting Columns and Measures

- Each column & measure has formatting properties
  - Make sure you set formatting for columns and measures



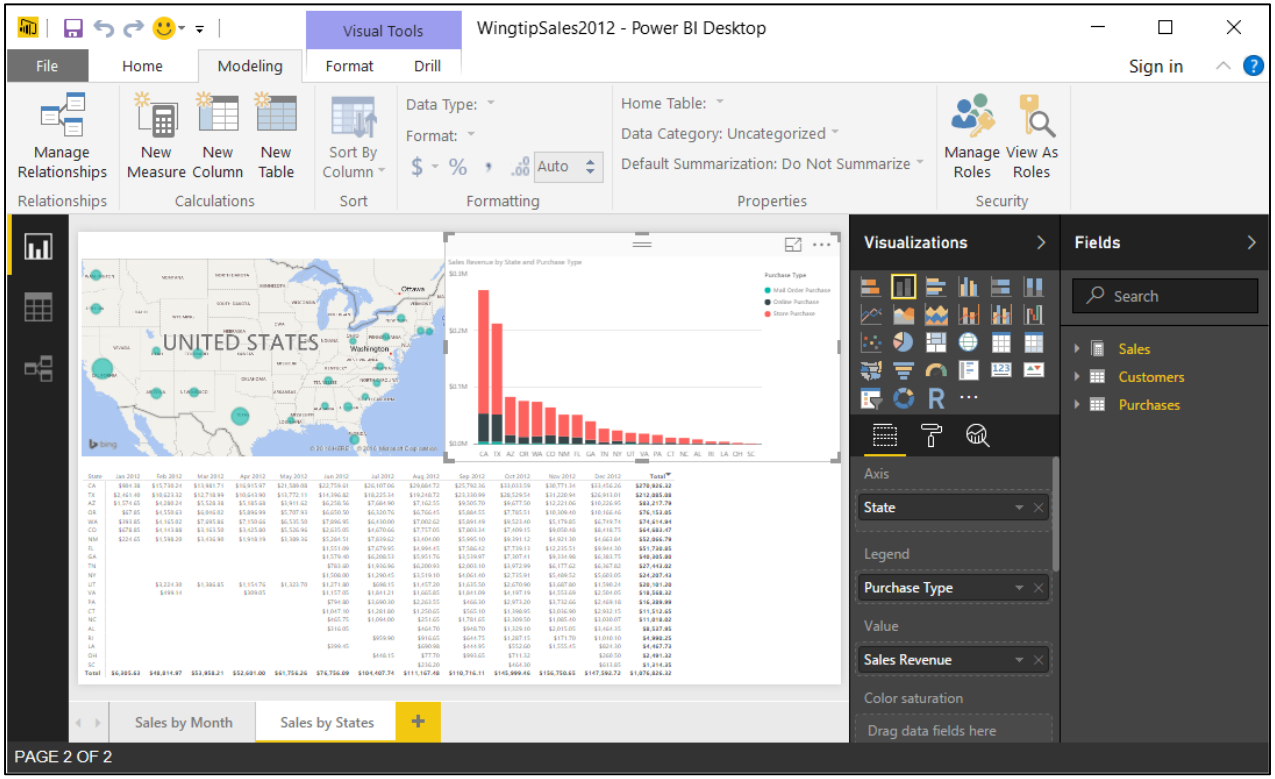

DEMO
Modeling Data using Power BI Desktop

Agenda

- ✓ Getting Started with Power BI Desktop
- ✓ Creating Queries in Power BI Desktop
- ✓ Modeling Data in Power BI Desktop
- ➢ Designing Reports in Power BI Desktop
- Publishing Power BI Desktop Projects

Designing Reports

- Report View is used to design reports
  - You design reports by adding visuals & configuring them
  - Report design is very similar to experience in browser



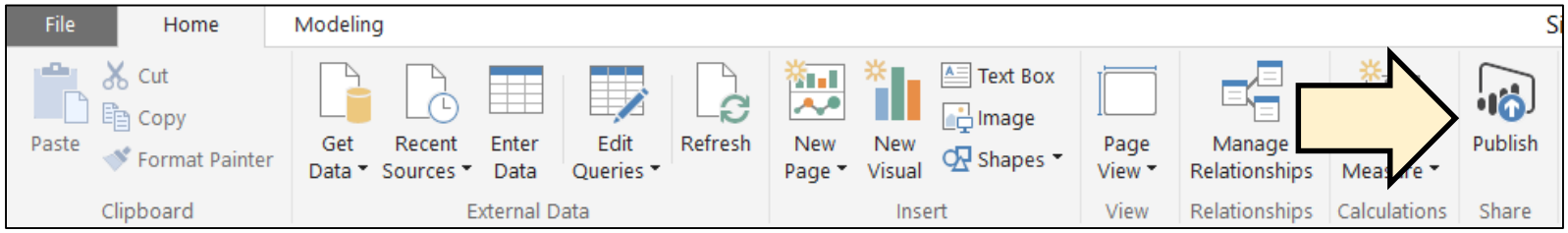

DEMO
Designing a Report in Power BI Desktop

Agenda

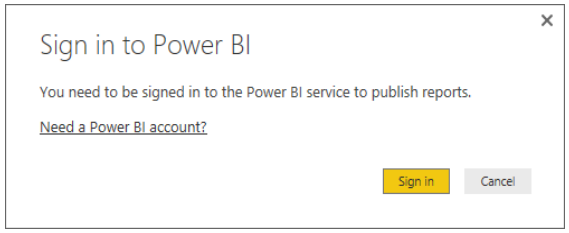
- ✓ Getting Started with Power BI Desktop
- ✓ Creating Queries in Power BI Desktop
- ✓ Modeling Data in Power BI Desktop
- ✓ Designing Reports in Power BI Desktop
- ➢ Publishing Power BI Desktop Projects

Publishing a Power BI Desktop Project

- Power BI Desktop provides **Publish** command
  - Used to publish project to Power BI service

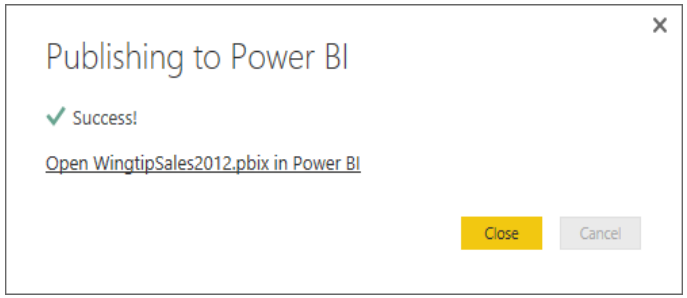


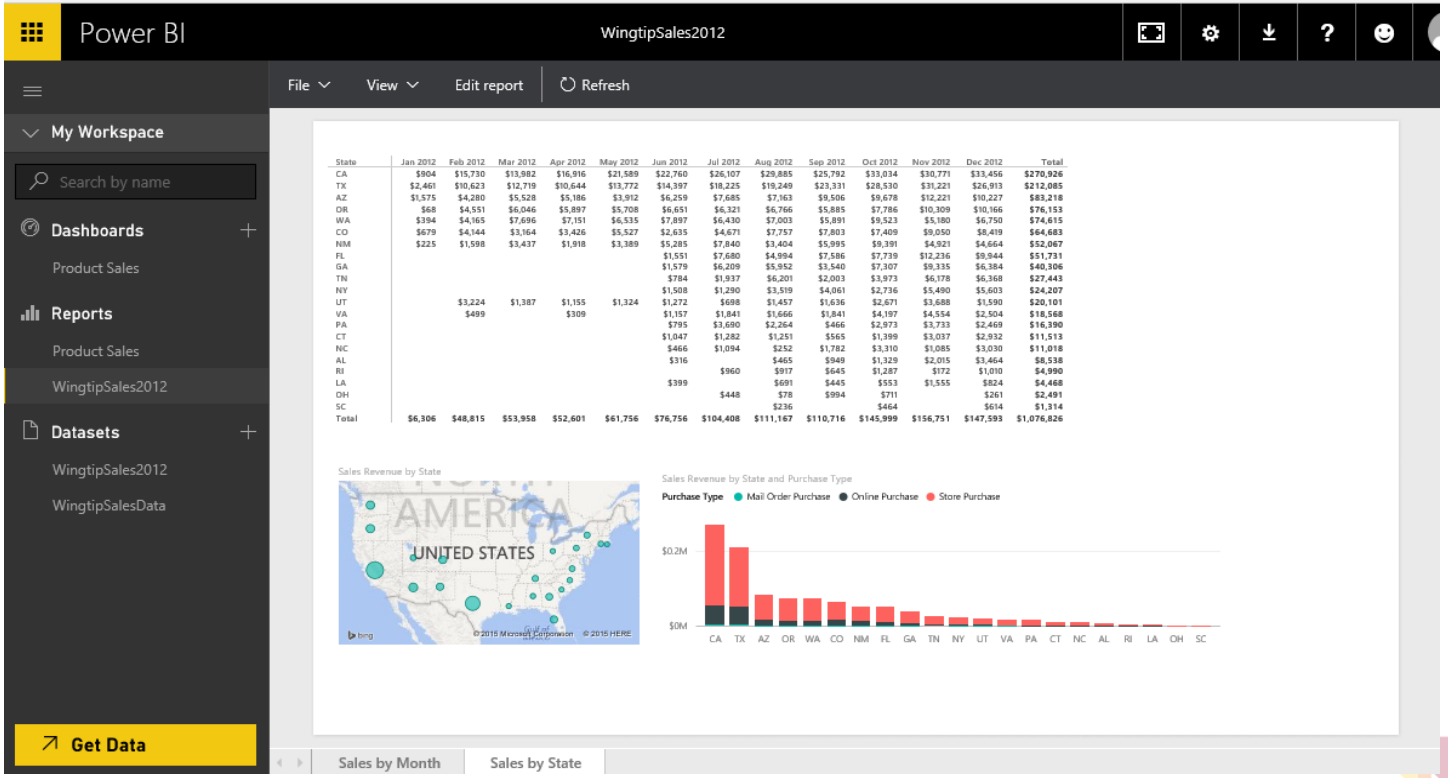
  - Requires logging into your Office 365 account



  - Published articles added to target workspace

A Published Power BI Desktop Project






DEMO
Publishing a Data Analysis Project using Power BI Desktop

Summary

- ✓ Getting Started with Power BI Desktop
- ✓ Creating Queries in Power BI Desktop
- ✓ Modeling Data in Power BI Desktop
- ✓ Designing Reports in Power BI Desktop
- ✓ Publishing Power BI Desktop Projects