Introduction to Power BI: What is Power BI?

1. What is Power BI?

Power BI is a cloud based data analysis, which can be used for reporting and data analysis from a wide range of data sources. Power BI is simple and user friendly enough that business analysts and power users can work with it and get benefits of it. On the other hand Power BI is powerful and mature enough that can be used in enterprise systems by BI developers for complex data mash-up and modelling scenarios.

Power BI made of 6 main components, these components released in the market separately, and they can be used even individually. Components of Power BI are:

- *Power Query: Data mashup and transformation tool.*
- *Power Pivot: In-memory tabular data modelling tool*
- *Power View: Data visualization tool*
- *Power Map: 3D Geo-spatial data visualization tool*
- *Power Q&A: Natural language question and answering engine.*
- *Power BI Desktop: A powerful companion development tool for Power BI*

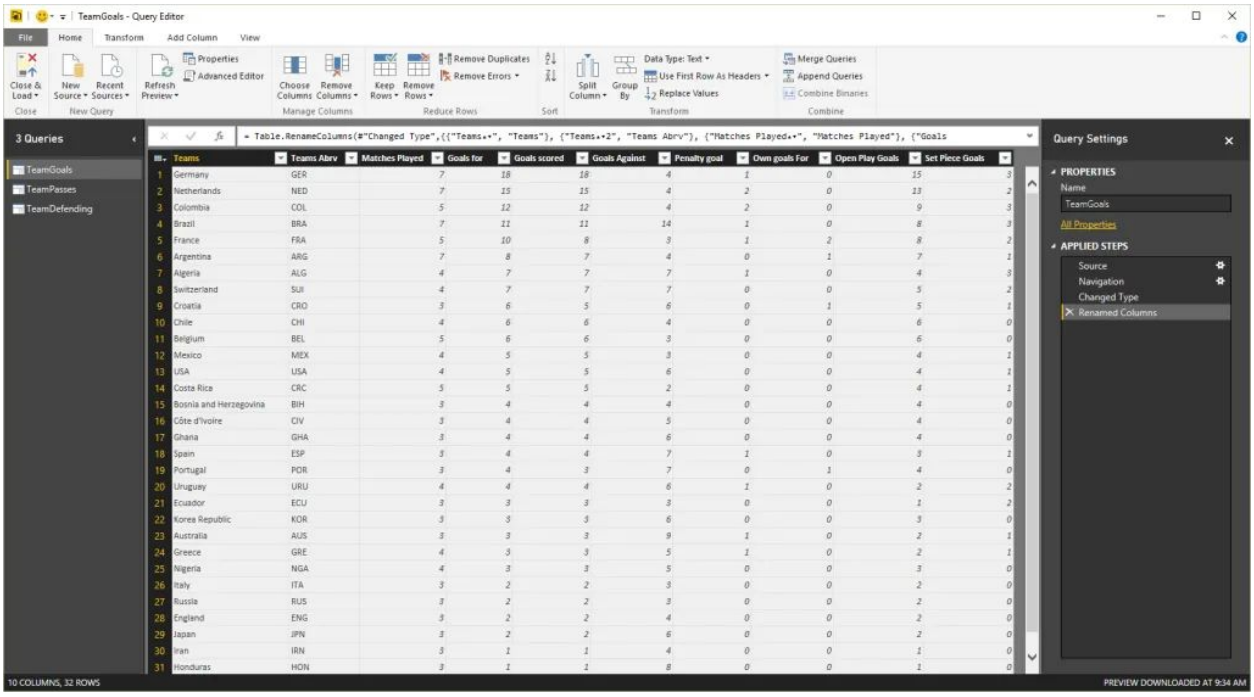
There are many other parts for Power BI as well, such as;

- *PowerBI.com Website; which Power BI data analysis can be shared through this website and hosted there as cloud service*
- *Power BI Mobile Apps; Power BI supported in Android, Apple, and Windows Phones.*

A Quick Overview of Components

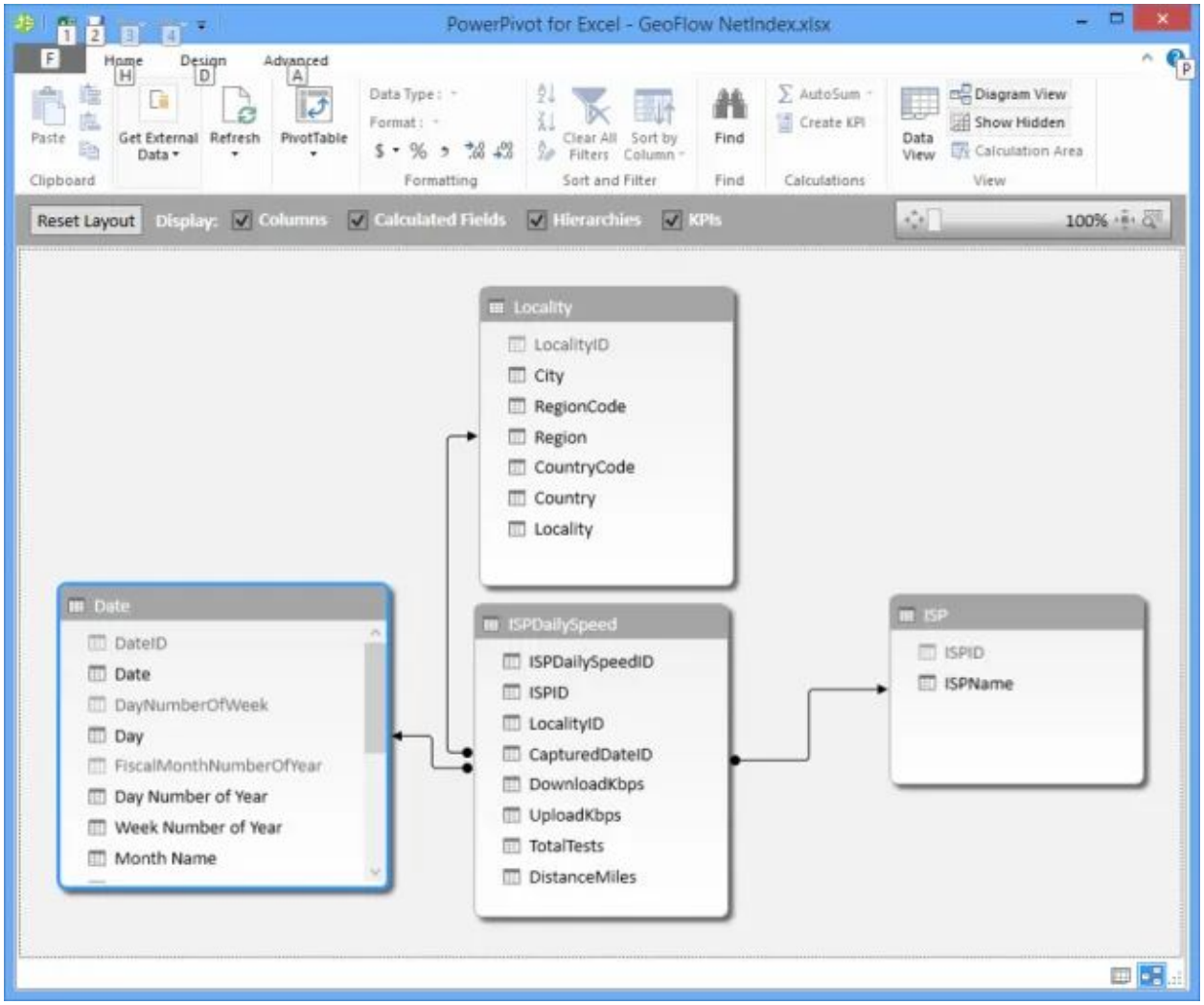
Power Query

1.Power Query is data transformation and mash up engine.
2.Power Query can be downloaded as an add-in for Excel or be used as part of Power BI Desktop.
3.With Power Query you can extract data from many different data sources.
4. You can read data from databases such as SQL Server, Oracle, MySQL, DB2, and many other databases.
5. You can fetch data from files such as CSV, Text, Excel.
6. You can even loop through a folder.
7. You can use Microsoft Exchange, Outlook, Azure…. as source.
8. You can connect to Facebook as source and many other applications.
9. You can use online search or use a web address as the source to fetch the data from that web page.
10. Power Query gives you a graphical user interface to transform data as you need, adding columns, changing types, transformations for date and time, text, and many other operations are available.
11. Power Query also uses a powerful formula language as code behind called M.
12. M is much more powerful than the GUI built for it.
13. There are many functionality in M that cannot be accessed through graphical user interface.
14. I would write deeply about Power Query and M in future chapters so you can confidently write any code and apply complex transformations to the data easily.



Power Pivot

Power Pivot is a data modelling engine which works on xVelocity In-Memory based tabular engine. The In-Memory engine gives Power Pivot super fast response time and the modelling engine would provide you a great place to build your 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. Screenshot below shows the relationship diagram of Power Pivot.



Power View

The main data visualization component of Power BI is Power View.Power View is an interactive data visualization that can connect to data sources and fetch the metadata to be used for data analysis.Power View has many charts for visualization in its list. Power View gives you ability to filter data for each data visualization element or for the entire report.You can use slicers for better slicing and dicing the data. Power View reports are interactive, user can highlight part of the data and different elements in Power View talk with each other. There are many configurations in Power View visualization that I will explain fully in future chapters.

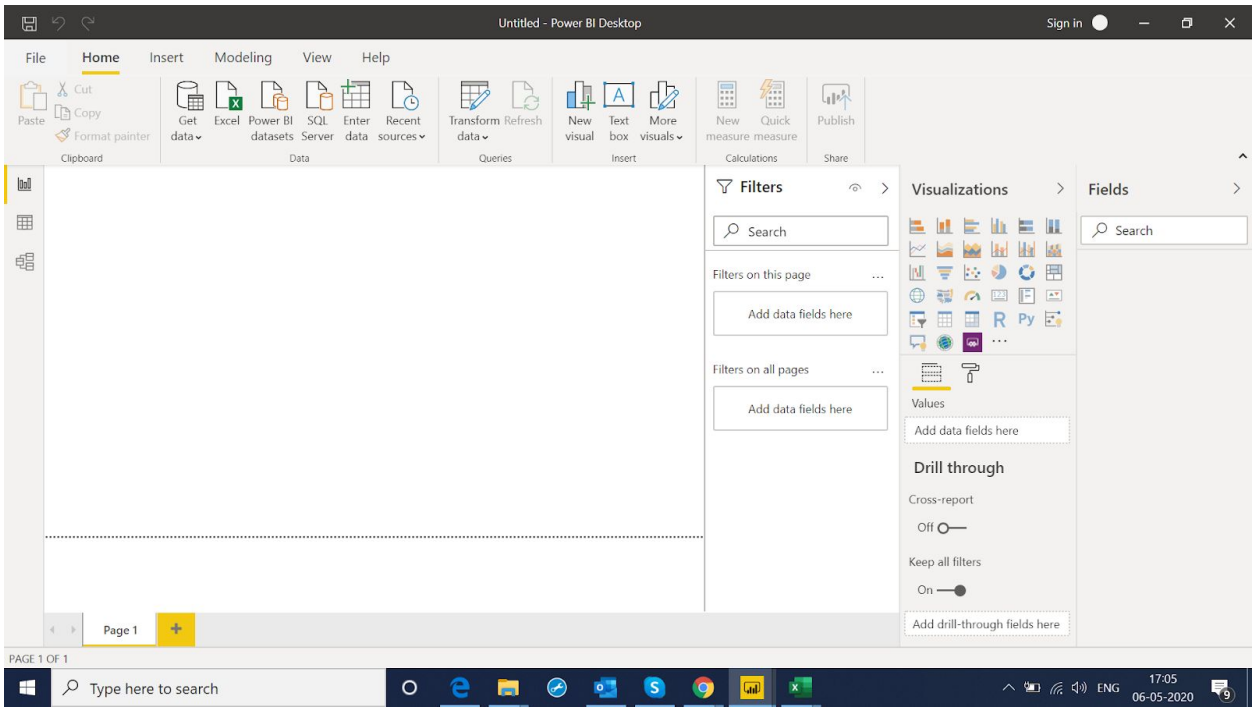
Power Map

Power Map is for visualizing Geo-spatial information in 3D mode. When visualization renders in 3D mode it will gives you another dimension in the visualization. You can visualize a measure as height of a column in 3D, and another measure as heatmap view. You can highlight data based on the Geo-grahpical location such as country, city, state, and street address. Power Map works with Bing maps to get best visualization based on Geo-graphical either latitude and longitude or country, state, city, and street address information. Power Map is an add-in for Excel 2013, and embedded in Excel 2016.

Power BI Desktop

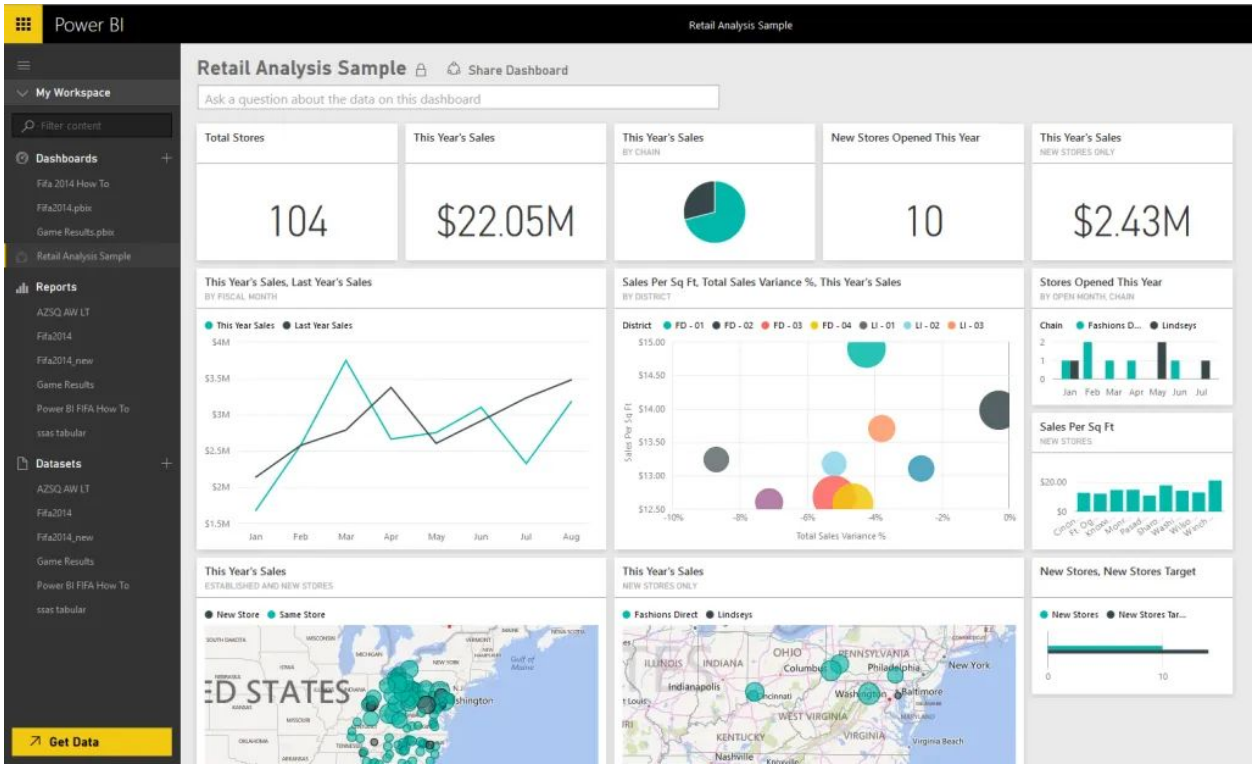
Power BI Desktop is the newest component in Power BI suit. Power BI Desktop is a holistic development tool for Power Query, Power Pivot and Power View. With Power BI Desktop you will have everything under a same solution, and it is easier to develop BI and data analysis experience with that. Power BI Desktop updates frequently and regularly. This product has been in preview mode for a period of time with name of Power BI Designer. There are so much great things about Power BI Desktop that

cannot fit in a small paragraph here, you'll read about this tool in future chapters. because of great features of this product I'll write the a section "Power BI Hello World" with a demo of this product.



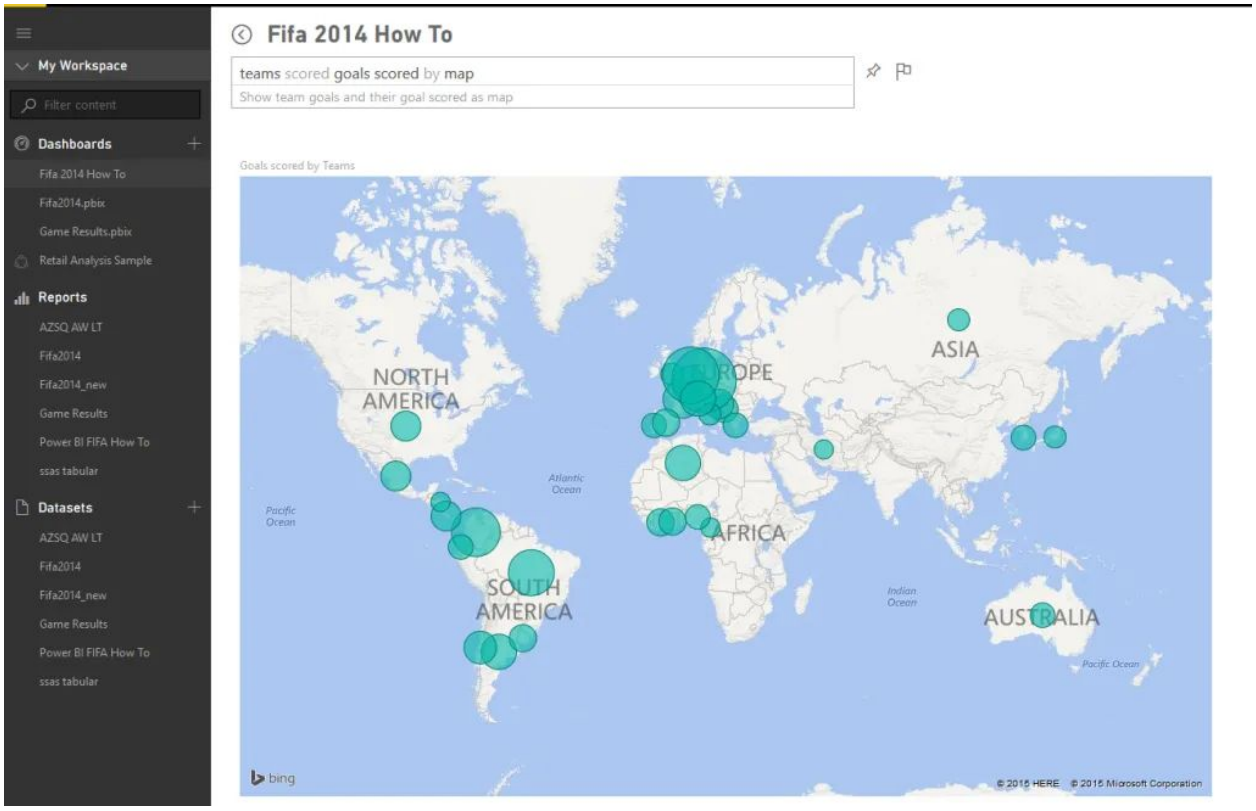
Power BI Website

Power BI solution can be published on the PowerBI website. In Power BI website the data source can be scheduled to refresh (depends on the source and is it supporting for schedule data refresh or not). Dashboards can be created for the report, and it can be shared with others. Power BI website even gives you the ability to slice and dice the data online without requiring any other tools, just a simple web browser. You can built report and visualizations directly on Power BI site as well. screenshot below shows a view of Power BI site and dashboards built there;



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.Power Q&A and works with Power View for the data visualizations. So users can simply ask questions such as: Number of Customers by Country, and Power Q&A will answer their question in a map view with numbers as bubbles, Fantastic, isn't it?



Power BI Mobile Apps

There are mobile apps for three main mobile OS providers: Android, Apple, and Windows Phone. These apps give you an interactive view of dashboards and reports in the Power BI site, you can share them even from mobile app. You can highlight part of the report, write a note on it and share it to others.

Game Results.pbix

Updated just now

Goals scored

by Team

Completed Clearances, Saves

by Team