Power BI

Introduction to Power BI

Hello, my name is Kristina

Krystsina Kremianeuskaya

Lead Software Engineer
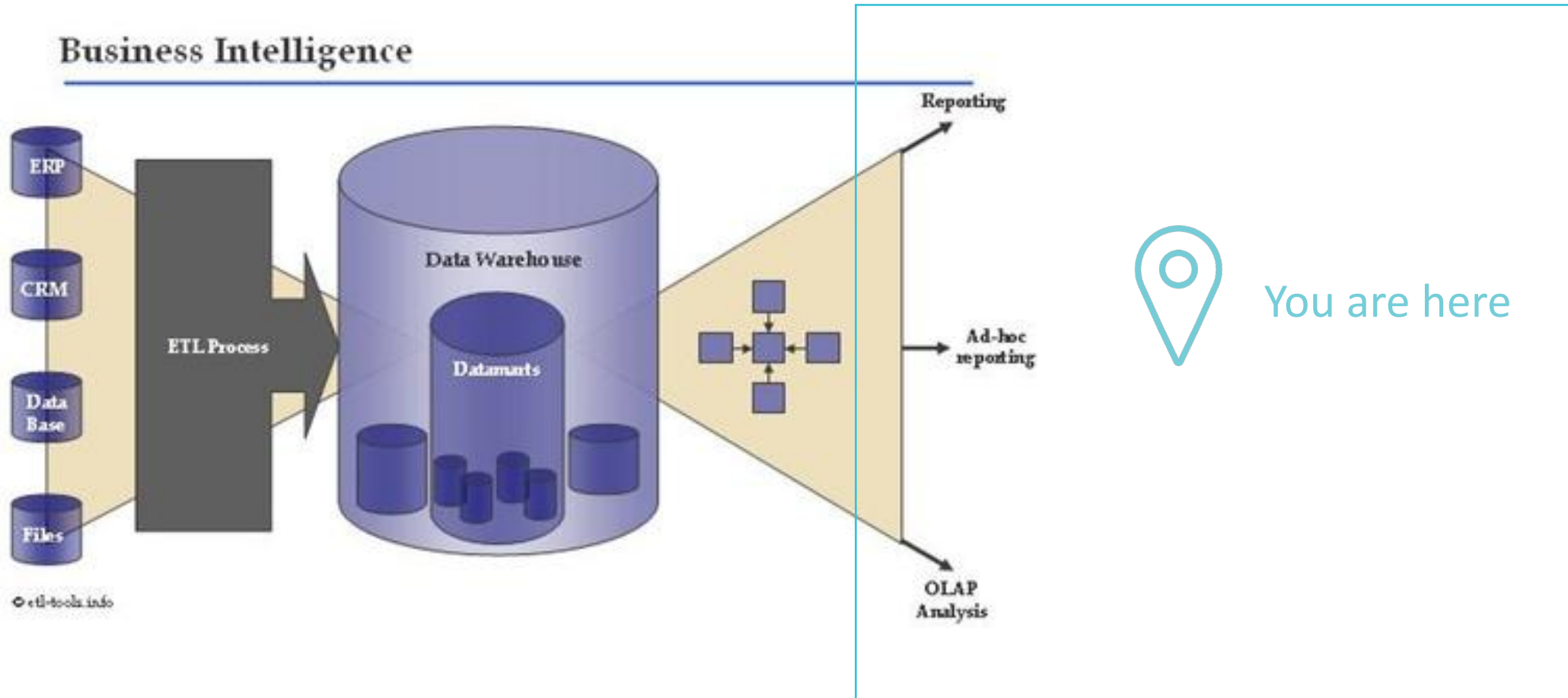
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- Business Intelligence developer with 7+ years of production experience.

- Advanced level in reporting including Tibco Spotfire, Power BI, Qlikview;

- Power BI POCs, pre-sales, mentoring participation;

- Strong proven development skills, including data modelling;

- Strong Business Analysis skills and experience in requirements elicitation and communication with stakeholders;

- Delivery Management production experience;

- Practical HTML, Python, R development experience;

- Working in Agile and KANBAN methodologies.

What is Power BI?

Business Intelligence

ERP
CRM
Data Base
Files

ETL Process

Data Warehouse

Datamarts

Reporting

Ad-hoc reporting

OLAP Analysis

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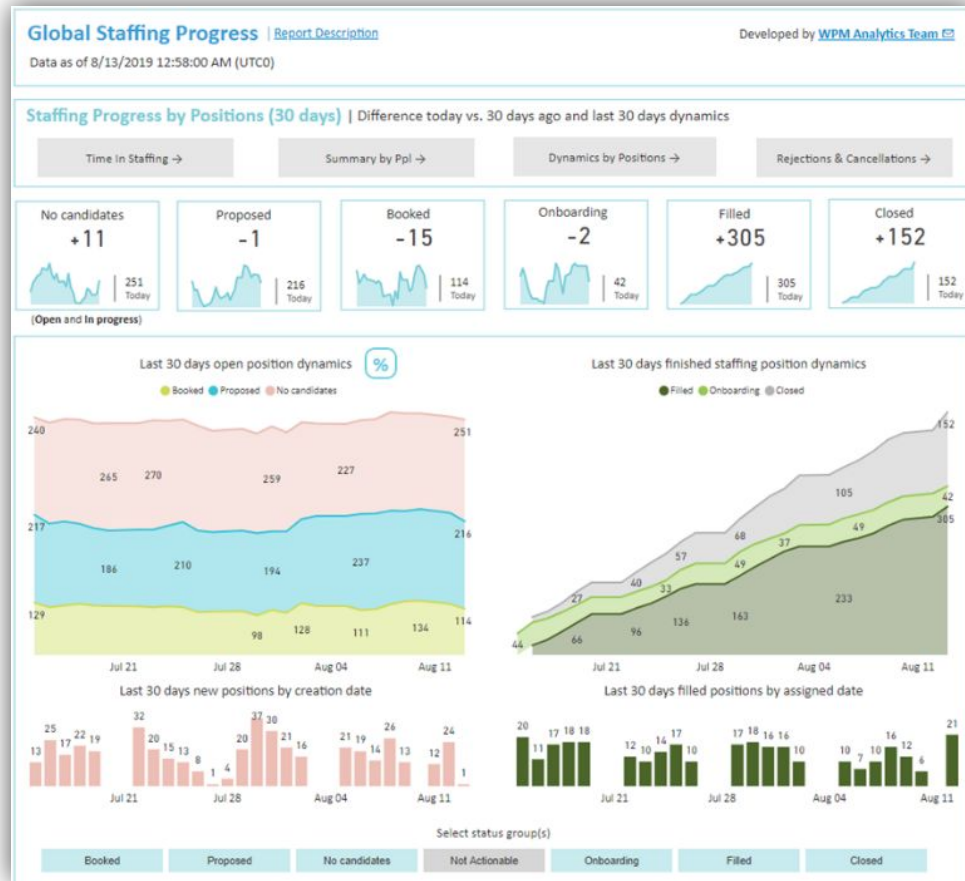You are here

BI Tools

Business Intelligence Tools 2019

What is Power BI?

Power BI is a collection of software services, apps, and connectors that work together to turn unrelated sources of data into coherent, visually immersive, and interactive insights.
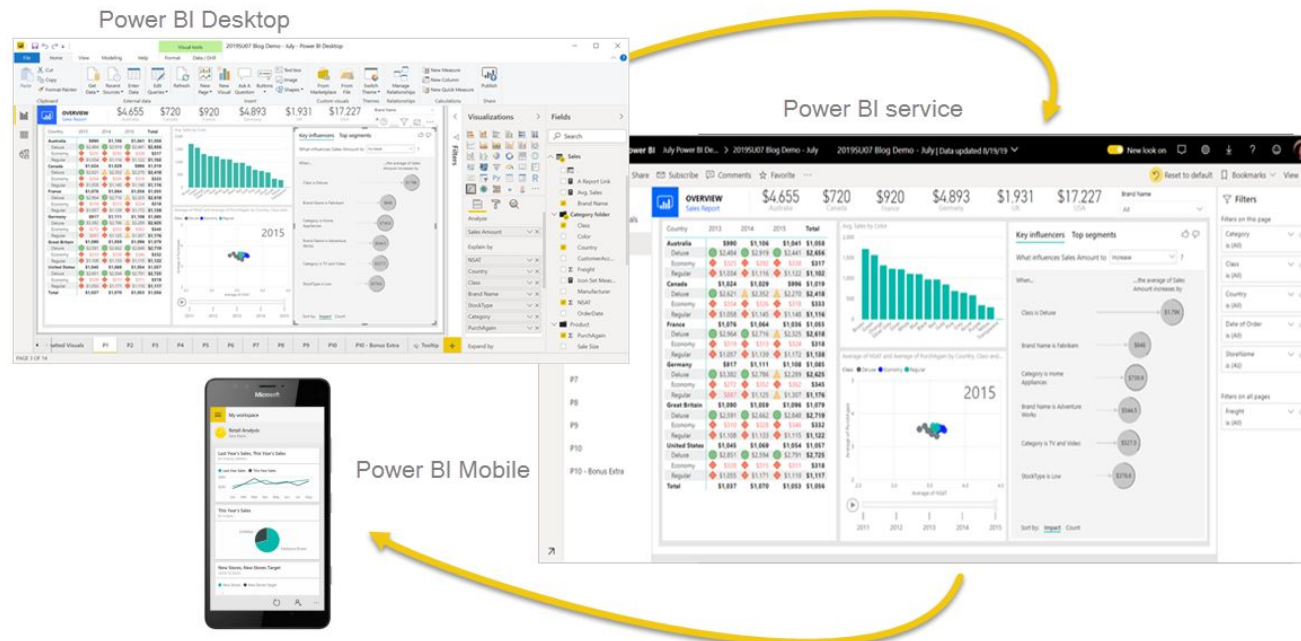

Power BI Desktop

Power BI service

Power BI Mobile
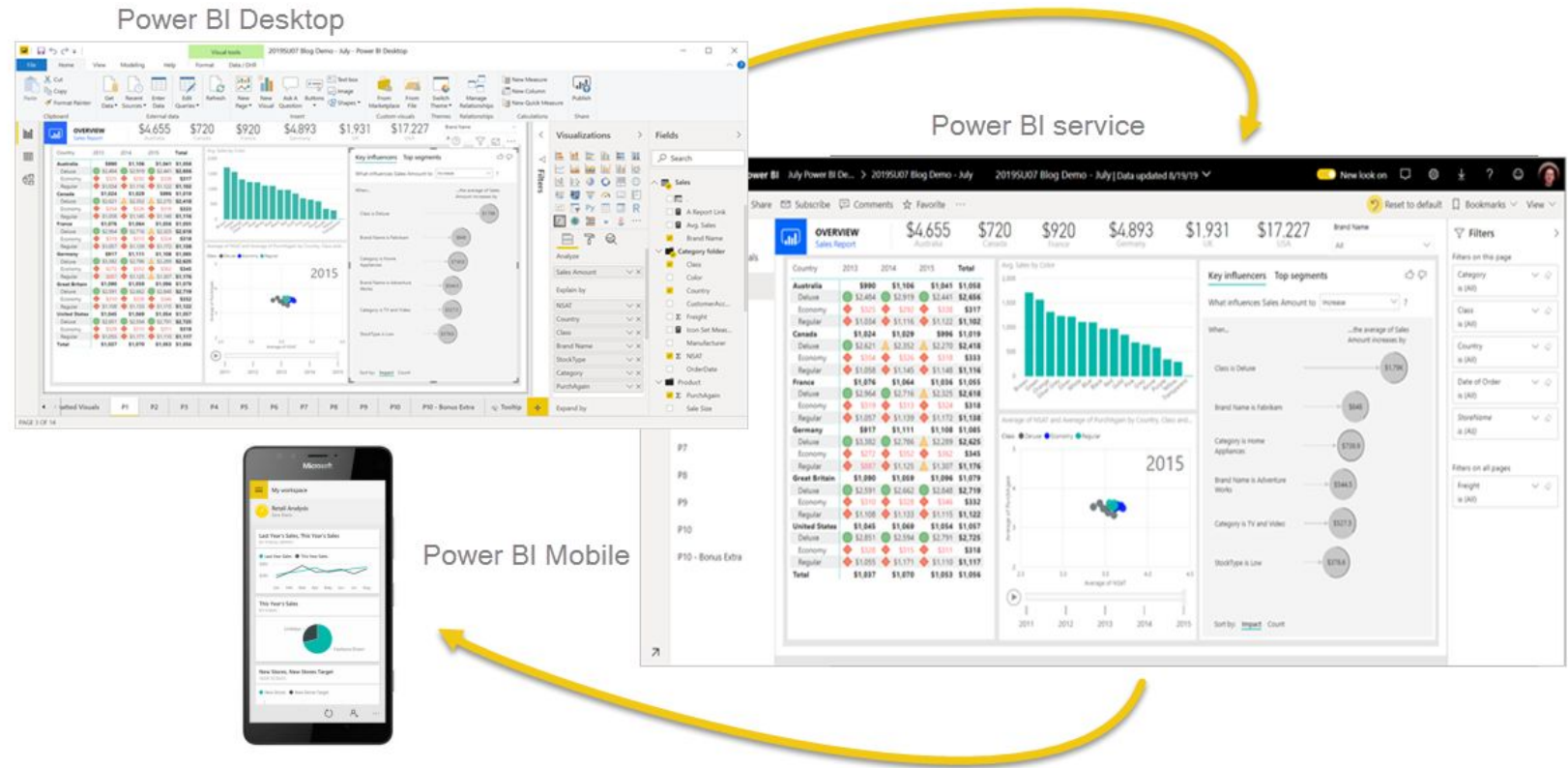
Power BI Success Stories with EPAM

EPAM has several success stories with Power BI implementation: Chevron, MSD Int., Kronos, HAVI, etc. A lot of widely used EPAM internal reports are also built in Power BI (staffing, PlusX, etc.).
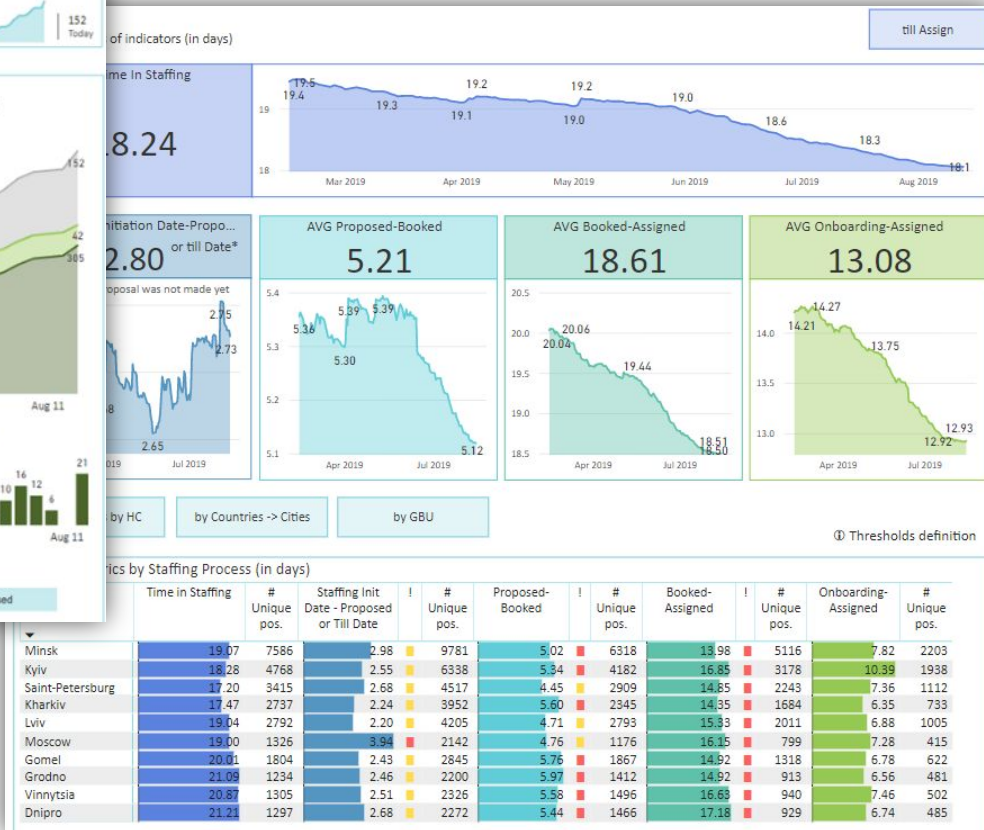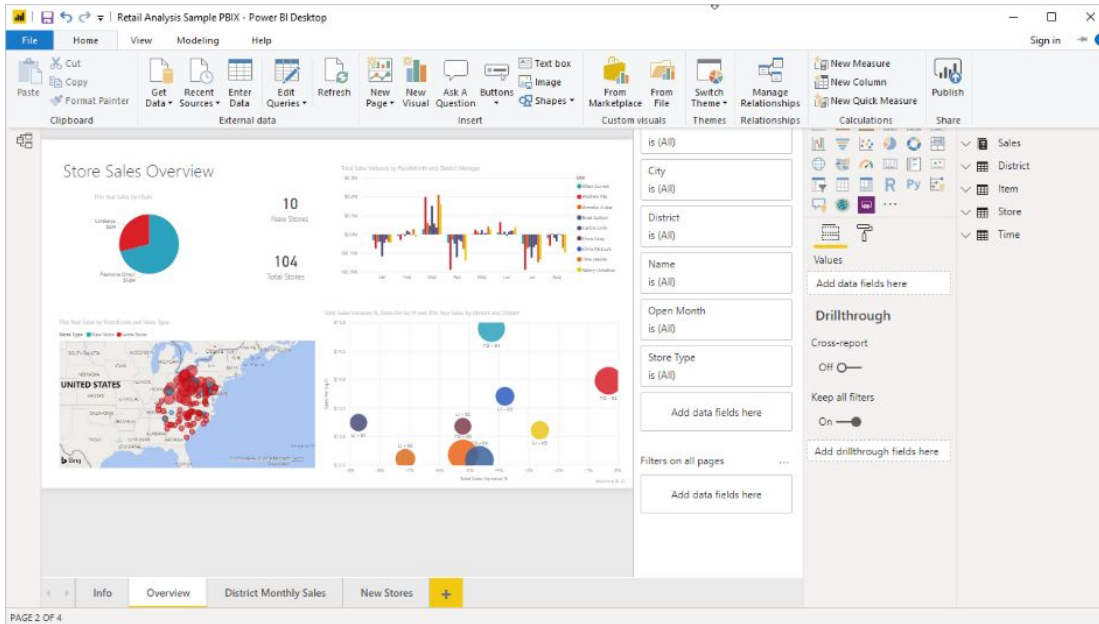
Power BI Platform

Power BI consists of:

- A Windows desktop application called Power BI Desktop.

- An online SaaS (Software as a Service) service called the Power BI service.

- Power BI mobile apps for Windows, iOS, and Android devices.

Power BI Desktop

The most common uses for Power BI Desktop are as follows:
- Connect to data
- Transform and clean that data, to create a data model
- Create visuals, such as charts or graphs, that provide visual representations of the data
- Create reports that are collections of visuals, on one or more report pages
- Share reports with others by using the Power BI service

There are three views available in Power BI Desktop, which you select on the left side of the canvas.
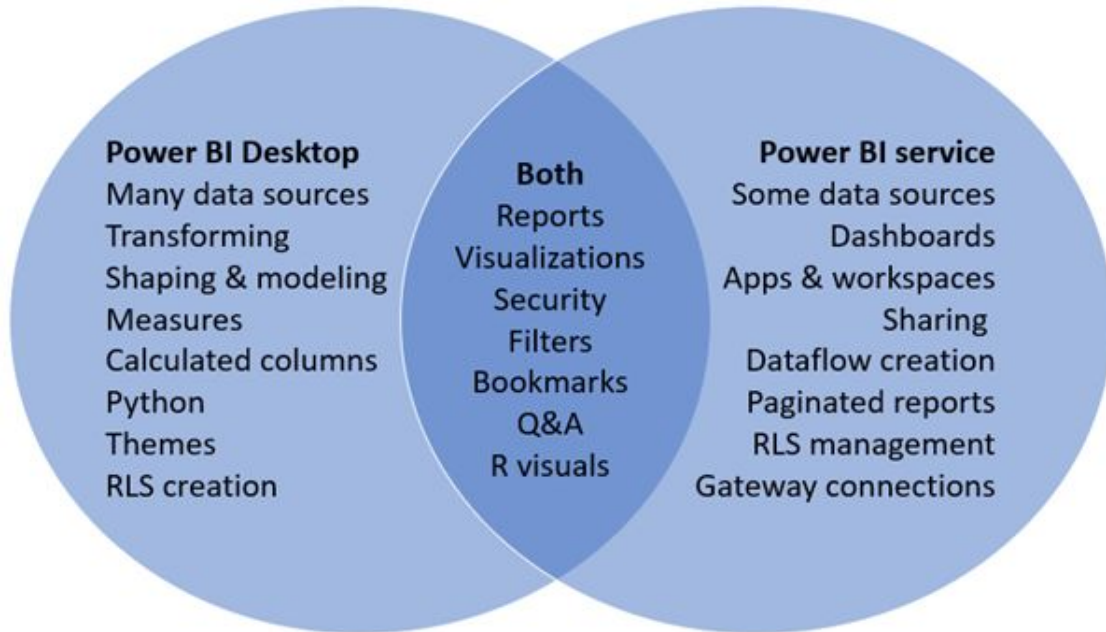
Report: In this view, you create reports and visuals, where most of your creation time is spent.

Data: In this view, you see the tables, measures, and other data used in the data model associated with your report and transform the data for best use in the report's model.

Model: In this view, you see and manage the relationships among tables in your data model.

Power BI Service

Power BI Desktop
Many data sources
Transforming
Shaping & modeling
Measures
Calculated columns
Python
Themes
RLS creation

Both
Reports
Visualizations
Security
Filters
Bookmarks
Q&A
R visuals

Power BI service
Some data sources
Dashboards
Apps & workspaces
Sharing
Dataflow creation
Paginated reports
RLS management
Gateway connections

- Power BI Service (usually known simply as Power BI) is the full version of Power BI, and is hosted on Azure, Microsoft's cloud platform. There are two ways to license Power BI Service; Power BI Pro and Power BI Premium.

- The Microsoft Power BI service (app.powerbi.com), sometimes referred to as Power BI online, is the SaaS (Software as a Service) part of Power BI. In the Power BI service, dashboards help you keep a finger on the pulse of your business. Dashboards display tiles, which you can select to open reports for exploring further. Dashboards and reports connect to datasets that bring all of the relevant data together in one place.

Other Products
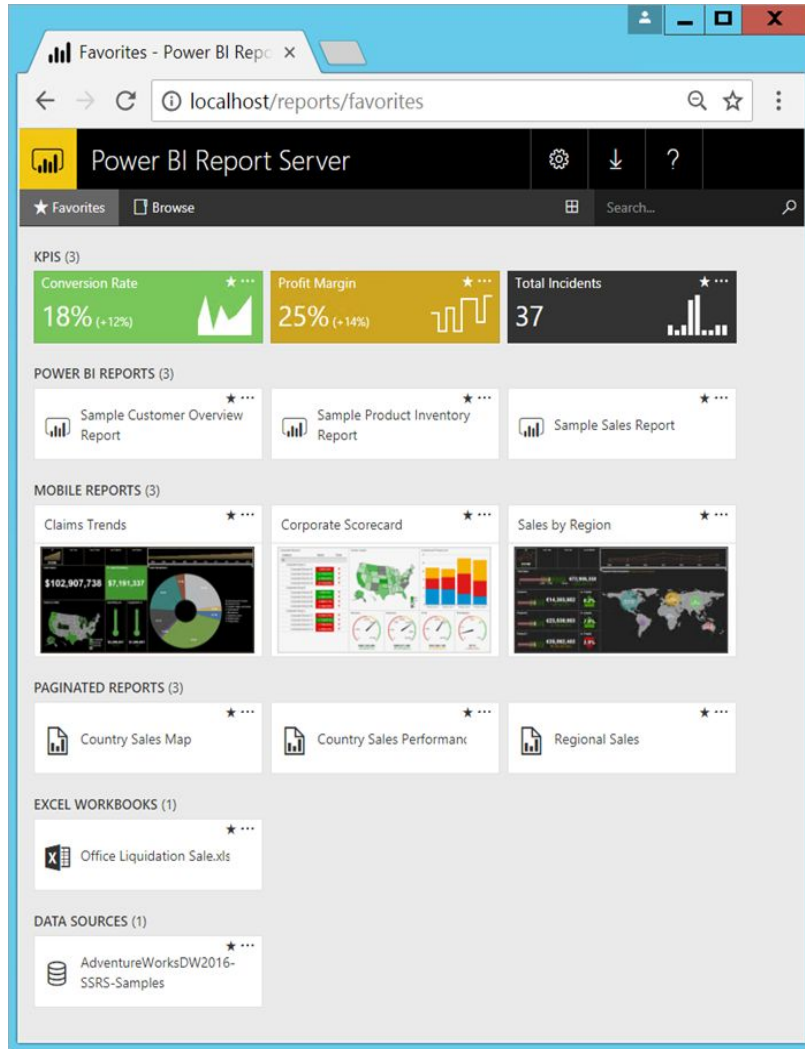
Power BI Mobile

- Power BI reports and dashboards are available in the Power BI mobile apps, whether they're on premises or in the cloud. Try viewing and interacting with them on your mobile device, be it iOS (iPad, iPhone, iPod Touch, or Apple Watch), Android phone or tablet, or Windows 10 device.

Power BI report Server

- Power BI Report Server is an on-premises report server with a web portal in which you display and manage reports and KPIs. Along with it come the tools to create Power BI reports, paginated reports, mobile reports, and KPIs. Your users can access those reports in different ways: viewing them in a web browser or mobile device, or as an email in their in-box.
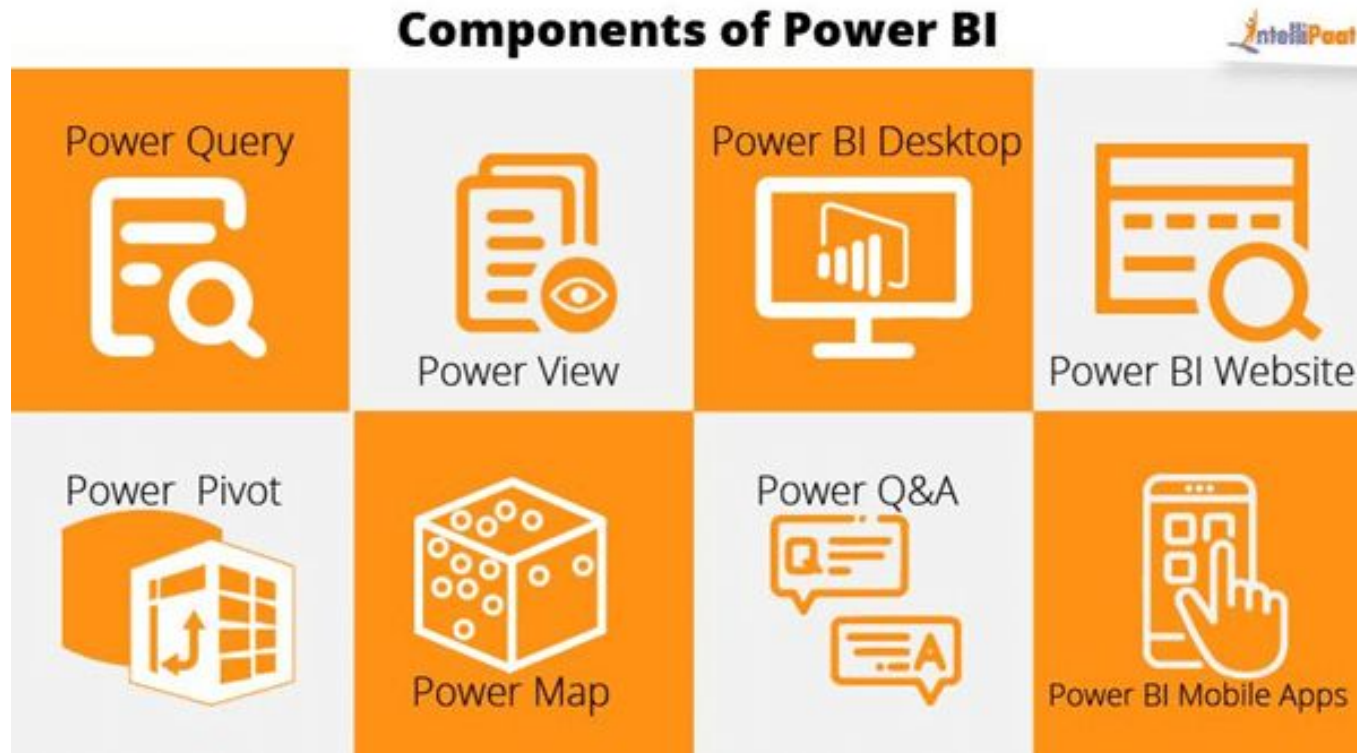
Azure Gateway

The on-premises data gateway acts as a bridge to provide quick and secure data transfer between on-premises data (data that isn't in the cloud) and several Microsoft cloud services. These cloud services include Power BI, PowerApps, Power Automate, Azure Analysis Services, and Azure Logic Apps. By using a gateway, organizations can keep databases and other data sources on their on-premises networks, yet securely use that on-premises data in cloud services.
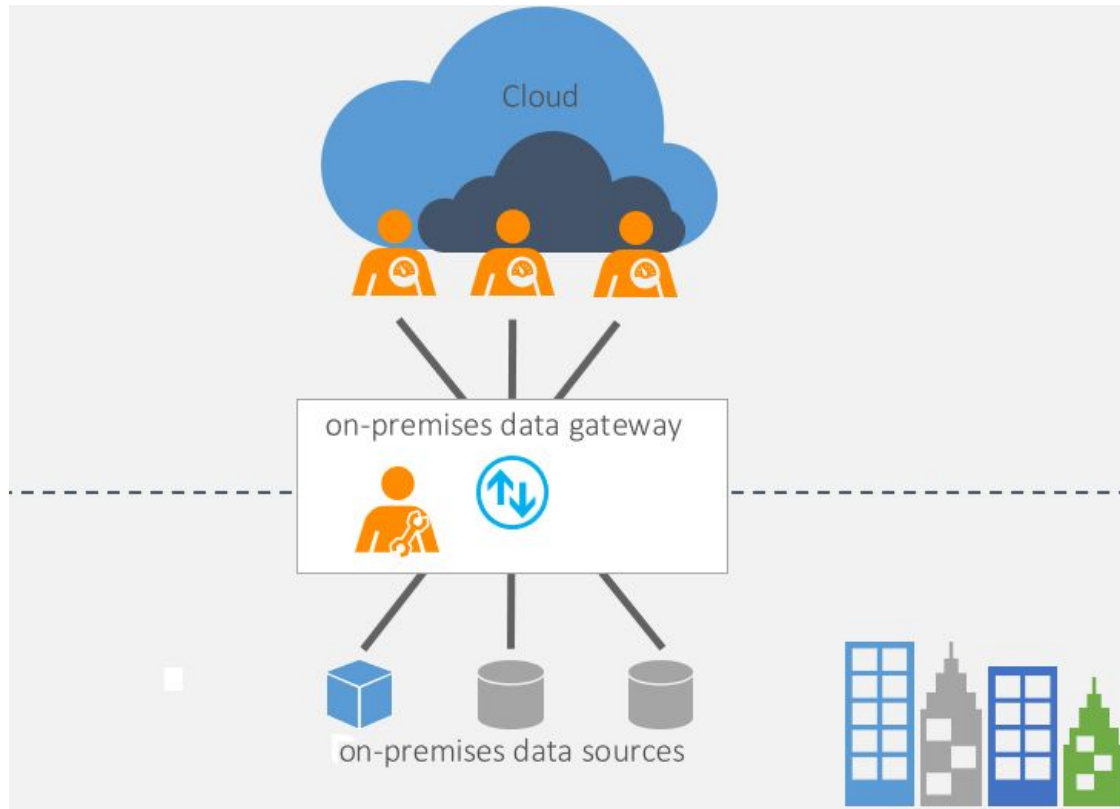
There are two different types of gateways, each for a different scenario:

- **On-premises data gateway** allows multiple users to connect to multiple on-premises data sources. You can use an on-premises data gateway with all supported services, with a single gateway installation. This gateway is well-suited to complex scenarios with multiple people accessing multiple data sources.
- **On-premises data gateway (personal mode)** allows one user to connect to sources and can't be shared with others. An on-premises data gateway (personal mode) can be used only with Power BI. This gateway is well-suited to scenarios where you're the only person who creates reports, and you don't need to share any data sources with others.

Power BI Components

Components of Power BI — IntelliPaat

Power Query | Power View | Power BI Desktop | Power BI Website

Power Pivot | Power Map | Power Q&A | Power BI Mobile Apps

The Power BI product is made up of a number of apps, each with their own features and uses. These include:

- **Power Query**: a data connection tool that lets you transform, combine, and enhance data from several sources

- **Power Pivot**: a data modeling tool for creating data models

- **Power View**: a data visualization tool that generates interactive charts, graphs, maps, and other visuals

- **Power Map**: another visualization tool for creating immersive 3D visuals

- **Power Q&A**: a question and answer engine that lets you ask questions about your data in plain language

Power Query
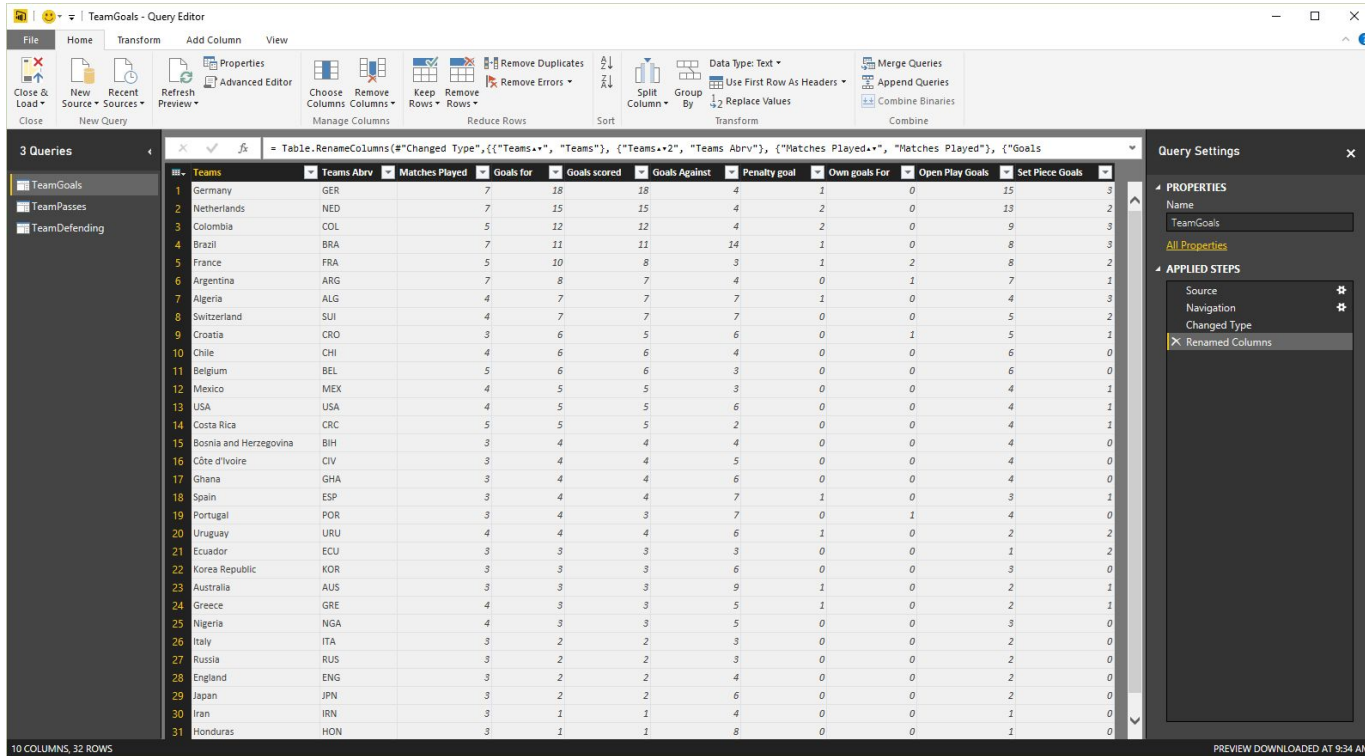
Power Query is data transformation and mash up engine. Power Query can be downloaded as an add-in for Excel or be used as part of Power BI Desktop. With Power Query you can extract data from many different data sources. You can read data from databases such as SQL Server, Oracle, MySQL, DB2, and many other databases. You can fetch data from files such as CSV, Text, Excel.

Power Query also uses a powerful formula language as code behind called M. M is much more powerful than the GUI built for it. There are many functionalities in M that cannot be accessed through graphical user interface. Screenshot below is a view of Power Query editor and some of its transformations.

Power Pivot
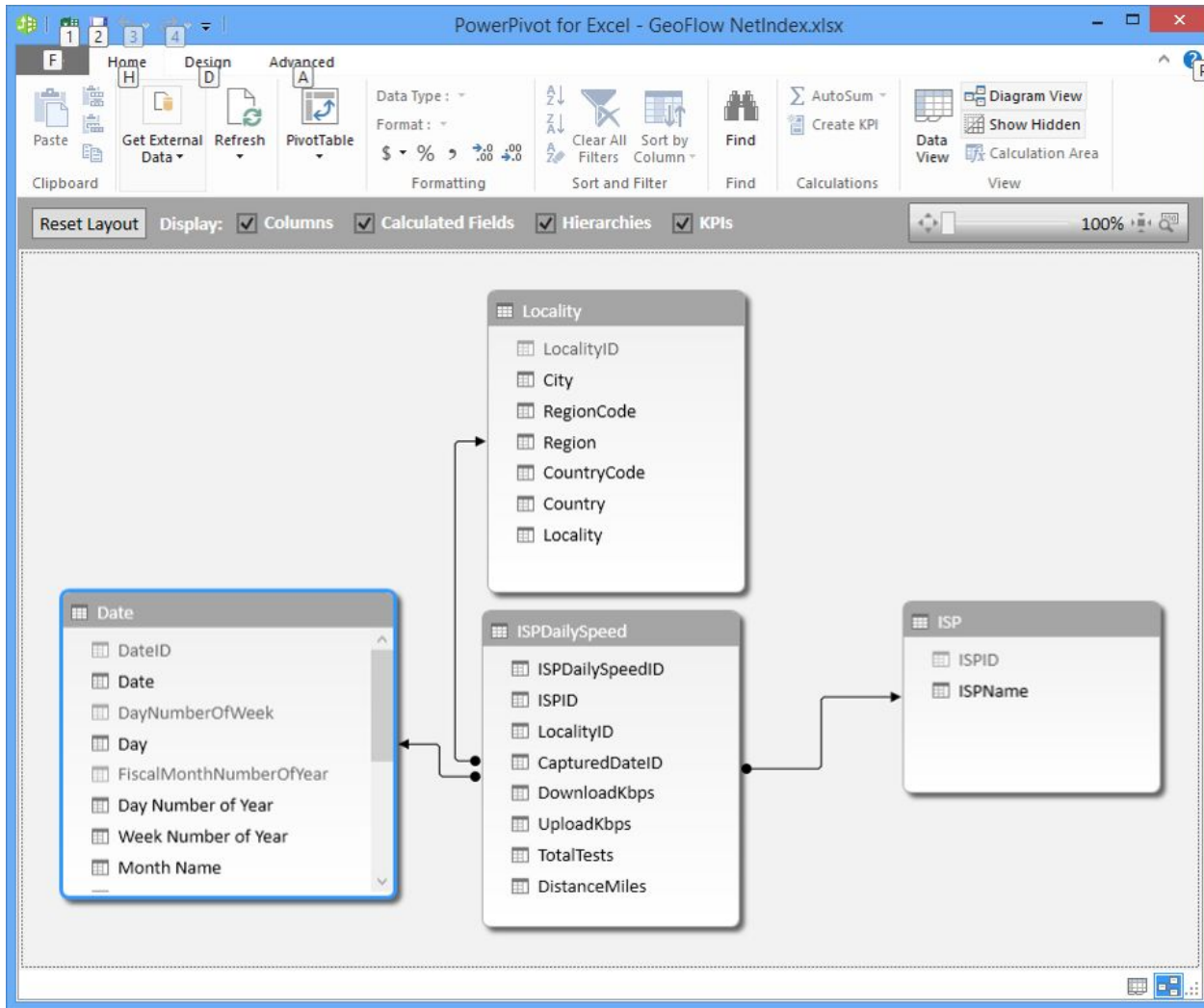
Power Pivot is data modelling engine which works on xVelocity In-Memory based tabular engine. The In-Memory engine gives Power Pivot fast response time and the modelling engine provides the possibility to build the star schema, calculated measures and columns, build relationships through entities and so on. Power Pivot uses Data Analysis eXpression language (DAX) for building measures and calculated columns. DAX is a powerful functional language, and there are heaps of functions for that in the library. We will go through details of Power Pivot modelling and DAX in future chapters.

Power View
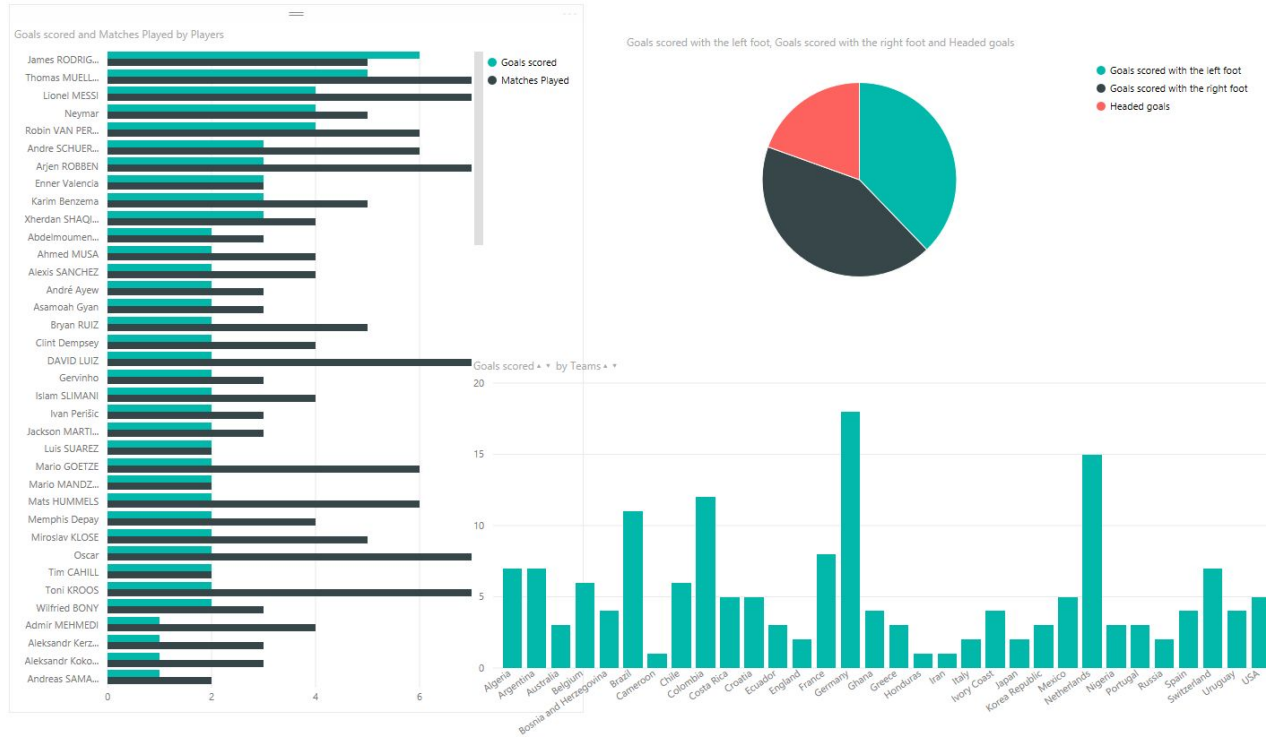
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Power Q&A
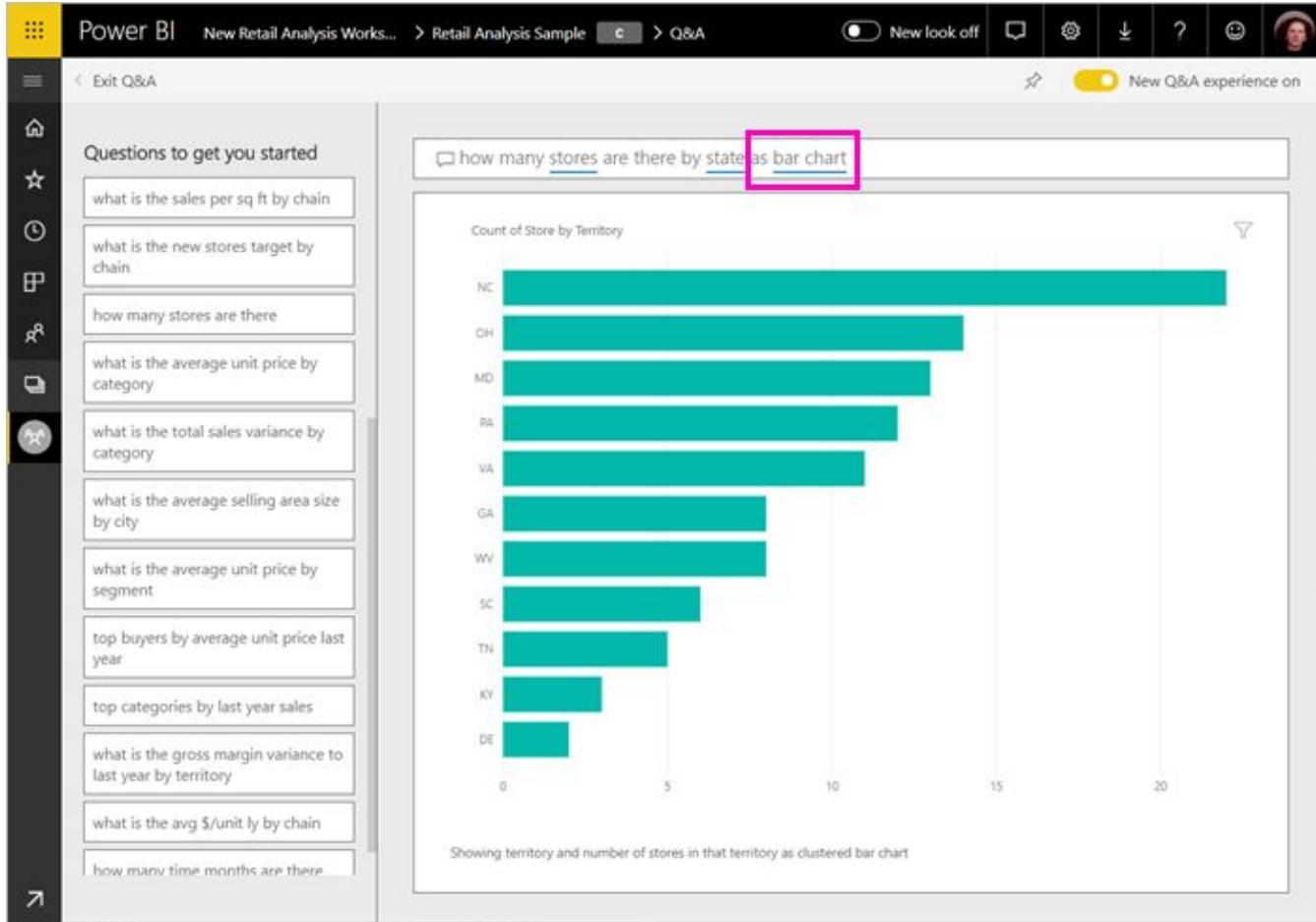
Power Q&A is a natural language engine for questions and answers to your data model. Once you've built your data model and deployed that into Power BI website, then you or your users can ask questions and get answers easily. There are some tips and tricks about how to build your data model so it can answer questions in the best way. Users can simply ask questions such as: Number of Stores by State, and Power Q&A will answer their question in a bar chart.

Homework

1. PBIX file with your progress

2. Word/Power Point file with screenshots and comments

3. * Additional steps described in the homework