Definition of Power BI:

1. Power BI is a set of Business Intelligence and Analytics services from Microsoft. It offers interactive visualization and advanced analytics capabilities that empower everyone to make smarter and real -time decisions.
2. Power BI is on of the top of the list of popular BI tools due to its ease of use and interactive visualization. It offers self-service analytics capability to let end users create reports and dashboards.
3. Power BI is a widely popular BI tool having customers ranging from students, startups, SMEs to large scale enterprises. Microsoft’s reliability and powerful features make it one of the widely- used BI tools.
4. Power BI is a complete ETL tool (Extract, transform, and load), ETL is a complete cycle of any Data Analysis project, where we can extract, Transform and load the data.
5. Extract, transform, and load (ETL) is the process of combining data from multiple sources into a large, central repository called a data warehouse. ETL uses a set of business rules to clean and organize raw data and prepare it for storage, data analytics, and machine learning (ML).
6. It’s a tool by Microsoft.

Power BI Necessity:

Power BI is a set of tools that allows non-technical folks to perform the kinds of analytics previously reserved for technical specialists or IT Departments. Power Bi changes that any analyst can connect to any data source and quickly summarize findings into a simple report.

Tools Used in Power BI:

DAX:

Data Analysis Expressions (DAX) is a programming language that is used throughout Microsoft Power BI for creating calculated columns, measures, and custom tables. It is a collection of functions, operators, and constants that can be used in a formula, or expression, to calculate and return one or more values.

Data Analysis Expressions (DAX) is a library of functions and operators that can be combined to build formulas and expressions in Power BI, Analysis Services, and Power Pivot in Excel data models.

* DAX Table-Valued Functions. DAX Filter Functions. DAX Aggregation Functions. DAX Time Intelligence Functions.
* DAX Date and Time Functions.
* DAX Information Functions.
* DAX Logical Functions.
* DAX Math and Trig Functions.
* DAX Other Functions.
* DAX Parent and Child Functions.
* DAX Statistical Functions.

Power BI Benefits:

1. Power BI Integrates seamlessly with existing applications:

* Adopt analytics & reporting capabilities easily to embed interactive visuals quickly in your applications
* Power BI integrates seamlessly with google sheets, Excel power-point sheets, SQL servers, mongo dB, oracle, IBM, Azure etc. any database data.
* Predicts and forecasting.

1. Rich Personalized Dashboards:

* Provide a unified user experience with the customized dashboards & reports that meet your exact needs

1. Secure Report Publishing:

* Set up automatic data refresh & rapidly publish reports, allowing all the users to avail the latest information.

1. No Memory & Speed Constraints:

* Quickly Retrieve and analyze your data eliminating any memory & speed constraints.

1. Supports Advanced Data Services:

* Integrates seamlessly with Advanced Cloud Services like Cortana to provide results for the verbal data queries as well.

1. Balanced Simplicity & performance

* In memory analysis technology & DAX scripting Language offers balanced simplicity & performance.

1. Extract Intelligence Rapidly & Accurately:

* Transform your enterprise data into rich visuals & accurate reports for enhanced decision making.

1. No specialized Technical Support Required:

* Leverage the benefits of agile inquiry and analysis that power NI offers eliminating the need for technical support

Tech Websites:

* Google Trends-To compare Software’s N number of tools
* Kaggle--
* Dataset Research-- <https://datasetsearch.research.google.com/>

IMP DATASET SUGGESTIONS:-

www.kaggle.com/datasets/shivamb/netflix-shows

https://www.kaggle.com/datasets/himanshupoddar/zomato-bangalore-restaurants

https://www.kaggle.com/datasets/patrickb1912/ipl-complete-dataset-20082020

https://datasetsearch.research.google.com

Datasets for End-End Project for Data Analysis:

🔗Kaggle: https://lnkd.in/dw8bbQci

🔗Tableau Datasets: https://lnkd.in/dG-S8pfF

🔗Eurostat: https://lnkd.in/dbrcQcp2

🔗Data Gov: https://data.gov/

🔗Datahub : https://lnkd.in/dXP-MWh

🔗Data World: https://lnkd.in/dB8rMaUg

🔗World Health Organization: https://lnkd.in/dxx\_TzRC

🔗British Library: https://lnkd.in/dxG\_kN39

🔗Google Dataset Search: https://lnkd.in/deNNzaPU

Steps to analysis:

1. Understand the business

2. Understand the data

3. Load the data

4. Visualize and transform the data

5. Report and dashboards.

Big Brands using BI:

Netflix

Amazon

Starbucks

Deloitte

TCS.

Top 10 keypoints :

1) Power BI is an industry leader

2) Easy to connect your data

3) Powerful and performant

4) Custom and open-source visuals

5) Familiar Excel features

6) Governance & security

7) Real-time information

8) Simple & accessible insights.

9) Data modeling

10) Unifies large datasets into one dashboard

Opportunities for Power-BI:

* 1. Data Analyst
  2. BI Developer
  3. Data Visualization Specialist
  4. Reporting Analyst
  5. Data Scientist
  6. Project Manager
  7. Data Engineer
  8. Data Architect
  9. Data Governance Analyst
  10. Business Analyst
  11. Data Mining Specialist
  12. Data Warehouse Manager
  13. Data Quality Analyst
  14. Financial Analyst
  15. Market Research Analyst
  16. Healthcare Data Analyst
  17. Supply Chain Analyst
  18. Sales Analyst
  19. Social Media Analyst
  20. CRM Analyst

Top 10 applications:

1. Healthcare
2. Business intelligence
3. Military
4. Finance
5. Data Science
6. Marketing
7. Food delivery apps
8. Real estate
9. Education
10. E-commerce

Introduction TO Power BI DAX:

* DAX- Data Analysis Expression
* DAX is a Combination/collection of functions, Operators, Constants, etc.
* It is also called Function Language.
* Three main Things that can done in DAX:
  1. Calculated columns
  2. Calculated Measures
  3. Calculated Tables
* In power BI individual cells are cannot apply Operators compared to Excel.

Types of Power BI DAX:

1. Aggregate Functions
2. Date Time functions
3. Time intelligence
4. Logical Functions
5. Text functions
6. Information Functions
7. Mathematical Functions.
8. Trigonometric Function
9. Statistical Function

Syntax of DAX:

Total sales = sum (order details[sales])

Total sales – Column name or measure name

= - Operator

Sum – Function

Order details – Table name

Sales – Column name on which you will create column

Count vs Count Distinct:

Count is Number of rows

Count distinct is number of values.

Panels in Power BI Desktop:

* 1. Fields
  2. Visualizations
  3. Filters.

1. Fields- The data which Is added, so the columns related to the data are shown in fields.
2. Visualizations: It contains Charts, Plots To apply visualization. It contains all general & visual formats.

* Stacked Column Chart- needs 2 axis X & Y axis.
* Pie chart gives a clear view in pie graph way of visualization.