

POWER BI TRAINING

Anexas Consultancy





About Anexas

*Enabling individuals and organizations
achieve excellence
since 2006*



- Anexas is a global network of lean six sigma, Power BI, Data Science and project professionals serving the wide spectrum of industries. We operate in 10 countries and have 25 professionals in the team.
- Our mission is to help organizations and individuals achieve excellence.
- Trained more than 1,50,000 professionals in Lean and Six Sigma, Project Management, Power BI, AI and quality related trainings across the world from various industries.
- Lean Green Belts and Black Belts certified by Anexas have completed more than 5000 successful projects under our guidance.

Agenda

What will we cover under Session - 1 A?

- ❑ Introduction to Power BI
- ❑ Market Analysis and Comparison Study
- ❑ Data Science Roadmap
- ❑ Features of Power BI
- ❑ Components of Power BI
- ❑ Building Blocks of Power BI

What is Power BI?
Is Power BI free to use?



What data sources can Power BI
connect to?
How is Power BI different to
Excel

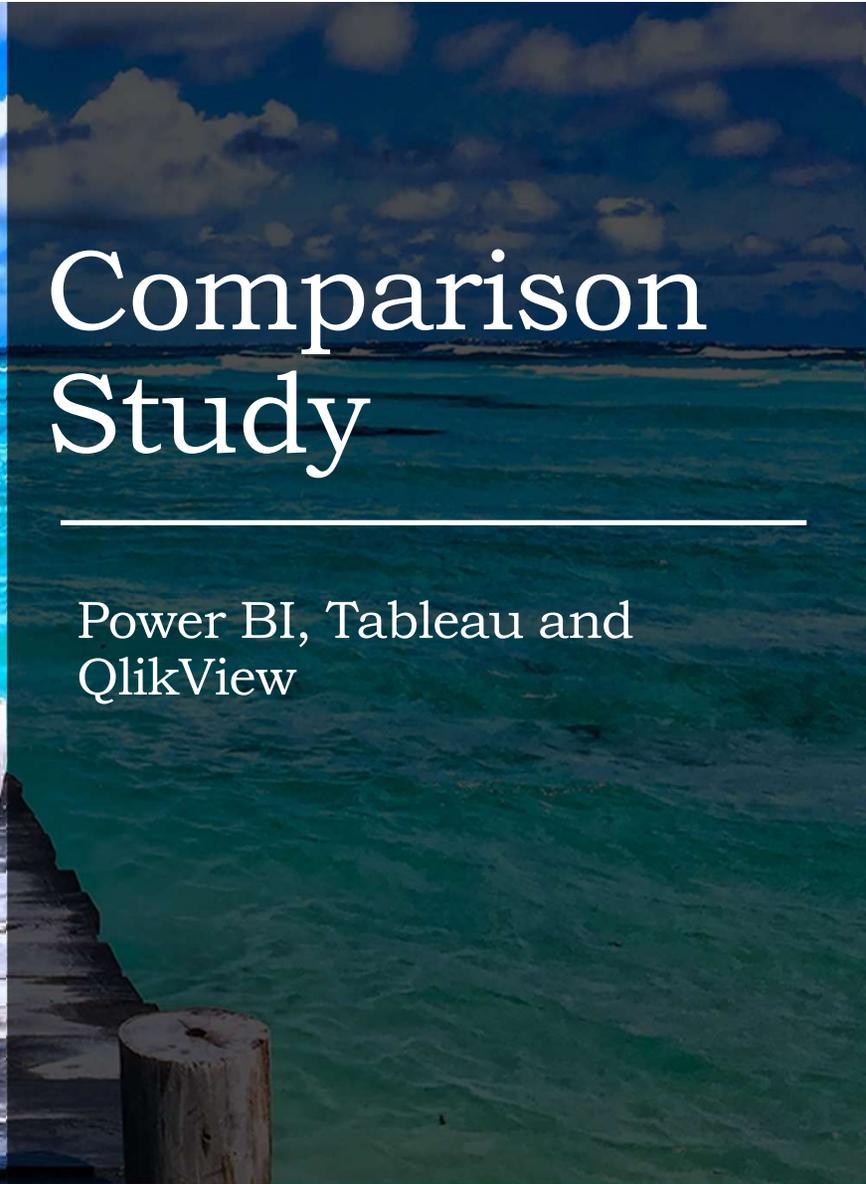


What is DAX?
What are some benefits of
using variables in DAX



Introduction

- ❑ Microsoft's Power BI is a **business analytics service** used to build reports and aims to provide interactive visualizations for developing actionable insights
- ❑ Power BI is the combined name for **cloud-based services** and **desktop platform** such as Power BI Service, Power BI Desktop etc. that help collate, transform and analyze data from a wide variety of data sources
- ❑ This application was originally put forward by Thierry D'Hers and Amir Netz of the SQL Server Reporting Services Team at Microsoft. It was originally designed by Ron George in the summer of 2010 and named **Project Crescent**. The initial release was on 11th July 2011
- ❑ It was later renamed to Power BI and unveiled by Microsoft in **September 2013** as Power BI for Office 365



Comparison Study

Power BI, Tableau and
QlikView

Gartner Study: As of January 2023

Figure 1: Magic Quadrant for Analytics and Business Intelligence Platforms



Source: Gartner

*2023 Gartner Magic Quadrant for Analytics and Business Intelligence Platforms

Comparison Study: Power BI, Tableau and QlikView

	Power BI	Tableau	QlikView
Data Sources	Support for querying multiple fact tables and complex schemas in a single data source	<ul style="list-style-type: none"> Multiple data source needs data blending Tableau supports much more native data connections at the moment 	Supports multiple data source using data load
Ease of use	Microsoft is rated top-third across all aspects for ease of use. Works much more like other Microsoft application	Good user Interface	User Interface is quite down when compared with Tableau and Power BI
Visualizations	Large variety of data visualization options are available	They are user-friendly because Non-technical users can work with this tool	Qlik needs a developer to work with reports and dashboards
Types of Subscriptions	There are three subscriptions available: <ul style="list-style-type: none"> Power BI Desktop(Developer Version) Power BI Pro(Server Version) Power BI Premium(Workspace Version) 	There are three subscriptions available: <ul style="list-style-type: none"> Tableau Creator(Developer Version) Tableau Explorer(Server Version) Tableau Reader(Viewing Software) 	There are three subscriptions available: <ul style="list-style-type: none"> QlikView Desktop QlikView Server QlikView Publisher

Comparison Study: Power BI, Tableau and QlikView

	Power BI	Tableau	QlikView
Analytics	<ul style="list-style-type: none"> Power BI is integrated with Microsoft Azure which helps in providing additional analytics features Power BI's automated capabilities with AI-infused experiences such as natural language, quick insights, image recognition, text analytics, and key driver analysis are new 	<ul style="list-style-type: none"> Tableau has an inbuilt Python Machine Learning capacity Comes with advanced NLP integration as well 	<p>QlikView depends upon its powerful inhouse data analytics platform and provide wide range deep analytics</p>
Deployment Model	<ul style="list-style-type: none"> Power BI are inexpensive and have scalability for larger projects Power BI has a SAAS model for deployment On-premise is only for Power BI premium users 	<ul style="list-style-type: none"> Tableau has both on-premises and cloud options available 	<ul style="list-style-type: none"> Qlik offers QlikView and QlikSense in the form of Desktop edition for personal use and an Enterprise edition for businesses QlikSense is available on cloud as a Business edition model

Big Data Architect or Big Data Engineers

R, Python, SQL, Matlab, IBM SPSS and more!



BI Analyst, BI Consultant or BI Developers

Power BI, Tableau, QlikView, Looker and more!



Data Architect, Database Engineer or Database Administrator

R, Python, SQL, Matlab, IBM SPSS and more!



Data Science

Data Scientist and Data Analyst

R, Python, Excel, IBM SPSS, Eviews and more!



Senior Executives or Key Decision Makers



Data Scientist, Machine Learning Engineer

R, Python, Java, Scala, Microsoft Azure, rapidminer and more!



Features of Power BI



Features of Power BI

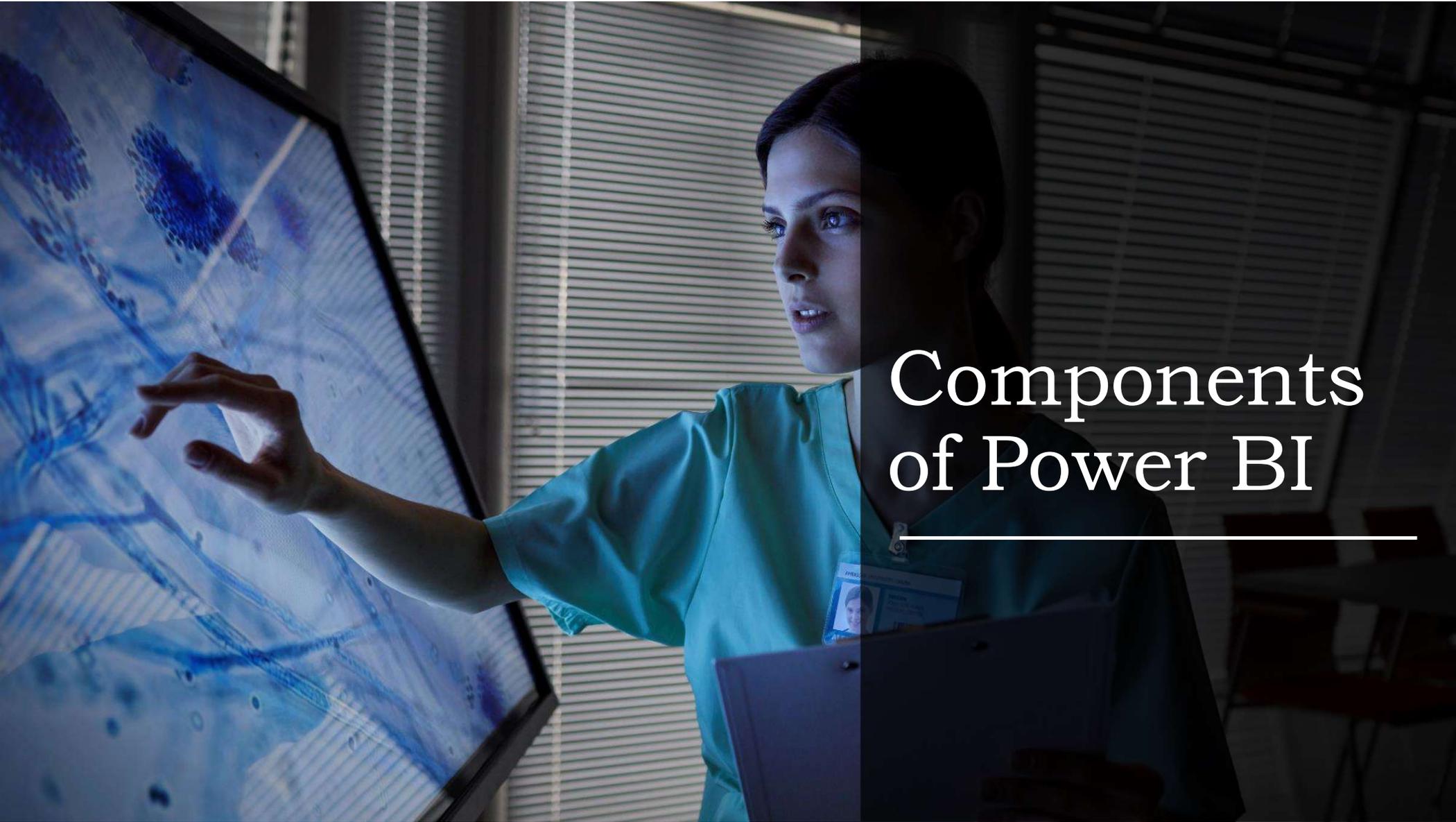
- ❑ Integration with cloud storage platforms
 - Flawless integration with **cloud storage platforms such as SharePoint, OneDrive and database management systems such as SQL**
- ❑ Integration with programming platforms
 - Integrates seamlessly with programming platforms such as **R, Python** etc
- ❑ Data Security
 - Power BI ensures data security by **providing granular and advanced controls** on accessing data both internally and externally
- ❑ Real time KPI Alert
 - Power BI offers a capability to regularly track metrics and measurements by enabling an **alert/notification feature based on a threshold value given**
- ❑ Multiple formats available for data upload
 - Power BI provides a capability of uploading/importing a file under various formats such as **.xlsx, .csv, databases, online platforms** etc.
- ❑ Data Analysis Expressions (DAX)
 - They are **predefined functions** that help perform data transformations, logical operations etc.

Features of Power BI

❑ Power BI Gateway:

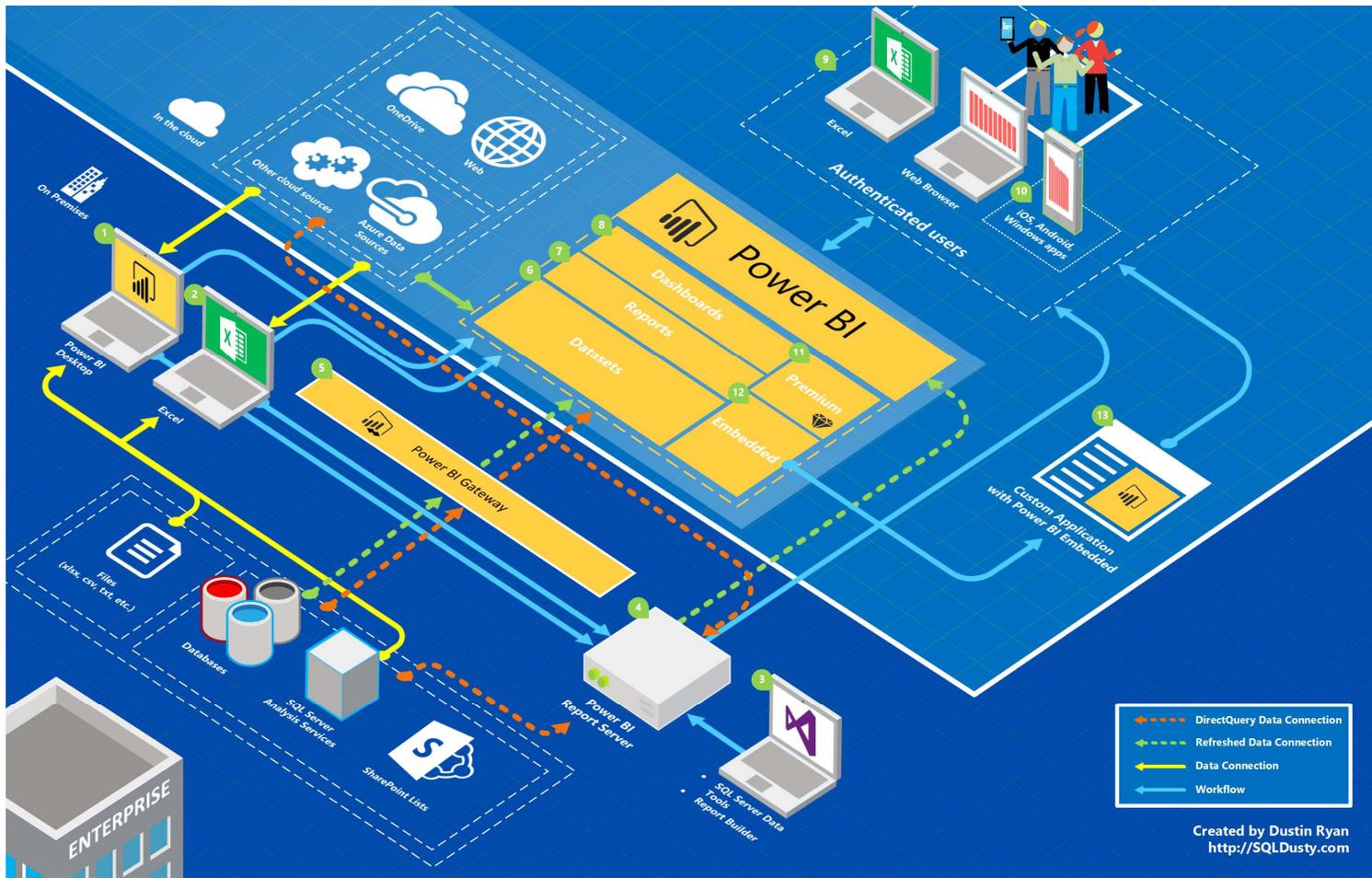
- With the help of gateways, a **connection can be created between cloud/web based apps to data present in an on-premises network**
- Two types of gateways include:
On-premise data gateway(standard) and On-premise data gateway(personal)

	On-premise data gateway (standard)	On-premise data gateway (personal)
Users	Allows multiple users	Single user
Services supported	Power BI, Power Apps, Azure Logic Apps, Power Automate, Azure Analysis Services, Dataflows	Power BI
Connection Type	Import data, Scheduled refresh, live query	Import data, Scheduled refresh



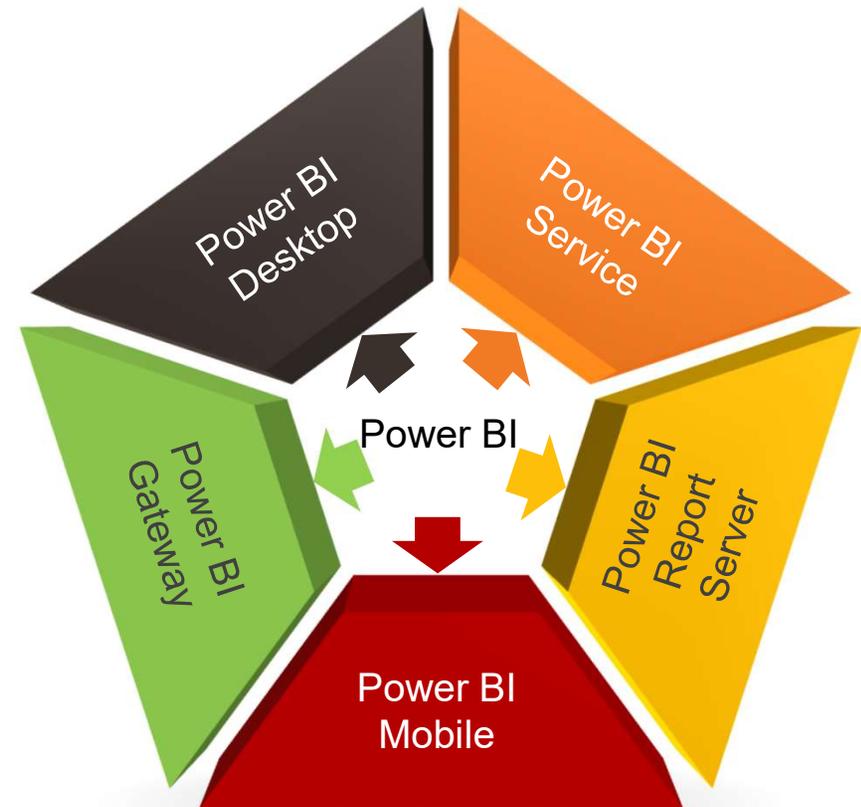
Components of Power BI

Components of Power BI



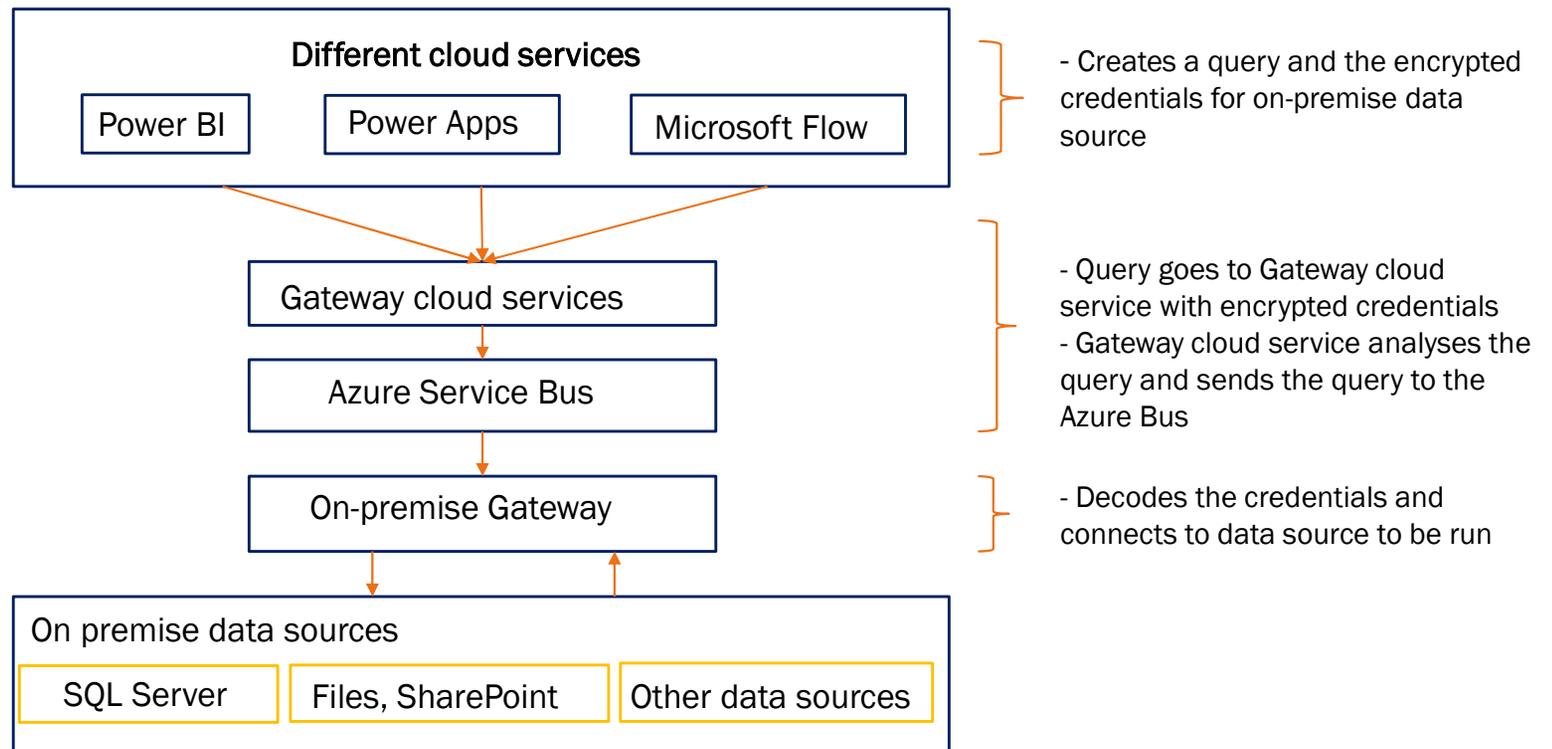
Components of Power BI(cont.)

- ❑ Power BI Desktop:
 - It is a **free version that can be installed in your system**
 - It **allows to connect to data, transform and create interactive visualization**
- ❑ Power BI Service:
 - Reports created in Power BI Desktop is shared with other users via Power BI Service
 - It is a **web-based platform** and is available in 3 versions :
 - **Free version, Pro version and Premium version**
- ❑ Power BI Report Server:
 - This allows organizations host Power BI Reports on an **on-premise platform**
 - Organizations concerned with data security, can use Power BI Report server as it provides **advanced data security controls**
- ❑ Power BI Mobile:
 - **Helps connect with cloud and on-premise data from your mobile**
 - This application is available for **iOS, Android, and Windows**



Components of Power BI(cont.)

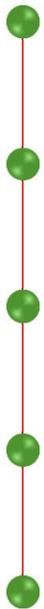
❑ Power BI Gateway: On-premise data gateway : One gateway for multiple cloud services



Power BI Building Blocks



Power BI Building Blocks



Datasets

Visualizations

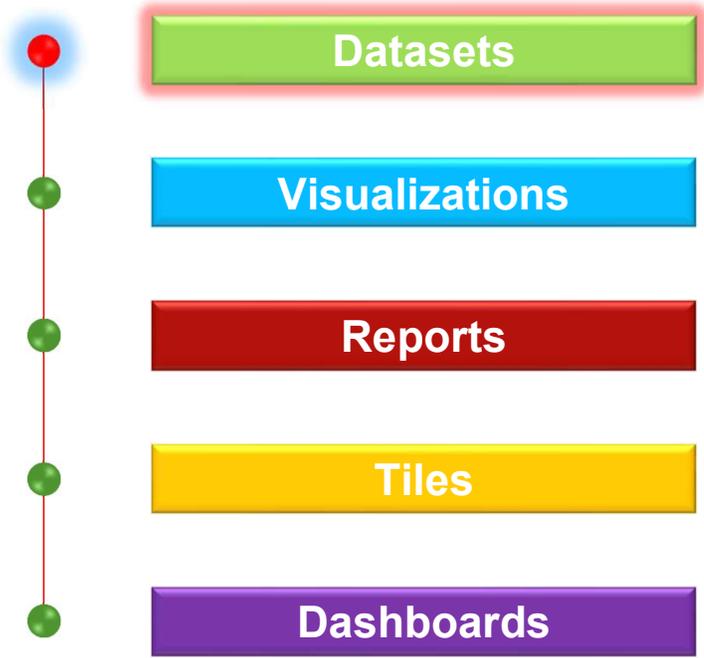
Reports

Tiles

Dashboards



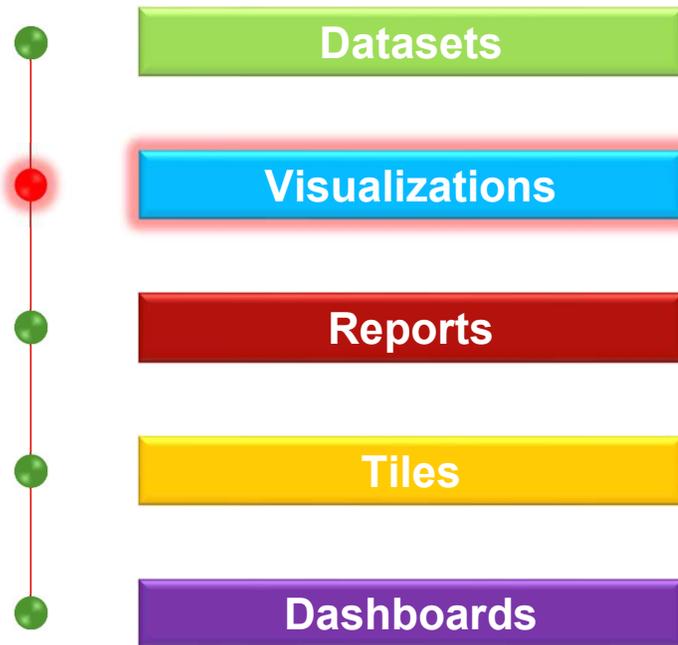
Power BI Building Blocks - Datasets



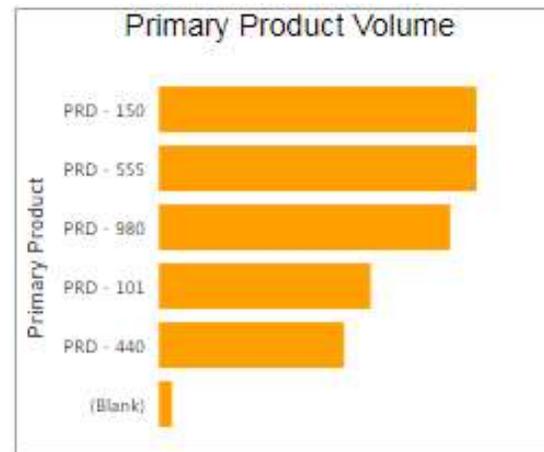
- ❖ A dataset is an accumulation of information that Power BI uses to make its representations
- ❖ Datasets can also be a wide range of sources, which you can channel and consolidate to give an accumulation of information for use in Power BI

	A	B	C	D	E	F	G	H	I
1	Case ID	Date	Agent Professional(0-5)	NPS Score(0-10)	CES(0-10)	Agent Nam	Manager Nam	Team Nam	Locatio
2	1	9/25/2019	5	9	10	Mitchell	Rebecca	Training Team 2	Australia
3	2	7/22/2019	4	7	7	Floyd	Raja	Training Team 3	India
4	3	7/9/2019	5	8	7	Aiden	Raja	Training Team 1	India
5	4	8/17/2019	4	7	6	Jim	Patrick	Training Team 1	Spain
6	5	6/10/2019	4	10	6	Tine	Rebecca	Training Team 1	Australia
7	6	9/25/2019	2	8	4	Kira	Patrick	Training Team 1	Spain
8	7	9/13/2019	0	3	3	Lia	Rebecca	Training Team 3	Turkey
9	8	7/2/2019	1	6	3	Jim	Patrick	Training Team 1	Spain
10	9	6/18/2019	0	4	2	Lydia	Rebecca	Training Team 2	Australia
11	10	7/6/2019	3	4	8	Lydia	Rebecca	Training Team 2	Australia
12	11	6/28/2019	2	4	8	Alec	Raja	Training Team 3	Malaysia
13	12	9/25/2019	5	8	0	Aiden	Raja	Training Team 1	India
14	13	7/20/2019	4	9	2	Jim	Patrick	Training Team 1	Spain
15	14	9/22/2019	4	8	3	Lia	Rebecca	Training Team 3	Turkey
16	15	6/3/2019	2	2	3	Meghan	Patrick	Training Team 3	USA
17	16	7/16/2019	3	7	4	Aiden	Raja	Training Team 1	India
18	17	8/3/2019	4	7	1	Tine	Rebecca	Training Team 1	Australia
19	18	7/8/2019	5	10	7	Frederick	Rebecca	Training Team 3	Turkey
20	19	6/3/2019	1	1	5	Joel	Rebecca	Training Team 2	Turkey

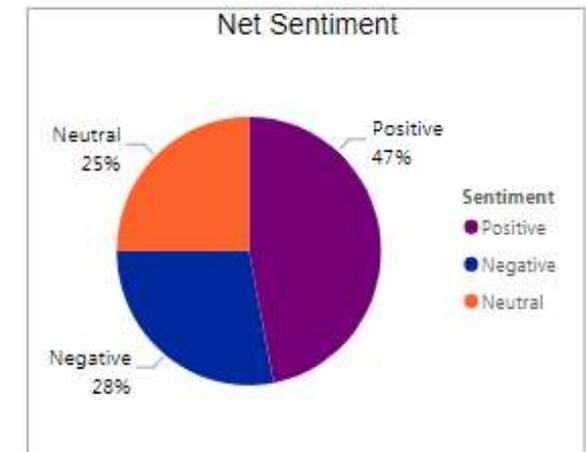
Power BI Building Blocks - Visualizations



- ❖ Data visualization refers to techniques used to communicate insights from data through visual representation
- ❖ Its main goal is to distill large datasets into visual graphics to allow for easy understanding of complex relationships within the data



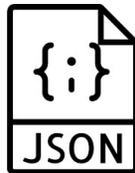
Bar Chart



Pie Chart

Power BI Building Blocks - Datasets

❖ Few of the common data sources can be seen below:



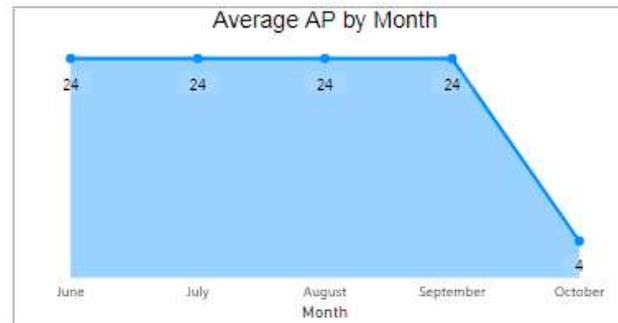
Power BI Building Blocks - Visualizations

Maps

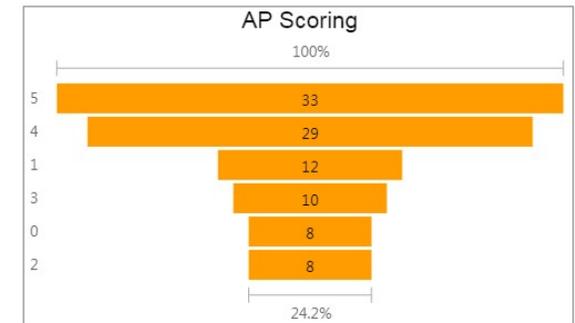
Location



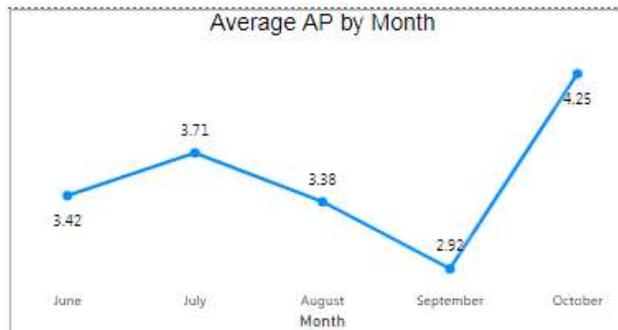
Area Chart



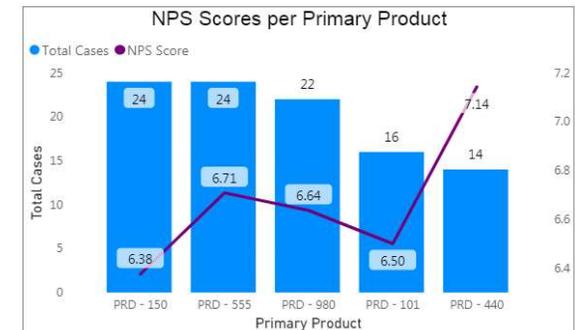
Funnel Chart



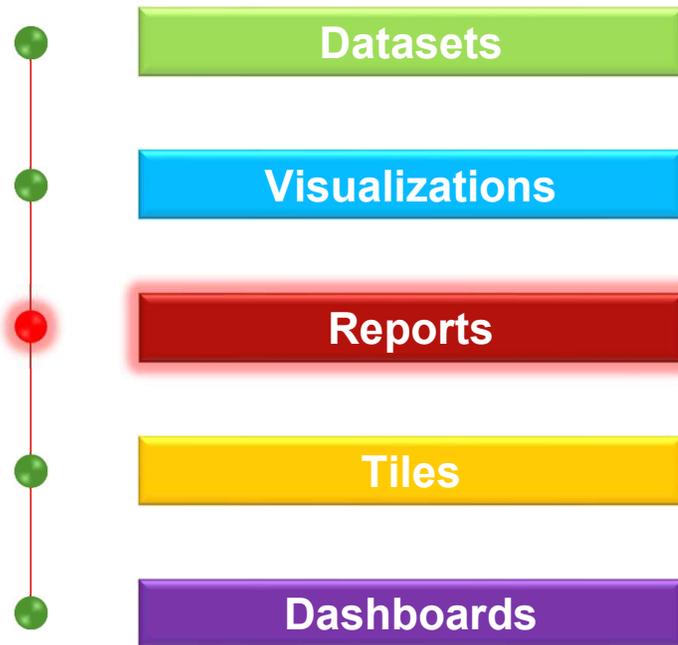
Line Chart



Line and Column Chart



Power BI Building Blocks - Reports

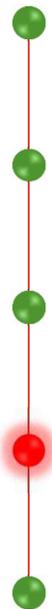


- ❖ Collections of visualizations on Power BI representing different dataset on one or more pages
- ❖ Few examples of Reports:
 - Business Introduction / Proposal Reports
 - Annual Reports
 - Operational Reports
 - Strategic Reports
 - Analytical Reports

Power BI Building Blocks - Reports



Power BI Building Blocks - Tiles



Datasets

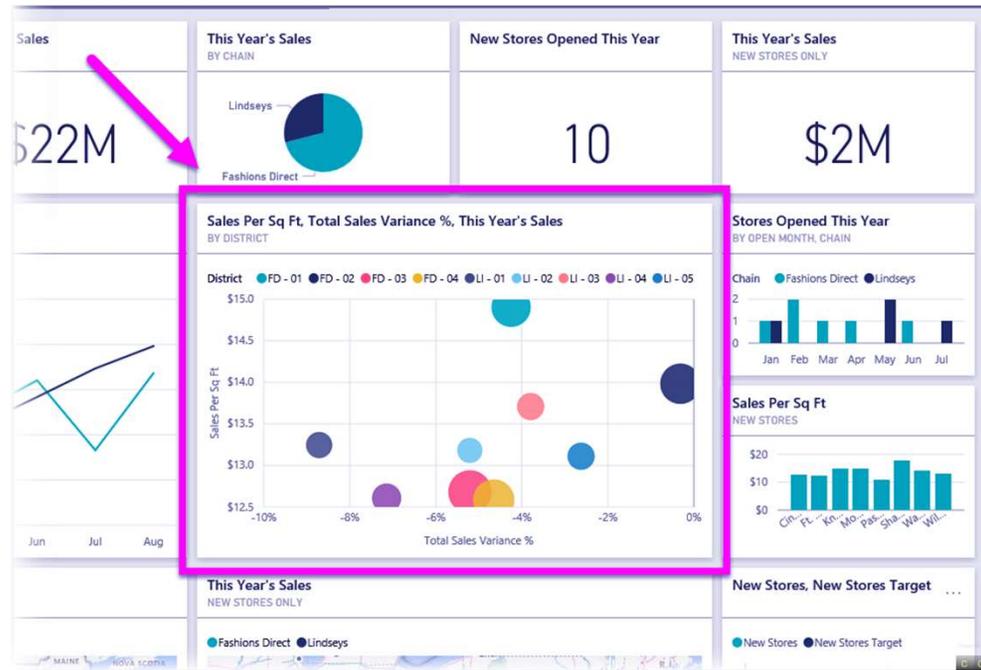
Visualizations

Reports

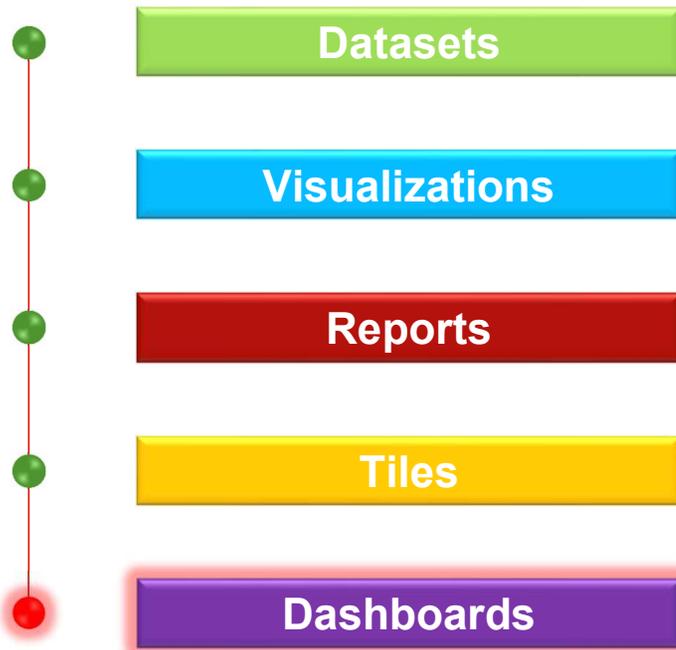
Tiles

Dashboards

- ❖ A tile is a single block containing a visualization in a Power BI dashboard/report
- ❖ Tiles segregate each informative visualization distinctively to provide a clear view



Power BI Building Blocks - Dashboards



- ❖ A Dashboard is a collection of visualizations from different reports or report pages, displaying an overview of the complete project
- ❖ Since a dashboard is limited to only one page, it contains only the most important elements/ visuals of the project



Reports vs Dashboards

Capability	Reports	Dashboards
Pages	One or more pages	Only one page
Data Sources	Single dataset per report	One or more reports and one or more datasets per dashboard
Set Alerts	No	Can create alerts to email you when the dashboard meets certain conditions
Features	Can't create a featured report	Can set one dashboard as your feature dashboard
Filtering	Multiple ways to filter, highlight and slide data	Filters are newly added on the Dashboard
Customization	Can customize as per user's preference	No
Extracting underlying Data	Yes	No (Exporting graphical data is possible but underlying dataset tables can not be extracted)

Power BI Helpful Links

Download Power BI	https://powerbi.microsoft.com/en-us/downloads/ <i>*click on – See download or language options</i>
Update Power BI to the latest Version	
<u>Power BI Blog:</u> Keep up with the latest and upcoming features on Power BI	https://powerbi.microsoft.com/en-us/blog/
Detailed Information on the latest updates on Power BI	https://powerbi.microsoft.com/en-us/blog/tag/update/

PL-300 Certification

Exam PL-300: Microsoft Power BI Data Analyst

Skills Measured:

- Prepare the data (25-30%)
- Model the data (25-30%)
- Visualize the data (25-30%)
- Deploy and maintain deliverables (15-20%)

Validity:

- Currently 1 Year

For more information, please refer this link:

- <https://learn.microsoft.com/en-us/credentials/certifications/exams/pl-300>

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Connect with the founder of Anexas Europe – Amitabh Saxena on his LinkedIn account to see his latest videos on quality topics <https://www.linkedin.com/in/amitabhsaxena/>

Thank You!

Please write to Anexas Team at enquiry@anexas.net for any queries

Anexas website: www.anexas.net

Thank You!

Congratulations on completing a milestone in your life!

Best wishes for your Power BI journey!

- Amitabh Saxena

Anexas Europe