

# Business Intelligence Practical #1

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Class	TY BScIT	Division	C
Subject/Course:	Business intelligence		
Topic			

## What is Power BI?

DEVELOPED BY - MICROSOFT

RELEASE DATE - 2015

LATEST VERSION - December 2023 Update (2.124.581.0)

INDIAN STARTUPS USING POWER BI – THE MATH COMPANY , TIGER ANALYTICS , FRACTAL

REASON FOR USING POWER BI - Ability to create interactive dashboards that provide a real-time view of the business

**Power BI** is a business analytics tool developed by Microsoft that allows users to visualize and share insights from their organization's data. It provides a range of capabilities for data preparation, data discovery, interactive dashboards, and augmented analytics. Power BI enables users to connect to a wide variety of data sources, including Excel spreadsheets, cloud services, streaming data, and on-premises databases. Users can then transform and model the data to create interactive visualizations and reports. These reports can be shared across the organization and accessed through web browsers or mobile devices.

One of the key features of Power BI is its ability to create interactive dashboards that provide a real-time view of the business. These dashboards can be customized to display key performance indicators (KPIs) and metrics that are important to the organization. Additionally, Power BI offers natural language query capabilities, allowing users to ask questions about their data using everyday language and receive relevant visualizations in response.

Another important aspect of Power BI is its integration with other Microsoft products such as Excel, Azure, and SQL Server. This integration allows for seamless access to data stored in these platforms and enables advanced analytics and machine learning capabilities.

Power BI comes in various versions, including Power BI Desktop (a free desktop application for creating reports), Power BI Pro (a subscription-based service for sharing reports and collaborating with colleagues), and Power BI Premium (providing dedicated cloud resources for large-scale deployments).

In summary, **Power BI** is a powerful business analytics tool that empowers organizations to gain insights from their data through interactive visualizations, real-time dashboards, and seamless integration with other Microsoft products.

## What are the components of Power BI?

**Power Query**

Power Query, formerly known as Power Query, is a data transformation tool that enables users to import, clean, and shape data from various sources. It allows users to connect to a wide range of data sources, including Excel, SQL Server, and web pages, and prepare the data for further analysis. Power Query's user-friendly interface and advanced features make it easy for users to manipulate and transform data to meet their specific needs.

**Power Pivot**

Power Pivot is a data modeling tool that enables users to create and manage large, complex datasets in Excel. It provides a powerful engine for analyzing multidimensional data using in-memory processing, which allows for faster querying and better performance. Power Pivot also supports the use of DAX (Data Analysis Expressions) for creating calculated columns, measures, and KPIs, which are essential for advanced data analysis.

**Power View**

Power View is an interactive data visualization tool that allows users to create interactive, interactive, and visually engaging reports. Power View provides a wide range of chart types, including bar, column, line, area, and scatter charts, as well as geographical maps. It also supports the creation of interactive slicers, which enable users to filter and drill down into the data for deeper analysis.

**Power Map**

Power Map, now known as Power BI Maps, is a geospatial visualization tool that allows users to explore data on a map. It provides a 3D environment in which users can visualize data points on a map and interact with the data by zooming, panning, and rotating. Power Map is particularly useful for analyzing geographical trends and patterns, such as sales performance by region or customer demographics by location.

**Power Q&A**

Power Q&A is a natural language processing (NLP) feature that enables users to ask questions in plain language and receive answers in the form of visualizations, tables, or charts. Power Q&A uses machine learning algorithms to understand the context and meaning of the question, allowing it to provide relevant and accurate information. This feature simplifies the process of exploring data by making it easy for users to ask questions and receive insights without having to build complex queries or write complex formulas.

**Power BI Desktop**

Power BI Desktop is a standalone application that enables users to create, edit, and publish Power BI reports. It provides a comprehensive set of tools for data preparation, modeling, and visualization, as well as support for connecting to various data sources. Power BI Desktop also includes a feature called "Quick Insights," which uses machine learning algorithms to identify patterns and trends in the data, providing users with actionable insights.

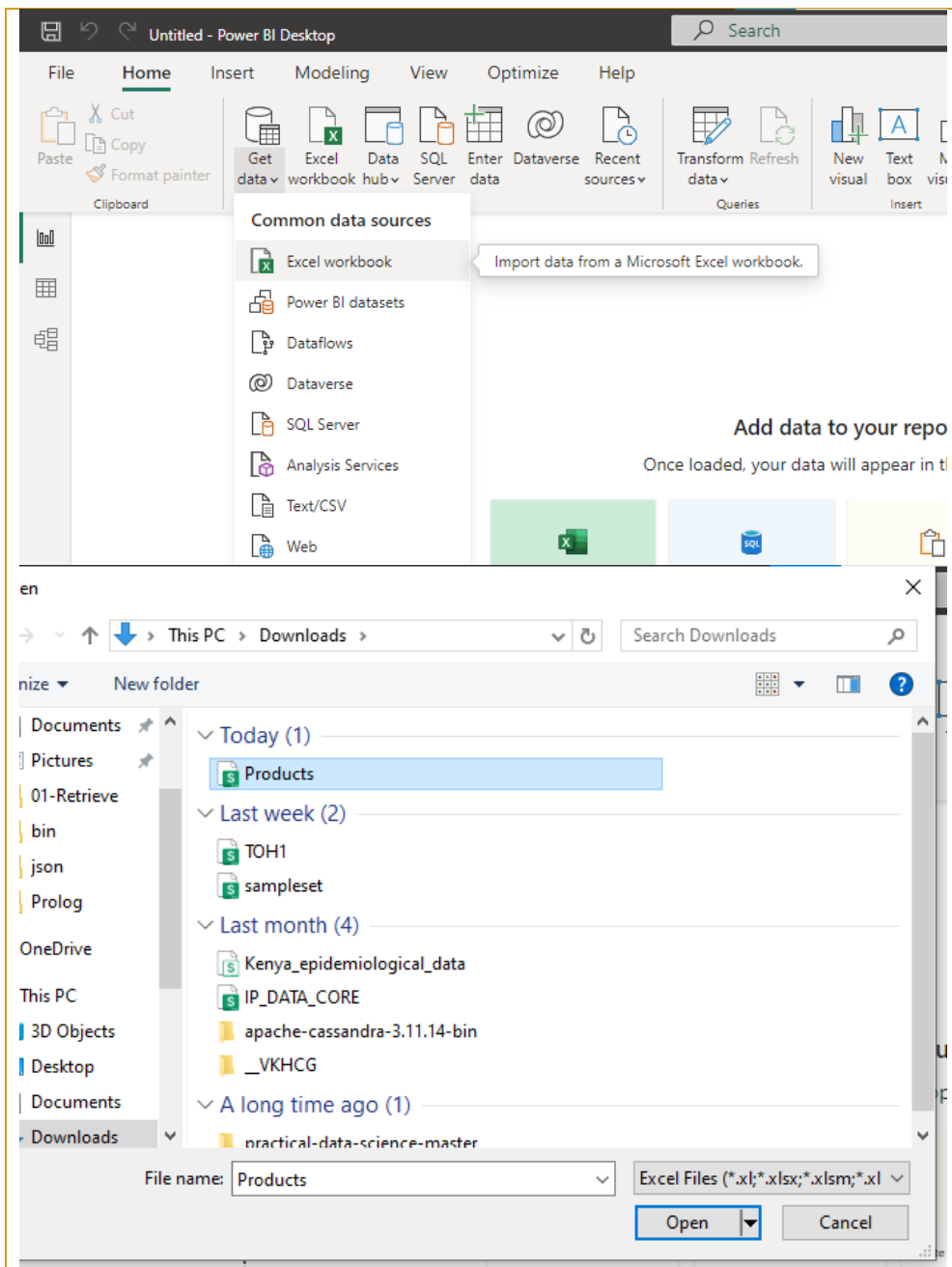
**Power BI Website**

The Power BI Website is an online platform that allows users to access, view, and share Power BI reports and dashboards. It provides a web-based interface for interacting with Power BI content, as well as collaboration features, such as commenting and sharing. The Power BI Website also integrates with other Microsoft products and services, such as Office 365 and SharePoint, making it easy for users to embed Power BI content into their existing workflows.

**Power Mobile Apps**

Power BI Mobile Apps are available for iOS, Android, and Windows devices, enabling users to access and interact with their Power BI content on the go. The mobile apps provide a responsive design that adapts to different screen sizes and devices, ensuring a consistent user experience across all platforms. Users can view and interact with reports, dashboards, and tiles, as well as receive notifications for important updates and changes in their data.

**What are the steps to load Excel data in Power BI?**



## Navigator

Display Options ▾

Products.xlsx [2]

☒ Products

☐ Sheet1

## Products

ProductID	ProductName	SupplierID	CategoryID	QuantityPerUnit
1	Chai	1	1	10 boxes x 20 bags
2	Chang	1	1	24 - 12 oz bottles
3	Aniseed Syrup	1	2	12 - 550 ml bottles
4	Chef Anton's Cajun Seasoning	2	4	48 - 6 oz jars
5	Chef Anton's Gumbo Mix	2	2	36 boxes
6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars
7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.
8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars
9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.
10	Ikura	4	8	12 - 200 ml jars
11	Queso Cabrales	5	4	1 kg pkg.
12	Queso Manchego La Pastora	5	4	10 - 500 g pkgs.
13	Konbu	6	8	2 kg box
14	Tofu	6	7	40 - 100 g pkgs.
15	Genen Shouyu	6	2	24 - 250 ml bottles
16	Pavlova	7	3	10 - 500 g boxes
17	Alice Mutton	7	6	20 - 1 kg tins
18	Carnarvon Tigers	7	8	16 kg pkg.
19	Teatime Chocolate Biscuits	8	3	10 boxes x 12 pieces
20	Sir Rodney's Marmalade	8	3	30 gift boxes
21	Sir Rodney's Scones	8	3	24 pkgs. x 4 pieces
22	Gustaf's Knäckebröd	9	5	24 - 500 g pkgs.
23	Tunnbröd	9	5	12 - 250 g pkgs.

Load Transform Data Cancel

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Close & Apply New Recent Enter Data source settings Manage Parameters Refresh Advanced Editor Choose Remove Keep Remove Split Group Data Type: Whole Number Merge Queries Append Queries Use First Row as Headers Replace Values Combine Files Azure Machine Learning

Queries [1] Products

Table.TransformColumnTypes(Products\_Table,({{"ProductID", Int64.Type}, {"ProductName", type text}, {"SupplierID", type text}, {"CategoryID", type text}, {"QuantityPerUnit", type text}, {"Unit", type text}}))

ProductID	ProductName	SupplierID	CategoryID	QuantityPerUnit	Unit
1	Chai	1	1	10 boxes x 20 bags	
2	Chang	1	1	24 - 12 oz bottles	
3	Aniseed Syrup	1	2	12 - 550 ml bottles	
4	Chef Anton's Cajun Seasoning	2	4	48 - 6 oz jars	
5	Chef Anton's Gumbo Mix	2	2	36 boxes	
6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	
7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	
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23	Tunnbröd	9	5	12 - 250 g pkgs.	

10 COLUMNS, 77 ROWS Column profiling based on top 1000 rows

Query Settings

PROPERTIES

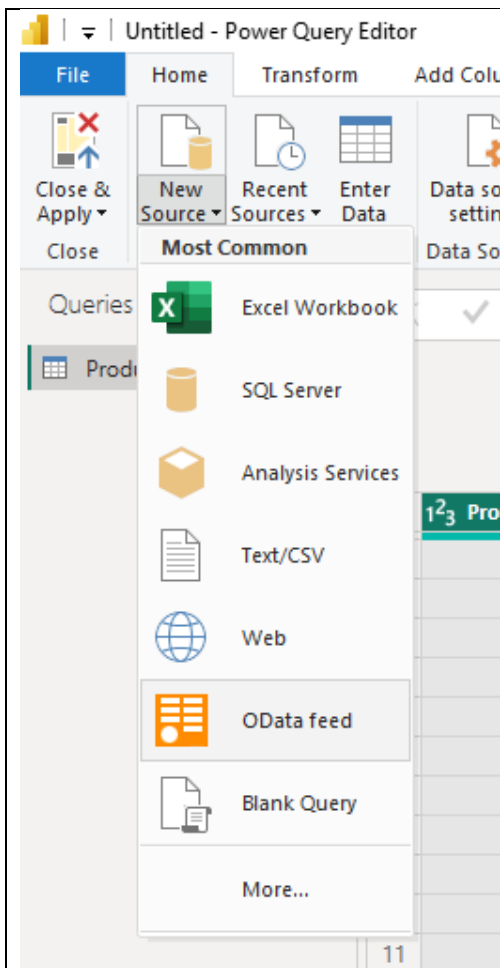
Name: Products

APPLIED STEPS

Source Navigation Changed Type

PREVIEW DOWNLOADED AT 08:31

What are the steps to load OData feed in Power BI?



×

## OData feed

☒ Basic ☐ Advanced

URL

<https://services.odata.org/V3/northwind/northwind.svc/>

OK

Cancel

### OData feed

Anonymous

 <https://services.odata.org/V3/northwind/northwind.svc/>

Use anonymous access for this OData feed.

Select which level to apply these settings to

<https://services.odata.org/>

Back

Connect

Cancel

## Navigator

Display Options ▾

- ☐ Alphabetical\_list\_of\_products
- ☐ Categories
- ☐ Category\_Sales\_for\_1997
- ☐ Current\_Product\_Lists
- ☐ Customer\_and\_Suppliers\_by\_Cities
- ☐ CustomerDemographics
- ☐ Customers
- ☐ Employees
- ☐ Invoices
- ☐ Order\_Details
- ☐ Order\_Details\_Extended
- ☐ Order\_Subtotals
- ☒ Orders
- ☐ Orders\_Qries
- ☐ Product\_Sales\_for\_1997
- ☐ Products
- ☐ Products\_Above\_Average\_Prices
- ☐ Products\_by\_Categories
- ☐ Regions
- ☐ Sales\_by\_Categories

## Orders

OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate
10248	VINET	5	04-07-1996 00:00:00	01-08-1996
10249	TOMSP	6	05-07-1996 00:00:00	16-08-1996
10250	HANAR	4	08-07-1996 00:00:00	05-08-1996
10251	VICTE	3	08-07-1996 00:00:00	05-08-1996
10252	SUPRD	4	09-07-1996 00:00:00	06-08-1996
10253	HANAR	3	10-07-1996 00:00:00	24-07-1996
10254	CHOPS	5	11-07-1996 00:00:00	08-08-1996
10255	RICSU	9	12-07-1996 00:00:00	09-08-1996
10256	WELLI	3	15-07-1996 00:00:00	12-08-1996
10257	HILAA	4	16-07-1996 00:00:00	13-08-1996
10258	ERNSH	1	17-07-1996 00:00:00	14-08-1996
10259	CENTC	4	18-07-1996 00:00:00	15-08-1996
10260	OTTIK	4	19-07-1996 00:00:00	16-08-1996
10261	QUEDE	4	19-07-1996 00:00:00	16-08-1996
10262	RATTC	8	22-07-1996 00:00:00	19-08-1996
10263	ERNSH	9	23-07-1996 00:00:00	20-08-1996
10264	FOLKO	6	24-07-1996 00:00:00	21-08-1996
10265	BLONP	2	25-07-1996 00:00:00	22-08-1996
10266	WARTH	3	26-07-1996 00:00:00	06-09-1996
10267	FRANK	4	29-07-1996 00:00:00	26-08-1996
10268	GROSR	8	30-07-1996 00:00:00	27-08-1996
10269	WHITC	5	31-07-1996 00:00:00	14-08-1996
10270	WARTH	1	01-08-1996 00:00:00	29-08-1996

Select Related Tables

OK

Cancel

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Close & Apply Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Manage Advanced Editor Choose Remove Columns Columns Keep Remove Rows Rows Split Column Group By Data Type: Whole Number Use First Row as Headers Replace Values Merge Query Append Query Combine Queries Combine

Queries [2] Products Orders

Source: [Name="Orders", Signature="table"] [Data]

	OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	ShippedDate
1	10248	VINET	5	04-07-1996 00:00:00	01-08-1996 00:00:00	16-08-1996 00:00:00
2	10249	TOMSP	6	05-07-1996 00:00:00	16-08-1996 00:00:00	16-08-1996 00:00:00
3	10250	HANAR	4	08-07-1996 00:00:00	05-08-1996 00:00:00	12-08-1996 00:00:00
4	10251	VICTE	3	08-07-1996 00:00:00	05-08-1996 00:00:00	15-08-1996 00:00:00
5	10252	SUPRD	4	09-07-1996 00:00:00	06-08-1996 00:00:00	11-08-1996 00:00:00
6	10253	HANAR	3	10-07-1996 00:00:00	24-07-1996 00:00:00	16-08-1996 00:00:00
7	10254	CHOPS	5	11-07-1996 00:00:00	08-08-1996 00:00:00	23-08-1996 00:00:00
8	10255	RICSU	9	12-07-1996 00:00:00	09-08-1996 00:00:00	15-08-1996 00:00:00
9	10256	WELLI	3	15-07-1996 00:00:00	12-08-1996 00:00:00	17-08-1996 00:00:00
10	10257	HILAA	4	16-07-1996 00:00:00	13-08-1996 00:00:00	22-08-1996 00:00:00
11	10258	ERNSH	1	17-07-1996 00:00:00	14-08-1996 00:00:00	23-08-1996 00:00:00
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19	10266	WARTH	3	26-07-1996 00:00:00	06-09-1996 00:00:00	31-08-1996 00:00:00
20						

18 COLUMNS, 830 ROWS Column profiling based on top 1000 rows