Welcome to my team
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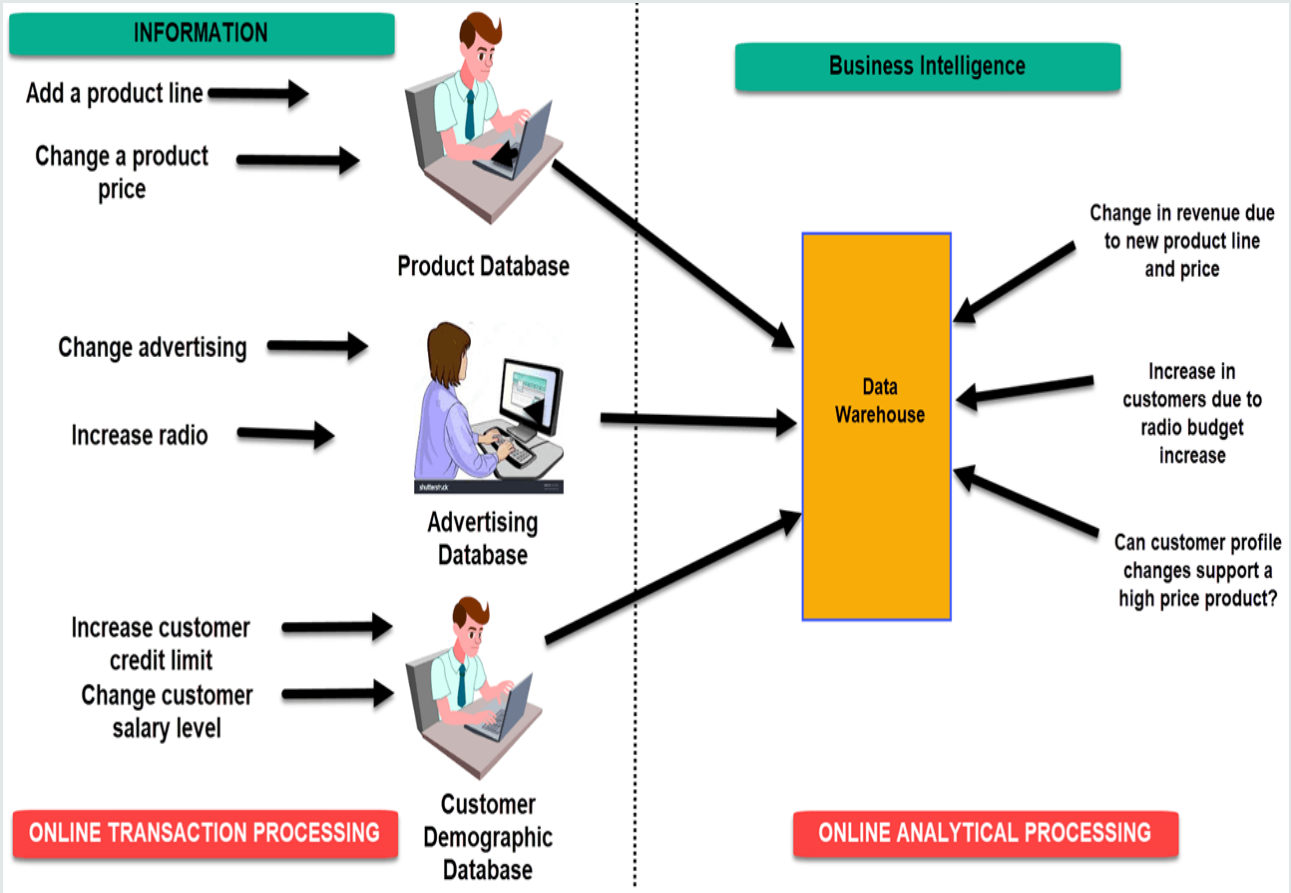
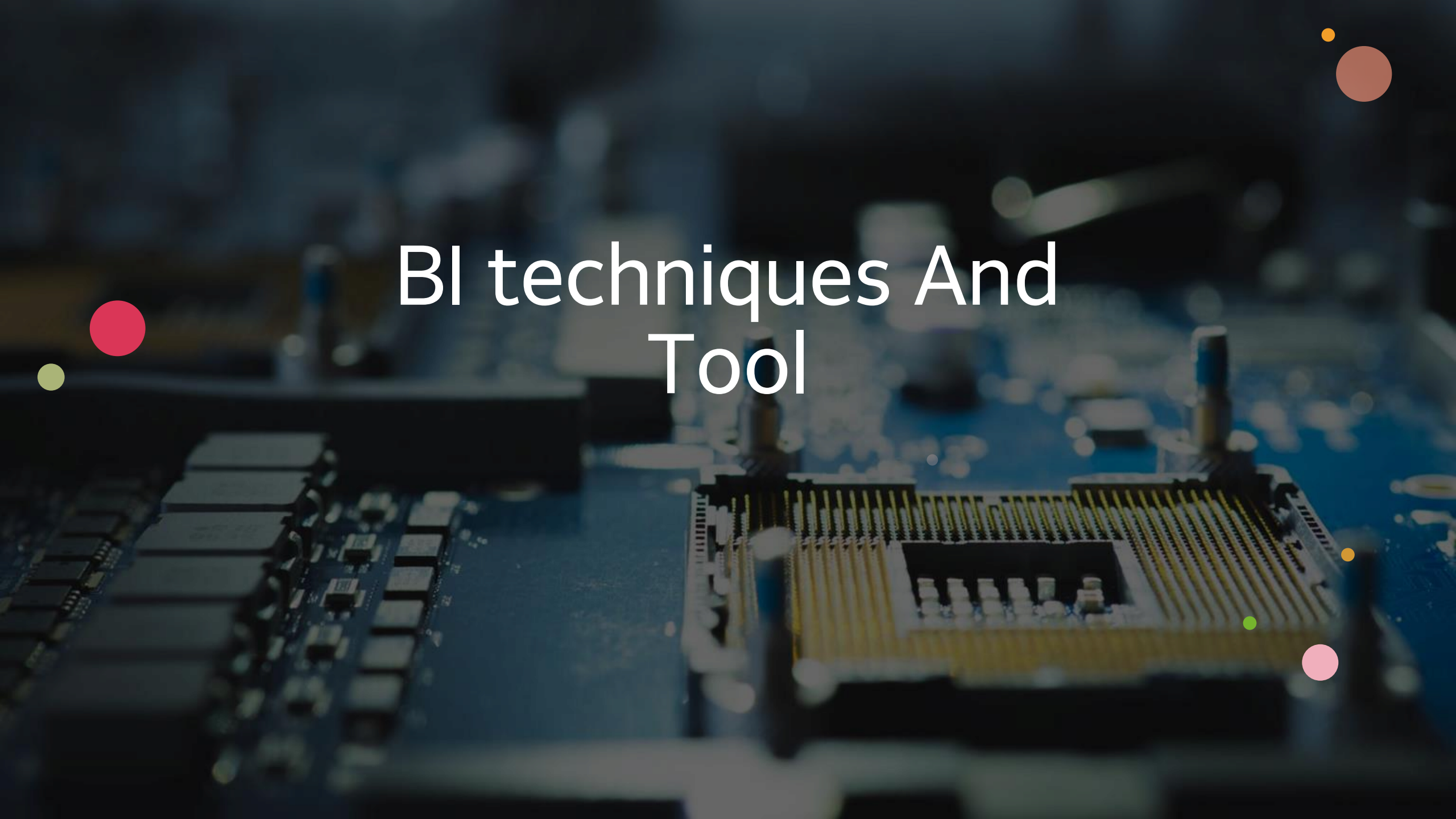
Introduction about BI

- Business Intelligence (BI) is the process of using a variety of tools, software and processes to analyze data, uncover insights and inform decisions within businesses. Through descriptive analytics and predictive models, it enables businesses to derive useful insights from their unprocessed data, assisting them in developing more strategic and informed business decisions.
- Better business decisions that help enterprises boost revenue, boost operational effectiveness, and gain a competitive edge over rival companies are the ultimate goal of BI projects. In order to accomplish that, BI combines analytics, reporting, and data management technologies with a number of different data management and analysis approaches.

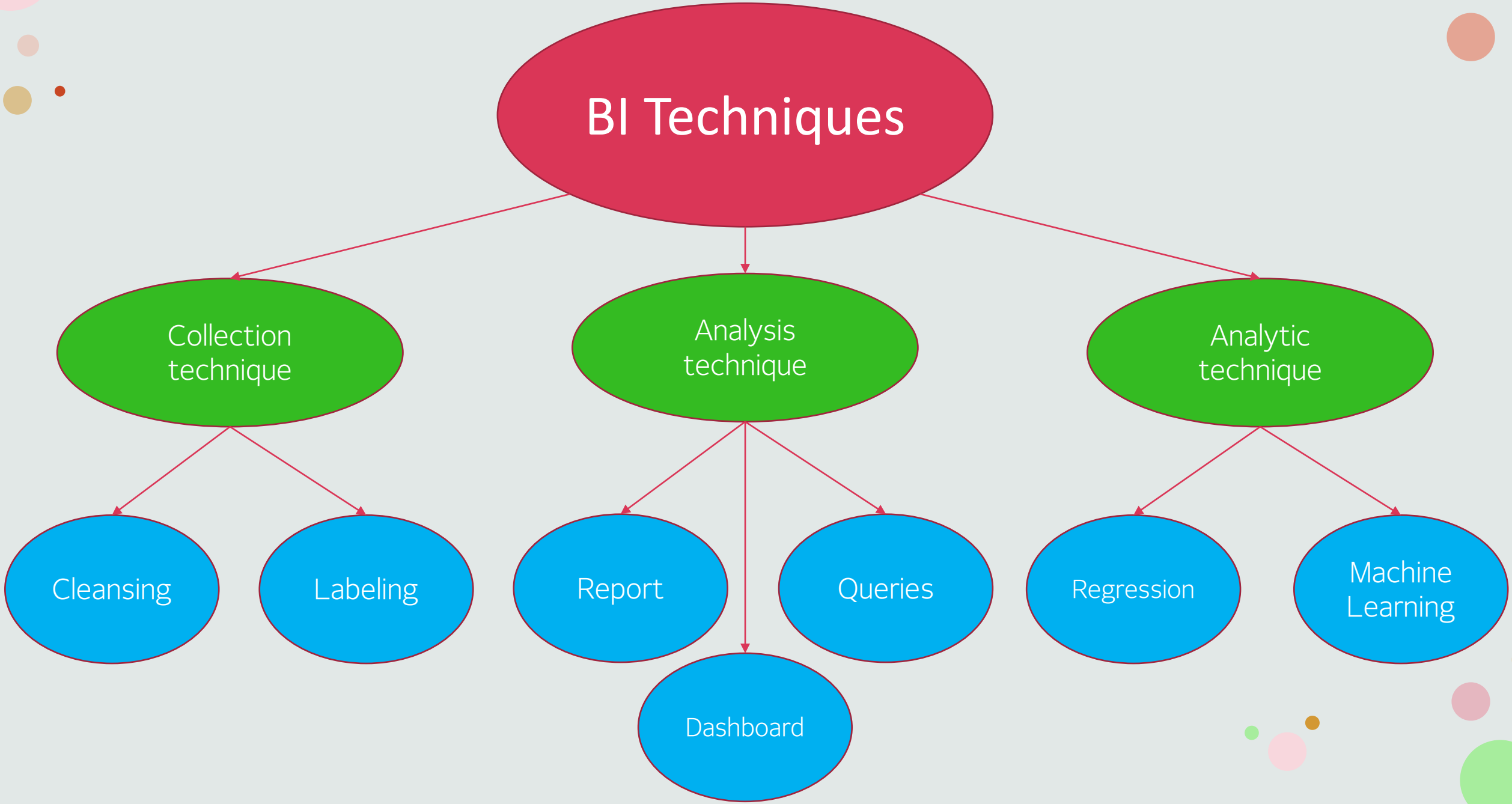


Example of Business Intelligence

- Netflix is a company that specializes in providing streaming TV and movie services. The company is aiming to expand the business model by expanding the market from domestic to international. However, Netflix's international expansion is facing many challenges in a world full of competition with other platforms such as Amazon, Microsoft, etc. That's why the solutions the company has used as not to target all markets at once. During this phase, Netflix will focus on understanding its internationalization strategy, improving partnerships with local businesses, and making investments in content geared toward local interests. management as well as data analytics and deep analytics technology. As a result, the company has been successful on this path and is being covered in 190 countries around the world with an incredible amount of revenue from home and abroad.



BI techniques And Tool


BI Techniques
Collection technique
Analysis technique
Analytic technique
Cleansing
Labeling
Report
Queries
Dashboard
Regression
Machine Learning

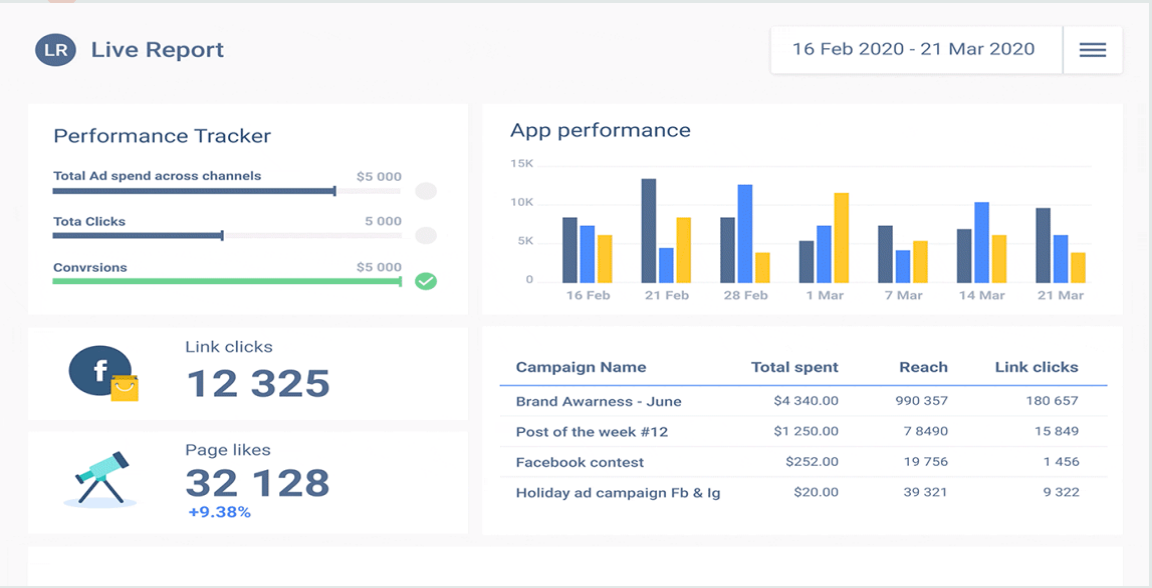
Collection technique

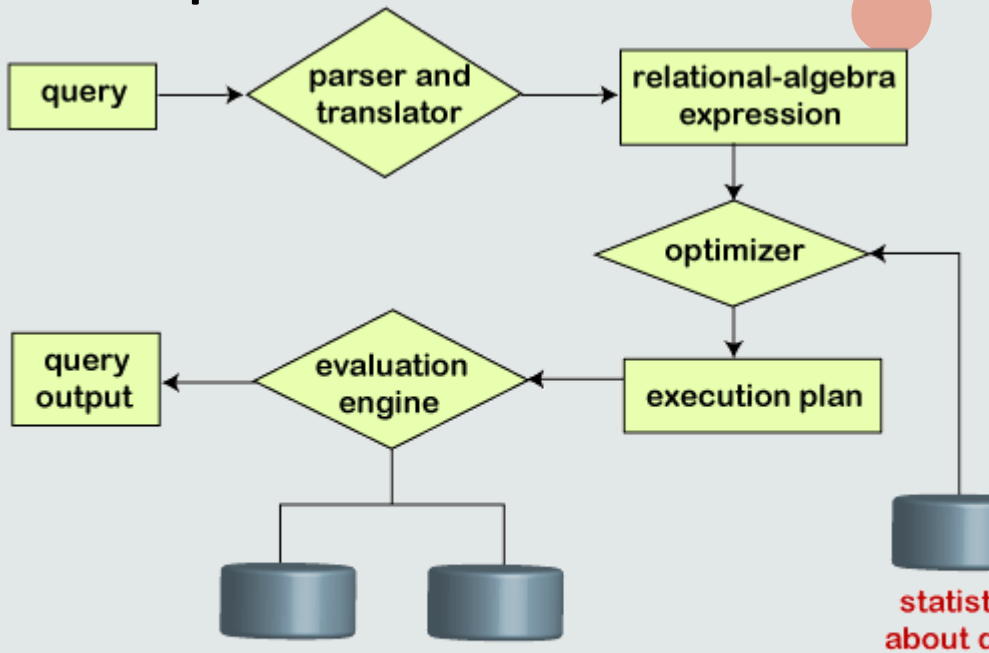
- Cleansing
  - is the process of changing or removing incorrect, duplicate, corrupted or incomplete data within a database. If the data is incorrect, the algorithms and the results they produce are unreliable (even if they appear to be correct). The Data Cleaning process is not merely concerned with deleting data to increase capacity for new data. But also find a way to maximize the authenticity of the data set without having to delete the information.
  - The engine of the Data Cleaning service is to build standardized and unified data sets. It allows data analytics and business intelligence tools to easily access and perceive the correct data for each issue.
- Labeling
  - are methods used to organize, categorize and identify data in a database or spreadsheet. Examples of label techniques include labels, tags, categories, keywords, taxonomies and code numbers. These tools make it easier to sort and filter large volumes of data quickly and accurately.
  - This is an important aspect of data preparation, as it helps to normalize the data and make it more meaningful for analysis.

Analysis techniques

- Report
  - An analysis report is an essential business report displaying analysis results and feasible suggestions, and providing valuable information for decision-makers so that they can evaluate current operation status and then make well-informed decisions.
  - According to different analysis objects, purposes, and methods, analysis reports can be categorized into many types, such as comprehensive analysis reports, thematic analysis reports, routine work analysis reports, etc.
- Dashboard
  - is a tool used to perform a variety of tasks, organize, visualize, analyze, and track data. It is designed to connect and help extract important information from a variety of data sources, services and APIs with the support of artificial intelligence and machine learning to save time and automate processes. processes such as collecting, discovering, preparing, copying, and reporting.
  - The overall purpose of data analytics dashboards is to help data analysts, decision makers, and ordinary users understand their data more easily, gain insights, and make data-driven decisions better.
- Queries
  - is a process used in a database to determine how to further optimize queries for performance.
  - is an important aspect of query processing because it helps to improve the overall performance of query processing, which will speed up many aspects and database functionality. To do this, the query optimizer analyzes a particular query statement and generates both local and remote access plans for use on the query fragment, based on the resource cost of each package.

Example about Analysis Technique



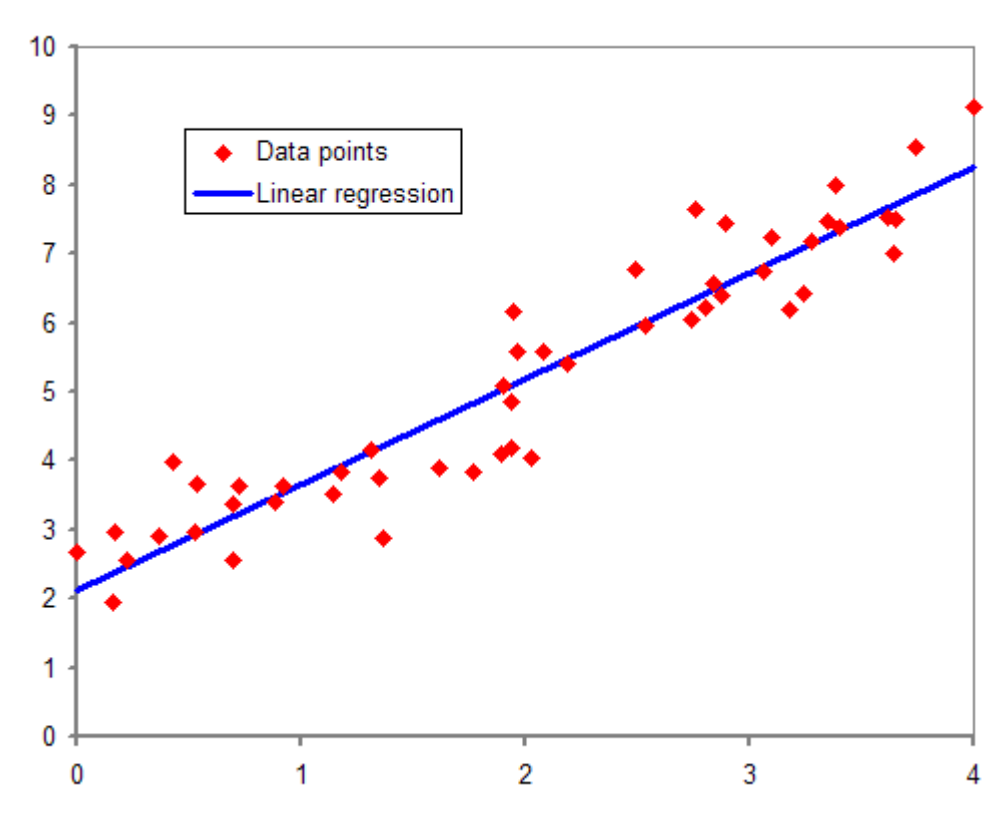


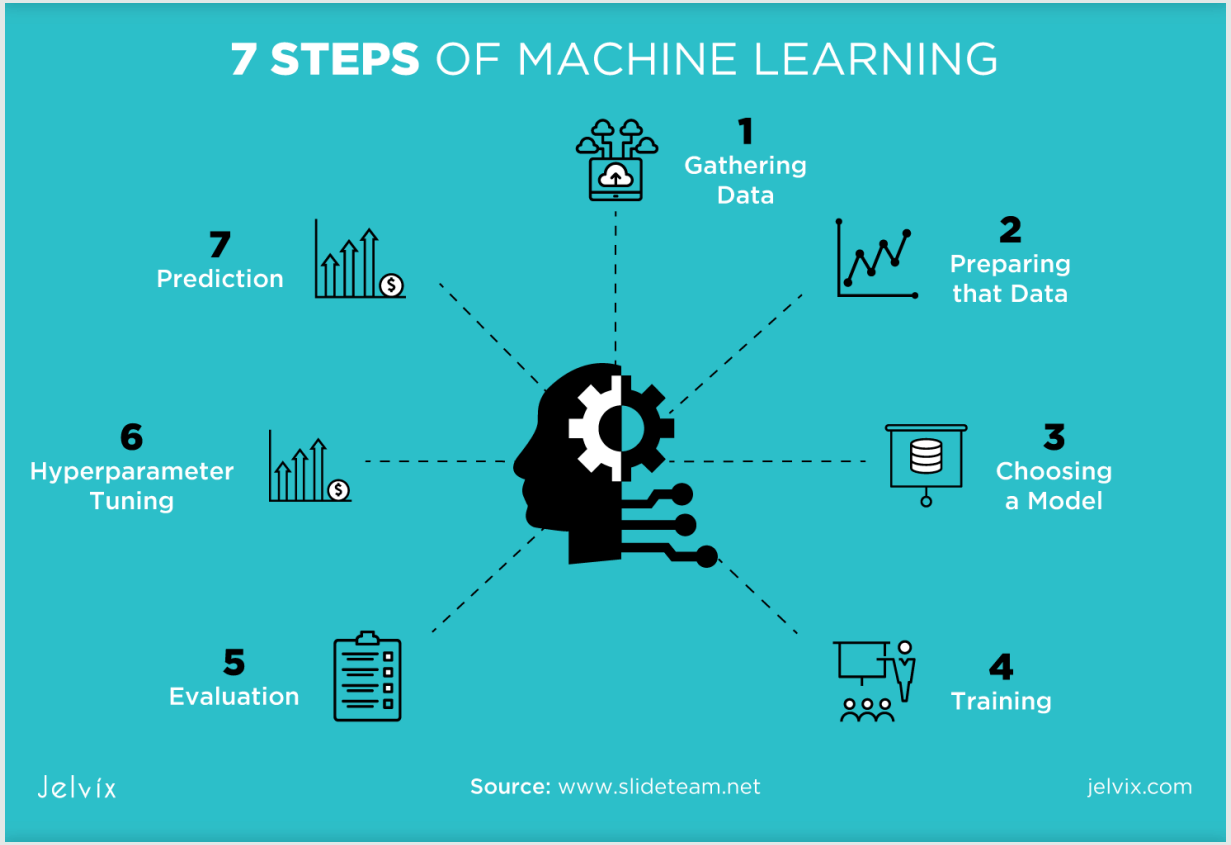
Analytic techniques

- Regression
  - is a statistical technique used to evaluate the relationship between two or more independent variables. Organizations use regression analysis to understand the significance of their data points and use analytical techniques to make better decisions.
  - This type of analysis is used by business analysts and data professionals to remove unwanted variables and select those that are statistically significant.

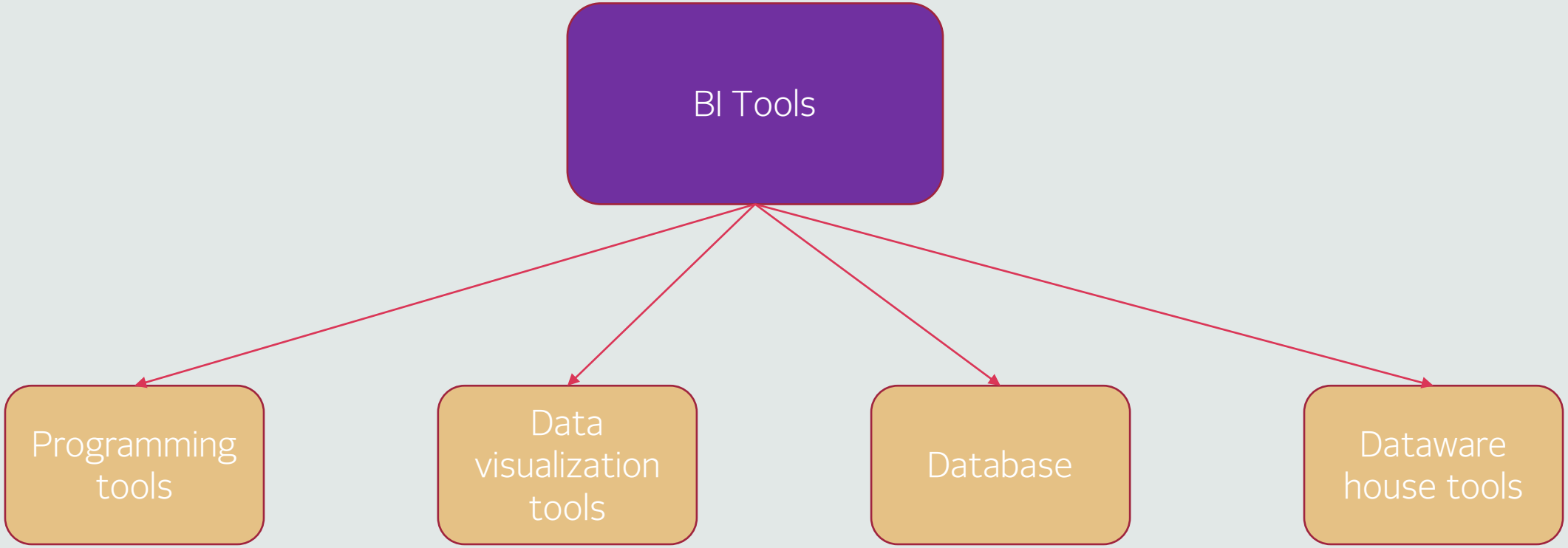
- Machine learning
  - Machine learning is a subset of AI with the narrow purpose of learning from information (data) as far as possible without explicit programming. ML utilizes numerical and statistical approaches to encode learning in models. Machine learning in data analytics is the new way of designing algorithms that learn on their own from data and adapt with minimal human intervention.
  - They are used by traders and investors to be able to study a field at a more detailed, complete, and maybe interested size, change management, and culture of curiosity.

Example about Analysis Technique





BI Tools


BI Tools
Programming tools
Data visualization tools
Database
Dataware house tools

Programming tools

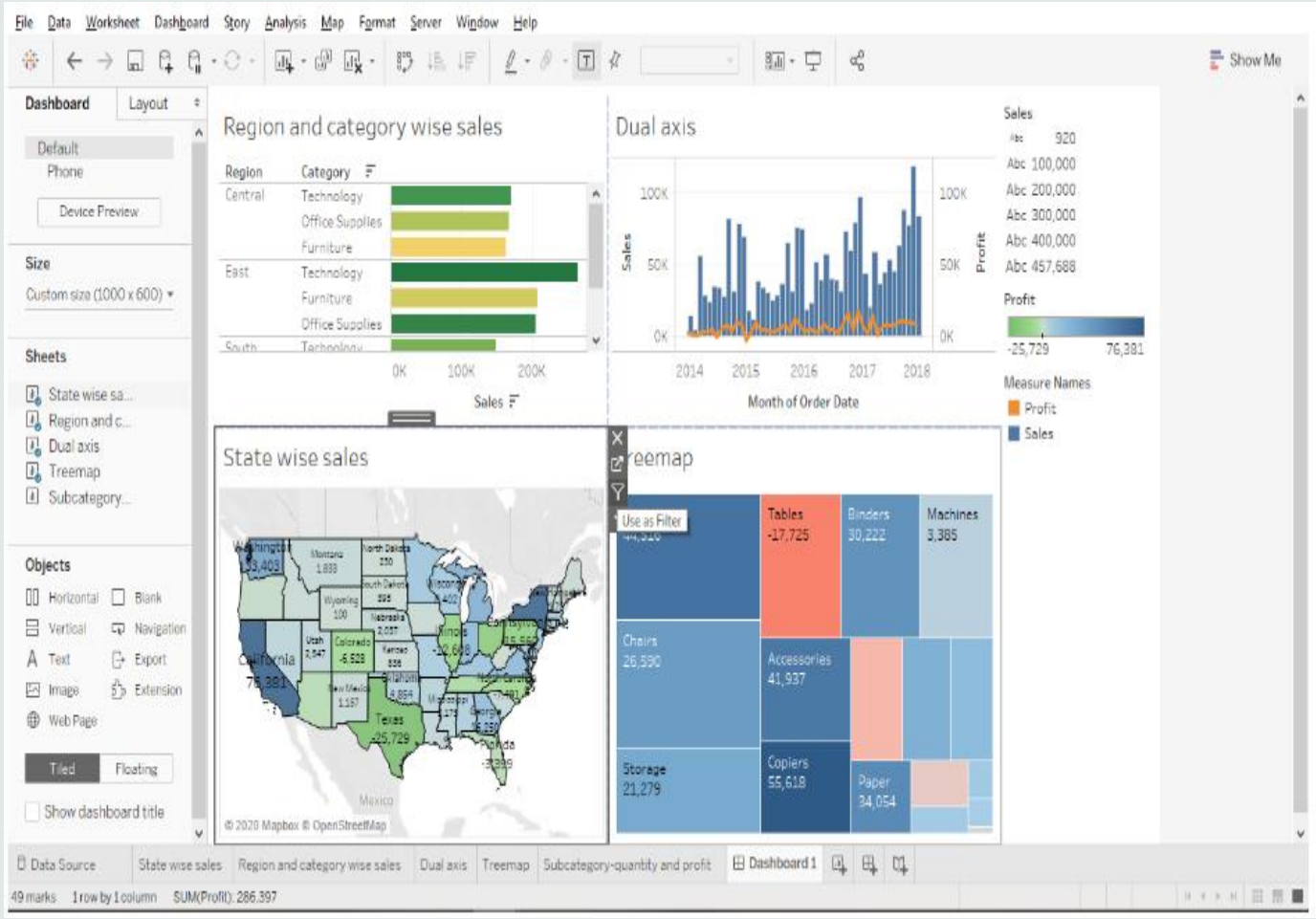
Python

- is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together.
- simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms and can be freely distributed.

Visualization tools

Tableau

- is a powerful and fastest growing data visualization tool used in the Business Intelligence Industry. It helps in simplifying raw data in a very easily understandable format.
- helps create the data that can be understood by professionals at any level in an organization. It also allows non-technical users to create customized dashboards.



Database tools

Database

- is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS). Together, the data and the DBMS, along with the applications that are associated with them, are referred to as a database system, often shortened to just database.
- Data within the most common types of databases in operation today is typically modeled in rows and columns in a series of tables to make processing and data querying efficient. The data can then be easily accessed, managed, modified, updated, controlled, and organized.

Database tool: Mongodb

Dataware house

Data warehouse is a type of data management system that is designed to enable and support business intelligence (BI) activities, especially analytics. Data warehouses are solely intended to perform queries and analysis and often contain large amounts of historical data.

The data within a data warehouse is usually derived from a wide range of sources such as application log files and transaction applications.

A data warehouse centralizes and consolidates large amounts of data from multiple sources. Its analytical capabilities allow organizations to derive valuable business insights from their data to improve decision-making. Over time, it builds a historical record that can be invaluable to data scientists and business analysts.