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TASK 6 - STATISTICAL TOOL

Report :-

PowerBI

In power BI 'BI' stands for business Intelligence, which is technology-driven method which helps you to analyse data and provide actionable information which helps corporate bussiness to handle their bussiness more efficiently.

As the BI meaning goes PowerBI is a Bussiness Intelligence and Data Visualization tool for converting data from various data sources into - interactive dashboards and analysis reports.

Moreover Different PowerBI version like desktop, service-based (saas), and mobile PowerBI apps used for different platforms. It provides multiple software connectors and services for Bussiness Intelligence.

→ Some attractive features of PowerBI tools

- It has pre-built dashboards and reports for SaaS solution.
- PowerBI allows real-time dashbaard updates.
- Offers secure and reliable connection to your data sources in the cloud or on-premises.
- PowerBI offers Quick deployment, hybrid configuration, and secure environment.
- allows data exploration using natural language query.
- Offers feature for dashboard visualisation regularly updated with the community.

⇒ There Various Types of POWERBI ~~tool~~ tools which can be used by user as per his/her work type.

PowerBI is developed by Microsoft and some of the tools are free to use while others are paid for the the extended features.

1) Power BI ~~tool~~ Desktop:

It can be used for primary authoring and publishing tool for PowerBI. Developers and power users use it to create brand new models and reports from scratch.

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Power BI desktop is free to use but requires subscription for using advance tools.

2) Power BI service :-

Online software as a service (SaaS) where PowerBI models, reports, dashboards are hosted. Administration, Sharing, Collaboration happens in the cloud.

3) PowerBI Data Gateway :-

PowerBI data gateway works as the bridge between the power BI service and on-premise data source like DirectQuery, Import, Live Query. It is installed by BI Admin.

4) Power BI Report Server :

It can host paginated reports, KPI's, mobile reports, & Power BI desktop reports. It is updated every 4 months and installed/managed by IT team. The users can modify power BI reports other reports created by the development team.

~~The fea~~

The feature which makes the PowerBI stand out of all other BI tools is it allows integration of data sources of various types.

The various data source formats allowed are :-

→ Excel files (.xlsx , xlxm)

→ Comma seperated Value (.csv)

→ PowerBI destop (.pbi)

→ Databases (SQL, MySQL, etc)

→ Databases in the cloud

→ Direct from Web (websites, articles)

→ BI tools files from other company.

The ~~fea~~ feature of collecting data from web and realtime updating of data are features are which a developer is alway searching for.

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⇒ Key terms in Power BI.

- Visualisation
- Datasets
- Reports
- Dashboards
- Tiles

1) Visualisation :- A visual display of information to achieve one or more objective. It offers a single-screen display of information alerts users on issues or problems — operational, performance, personal, etc.

2) Datasets : A dataset is something which you import or connect to. Datasets can be renamed, refreshed, removes, and explored.

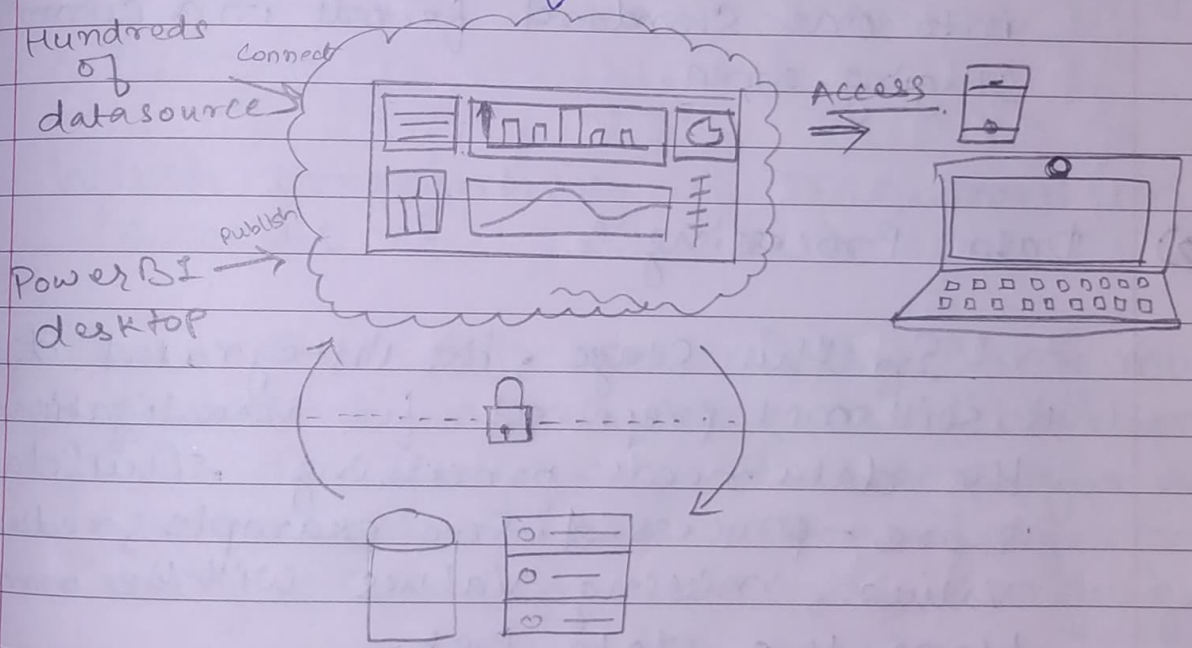
3) Dashboard : The dashboard is a collection which contains zero or more tiles and widgets. It is used to represent a customized view of some subset of the underlying datasets.

4) Reports : A power BI report is one or multiple pages of visualisations. It can be created from scratch,

imported to a dashboard, and create using datasets.

5) Tile: It is a single visualization found in a report or on a rectangular dashboard box which contain each visual.

⇒ Architecture of PowerBI.



Architecture of powerBI

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1) Data Integration :

An organisation needs to work with data which come from different sources which can be in various file formats. The data should be extracted from a different source which can be from different servers or databases. This data is integrated into one standard format in a common staging area.

2) Data Processing :

In this stage, the integrated data is still not prepared for visualization as the data needs processing. This data is pre-processed. For example, redundant values, missing values will be removed from the data set.

The bussiness rule should be applied to the data when the data is cleaned. You can load that data back to data warehouse.

3) Data Presentation :

Once the data is loaded and processed, It can be visualised much better with use of various visualisation that powerBI has to offer. use of dashboard and report helps one represent data more intuitively. This visual report helps business end users to take business decision based on the insights.

⇒ Which programming is required in PowerBI ?

PowerBI is not really very much dependent on coding and development so it is very easy to learn for any person who has no knowledge in coding and programming language.

It has a involvement of DAX language. but it is not any hardcore language.

DAX is a formula expression language which is called (DAX) which can be used with various visualisation tools. like power BI. It is also known as functional language, where the full code is kept inside a function. ~~DAX~~.

DAX contains formulas for siple - mathematical expressions such as, Average, Max, Min, Concatenate, TotalYTD, etc.

⇒ The PowerBI tool can be extremely helpful in professions like:-

1) PMO - Project & portfolio manager
2) Bussiness & Data analyst
3) Developer & Database adminstator.
4) IT Team, IT professionals.
5) Consumer for End user report.
6) Data scientist

And I feel it should also be taught in high schools as it is very important tool whether you select any of the streams for further studies.

⇒ Advantages of power BI.

→ Offers pre-built dashboards.
→ Provide realtime dashboard updates.
→ Features for dashboard visualisation.
→ Extensive database connectivity compabilities.
→ Integration with python & R supported.
→ It is backed by artificial Intelligence and machine learning.