Introduction to the Power BI Platform

More Power BI Training from Critical Path Training

- **PBI365** - Data Analytics and Reporting with Power BI and Office 365
  - Three-day Instructor-led training course with hands-on lab exercises
  - Attend this course in person in London or Tampa or attend remotely

Upcoming Offerings

Date	Location	Instructor
Feb-17	London, UK	Ted Pattison
Mar-7	Tampa, FL	Ted Pattison

Module 01: Introduction to the Power BI Platform

Module 02: Getting Started with Power BI Desktop

Module 03: Extracting and Shaping Data using Power Query

Module 04: Modeling Data for Analytics using Power Pivot

Module 05: Extending Datasets to Support Time Intelligence

Module 06: Creating Dashboards and Reports in Power BI

Module 07: Creating Dashboards for Mobile Devices

Module 08: Creating and Deploying Power BI Content Packs

Module 09: Leveraging the New BI Features in Excel 2016

Module 10: Creating BI Solution using Excel Online

- Check out https://www.criticalpathtraining.com for more info
- Email info@criticalpathtraining.com if you have questions
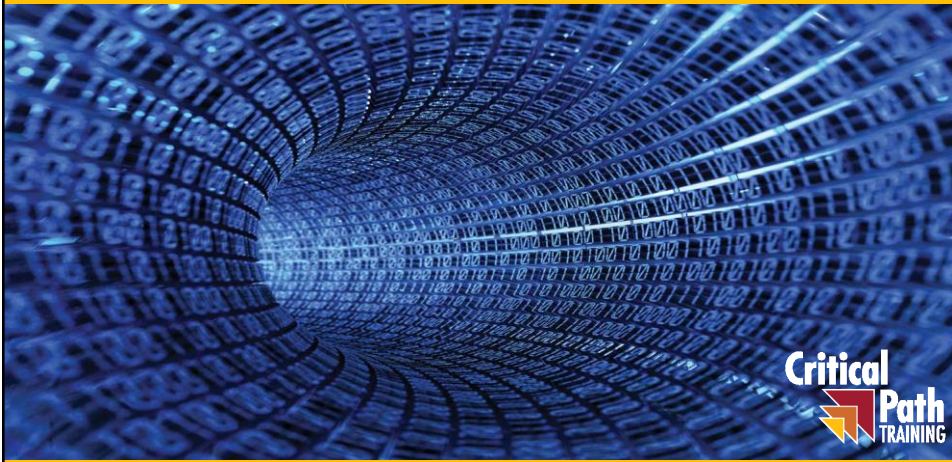
Introduction to Power BI

- This course consists of three presentations

    1. Introduction to the Power BI Service

    2. Creating Power BI solutions using Power BI Desktop

    3. Designing and Deploying Reports and Dashboards

Let's Get Started…

Introduction to the Power BI Service

Agenda

- Introduction to the Power BI Platform
- Introduction to the Power BI Service
- Creating Datasets, Reports and Dashboards
- Loading a Sample Content Pack
- Power BI Real-time Dashboard Demo

Brief History of Microsoft's BI Platform

1985 - Microsoft Excel

1993 - SQL Server Database Engine

2000 - SQL Server Analysis Services (SSAS) - Multidimensional Model

2005 - SQL Server Reporting Services (SSRS)

2005 - SQL Server Integration Services (SSIS)

2007 – Excel Services in SharePoint Server 2007

2007 – Performance Point for SharePoint Server

2008 - SQL Server Analysis Services – Tabular Model

2010 - Power Pivot as an Excel Add-in

2010 - Power Pivot as a SharePoint Add-in

2010 - Power View as a SharePoint Add-in

2013 - Power View as an Excel Add-in

2013 - Power Query as an Excel Add-in

2014 - Power BI for Office (aka Power BI 1.0)

2015 - Power BI (aka Power BI 2.0)

2015 – Power BI Desktop

2015 – Excel 2016

2015 – Excel Online in Office 365

2016 – SQL Server Reporting Services 2016

Microsoft BI Technology Winners

- Which BI products are strategic moving forward?
  - Microsoft Excel
  - SQL Server, SSAS, SSIS, SSRS
  - Tabular Databases, Power Pivot and DAX language
  - Power Query
  - Power BI Service (aka Power BI 2.0 or what they call the "New Experience")
  - Power BI Desktop
  - Excel Online (no longer considered part of SharePoint)
  - SQL Server 2016 – especially SSAS and SSRS

Microsoft BI Technology Losers

- Technologies in which Microsoft is no longer investing
    - Power BI for Office 365 (aka Power BI v1.0)
    - Power View
    - Performance Point Services
    - Excel Services in SharePoint Server
   - SharePoint as place to surface reports & dashboards

What is Power BI?

- What is Power BI?
    - Collection of online services and features
    - Environment created to promote self-service BI *to the end user*
    - Environment created to support Power Query and Power Pivot
    - Something to assists with data import, analysis and visualization

- The Power BI service
    - Accessible to subscribed users through https://app.powerbi.com
    - User has access to personal workspace and group workspaces
    - Workspaces contain datasets, reports and dashboards
    - Supports Power Query features for data import and transformation
    - Supports Power Pivot and DAX used for data modeling
    - Provides authoring environment for reports and dashboards

Power BI Workspaces

- Power BI manages user context using workspaces
  - User is always running within the scope of a specific workspace
  - Personal workspace (i.e. My Workspace) created for each user
  - Group workspaces can be created for team-based authoring
  - Creating group workspace creates unified group in Office 365

- Workspace is container with three collections
  - Dashboards
  - Reports
  - Datasets
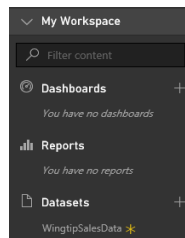
Central Power BI Concepts

- Workspace
  - Provides user context (personal workspaces & group workspaces)

- Dashboard
  - Dashboard provides consolidated view into reports and datasets
  - Provides entry point in custom solution for Power BI consumers

- Report
  - Report is a collection of pages containing visuals
  - Report visual can be pinned to a dashboard

- Dataset
  - A data model containing one or more tables
  - Can be very simple or very complex

Power BI Tools

- Power BI service using a standard web browser
  - Import datasets
  - Design reports and dashboards
  - Create content packs
  - No dataset authoring tools
- Power BI Desktop
  - Create datasets using Power Query
  - Model datasets using Power Pivot and DAX
  - Design reports
  - Publish PBIX files from local desktop to Power BI service
- Microsoft Excel 2016
  - Similar feature set to Power BI Desktop for Power Query and Power Pivot
  - Contains extra features, charts and visuals not supported Power BI
  - An complete BI solution can be embedded in a Excel workbook file

Creating a Power BI Testing Environment

- Sign up for an Office 365 trial account
  - Creates a new Office 365 tenant
  - Sign up account you use becomes tenant administrator
  - You can add up to 25 user accounts
  - User can be configured trial licenses for Office 365 and Power BI

Hello Edward

Office 365
Enterprise E3 Trial

Save this info. You'll need it later.

Office 365 sign-in page
https://portal.office.com

Your user ID
Student@CptPowerBiLabs.onmicrosoft.com

Step 1
About you

Step 2
Create an ID

Step 3
You're in

You're ready to go... ⊕

Setup Guide for Creating a Test Environment for Power BI Projects
  Setup Task 1: Create a new Office 365 Trial Tenant
  Setup Task 2: Verify You Have Access to Office 365 Mail
  Setup Task 3: Upload a Workbook with Sample Data to OneDrive for Busi...
  Setup Task 4: Add Trial User Licenses for Power BI Pro
  Setup Task 5: Create a Second User Account for Testing Purposes
  Setup Task 6: Use the Power BI Service to Import a New Dataset
  Setup Task 7: Create a New Power BI Report with Multiple Pages
  Setup Task 8: Create and Share a Power BI Dashboard

Agenda

- ✓ Introduction to the Power BI Platform
- ➢ Introduction to the Power BI Service
- • Creating Datasets, Reports and Dashboards
- • Loading a Sample Content Pack
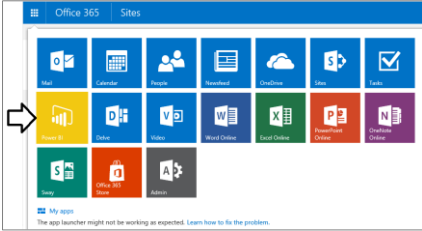- • Power BI Real-time Dashboards

Power BI Service

- • Power BI service is accessible through browser
  - • Logged in user runs in context of a specific workspace
  - • Provides user with access to dashboards, reports and datasets

The Navigation Pane

- Navigation pane is central to user experience
  - Displays links to visible dashboards, reports and datasets
  - Allows user to move between workspaces
  - Allows user to create new group workspace
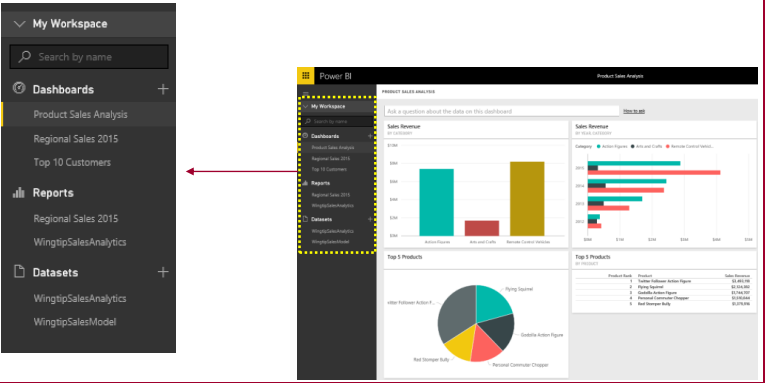
Dashboards and Tiles

- Dashboard is a collection of tiles
  - Tile can be created by pinning visual from a report
  - Tile can be created by pinning query result from dataset
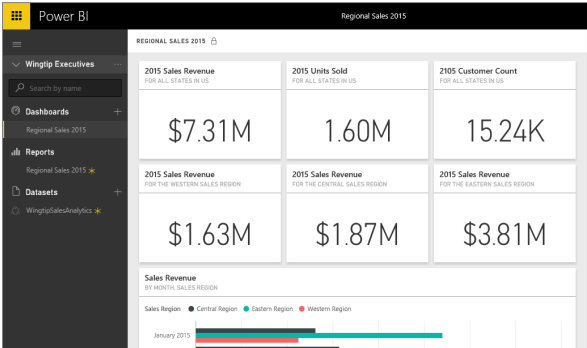
Dashboards and Reports

- Dashboards link users to reports
  - Dashboard tiles designed to provide high-level view
  - Clicking tiles drills down into report to see more detail
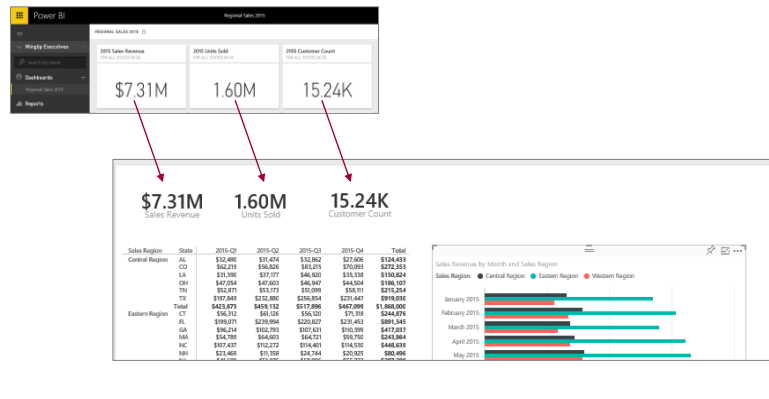
Reports and Pages

- Reports contain one or more pages
  - A report can be designed with a single page
  - A report can be designed with many pages
  - Tabbed navigation located at bottom of report view
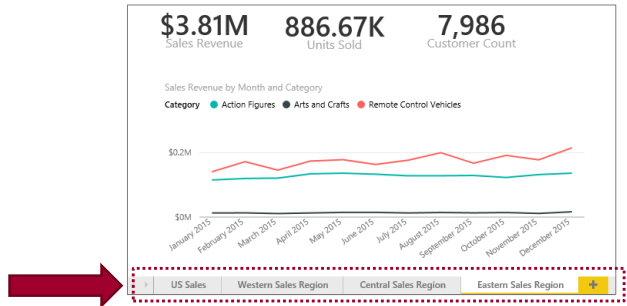
Report Authoring

- Report initially opens in reading view
    - Click Edit report to switch to edit mode
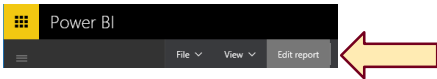
    - Report design tools appear on right side of page
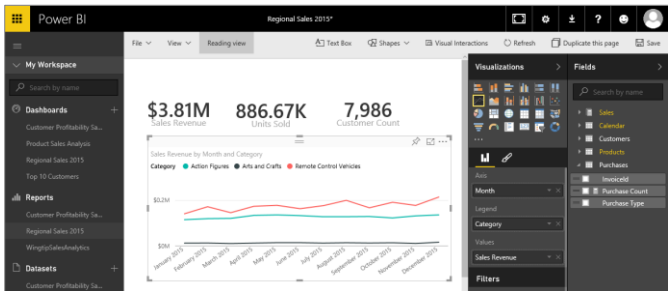
Visuals (aka Visualizations)

- Reports are designed using visual (aka visualizations)
    - Each visuals is based on an underlying visualization type
    - Visualization type can be changed using **Visualizations** pane
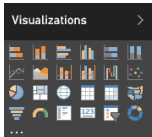
    - Visuals creating by using fields from tables inside **Fields** list
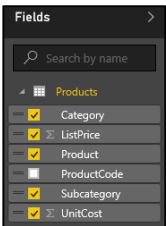
Editing Visual Properties

- Visuals have Field properties and Format properties
  - Visual properties vary depending on visualization type

Field Properties

Format Properties
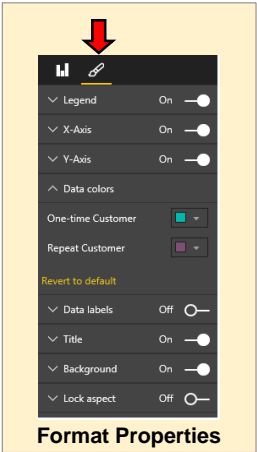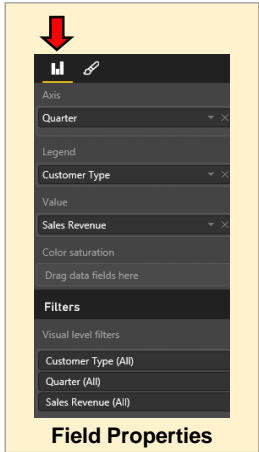
Report and Datasets

- Each report is based on an underlying dataset
  - **Fields** list in report designer shows tables and fields
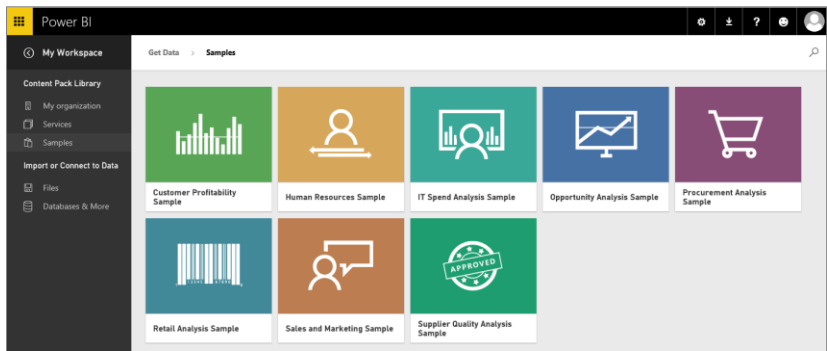 - Report author sees tables & fields as dataset consumer
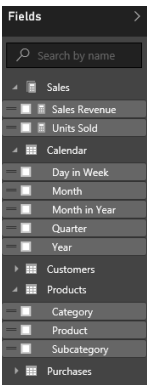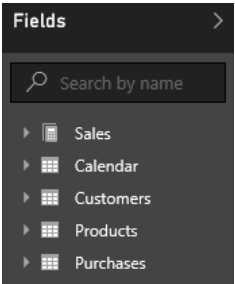
Agenda

- ✓ Introduction to the Power BI Platform
- ✓ Creating a Power BI Test Environment
- ✓ Introduction to the Power BI Service
- ➢ Creating Datasets, Reports and Dashboards
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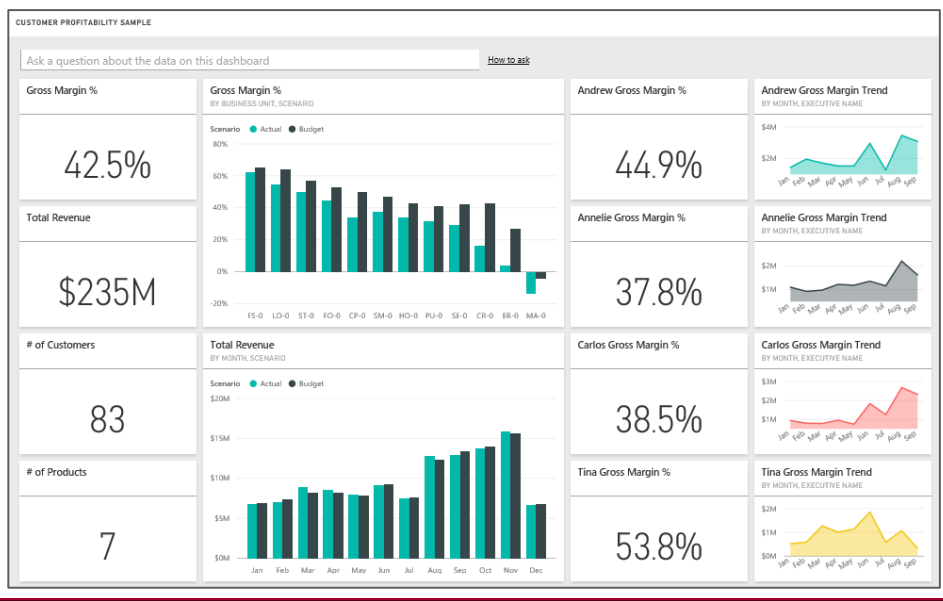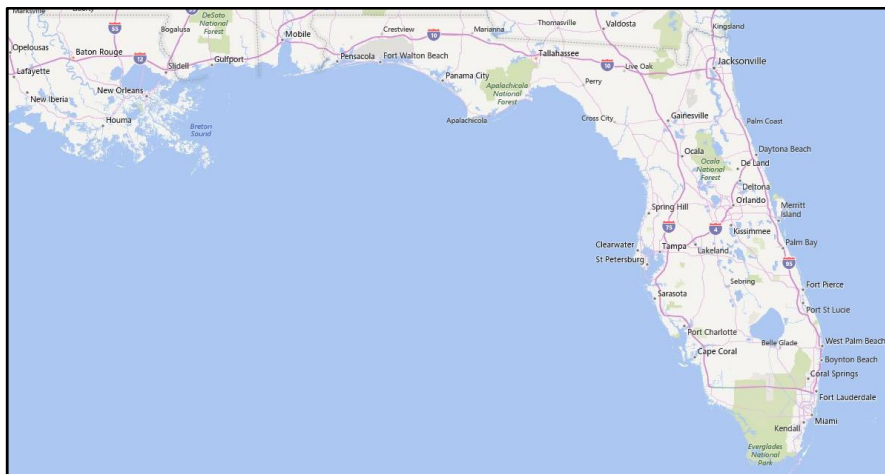- • Power BI Real-time Dashboards

Power BI Party Pack

- • Sample data for exploring the Power BI platform
  - • https://github.com/CriticalPathTraining/PowerBiPartyPack
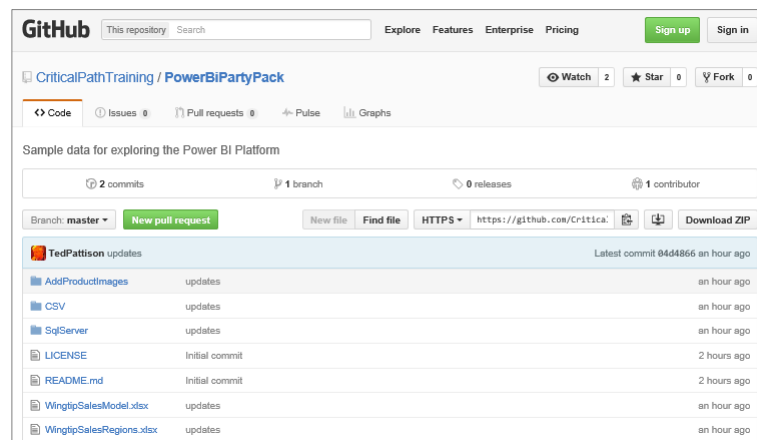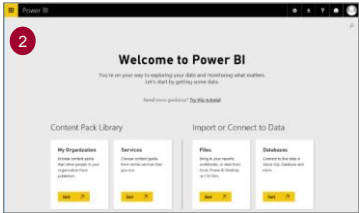
Getting Started with the Power BI Service
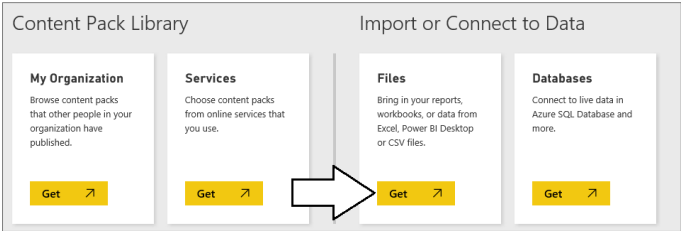
Importing a Dataset

- Connect to files in OneDrive
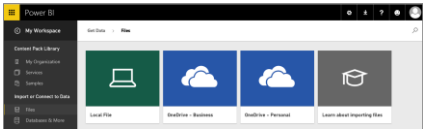
- Select the file and click Connect

- Choose between Import or Connect
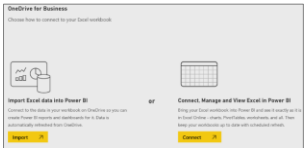
Designing Reports

- Power BI service provides browser-based report designer
    - Report contains one o more pages
    - Pages contain visuals (aka visualizations)
    - Visuals display fields from underling data model
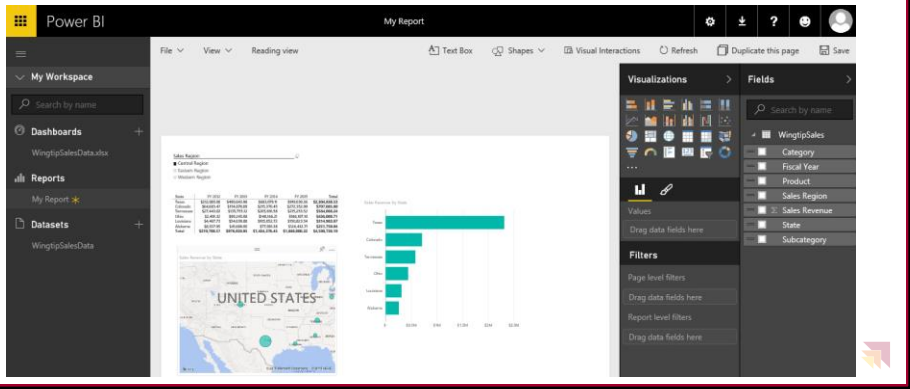
Creating Dashboards

- Dashboards contain tiles
    - Tiles created from visuals on report pages
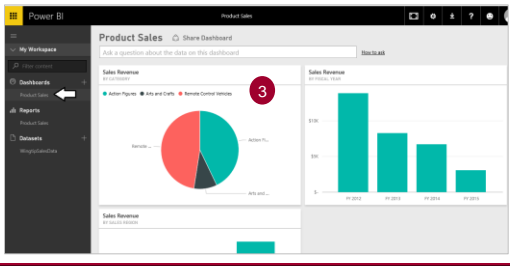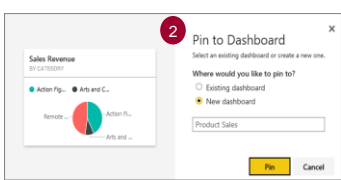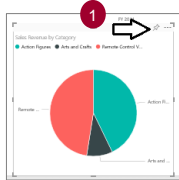
DEMO

Getting started with Datasets, Reports and Dashboards

Agenda

✓ Introduction to the Power BI Platform
✓ Creating a Power BI Test Environment
✓ Introduction to the Power BI Service
✓ Creating Datasets, Reports and Dashboards
➢ Loading a Sample Content Pack
• Power BI Real-time Dashboards

Power BI Sample Content Packs

- Power BI service offers sample BI solutions
  - Each sample installs in seconds
  - Samples provide examples of dashboards, reports and datasets
  - Provides sample solutions for common BI solution scenarios

Customer Profitability Dashboard Sample

Agenda

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Our Scenario for Real-time Dashboard

Our Scenario for Real-time Dashboard

It all starts in an Alpaca farm in Lutz, FL

Alpaca Joe
Joseph Patrick McMurphy

Someone doesn't like alpacas...

A true defender of the alpaca

This alpaca hate speech is getting out of control. Alpacas are some of the finest animals that inhabit the earth. I call upon Donald Trump to issue an apology.

On the Campaign Trial...

Mr. Trump, recently you have made remarks about alpacas in a manner that the vast majority of the US population finds very offensive. Many on the far left are calling upon you to issue a public apology. How do you respond?

Alpaca Joe has got to go

I have worked on amazing business deals with both odd-toed and even-toed mammals including camels, llamas, yaks and even gazelle. But I draw the line when it comes to doing business with alpacas. They're just not trustworthy.

Things heat up on Twitter...

Deciding Whether to run for President...

Alpaca Joe's Contribution Site

- Demo based on Power BI REST API
  - Developer can create dataset using HTTP requests
 - Developer can add table records using HTTP requests

**Real-time Power BI Dashboard
Demo for Campaign Contributions**

DEMO

Real-time Dashboard Recap
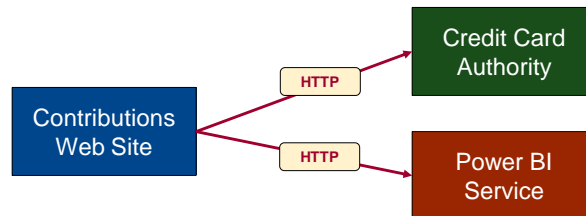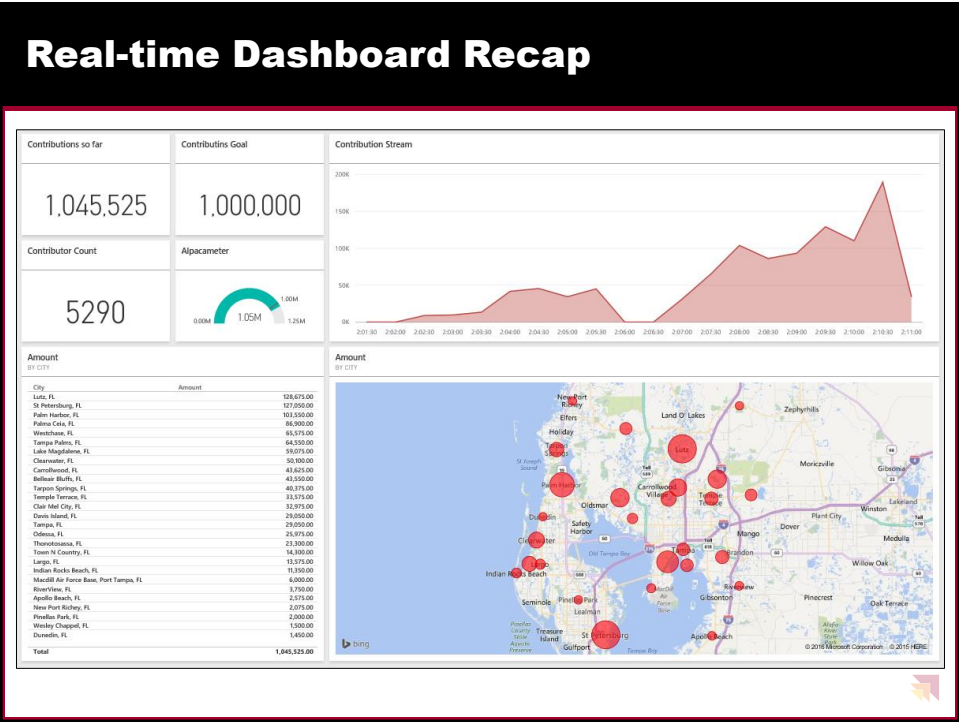
Summary

- ✓ Introduction to the Power BI Platform
- ✓ Creating a Power BI Test Environment
- ✓ Introduction to the Power BI Service
- ✓ Creating Datasets, Reports and Dashboards
- ✓ Loading a Sample Content Pack
- ✓ Power BI Real-time Dashboards

Creating Power BI Solutions with Power BI Desktop
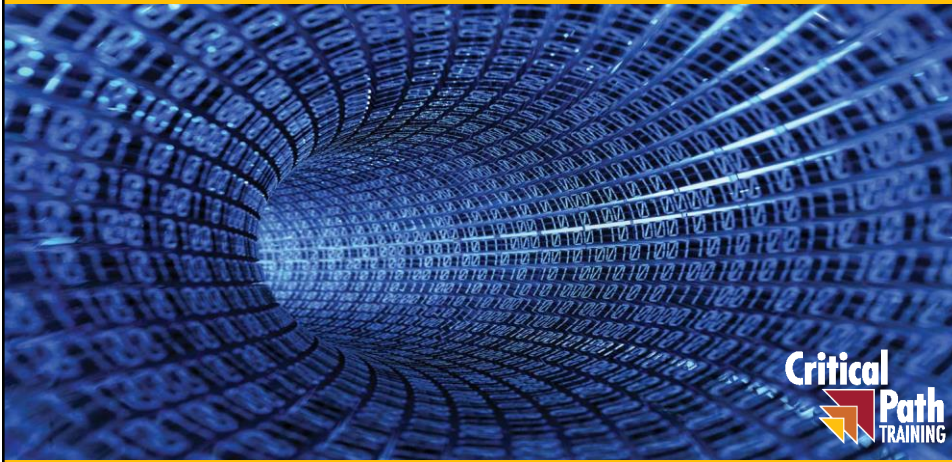
Agenda

- The BI Project Lifecycle
- Getting Started with Power BI Desktop
- Using Power Query to Import Data
- Using Power Pivot to Model Data
- 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 to one or more dashboards
  - Package project artifacts for deployment
  - Deploy to production environment

Typical BI Project Lifecycle

| Data Discovery | → | ETL | → | Data Modeling | → | Design Reports | → | Create Dashboards | → | Deploy Dashboards |

Working with Power BI Desktop

- Power BI Desktop focuses on three phases
  - Power Query features used for ETL
  - Power Pivot and DAX used for data modeling
  - Report creation using the Power BI report designer

Assistance from Power BI Desktop

| Data Discovery | ELT | Data Modeling | Design Reports | Create Dashboards | Deploy Dashboards |

Agenda

- ✓ The BI Project Lifecycle
- ➢ Getting Started with Power BI Desktop
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Installing Power BI Desktop

- • Power BI Desktop installs as click-once application
  - • Can be installed when logged into Power BI service
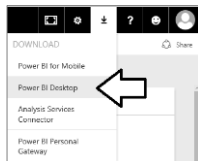
Launching Power BI Desktop
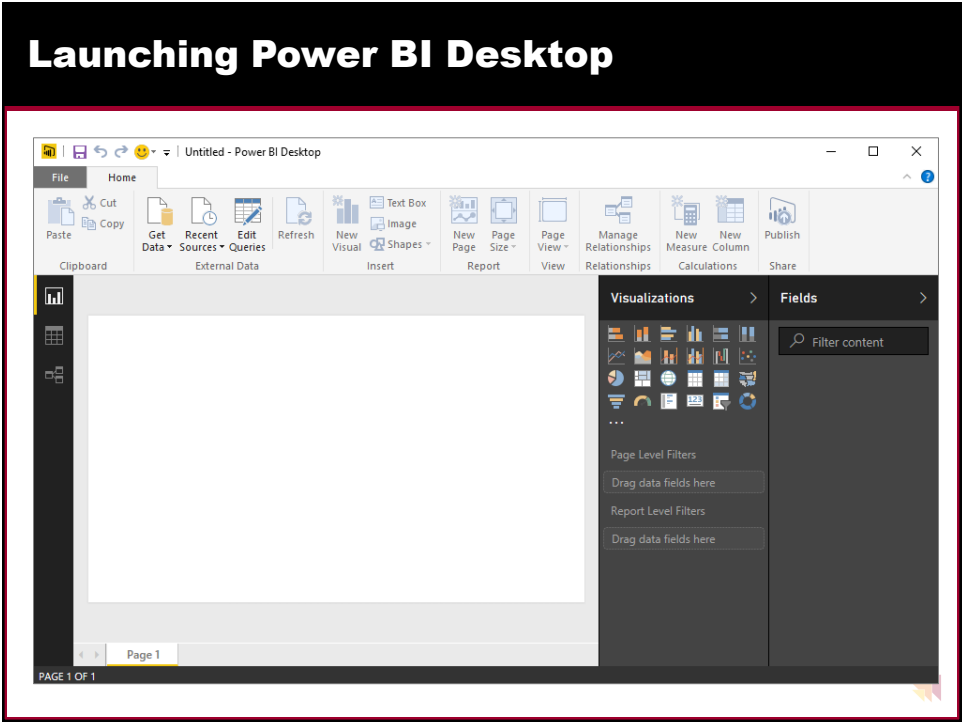
Getting Around in Power BI Desktop

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

- Navigating between view modes

Report View

Data View

Relationship View

To access Power Query features
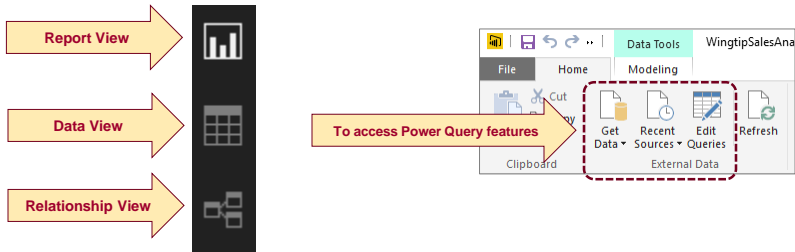
Data View

- Primary view used when data modeling with Power Pivot
  - Data view displays columns and rows for each table
  - You can extend tables with calculated columns and fields
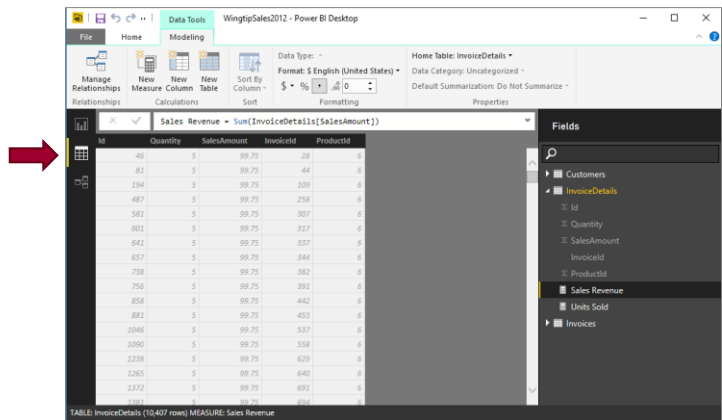
Relationship View

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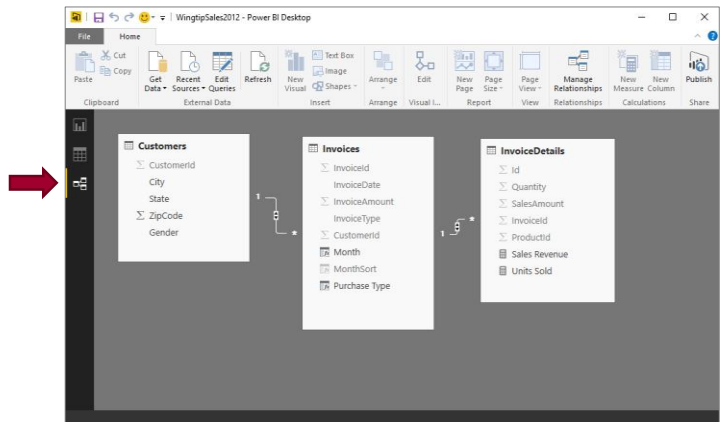
Report View

- Report view displays report of current project
  - Report designer is the same as in the Power BI service
  - Dataset appears in consumer mode - not author mode
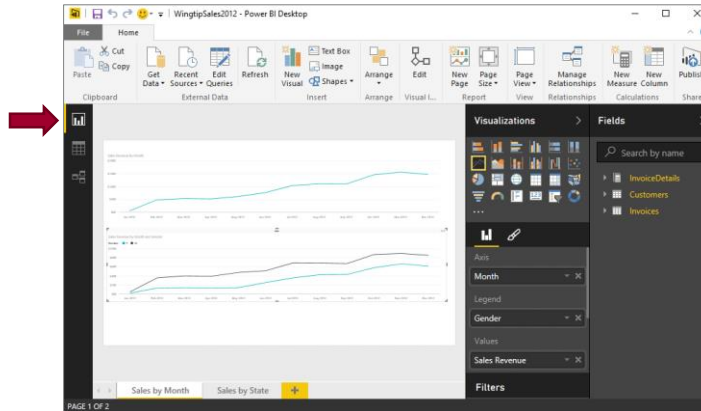
Projects and PBIX Files

- Power BI Desktop projects saved using PBIX files
  - PBIX file contains queries created with Power Query
  - PBIX file contains data imported using queries
  - PBIX file contains data modeling definitions
  - PBIX file contains reports

DEMO

**Getting Up and Running
with Power BI Desktop**

Agenda

- ✓ The BI Project Lifecycle
- ✓ Getting Started with Power BI Desktop
- ➢ Using Power Query to Import Data
- • Using Power Pivot to Model Data
- • Publishing Power BI Desktop Projects

Power Query is an ETL Tool

- ETL process is essential part of any BI Project
  - **Extract** the data from wherever it lives
  - **Transform** the shape of the data for better analysis
  - **Load** the data into dataset for analysis and reporting

CSV File		
Excel Workbook	→	Power Query
OLTP Database		

Power BI Desktop Project (PBIX)

Dataset
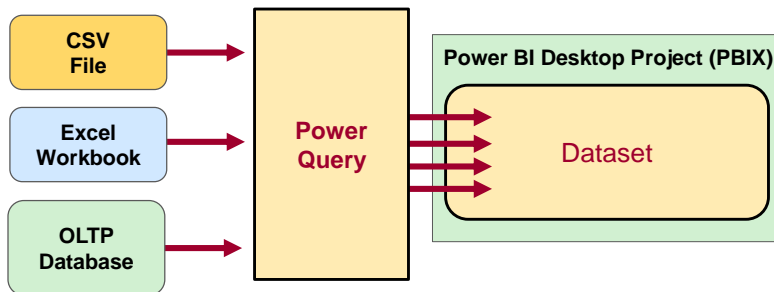
Data Discovery

- Data can live in a variety of sources
  - Files (e.g. CSV file, Excel workbook)
  - OLTP Databases
  - OLAP Databases
  - SaaS Applications
  - Web services

Creating Queries with Power Query

- Power BI Desktop support Power Query features
  - Creating a new query
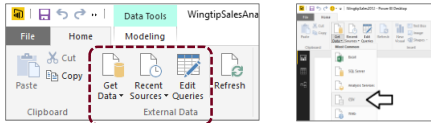
  - The difference between Load versus Edit
    - **Load** command creates the query and runs it as is
    - **Edit** command creates query & opens it in Query Editor window

Query Editor Window

- Power BI Desktop provides Query Editor window
  - Provides Power Query features for designing queries
  - Displays list of all queries in project on the left
  - Displays properties and step for selected query on right
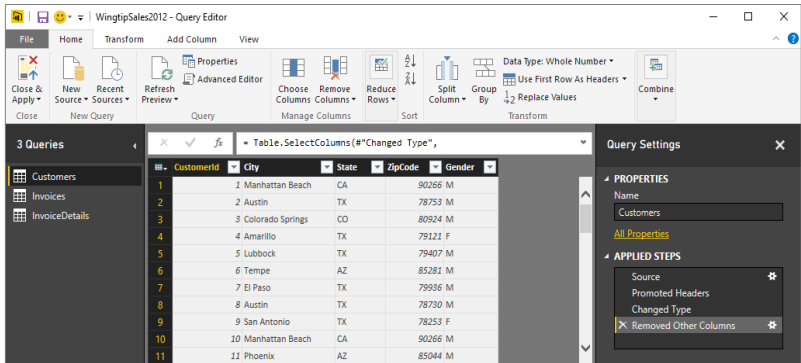
Query Editor Ribbon Tabs

Home tab
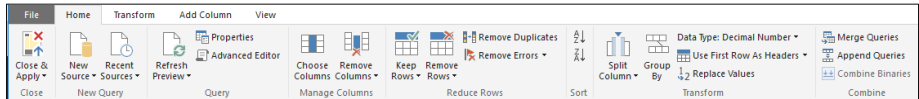
Transform tab
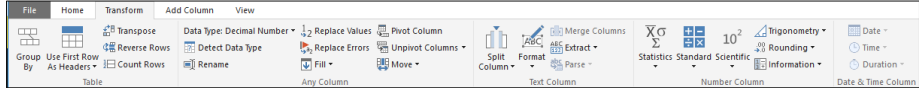
Add Columns tab
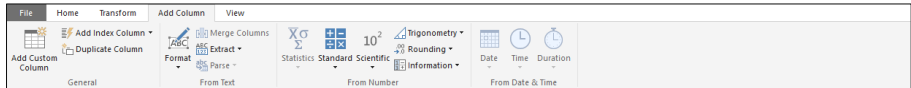
View tab
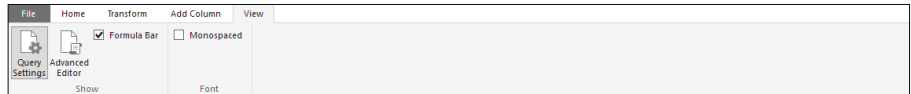
Examples of Basic Power Query Steps

- Rename column
- Convert column type
- Format column values
- Reorder columns
- Replace column values
- Expanding related column
- Merging columns
- Splitting columns
- Adding custom column

DEMO

Importing Data using Power Query

Agenda

- ✓ The BI Project Lifecycle
- ✓ Getting Started with Power BI Desktop
- ✓ Using Power Query to Import Data
- ➢ Using Power Pivot to Model Data
- • Publishing Power BI Desktop Projects

Building a Data Model with Power Pivot

- Steps to create a data model with Power Pivot
  - Create relationships between tables
  - Modify columns (rename, set formatting, convert type)
  - Create calculated columns
  - Create measures

- Features not yet supported by Power BI Desktop
  - Creating dimensional hierarchies
  - Creating key performance indicators (KPIs)

Table Relationships

- Tables in data model associated with relationships
  - Relationships based on single columns
  - Tabular model supports [1-to-1] and [1-to-many] relationships
  - Relationships based on single column in each table
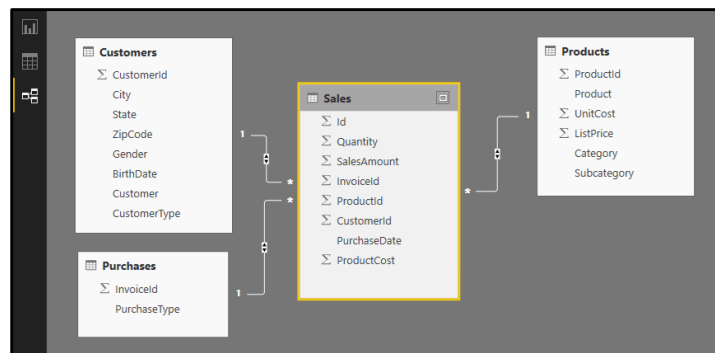
The Project's Data Model

- Each PBIX project has a data model
  - Data model contains tables and table relationships

- Tables contain three different types of fields
  - Native columns
  - Calculated columns
  - Measures

Creating Calculated Columns

- Calculated column can be added to table
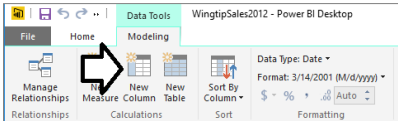
- Calculated columns created with DAX expressions

When to Create Calculated Columns

- Measures often better choice than calculate columns
  - Don't create calculated column when you need a measure
  - Prefer to create calculated columns only in specific scenarios

- When should you create calculated columns?
  - To create headers for row labels or column labels
  - To place calculated results in a slicer for filtering
  - Define an expression strictly bound to current row
  - Categories text or numbers (e.g. customer age groups)

Calculated Column for Customer Age Group

1. Calculate customer age from birthdate

2. Calculate age groups using calculated column

Calculated Column as a Row Label

- Age Group can now be used as row label

Age Group	Count of CustomerId	Quantity	SalesAmount
Ages 50 TO 65	7974	1,143,644	$4,904,342.59
Ages 65 and over	7569	1,050,879	$4,480,748.98
Ages 40 TO 49	5103	713,453	$3,083,964.23
Ages 30 TO 39	4547	646,121	$2,798,053.19
Ages 18 TO 23	3278	478,405	$1,985,991.24
Total	28471	4,032,502	$17,253,100.23

Calculated Column used in a Slicer

- Calculated column can populate slicer values
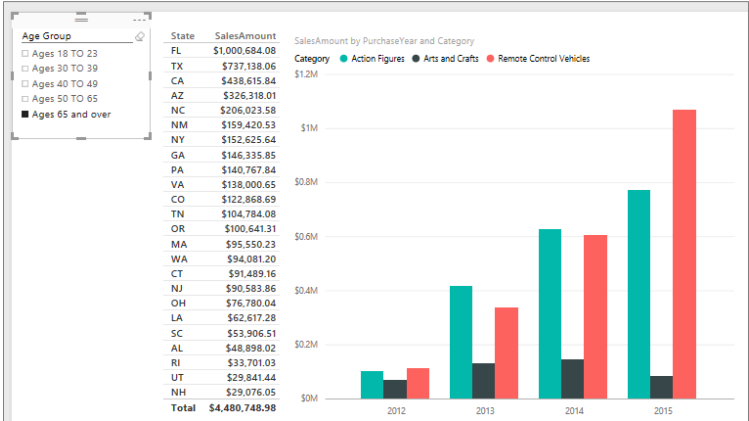
Creating Measures

- Measure defined as DAX expression with format settings

Benefits of Measures over Calculated Columns

- Calculated columns can be aggregated in visual
    - However, aggregation details are stored in visual
    - Visual doesn't offer control over name and formatting

- Measure defines name, aggregation and formatting
    - Work is done once and reused across many visuals
    - Makes data model more fool-proof for report designers

Creating Measures

- Measures have advantage over calculated columns
  - They are evaluated based on the current evaluation context

- Creating a measure with Power BI Desktop
  1. Click New Measure button
  2. Give measure a name and write DAX expressions
  3. Configure formatting
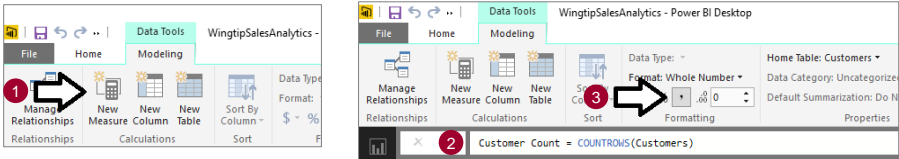
Formatting Measures

- Format as whole number
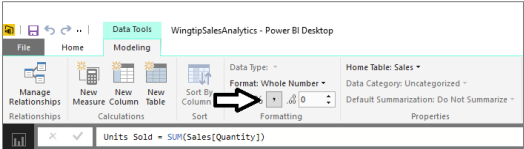
- Format as currency
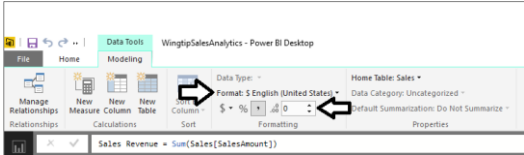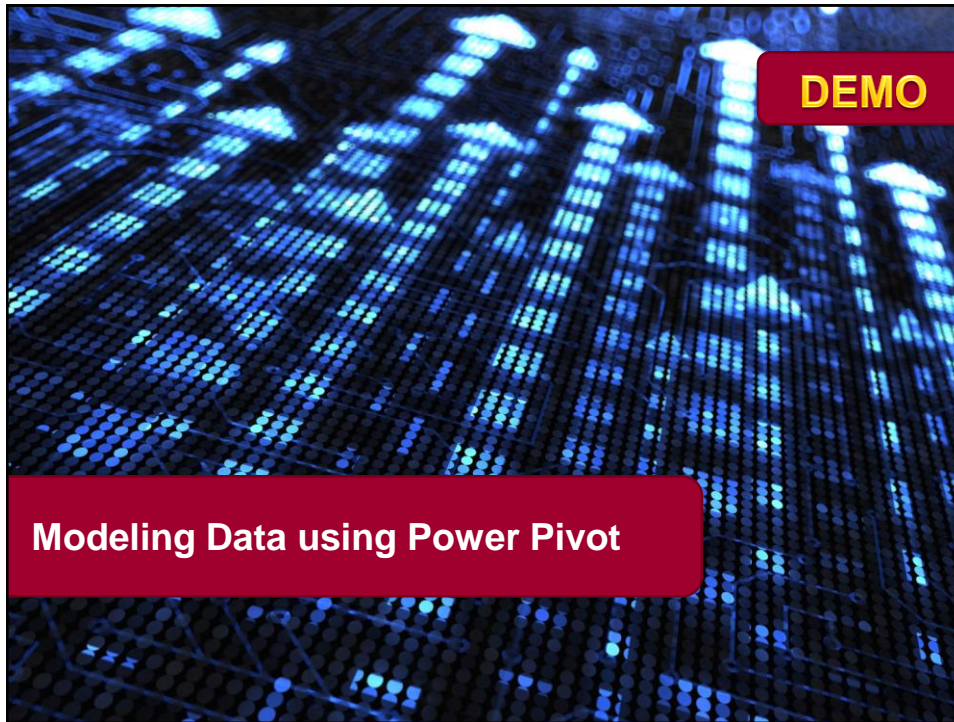
DEMO

Modeling Data using Power Pivot

Agenda

- ✓ The BI Project Lifecycle
- ✓ Getting Started with Power BI Desktop
- ✓ Using Power Query to Import Data
- ✓ Using Power Pivot to Model Data
- ➢ 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
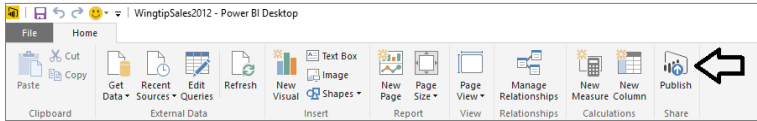
  - Requires logging into your Office 365 account

  - Published articles added to your personal workspace

A Published Power BI Desktop Project

DEMO

Publishing a Data Analysis Project using Power BI Desktop
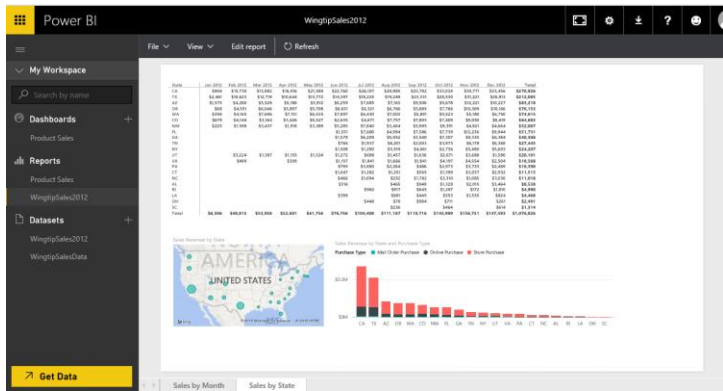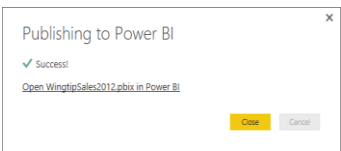
Summary

✓ The BI Project Lifecycle
✓ Getting Started with Power BI Desktop
✓ Using Power Query to Import Data
✓ Using Power Pivot to Model Data
✓ Publishing Power BI Desktop Projects

Designing and Deploying Reports and Dashboards
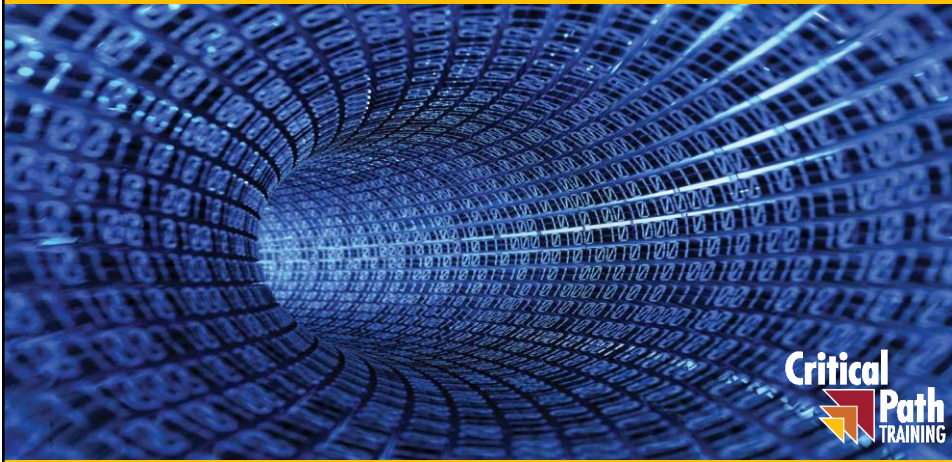
Agenda

- Writing DAX Expressions for Reports
- Creating and Designing Dashboards
- Sharing Dashboards
- Deploying Dashboards using Content Packs
- Accessing Dashboards using Mobile Devices

Evaluation Contexts for DAX Expressions

- DAX expressions evaluated using two context
  - Row context
  - Filter context

- Row Context
  - The current row in a table iteration

- Filter Context
  - The set of active rows in a calculation

Understanding Filter Context

- Visuals apply various filters in evaluation contexts

- Filter context also affected by slicers and other filters

Calculated Fields for QTD and YTD Sales

- TOTALQTD function calculates quarter-to-date totals
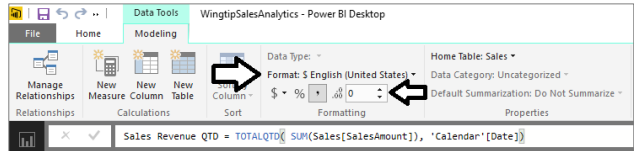
- TOTALYTD function calculates year-to-date totals
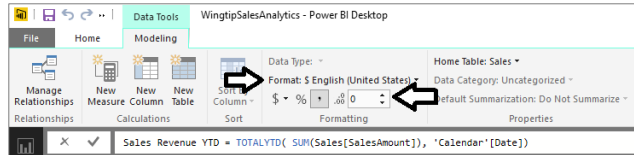
Using the CALCULATE Function

- Calculate a running total of sales revenue across years
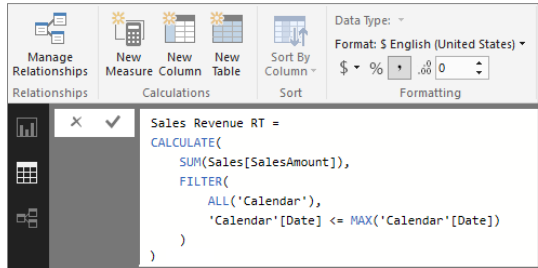
Matrix Visual with To-Date Running Totals

- Running totals calculated using DAX

Year	Quarter	Month	Sales Revenue	Sales Revenue QTD	Sales Revenue YTD	Sales Revenue RT
2012	2012-Q1	Jan 2012	$6,306	$6,306	$6,306	$6,306
		Feb 2012	$48,815	$55,121	$55,121	$55,121
		Mar 2012	$53,958	$109,079	$109,079	$109,079
	2012-Q2	Apr 2012	$52,601	$52,601	$161,680	$161,680
		May 2012	$61,756	$114,357	$223,436	$223,436
		Jun 2012	$76,756	$191,113	$300,192	$300,192
	2012-Q3	Jul 2012	$104,408	$104,408	$404,600	$404,600
		Aug 2012	$111,167	$215,575	$515,767	$515,767
		Sep 2012	$110,716	$326,291	$626,483	$626,483
	2012-Q4	Oct 2012	$145,999	$145,999	$772,483	$772,483
		Nov 2012	$156,751	$302,750	$929,234	$929,234
		Dec 2012	$147,593	$450,343	$1,076,826	$1,076,826
2013	2013-Q1	Jan 2013	$164,334	$164,334	$164,334	$1,241,161
		Feb 2013	$126,501	$290,835	$290,835	$1,367,661

- Question: when did company reach $1,000,000 in sales

Nov 2012	$156,751	$302,750	$929,234	$929,234
Dec 2012	$147,593	$450,343	$1,076,826	$1,076,826
Jan 2013	$164,334	$164,334	$164,334	$1,241,161
Feb 2013	$126,501	$290,835	$290,835	$1,367,661

Sales Growth PM Measure - First Attempt

- Create a measure named Sales Growth PM

```
Sales Growth PM =
DIVIDE(
  SUM(Sales[SalesAmount]) -
  CALCULATE(
    SUM(Sales[SalesAmount]),
    PREVIOUSMONTH(Calendar[Date])
  ),
  CALCULATE(
    SUM(Sales[SalesAmount]),
    PREVIOUSMONTH(Calendar[Date])
  )
)
```

- Use measure in matrix evaluating month and quarter
  - Measure returns correct value for Month
  - Measure returns incorrect and erroneous value for Quarter

Year	Quarter	Month	Sales Revenue	Sales Growth PM
2015	2015-Q1	Jan 2015	$512,822	-11.88 %
		Feb 2015	$597,684	16.55 %
		Mar 2015	$532,123	-10.97 %
		Total	$1,642,629	182.25 %
	2015-Q2	Apr 2015	$602,751	13.27 %
		May 2015	$647,276	7.39 %
		Jun 2015	$608,448	-6.00 %
		Total	$1,858,474	249.26 %
	2015-Q3	Jul 2015	$620,316	1.95 %
		Aug 2015	$678,499	9.38 %

Using the ISFILTERED Function

- ISFILTERED function used to determine when perform evaluation

```
Sales Growth PM = IF(
    ( ISFILTERED(Calendar[Month]) && ISFILTERED(Calendar[Date]) = FALSE() ),
    DIVIDE(
        SUM(Sales[SalesAmount]) -
        CALCULATE(
            SUM(Sales[SalesAmount]),
            PREVIOUSMONTH(Calendar[Date])
        ),
        CALCULATE(
            SUM(Sales[SalesAmount]),
            PREVIOUSMONTH(Calendar[Date])
        )
    ),
    BLANK()
)
```

- Expression returns Blank when evaluation context isn't appropriate

Year	Quarter	Month	Sales Revenue	Sales Growth PM
2015	2015-Q1	Jan 2015	$512,822	-11.88 %
		Feb 2015	$597,684	16.55 %
		Mar 2015	$532,123	-10.97 %
		Total	$1,642,629	
	2015-Q2	Apr 2015	$602,751	13.27 %
		May 2015	$647,276	7.39 %
		Jun 2015	$608,448	-6.00 %
		Total	$1,858,474	
	2015-Q3	Jul 2015	$620,316	1.95 %
		Aug 2015	$678,499	9.38 %

Calculating Percentage of Product sales

The Product Revenue Breakdown Report

Creating the Top 5 Products Report

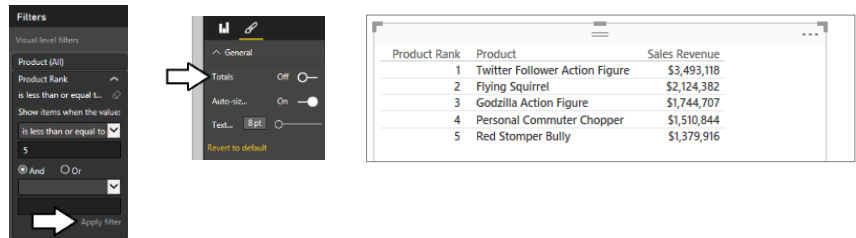- It starts with creating measure to rank products

```
Product Rank =
RANKX(
    ALL(Products),
    CALCULATE( SUM(Sales[SalesAmount]) )
)
```

- Next, add **Product Rank** measure to table visual
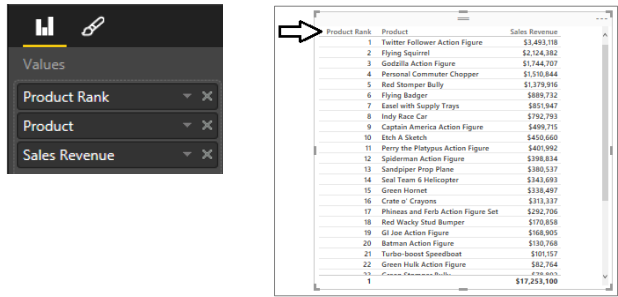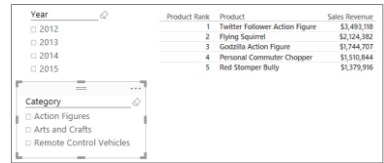
Next Steps

- Apply filter and remove Totals row

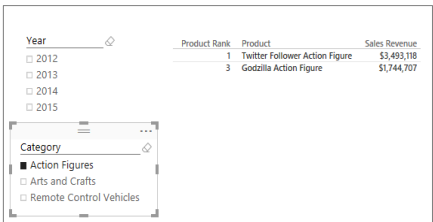

- Add slicer to make report interactive

There a Problem with Measure Filters

- Add a Slicer to filter on product category

- Top 5 products ranking measure is now broken

Fixing the Problem

- Rewrite DAX using ALL function
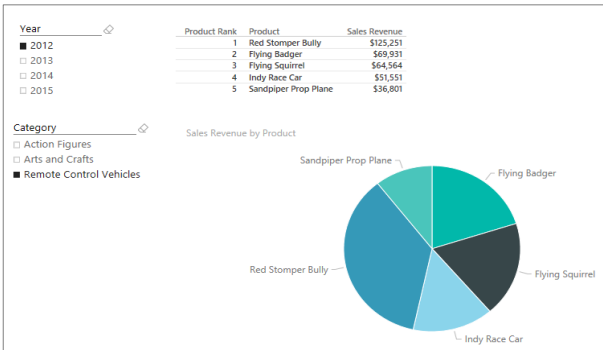 - Include columns which should not be filtered

- Top 5 products ranking now works as expected

Display Top 5 Products with Two Visuals

- Add pie chart
  - Filter by product rank
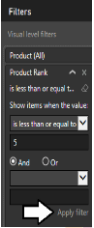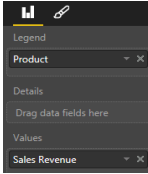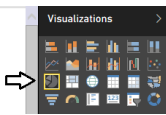
Agenda

- ✓ Writing DAX Expressions for Reports
- ➢ Creating and Designing Dashboards
- • Sharing Dashboards
- • Deploying Dashboards using Content Packs
- • Accessing Dashboards using Mobile Devices

Dashboards in Power BI

- • Dashboard is consolidated view of reports & datasets
  - • Provides simpler, more intuitive entry point to reports and datasets
  - • Simplicity and intuition key for users with tablets & mobile devices
- • Dashboard represents unit of deployment and reuse
  - • Dashboards can by deployed via dashboard sharing
  - • Dashboards can by deployed using content packs
 - • Dashboard represents security boundary to reports and datasets
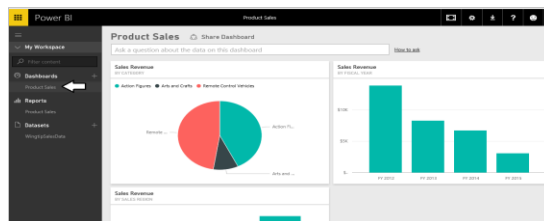
Creating Dashboards

- Dashboard is a collection of tiles
  - Dashboard tiles can be created by pinning a visual from a report
  - Dashboard tiles can be created from Q&A search result
  - Each tile is snapshot of information from an underlying dataset
- Dashboard can be created two different ways
  - Click on (+) button in Dashboards section of navigation pane
 - Create new dashboard when pinning visual from report

The Q&A Search Box

- Used to execute natural language queries
  - Queries are executed against underlying dataset in workspace
  - Query results display using some type of Power BI visual
  - Power BI service selects visualization type based on result type
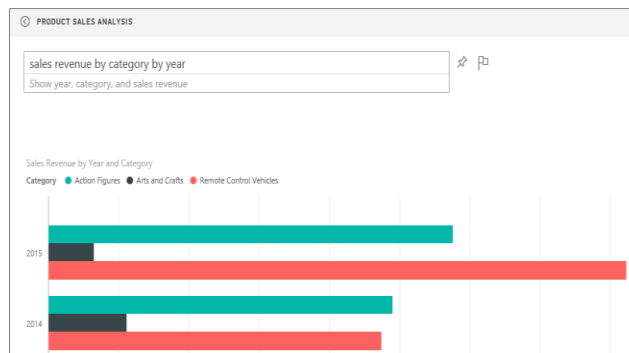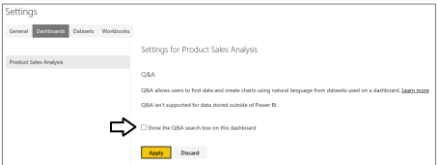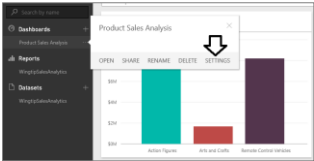
Pinning Search Result to Dashboard

- ## Q&A search results can be pinned to dashboard
  - ### Allows users to easily save visuals from query results
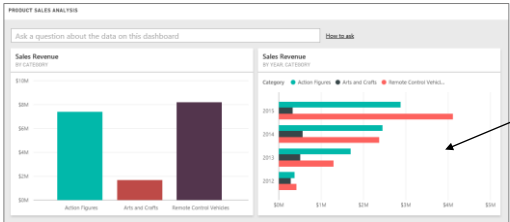
This tile was created from a visual on a report

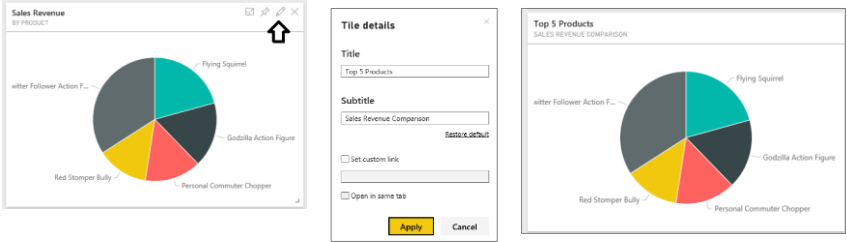# Removing the Q&A Search Box

Modifying Tile Details

- You can customize Title and Subtitle of tile
  - Default title and subtitle doesn't always provide enough clarity

  - Click on Edit title edit icon button

DEMO

Creating a Dashboard

Agenda

- ✓ Writing DAX Expressions for Reports
- ✓ Creating Dashboards
- ➤ Sharing Dashboards
- • Deploying Dashboards using Content Packs
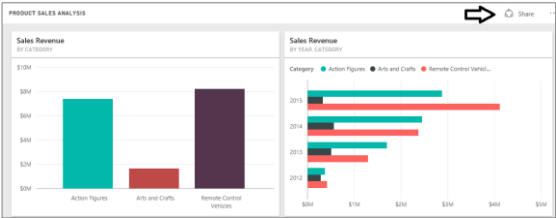- • Accessing Dashboards using Mobile Devices

Sharing Dashboards

- • There are two types of Power BI workspaces
  - • Personal workspaces
  - • Group Workspaces
- • To deploy reports and dashboards from a personal workspace
  - • Create one or more reports in your personal workspace
  - • Create a dashboard and pin report tiles to it
  - • Share dashboard with other users
  - • Dashboard sharing involves accepting invitation
  - • Dashboard owner can see who has accepted invitation
- • Deploying reports and dashboards from group workspace
  - • Group workspace created using Unified Group in Office 365 tenant
  - • Allows team of authors to work on a single BI project
  - • Users can be added with authoring permission or read-only permissions

Sharing a Dashboard

Viewing the Shared With List

Testing the Dashboard as a Consumer
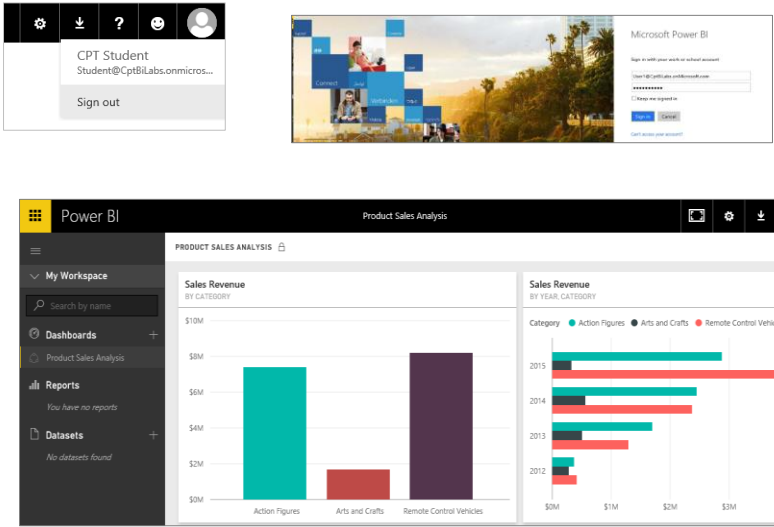
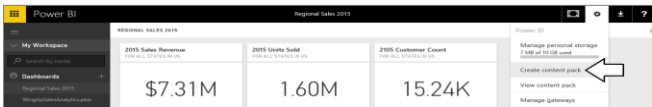# Drilling Down Into Reports
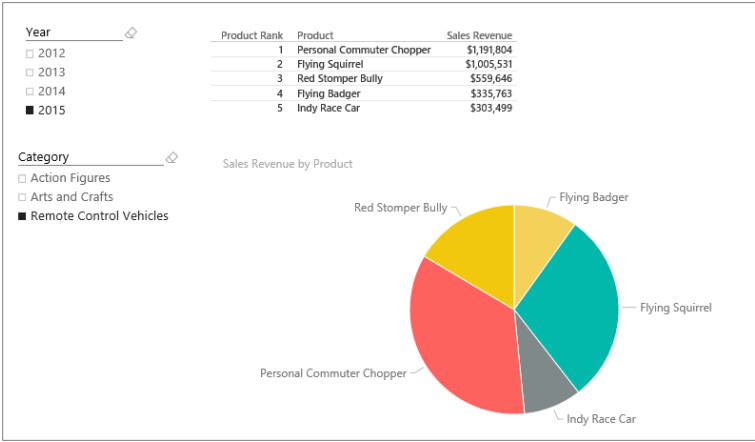
Sharing a Dashboard

DEMO

Agenda

- ✓ Writing DAX Expressions for Reports
- ✓ Creating Dashboards
- ✓ Sharing Dashboards
- ➢ Deploying Dashboards using Content Packs
- • Accessing Dashboards using Mobile Devices

Creating a Content Pack

Viewing and Managing Content Packs

- You can view existing content packs
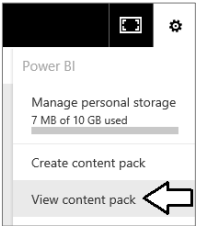
- You can delete a content pack or edit its properties

| Name	Published To	Date published	Actions
Regional Sales 2015	My Organization	Dec 02, 2015	Edit | Delete

Creating a Group Workspace

- Group Workspace can be created in Power BI service
  - This action created Office 365 unified group behind the scenes
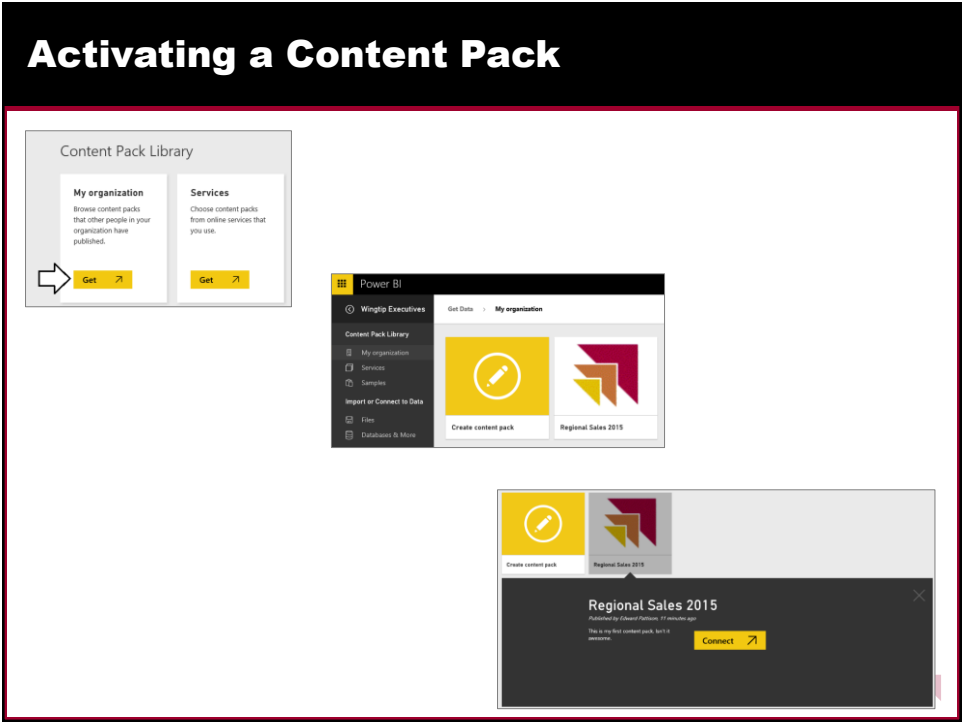 - Allow for shared authoring scenarios
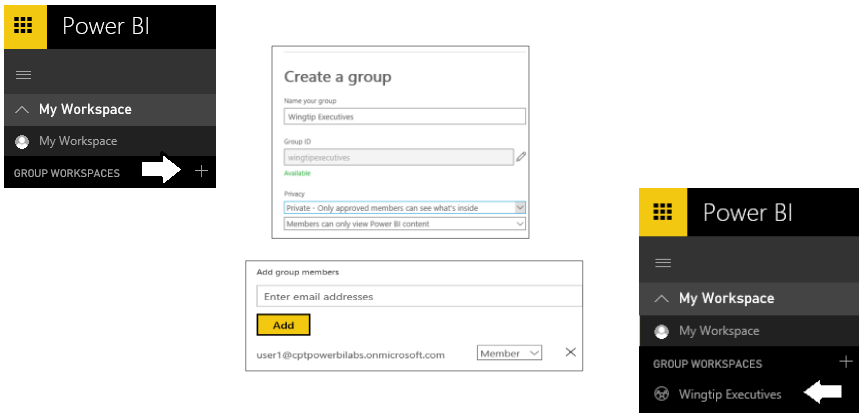
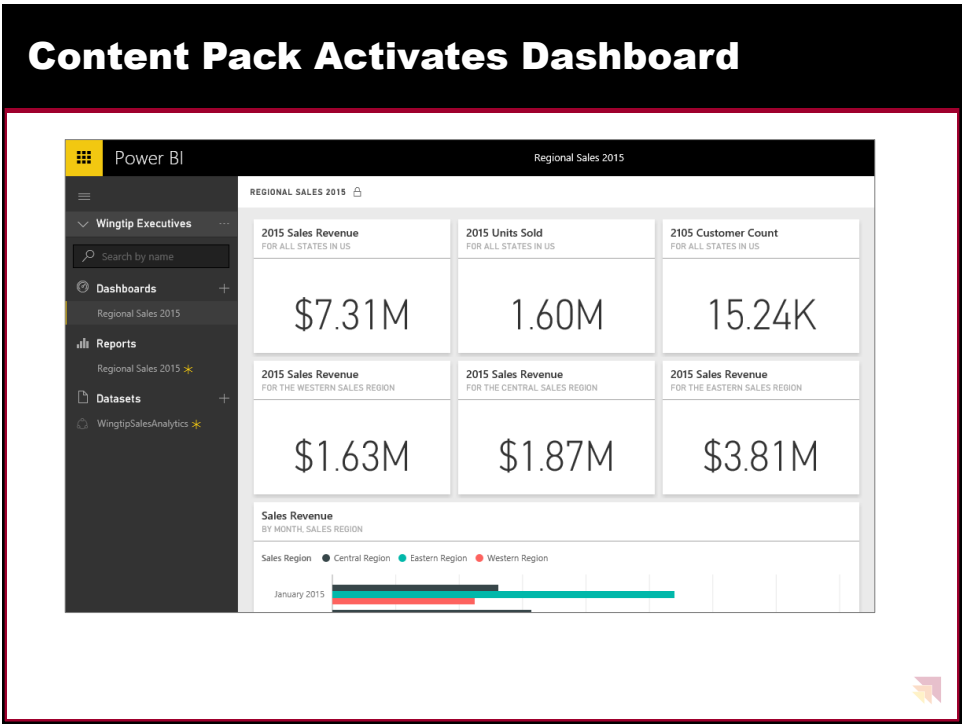## Switching Over to the Group Workspace

- Group workspace has its own collections
  - Dashboards
  - Reports
  - Datasets
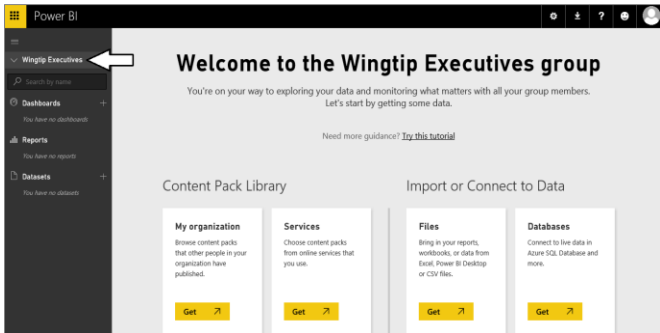
Activating a Content Pack

Content Pack Activates Dashboard

DEMO

Deploying a Dashboard using an Organizational Content Pack

Agenda

- ✓ Writing DAX Expressions for Reports
- ✓ Creating Dashboards
- ✓ Sharing Dashboards
- ✓ Deploying Dashboards using Content Packs
- ➢ Accessing Dashboards using Mobile Devices

Discovering and Installing the Power BI App

Launching the Power BI App

Viewing a Dashboard

Drilling Down on a Tile

Viewing a Report

DEMO

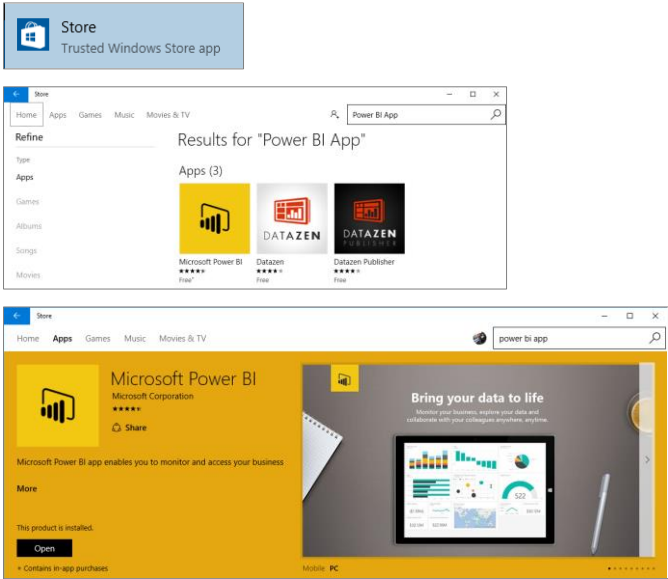**Viewing Dashboards and Reports using the Power BI App for Windows**

Summary

- ✓ Writing DAX Expressions for Reports
- ✓ Creating Dashboards
- ✓ Sharing Dashboards
- ✓ Deploying Dashboards using Content Packs
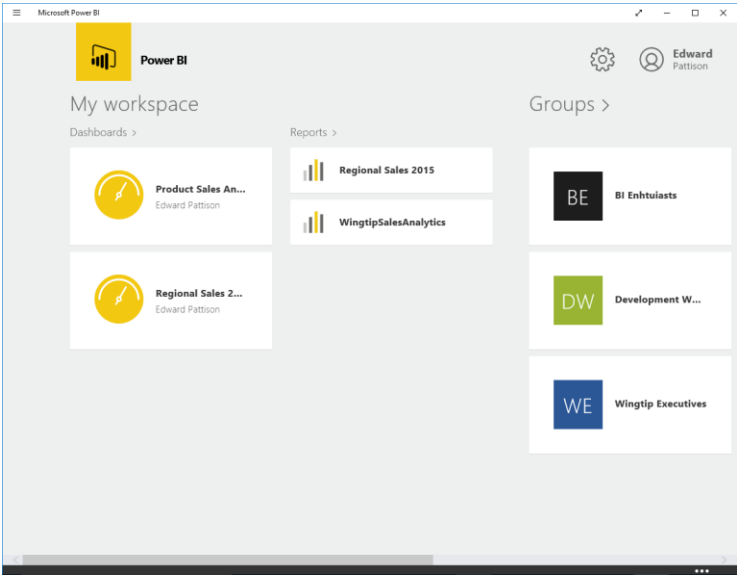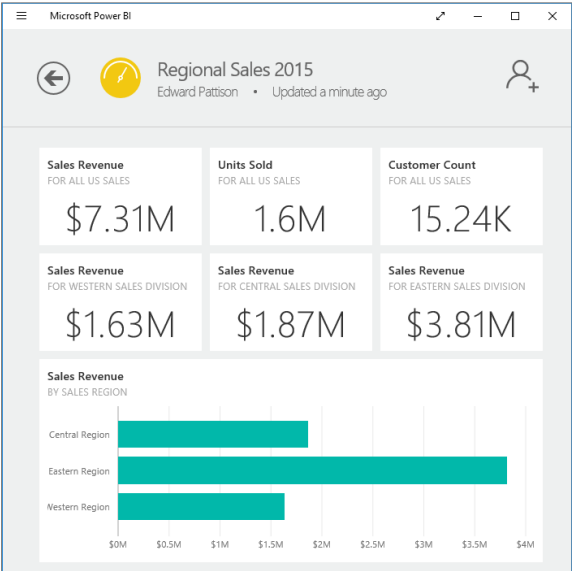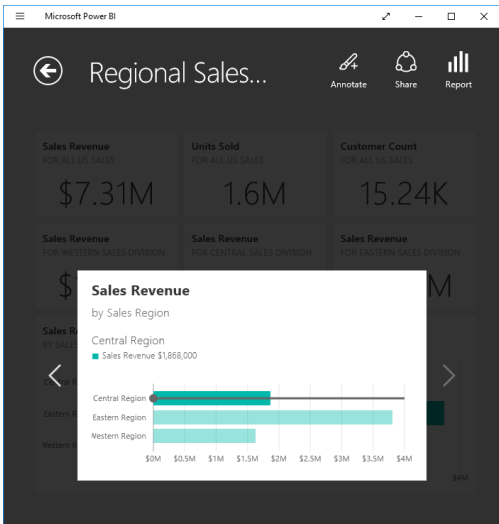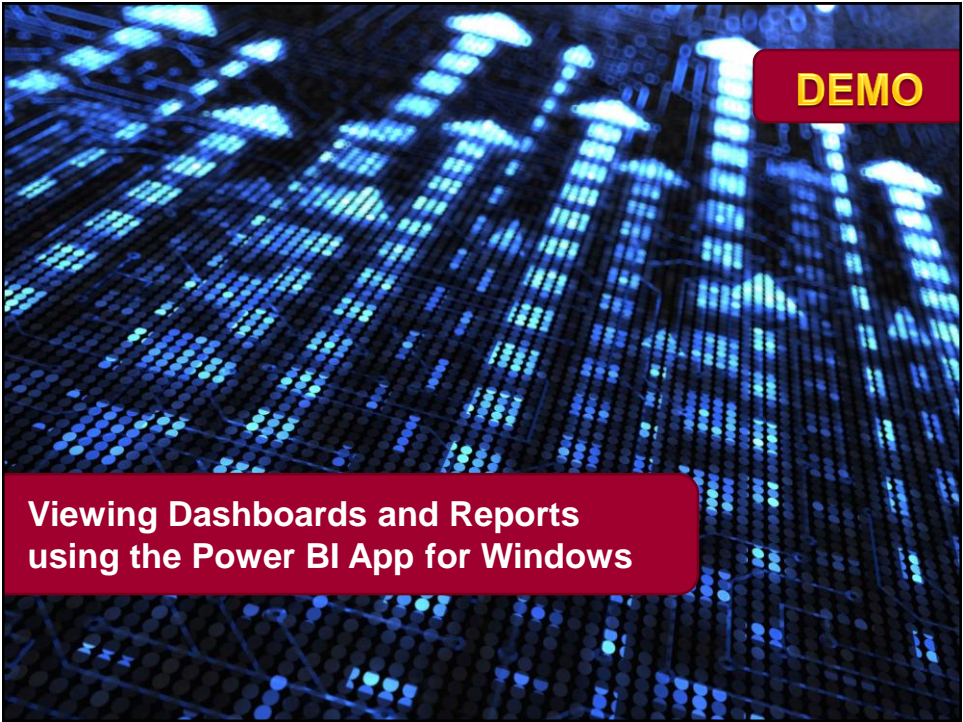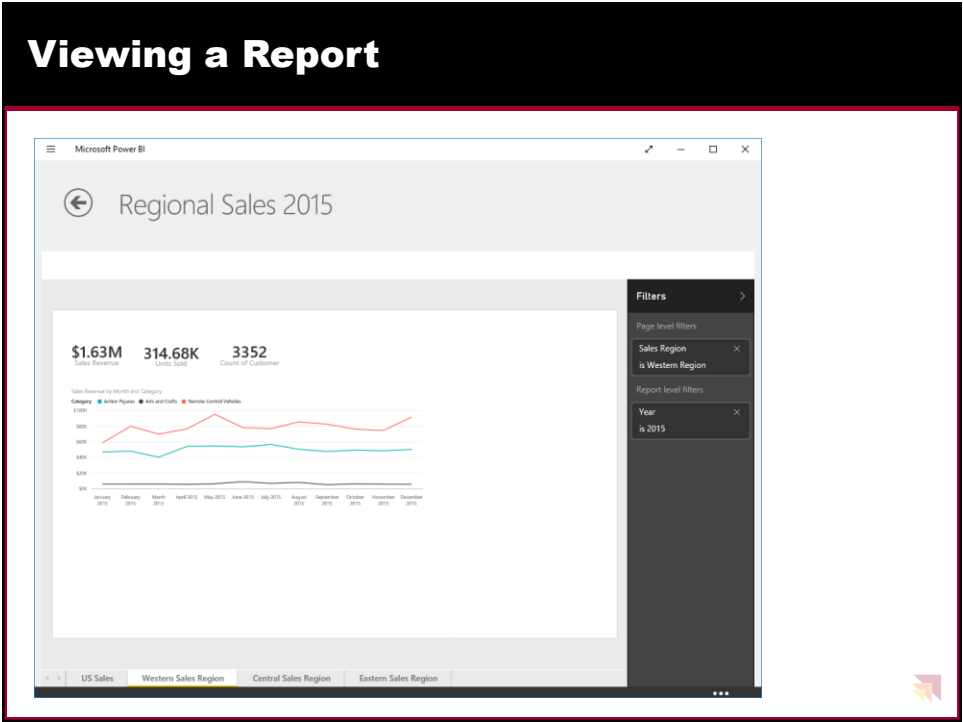- ✓ Accessing Dashboards using Mobile Devices

More Power BI Training from Critical Path Training

- **PBI365** - Data Analytics and Reporting with Power BI and Office 365
  - Three-day Instructor-led training course with hands-on lab exercises
  - Attend this course in person in London or Tampa or attend remotely

Upcoming Offerings

Date	Location	Instructor
Feb-17	London, UK	Ted Pattison
Mar-7	Tampa, FL	Ted Pattison

Module 01: Introduction to the Power BI Platform
Module 02: Getting Started with Power BI Desktop
Module 03: Extracting and Shaping Data using Power Query
Module 04: Modeling Data for Analytics using Power Pivot
Module 05: Extending Datasets to Support Time Intelligence
Module 06: Creating Dashboards and Reports in Power BI
Module 07: Creating Dashboards for Mobile Devices
Module 08: Creating and Deploying Power BI Content Packs
Module 09: Leveraging the New BI Features in Excel 2016
Module 10: Creating BI Solution using Excel Online

- Check out https://www.criticalpathtraining.com for more info
- Email info@criticalpathtraining.com if you have questions