

Preparing for Power BI Exam 70-778

STRONG-BRIDGE ENVISION
EXPERIENCE MATTERS



Today's Agenda

Preparing for Power BI
Exam 70-778

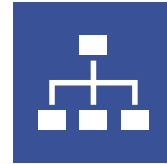
01



Introduction and Overview

5 min

02



Exam Structure

5 min

03



Exam Content

10 min

04



Preparation & Review

20 min

05



Tutorials

20 min

ABOUT ME

HERE IS SOME INFO ABOUT ME



PAUL DELLAGROTTE

Senior Consultant at SBE

Personal Website

<https://pdellagrotte.github.io/>

PROFILE

10+ years as an analytics professional in a variety of industries including Defense and Management Consulting. Began career in finance and quickly developed a passion for data. Experience in strategy development, data modeling, process improvement and financial analysis.

EDUCATION

Northwestern University (2016)
MS Predictive Analytics

Plymouth State University (2008)
BS Finance



DATA ANALYSIS

85%



COMMUNICATION

75%



PROGRAMMING

40%



DATA SCIENCE

60%



SQL SERVER STACK

20%







GitHub

<https://github.com/pdellagrotte/>



<https://github.com/pdellagrotte/SQLSaturday-813-Boston>

		This Presentation
		Sample Study Guide
		Resource List
		Preparation Checklist

Introduction and Overview

Who should take the Exam?



- Candidates should have a good understanding of how to perform data analysis
- Candidates should understand both Power BI Desktop and Services
- BI professionals, data analysts, and other roles responsible for creating reports by using Power BI

What does the Exam cover?



- Consuming and Transforming Data By Using Power BI Desktop
- Modeling and Visualizing Data
- Configure Dashboards, Reports and Apps in the Power BI Service

What are the preparation options?



- **Free** Resources
- Microsoft Course
- Books

Today's Agenda

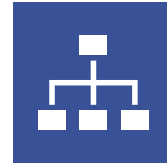
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Preparation & Review

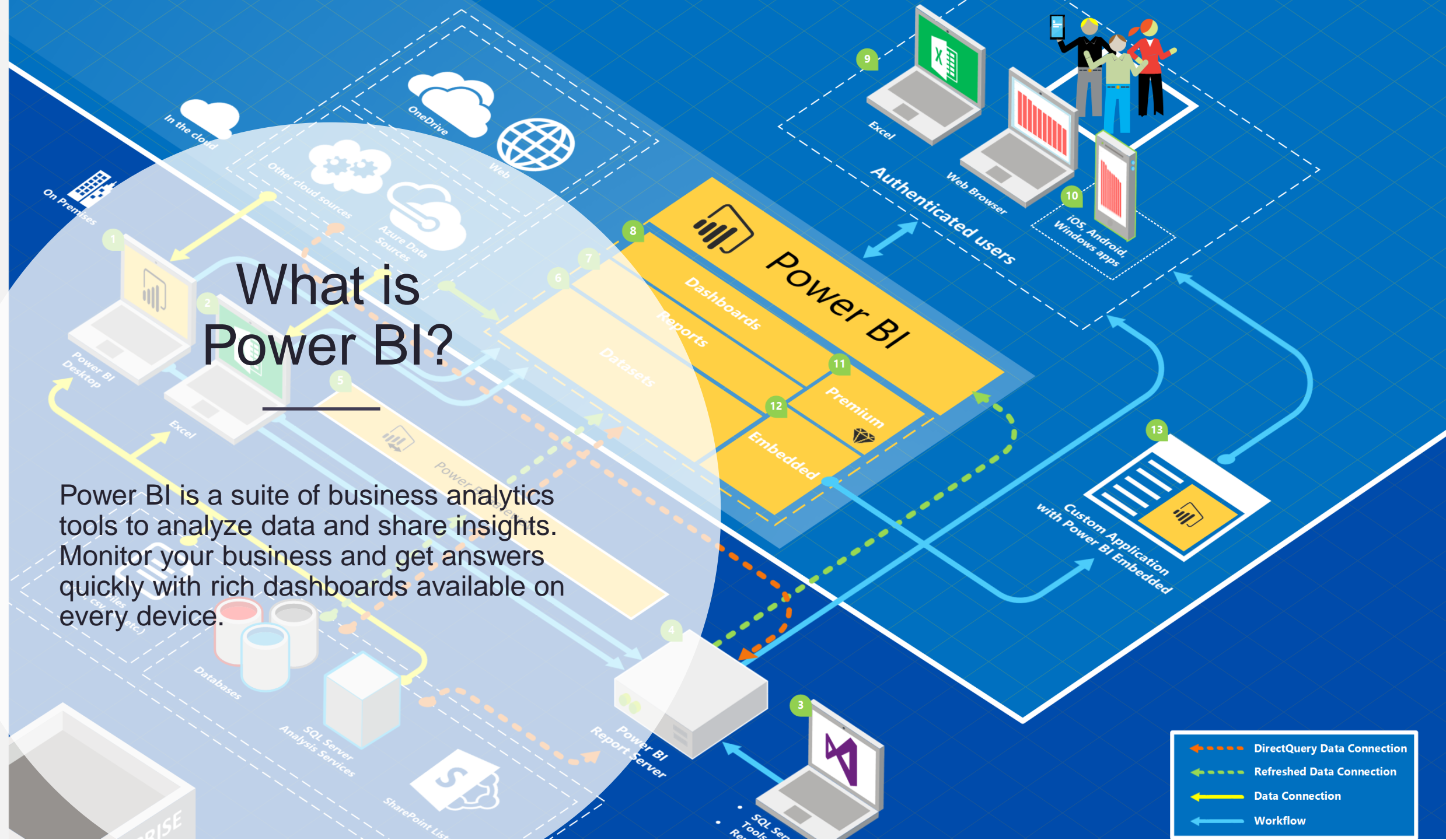
05

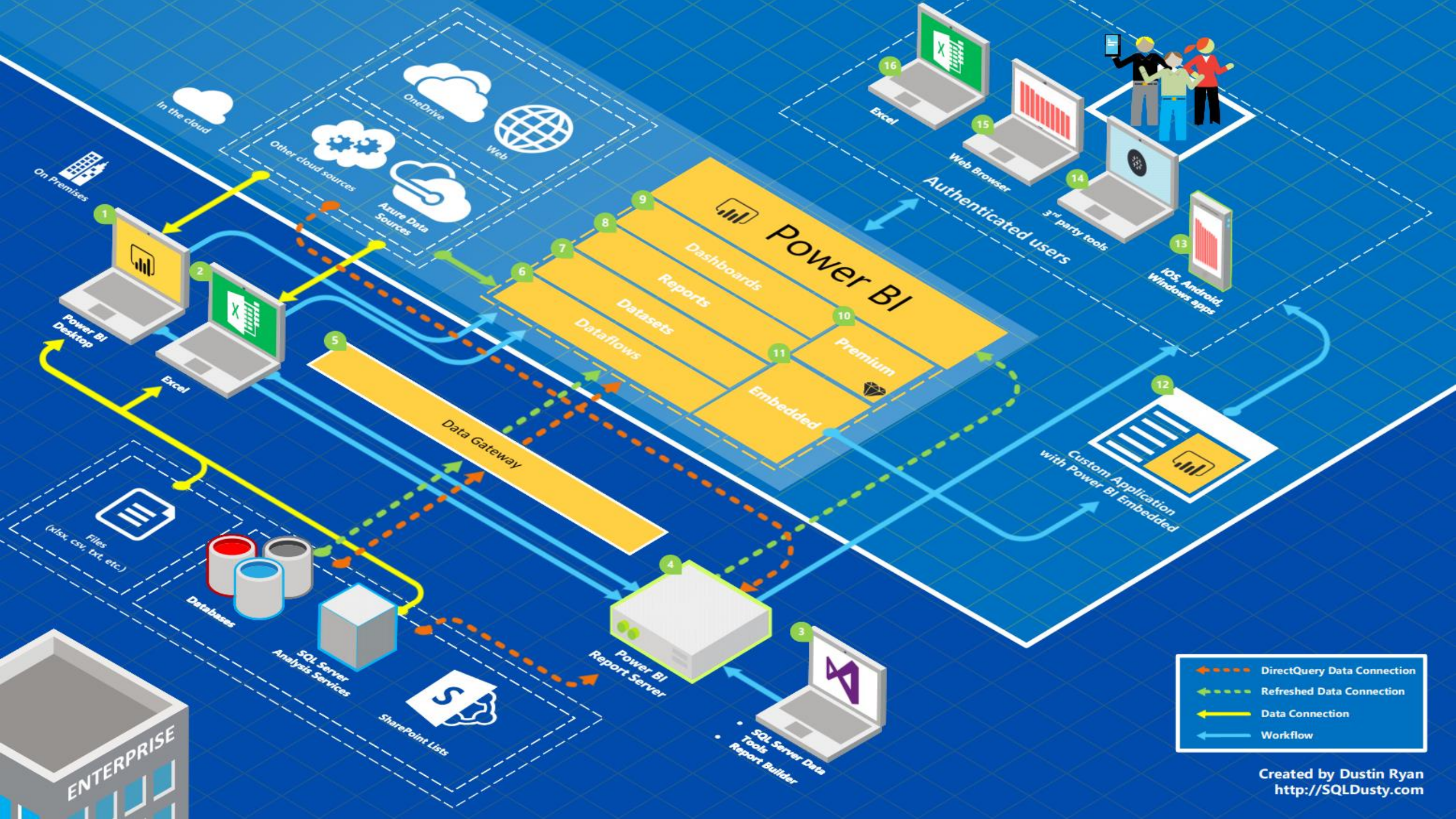


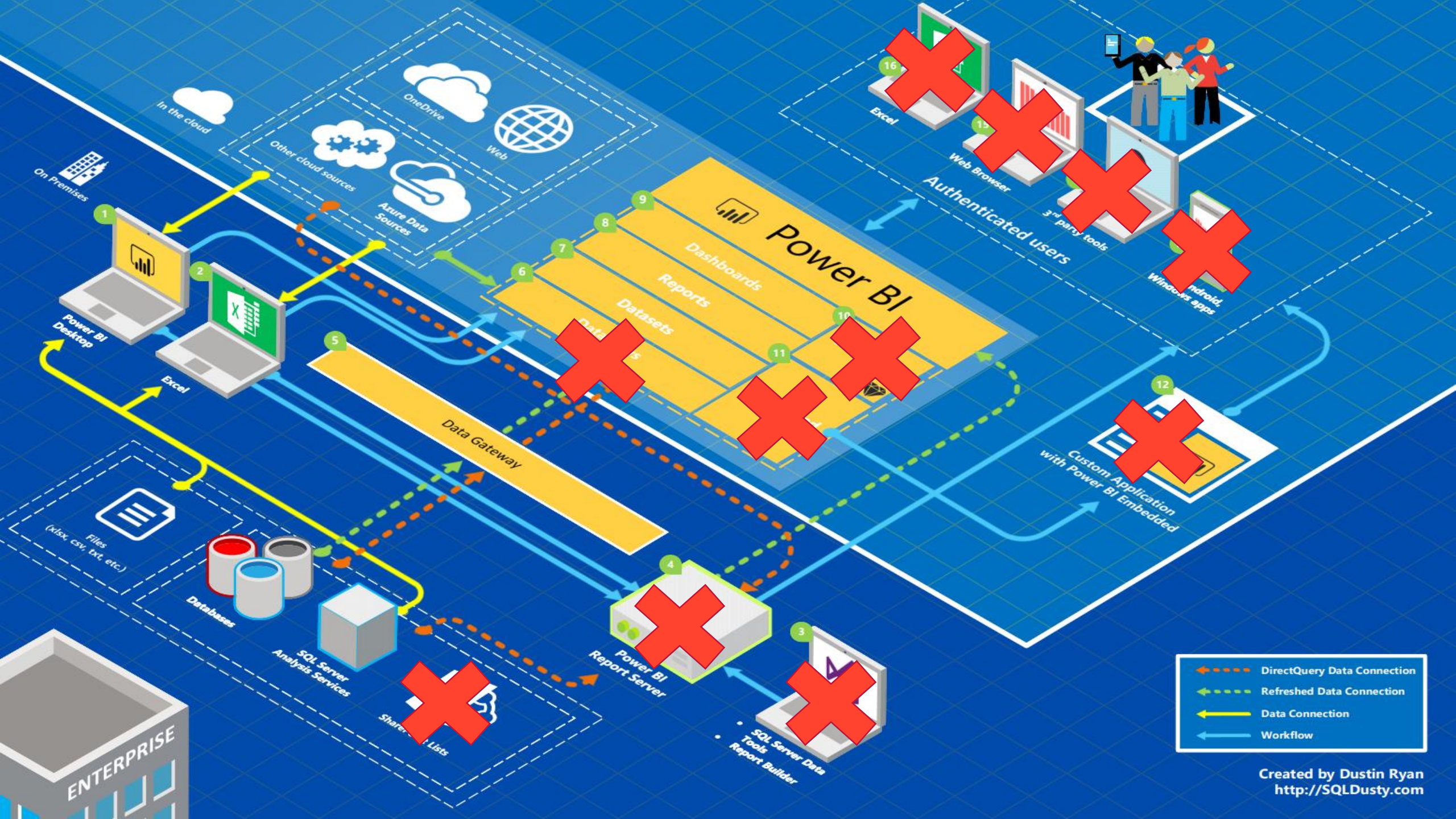
Tutorials

What is Power BI?

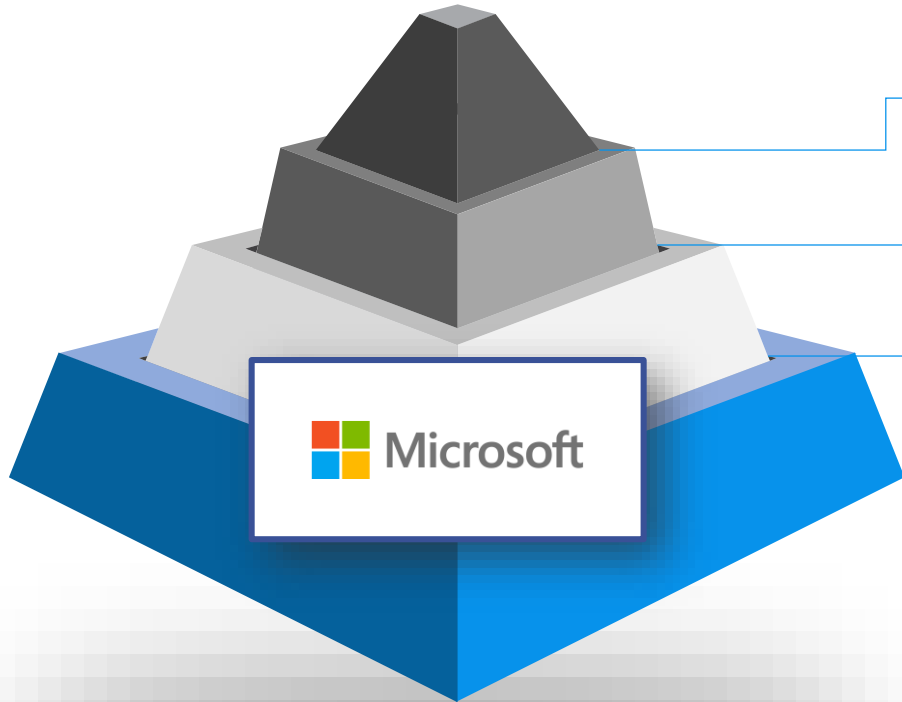
Power BI is a suite of business analytics tools to analyze data and share insights. Monitor your business and get answers quickly with rich dashboards available on every device.







Exam Structure



Question Types

T / F, Multiple Choice, Drag & Drop



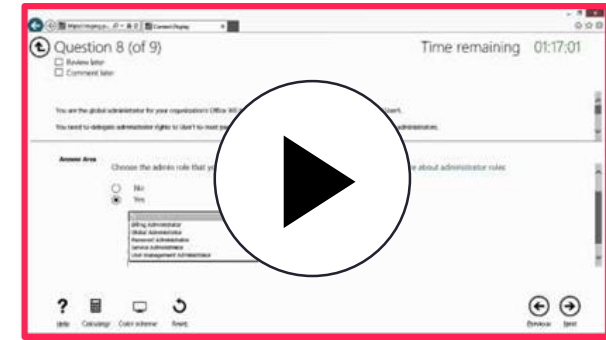
Best Answer Multiple Choice

Select the response that best fits when more than one is correct



Case Study

Presents a business case and multiple questions are presented that reference it



Today's Agenda

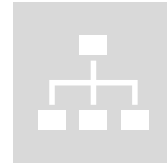
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Preparation & Review

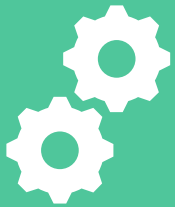
05



Tutorials

Exam Content

**Consuming and
Transforming Data
by Using Power BI
Desktop**



**Modeling and
Visualizing Data**



**Configure Dashboards,
Reports, and Apps
in the Power BI Service**



Consuming and Transforming Data by Using Power BI Desktop



- Connect to data sources
- Perform transformations
- Cleanse data

Modeling and Visualizing Data



- Create and Optimize Data Models
- Calculated Columns, calculated tables, and measures
- Measure performance with KPI, gauges, and cards
- Create hierarchies
- Format interactive visualizations
- Manage custom reporting solutions

Configure Dashboards, Reports, and Apps in the Power BI Service



- Create and optimize data models
- Create calculated columns, calculated tables, and measures
- Measure performance by using KPIs, gauges and cards
- Create hierarchies
- Create and format interactive visualizations
- Manage custom reporting solutions

Power BI Desktop



CONNECT



Excel /CSV, SQL Server (SSAS)



Power BI Service

PUBLISH

- Upload Reports
- Edit in Service



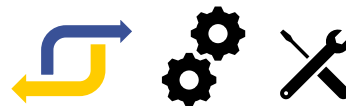
REPORT FEATURES

- Visualizations
- KPIs
- Hierarchies



TRANSFORM

- Apply Business Rules
- Manage incomplete Data



MODEL / DAX

- Measures and Calculated Columns
- Calculated Tables



SECURE DATA

- RLS
- Security Groups
- User Access



Today's Agenda

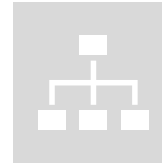
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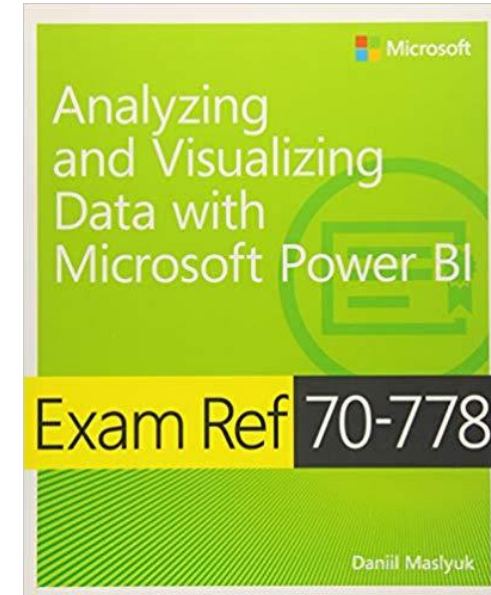
Preparation & Review

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Tutorials

What are the Preparation Options?



Preparation Checklist

Verify the following are met:



Take the EDx Course



Create a Study Guide



Create an N:N project using all the exam content



Complete practice questions



Review Your Study Guide Prior to taking the test



Preparation Checklist

<https://github.com/pdellagrotte/SQLSaturday-813-Boston>

Resources

Power BI Exam 70-778 Resources

Free Courses

[eDX Power BI Course](#)

Practice Quizzes

<https://www.criticalpathtraining.com/testing-quiz-page/>

<http://www.pbiquiz.moonfruit.com/>

<http://www.accelerated-ideas.com/>

[DAX Quiz](#)

Video Guides

[Guy in a Cube Playlist](#)

[Critical Path Training - Exam Video 1](#)

[Critical Path Training - Exam Video 2](#)

Blog

[Data and Analytics with Dustin Ryan](#)

Book

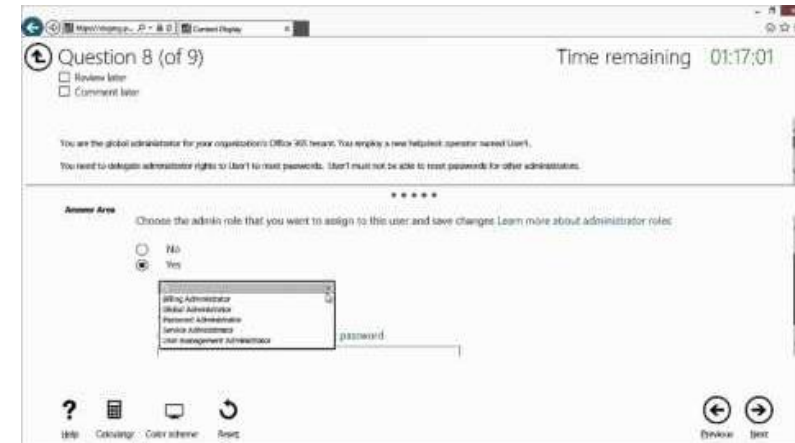
[Exam Ref 70-778](#)

* Some of the linked content may not reflect the latest version of the exam – be sure to check with the Microsoft Exam Page to verify the latest exam content

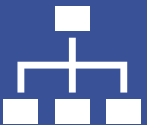
Create By: paul.dellagrotte@gmail.com

Microsoft Exam Structure

<https://www.youtube.com/watch?v=7CvYGpSVbkA>

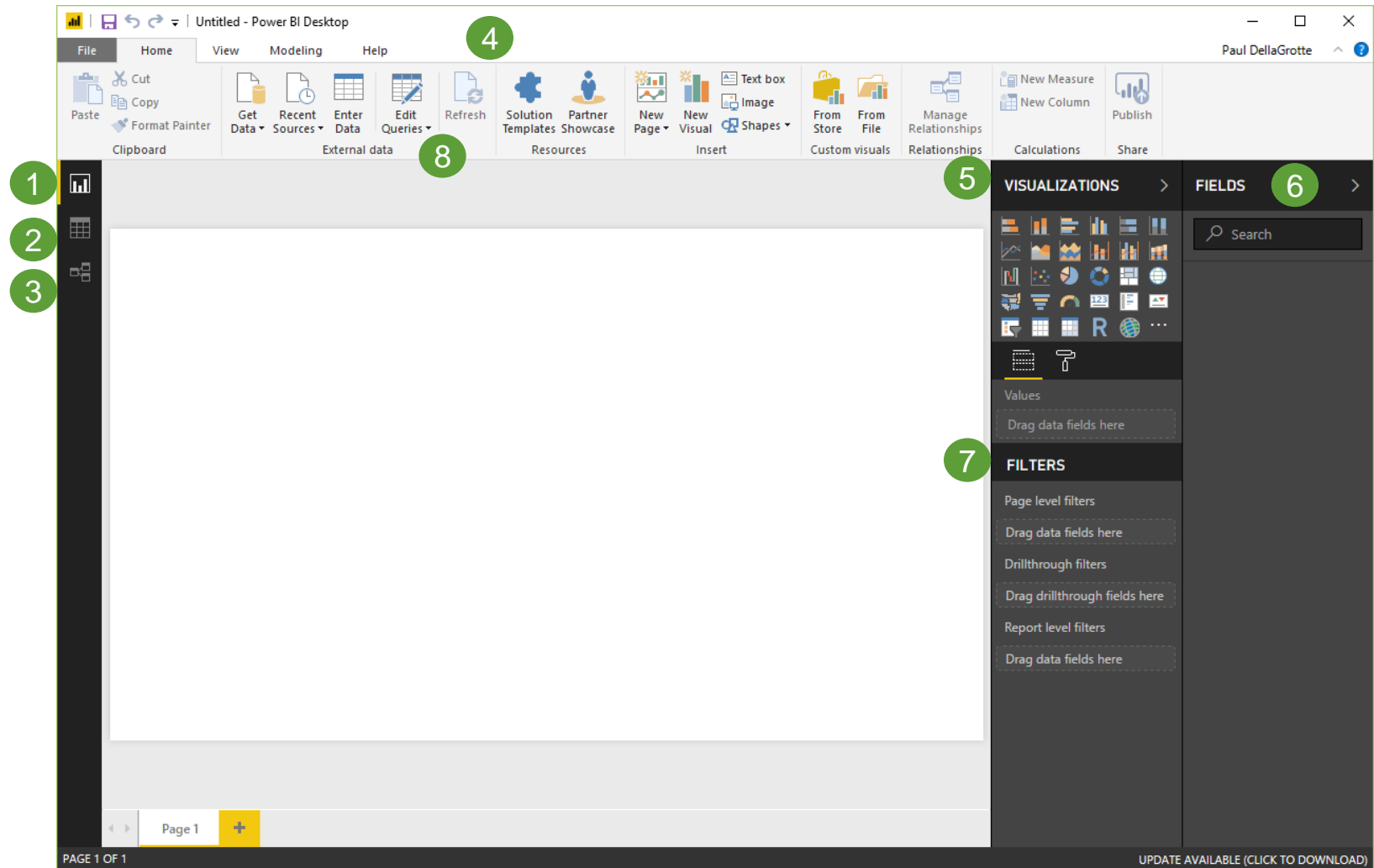


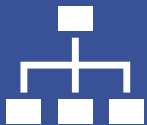
Review



Navigation

1. Reports
2. Data View
3. Relationships
4. Ribbon
5. Visualizations
6. Fields
7. Filters
8. Launch Power Query





Connecting to Data

Files

- Excel
- CSV
- XML
- Text
- Folder

Azure Services

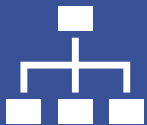
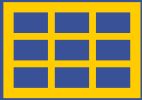
- Microsoft Azure SQL Database
- Microsoft Azure SQL Data Warehouse
- Microsoft Azure Marketplace
- Microsoft Azure HDInsight
- Microsoft Azure Blob Storage
- Microsoft Azure Table Storage
- Azure HDInsight Spark
- Microsoft Azure DocumentDB
- Microsoft Azure Data Lake Store

Databases

- SQL Server Database
- Access Database
- SQL Server Analysis Services Database
- Oracle Database
- IBM DB2 Database
- MySQL Database
- PostgreSQL Database
- Sybase Database
- Teradata Database
- SAP HANA Database

Other Sources

- Web
- SharePoint List
- OData Feed
- Hadoop File (HDFS)
- Active Directory
- Microsoft Exchange
- Dynamics CRM Online
- Facebook
- Google Analytics
- Salesforce Objects
- Salesforce Reports
- ODBC
- R Script
- appFigures
- GitHub
- MailChimp
- QuickBooks Online
- SweetIQ
- Twilio
- Zendesk
- Marketo
- Spark



Data View

1. Tables
2. Fields
3. Calculated Columns & Measures

Untitled - Power BI Desktop

File Home Modeling Help

Manage Relationships Relationships New Measure Calculations New Column What If New Table Sort by Column Sort

Data type: Format: \$ % , .00 Auto

Home Table: Data Category: Uncategorized Default Summarization: Don't summarize

Manage Roles View as Roles Security New Group Edit Groups Groups

CustomerKey GeographyKey CustomerAlternateKey Title FirstName MiddleName LastName NameStyle BirthDate MaritalStatus Suffix

11602 159 AW00011602 Larry Gill False Monday, October 11, 1982 S

11603 244 AW00011603 Geoffrey Gonzalez False Friday, August 6, 1982 S

11610 269 AW00011610 Blake Collins False Monday, October 20, 1980 S

12517 133 AW00012517 Alexa Watson False Tuesday, February 22, 1983 S

12518 161 AW00012518 Jacquelyn Dominguez False Sunday, March 27, 1983 S

12519 265 AW00012519 Casey Gutierrez False Thursday, June 16, 1983 S

12714 157 AW00012714 Colleen Lu False Sunday, January 14, 1979 S

12728 131 AW00012728 Jeremiah Stewart False Sunday, December 23, 1984 S

12871 233 AW00012871 Leah Li False Monday, April 5, 1982 S

13671 173 AW00013671 Frank Ramos False Tuesday, August 7, 1979 S

13826 127 AW00013826 Candice He False Wednesday, May 25, 1983 S

13830 237 AW00013830 Andrea Cox False Monday, January 31, 1983 S

13838 263 AW00013838 Jill Rubio False Friday, December 25, 1981 S

14838 121 AW00014838 Darren Alvarez False Sunday, January 23, 1983 S

14839 238 AW00014839 Natasha Sanz False Monday, November 15, 1982 S

14840 277 AW00014840 Autumn Zhu False Friday, April 22, 1983 S

14848 186 AW00014848 George Louverdis False Monday, March 9, 1981 S

14849 142 AW00014849 Dwayne Martin False Friday, April 10, 1981 S

14991 272 AW00014991 Edwin Zhao False Tuesday, August 25, 1981 S

16317 263 AW00016317 Joel Raman False Wednesday, March 23, 1983 S

16452 232 AW00016452 Cassie Luo False Saturday, May 21, 1983 S

16453 271 AW00016453 Mayra Chandra False Thursday, October 7, 1982 S

16458 132 AW00016458 Michele Ruiz False Friday, June 18, 1982 S

16460 277 AW00016460 Jodi Xu False Monday, May 17, 1982 S

16461 279 AW00016461 Rosa Wu False Wednesday, August 5, 1981 S

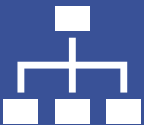
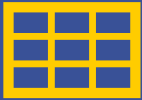
18038 207 AW00018038 Kelli Kumar False Friday, November 14, 1980 S

18048 229 AW00018048 Alisha Sun False Friday, April 4, 1980 S

19371 168 AW00019371 Rnv Mehra False Sunday, December 5, 1982 S

TABLE: DimCustomer (18,484 rows)

UPDATE AVAILABLE (CLICK TO DOWNLOAD)



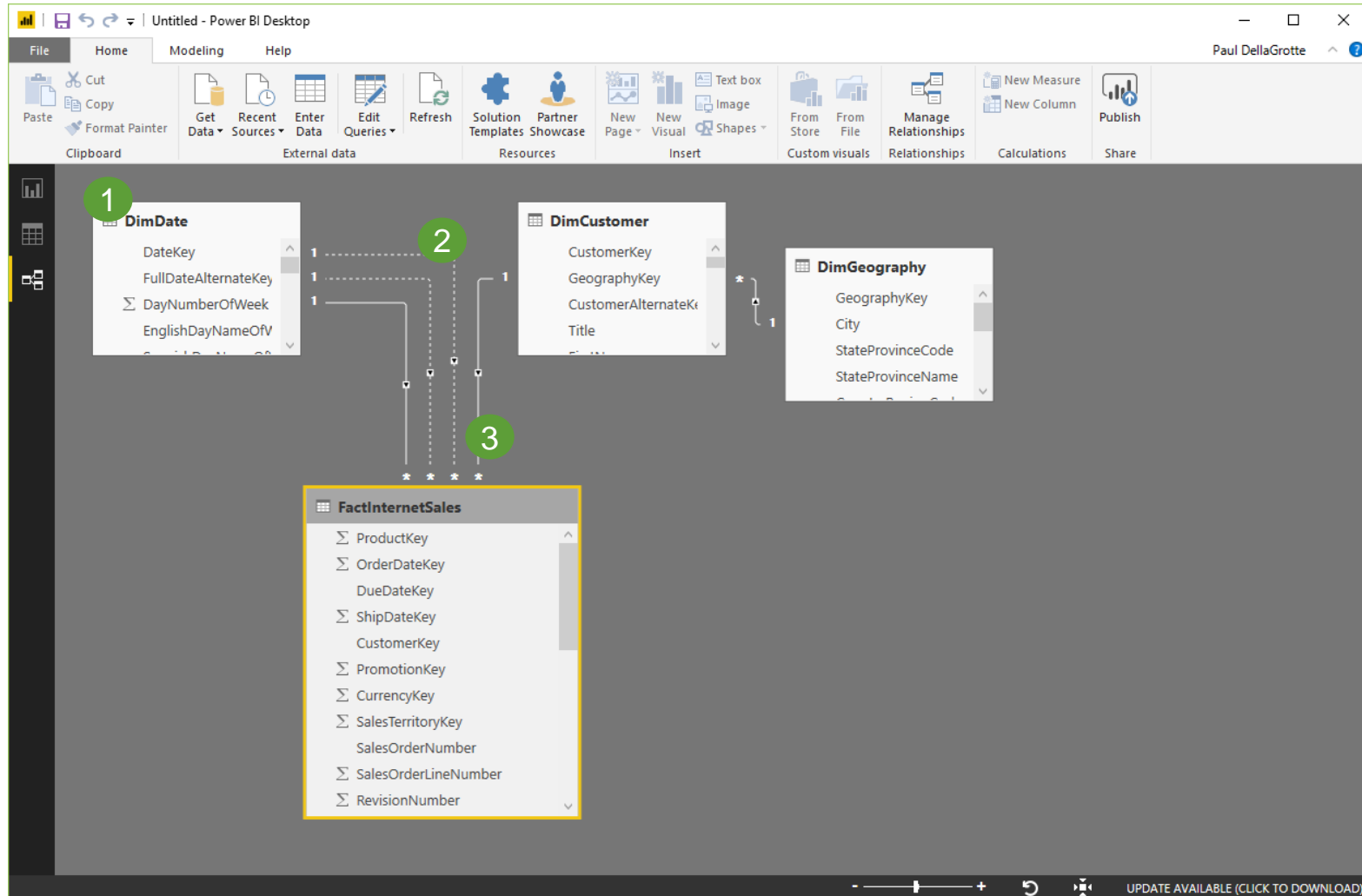
Power Query

1. Query Manager
2. Field and Data Type
3. Stepwise Transformations
4. Advanced Editor – 'M' Code
5. Data Source Settings – Manage Connection String



Relationships

1. Table
2. Inactive Relationship
3. Active Relationship





Relationships

×

Edit relationship

Select tables and columns that are related.

FactInternetSales

ProductKey	OrderDateKey	DueDateKey	ShipDateKey	CustomerKey	PromotionKey	CurrencyKey	S
528	20130128	20130209	20130204	14870	1	100	
528	20130129	20130210	20130205	15319	1	100	
528	20130131	20130212	20130207	16384	1	100	

< >

DimCustomer

CustomerKey	GeographyKey	CustomerAlternateKey	Title	FirstName	MiddleName	LastName	Nan
11602	135	AW00011602	null	Larry	null	Gill	
11603	244	AW00011603	null	Geoffrey	null	Gonzalez	
11610	269	AW00011610	null	Blake	null	Collins	

< >

Cardinality

Many to one (*:1)

Cross filter direction

Single

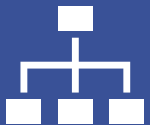
☒ Make this relationship active

☐ Assume referential integrity

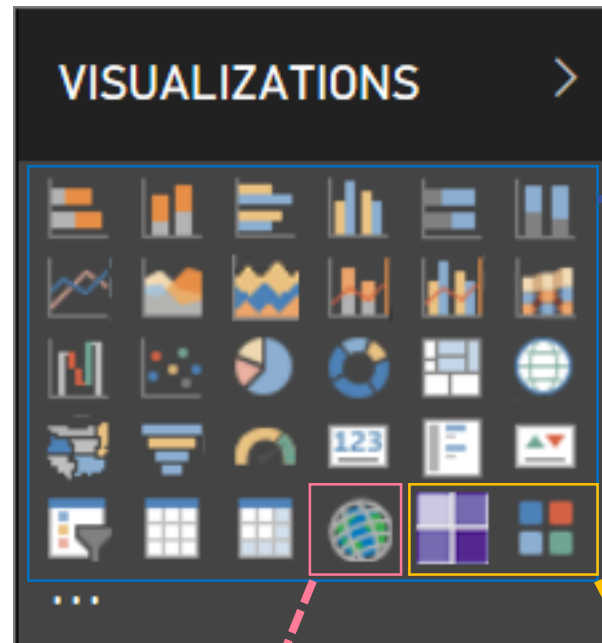
☐ Apply security filter in both directions

OK

Cancel



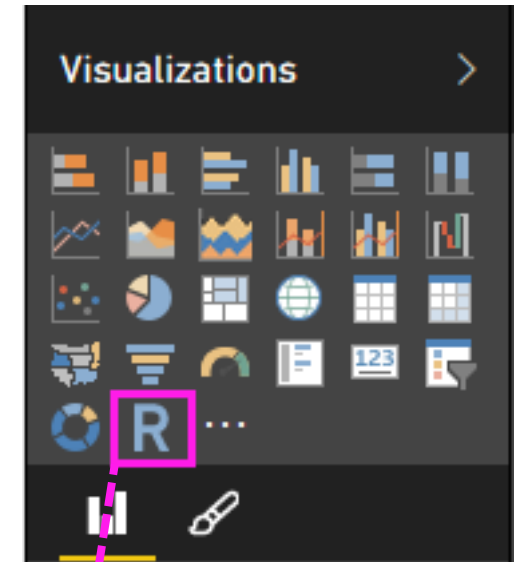
Reports



Base
Visuals

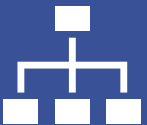
Preview

Custom

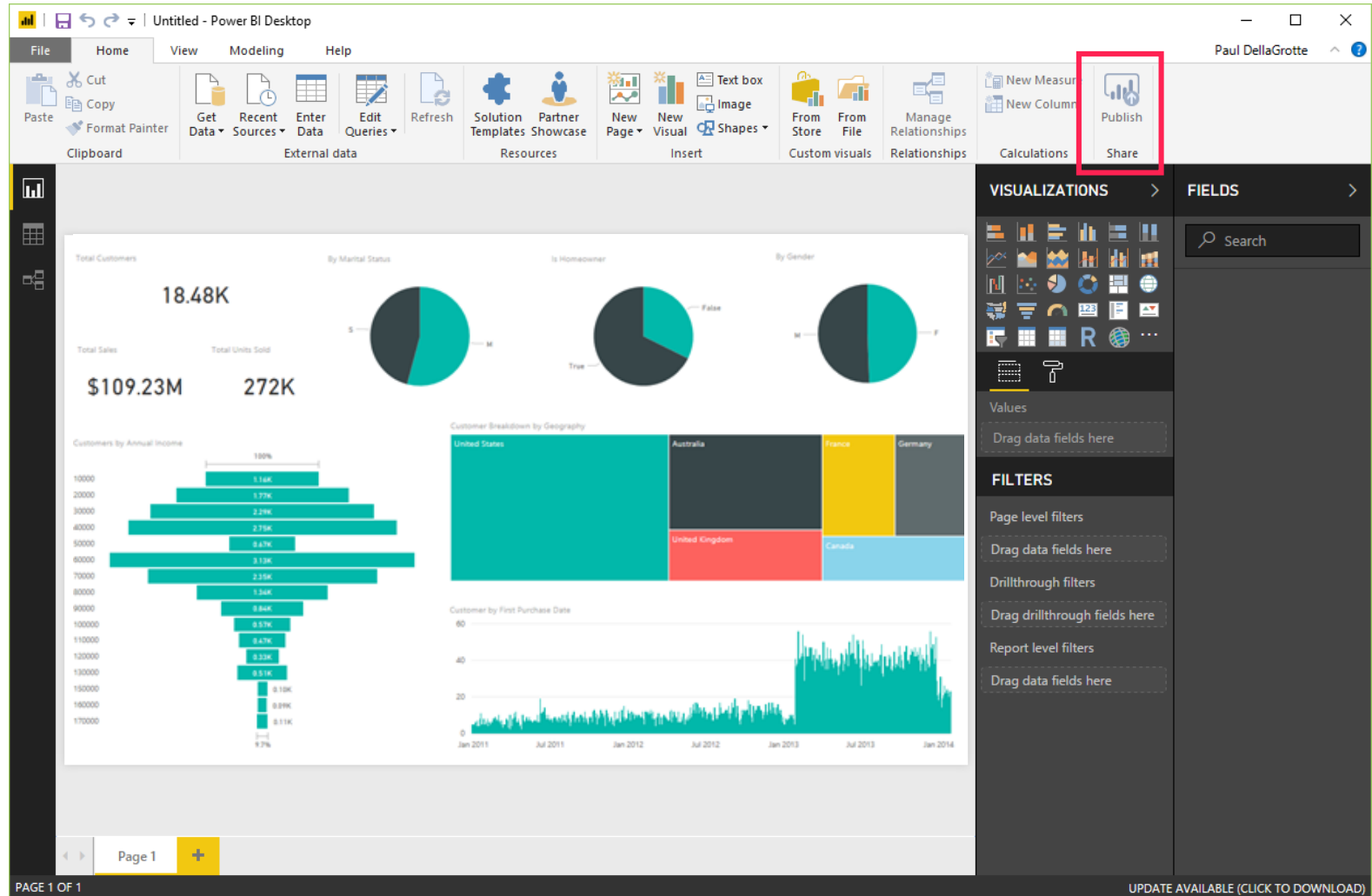


R Script Visuals

<https://docs.microsoft.com/en-us/power-bi/desktop-report-view>



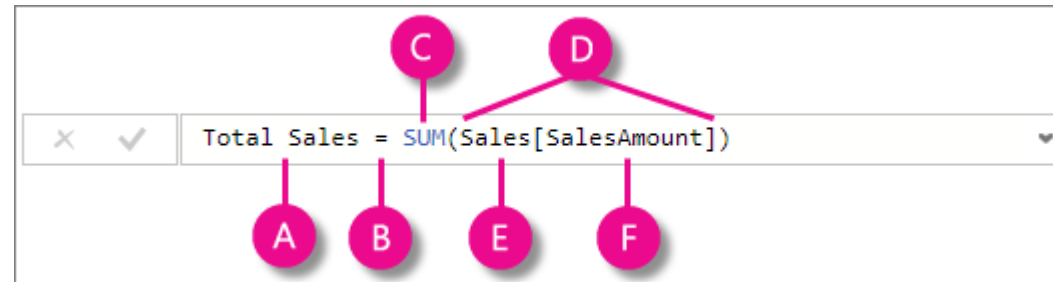
Publishing to Service



DAX

WHAT IS DAX (Data Analysis eXpression)?

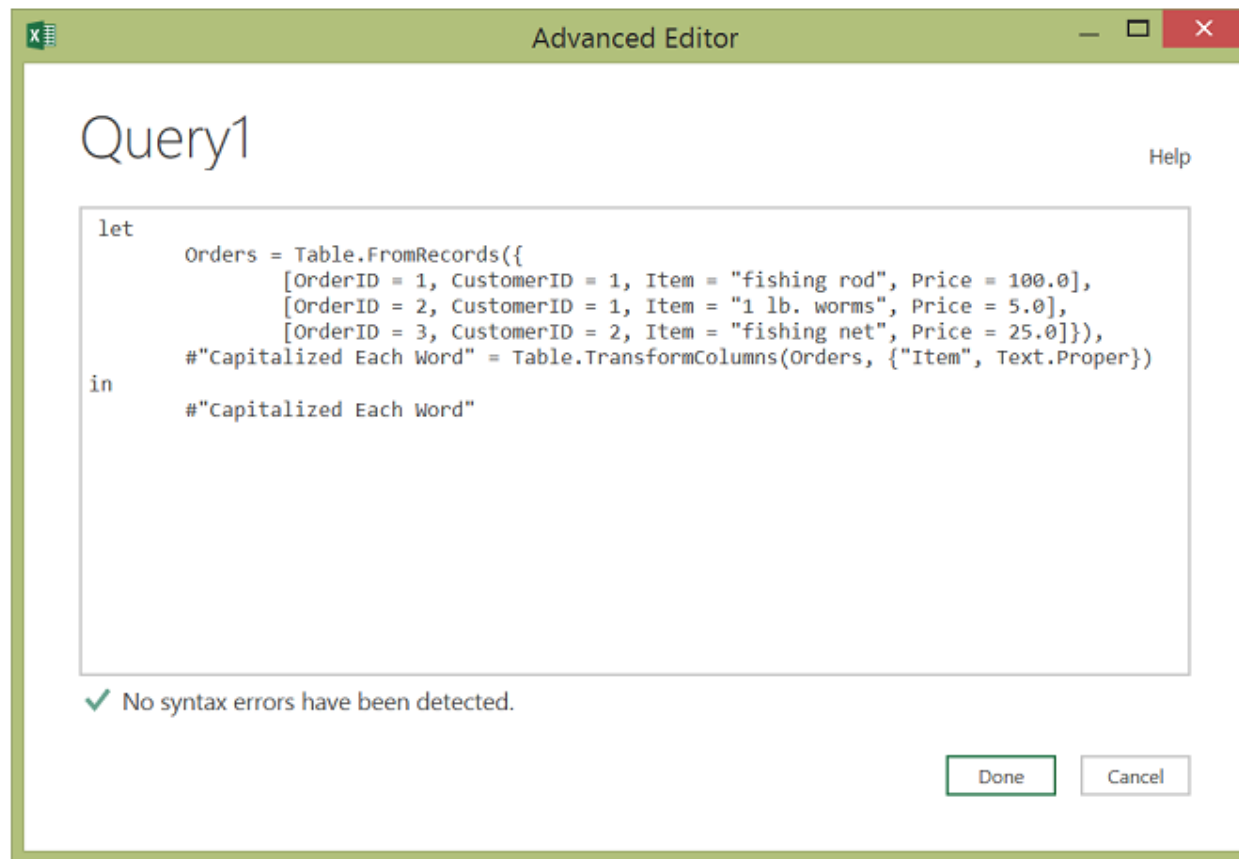
- Formula AND Query Language
- Used to create Calculated Columns and Measures
- Evaluated based on Row and Filter Context
- Calculated Column: Evaluated Immediately by Row
- Measure: Evaluated at Query Time



<https://docs.microsoft.com/en-us/power-bi/desktop-quickstart-learn-dax-basics>

- A. Name
- B. Initialize
- C. Function
- D. Parameter(s)
- E. Table
- F. Column

M



Advanced Editor

Query1 Help

```
let
    Orders = Table.FromRecords({
        [OrderID = 1, CustomerID = 1, Item = "fishing rod", Price = 100.0],
        [OrderID = 2, CustomerID = 1, Item = "1 lb. worms", Price = 5.0],
        [OrderID = 3, CustomerID = 2, Item = "fishing net", Price = 25.0]}),
    #"Capitalized Each Word" = Table.TransformColumns(Orders, {"Item", Text.Proper})
in
    #"Capitalized Each Word"
```

✓ No syntax errors have been detected.

Done Cancel

<https://docs.microsoft.com/en-us/powerquery-m/quick-tour-of-the-power-query-m-formula-language>

Type of M Question

Match the following functions in M (Power Query Language) with their description/definition

Text.Split	Removes any occurrences of characters in trimChars (E.g.
Text.Proper	Returns the portion of text between the specified
Text.Trim	Returns a text value composed of the input text value repeated a
Text.Repeat	Returns a text value with first letters of all words converted to
Text.Combine	Returns a list containing parts of a text value that are delimited by
Text.Clean	Returns the original text value with non-printable characters

<https://docs.microsoft.com/en-us/powerquery-m/text-functions>

Question – True or False



Using the new bookmarking features in the report designer in Power BI Desktop, you are limited to creating only one bookmark per page in a report.

Answer:

False

Question – Select all that apply



Which of the following statements are true regarding use of the Slicer visual in a Power BI report?

- ☒ A Slicer visual is used on Power BI reports to provide the report consumer with interactive filtering behavior.
- ☐ A Slicer visual from a Power BI report can be pinned to a dashboard to make the dashboard interactive.
- ☒ A Slicer visual based on a Date column can be configured to use slider controls.
- ☐ When adding a field to the Field well of a Slicer visual, you can use either a column or a measure.

Question – Multiple Choice



Which of the following visuals is not included as part of Power BI and must be added as a custom visual?

- ☐ Waterfall
- ☐ Treemap
- ☒ Histogram
- ☐ Stacked Area Chart

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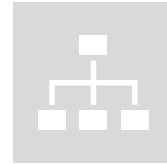
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Tutorials

Tutorial Topics



Transform



Modeling & Visuals



Configure

Manage Query Groups - Create Group	Calculated Tables - DAX	Analyze in Excel
Connecting to Files in a Folder	Creating and managing Hierarchies	Sharing a dashboard
Power BI Template	Include / Exclude from Visual	Add Widget / Title
Query Dependency	Grouping / Binning fields	Create Security Group
Change Data Type	Clustering (and Machine Learning)	Row Level Security
Query Parameter	Change Default Aggregation	Change data refresh settings
Edit Data from a Custom Table	Export data from table	Featured Q&A
Connect to different data sources	Filter including Top N	Publish to Web

Thank You!

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