



Microsoft Power BI

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Agenda



- What is Power BI?
- Features
 - What can Power BI do?
 - How does it work?
- Demonstration
 - How to use it
- Benefits
- Learning Curve

What is Power BI?

- Business Intelligence (BI)
 - Technology-driven process for analyzing data and presenting information
- Power BI
 - Cloud-based business analytics service from Microsoft
 - Fast and easy to use
 - Data discovery and exploration
 - Works on multiple devices
 - Connects to all types of data sources

What can Power BI Do?

- Natural language querying
- Live dashboards
- Visualizations
- Reporting



How does it work

- Connect to data source(s)
- Provide initial insights
- Ask questions of your data
 - What is the average sales by region?
 - What is our best-selling product by sales representative?
- Can create live dashboard views with a scheduled data refresh
- Pin report graphs and insight graphs to dashboards
- Share dashboards

Data Source Connection

Power BI My workspace

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Dashboards Reports Workbooks Datasets

NAME ↑	ENDORSEMENT	ACTIONS	REFRESHED	NEXT REFRESH	API ACCESS
equine-death-and-breakdown		...	2/16/2020, 9:15:38 AM	N/A	--
sales		...	2/16/2020, 8:29:40 AM	N/A	--

My workspace

Dashboards

Tracking the Danger...

Get Data

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Build on existing datasets

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Dashboards Reports Workbooks Datasets

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sales		...	2/16/2020, 8:29:40 AM

My workspace

Dashboards

Tracking the Danger...

Reports

Equine Death by DI...

Equine Death by Tra...

Workbooks

- Analyze in Excel
- Delete
- View Insights
- Rename
- Settings
- Manage permissions

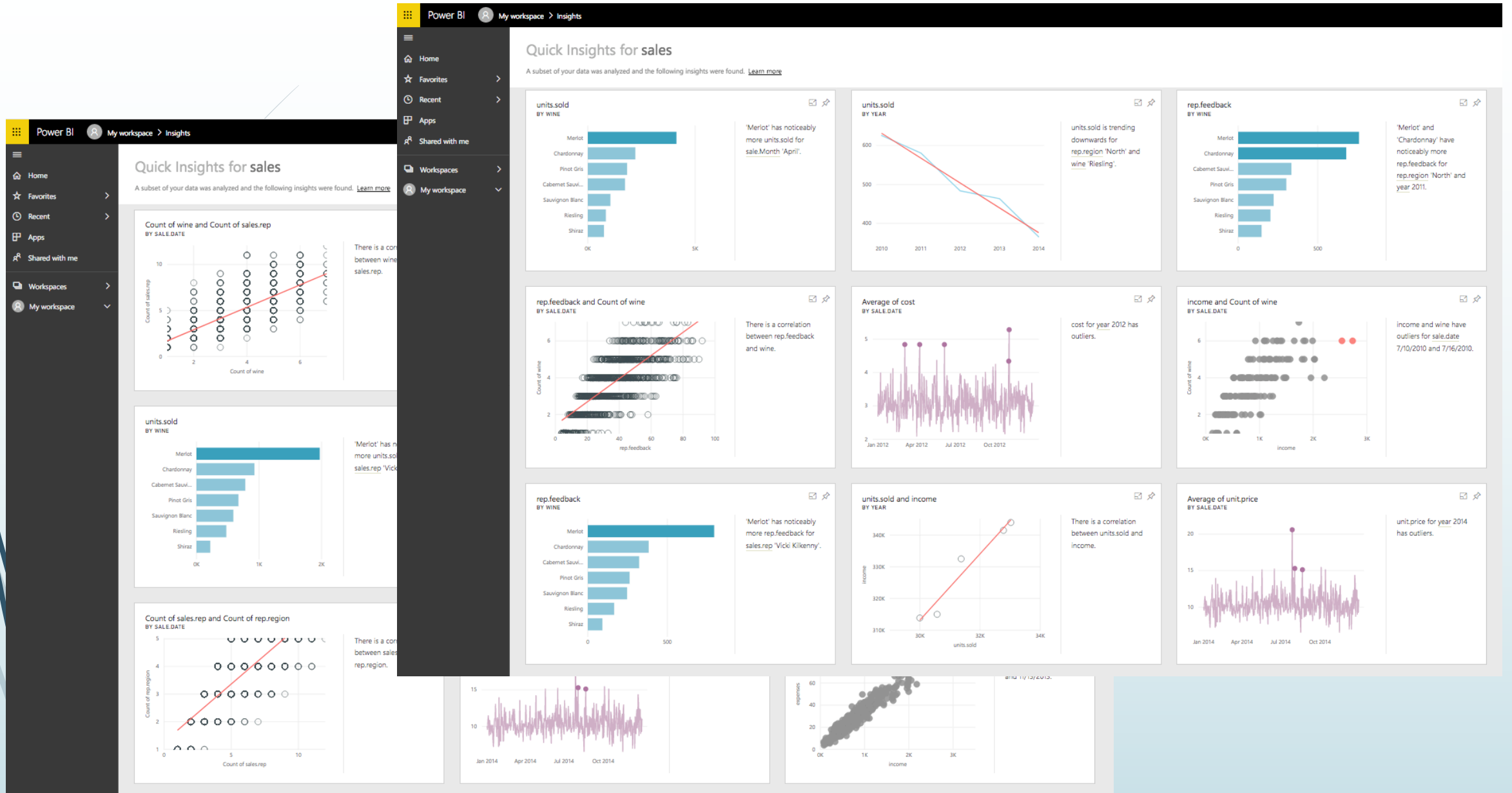
Data Sources

File	Database	Azure	SaaS	Other
<ul style="list-style-type: none">• Excel• CSV• XML• Text• JSON• Folder	<ul style="list-style-type: none">• SQL Server Database• Access Database• SQL Server Analysis Services Database• Oracle Database• IBM DB2 Database• MySQL Database• PostgreSQL Database• Sybase Database• Teradata Database	<ul style="list-style-type: none">• Microsoft Azure SQL Database• Microsoft Azure Marketplace• Microsoft Azure HDInsight• Microsoft Azure Blob Storage• Microsoft Azure Table Storage	<ul style="list-style-type: none">• appFigures• QuickBooks Online• Zendesk• GitHub• Twilio• SweetIQ	<ul style="list-style-type: none">• Web• SharePoint List• OData Feed• Hadoop File (HDFS)• Active Directory• Microsoft Exchange• Dynamics CRM Online• Facebook• Google Analytics• SAP Business Objects BI Universe• Salesforce Objects• Salesforce Reports• ODBC Query• ODBC Tables

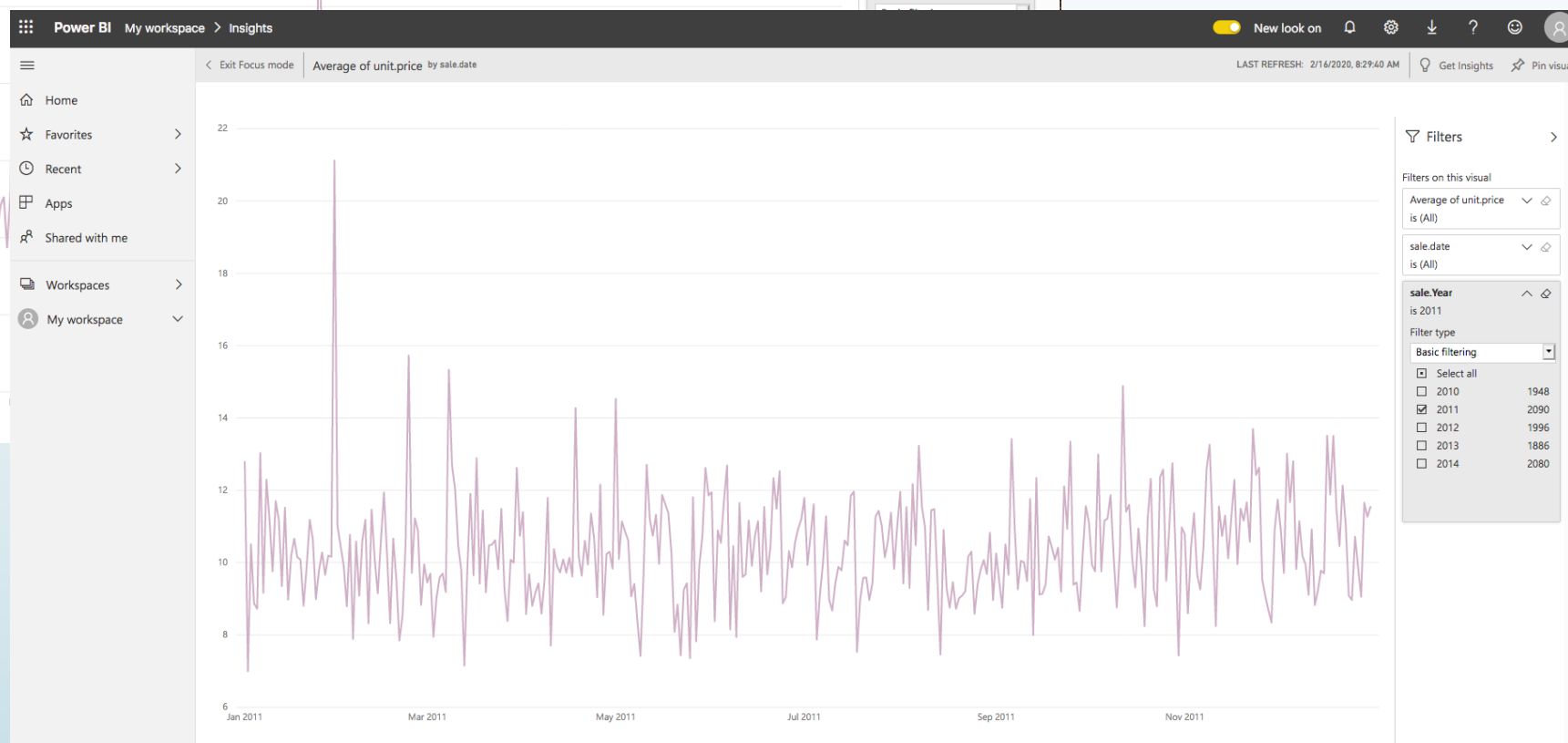
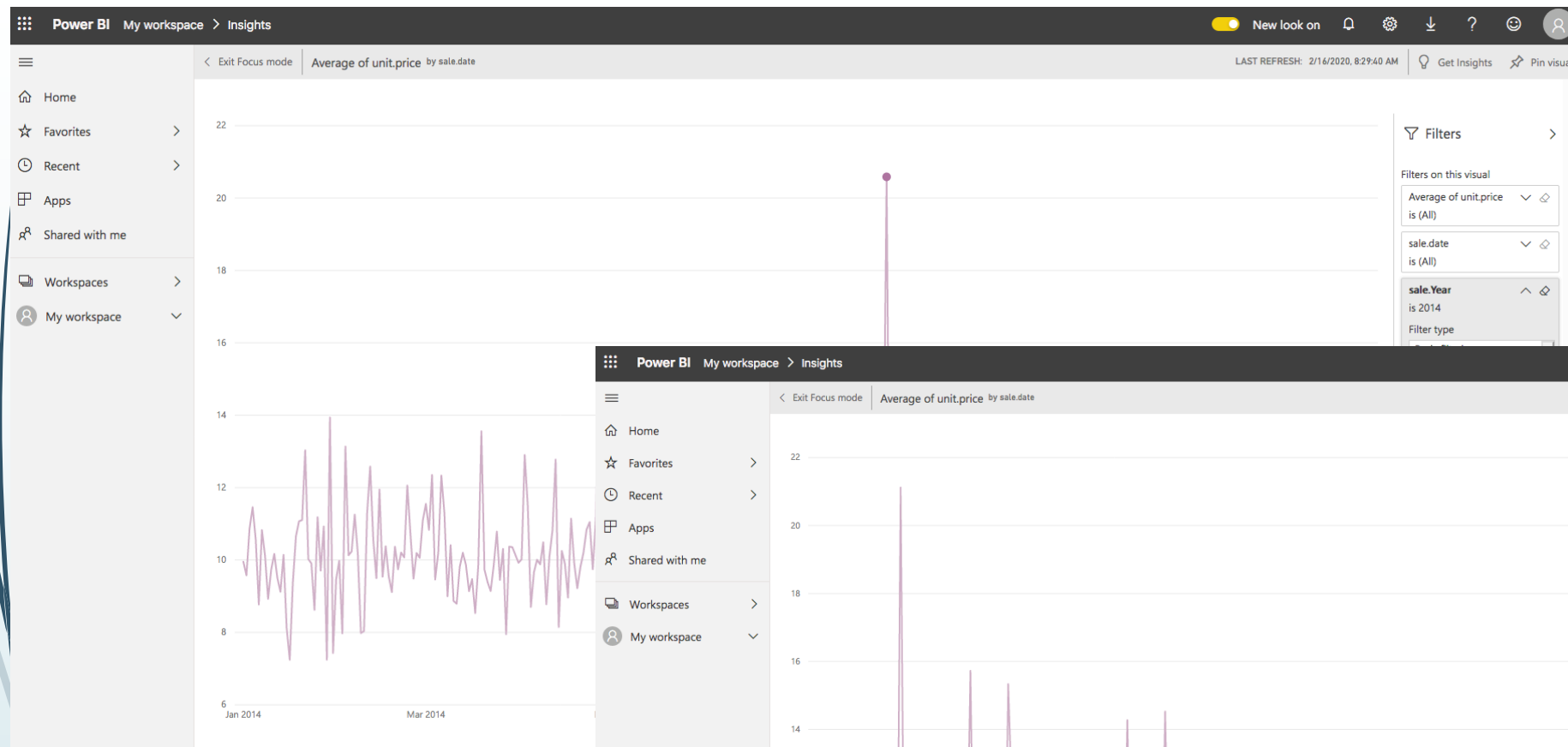
Data Preparation

- Data transformation
- Cleanse data removing errors
- Pivot columns/rows
- Modify table/row/column names
- Remove data
- Build data relationships and adjust relationship types
- Uncover correlations, relationships within the data

Data Exploration and Visualization



Focus View



Asking Questions of Data

Power BI My workspace > ... > Q&A sales.csv

< Exit Q&A

who are the sales

who are the sales **by rep.region**

who are the sales **by sale.date**

who are the sales **by sales rep**

who are the sales **in North**

who are the sales **that are expensive**

who are the sales **sorted by sale.date**

who are the sales **sorted by sales rep**

< Exit Q&A

what wine sold best in the Central region

what wine sold best in the Central **rep.region**

wine

Cabemet Sauvignon

Chardonnay

Merlot

Pinot Gris

Riesling

Sauvignon Blanc

Shiraz

Power BI My workspace > ... > Q&A

< Exit Q&A

who are the sales **by rep.region**

sale.date	sales.rep	rep.sex	rep.feedback	wine	type	rep.region
1/2/2010	Lolita Wass	0	6	Pinot Gris	white	Central
1/2/2010	Nilda Hypolite	0	6	Riesling	white	Central
1/5/2010	Lolita Wass	0	5	Pinot Gris	white	Central
1/6/2010	Dannette Saltsman	0	5	Chardonnay	white	Central
1/6/2010	Lolita Wass	0	6	Merlot	red	Central
1/7/2010	Virgilio Mcelligott	1	5	Merlot	red	Central
1/8/2010	Nilda Hypolite	0	6	Pinot Gris	white	Central
1/9/2010	Nilda Hypolite	0	6	Merlot	red	Central
1/10/2010	Virgilio Mcelligott	1	7	Merlot	red	Central
1/11/2010	Dannette Saltsman	0	7	Pinot Gris	white	Central
1/11/2010	Lolita Wass	0	6	Merlot	red	Central
1/11/2010	Virgilio Mcelligott	1	8	Chardonnay	white	Central
1/13/2010	Virgilio Mcelligott	1	6	Pinot Gris	white	Central
1/17/2010	Dannette Saltsman	0	6	Merlot	red	Central
1/17/2010	Virgilio Mcelligott	1	6	Chardonnay	white	Central
1/21/2010	Lolita Wass	0	5	Pinot Gris	white	Central
1/24/2010	Nilda Hypolite	0	7	Sauvignon Blanc	white	Central
1/27/2010	Virgilio Mcelligott	1	4	Chardonnay	white	Central
1/30/2010	Dannette Saltsman	0	5	Merlot	red	Central
1/30/2010	Nilda Hypolite	0	5	Riesling	white	Central
1/30/2010	Nilda Hypolite	0	7	Shiraz	red	Central
2/1/2010	Dannette Saltsman	0	4	Sauvignon Blanc	white	Central
2/1/2010	Virgilio Mcelligott	1	5	Chardonnay	white	Central

Questions with Graphed Answers



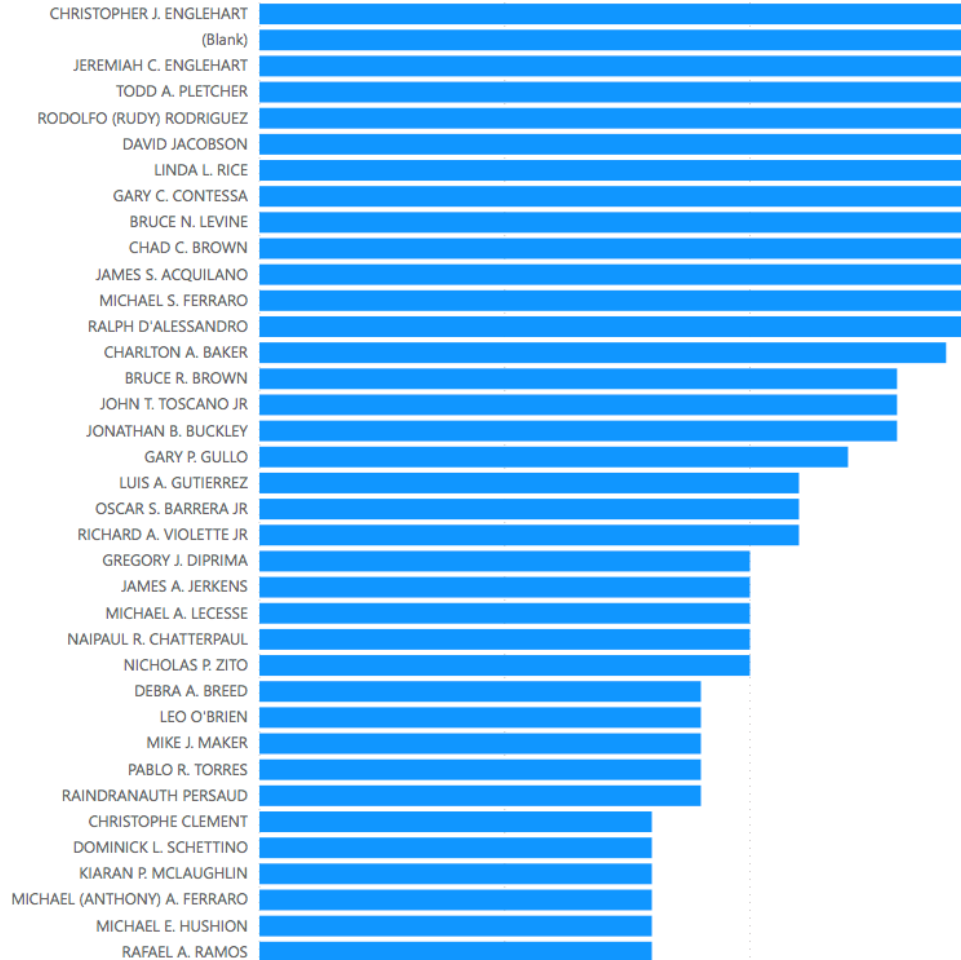
Building my Own

Taking Advantage of the features

☐ which trainer has the most incident type = equine death

☐ sort equine-death-and-breakdowns by year by track by incident type = Equine Death (incident type) by division

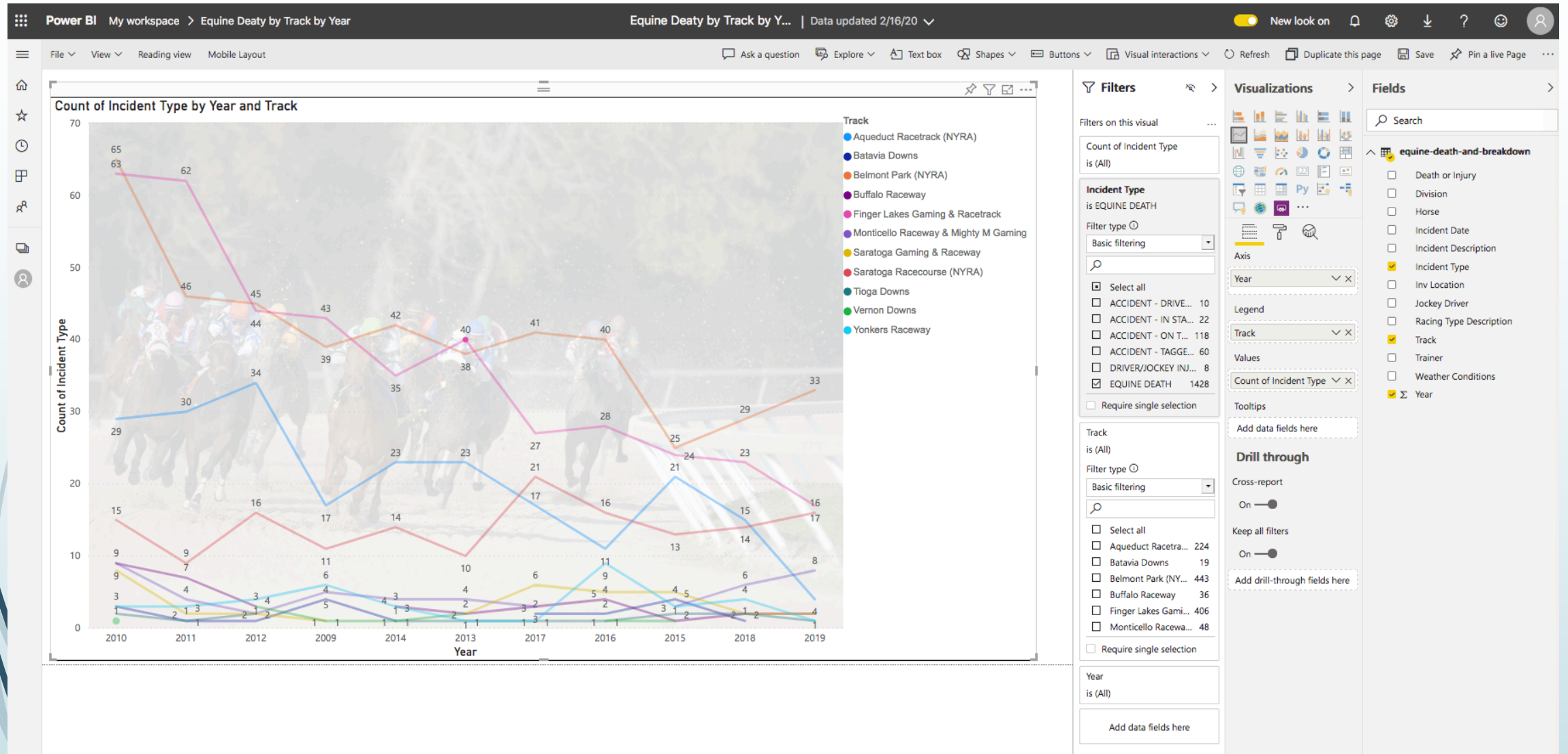
Trainer



sort equine-death-and-breakdowns by year by track by incident type = Equine Death (incident type) by <u>division</u>							
track	incident type	Division	incident Date	inv Location	racing type	Description	year
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-03-04T00:00:00.000	Aqueduct	Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-03-05T00:00:00.000	Aqueduct	Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-04-25T00:00:00.000	Wire - first time	Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-04-28T00:00:00.000	Aqueduct Barn#1	Training		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-07-11T00:00:00.000	Aqueduct barn 12A	Non-Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-07-14T00:00:00.000	3/8 Pole	Non-Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-07-21T00:00:00.000	Stable area	Non-Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-08-23T00:00:00.000	Barn # 9	Non-Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-10-21T00:00:00.000	Aqueduct Barn area	Training		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-11-13T00:00:00.000	3/8 Pole	Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-11-21T00:00:00.000		Non-Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-11-21T00:00:00.000	3/8 Pole	Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-11-26T00:00:00.000	3/4 pole	Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-11-28T00:00:00.000	After finish.	Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-11-29T00:00:00.000	After the wire	Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-12-30T00:00:00.000	Holding Barn	Racing		2009
Aqueduct Racetrack (NYRA)	EQUINE DEATH	Thoroughbred	2009-12-31T00:00:00.000	Aqu - 3/8 pole	Racing		2009
Batavia Downs	EQUINE DEATH	Harness	2009-08-13T00:00:00.000	Batavia Downs barn area	Training		2009
Batavia Downs	EQUINE DEATH	Harness	2009-08-21T00:00:00.000	Batavia Downs	Racing		2009
Batavia Downs	EQUINE DEATH	Harness	2009-09-07T00:00:00.000	Batavia Downs	Racing		2009
Batavia Downs	EQUINE DEATH	Harness	2009-11-10T00:00:00.000	3/4 mark on track at Batavia Downs..	Racing		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-04-10T00:00:00.000	Belmont Training Track	Training		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-04-11T00:00:00.000	Belmont Barn #35	Non-Racing		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-04-28T00:00:00.000	1mile 1/4	Training		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-05-03T00:00:00.000	3/4 pole	Training		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-05-07T00:00:00.000	Barn #10	Racing		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-05-15T00:00:00.000	3/8 Pole	Racing		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-05-20T00:00:00.000	paddock	Racing		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-05-28T00:00:00.000	Wire	Racing		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-05-30T00:00:00.000	Belmont barn 43	Non-Racing		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-05-31T00:00:00.000	After 1/4 Pole	Racing		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-05-31T00:00:00.000	Belmont barn 43	Training		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-06-17T00:00:00.000	Barn 26	Non-Racing		2009
Belmont Park (NYRA)	EQUINE DEATH	Thoroughbred	2009-06-20T00:00:00.000	Belmont Barn #37	Racing		2009

Building my Own

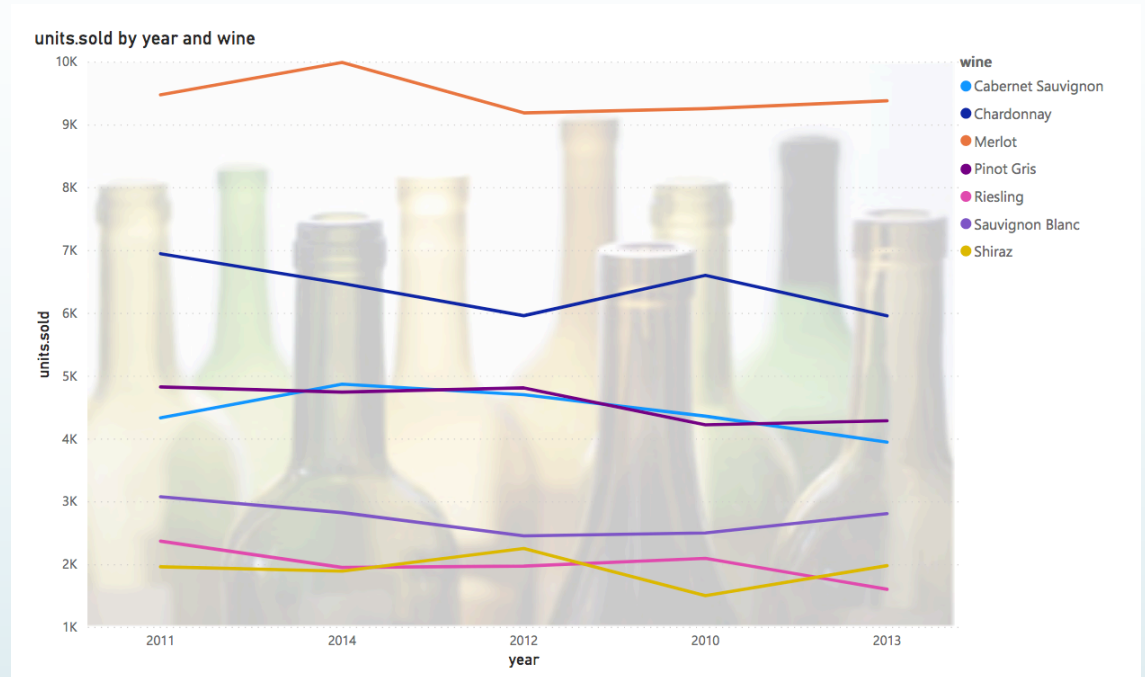
Taking Advantage of the features





Demonstration

Yep, LIVE DEMONSTRATION



Benefits of Power BI

- Pre-built dashboards
- Real-time dashboard updates
- Secure data source connections
- Natural language query for intuitive data exploration
- Integrated with other Microsoft products

Learning Curve

- Quite simple to use
- I learned Power BI in less than 2 hours
- I found it easier and more intuitive than Tableau
- The ability to ask questions aided in speeding up the learning curve
- I was impressed



Thank you

Joyce Woznica