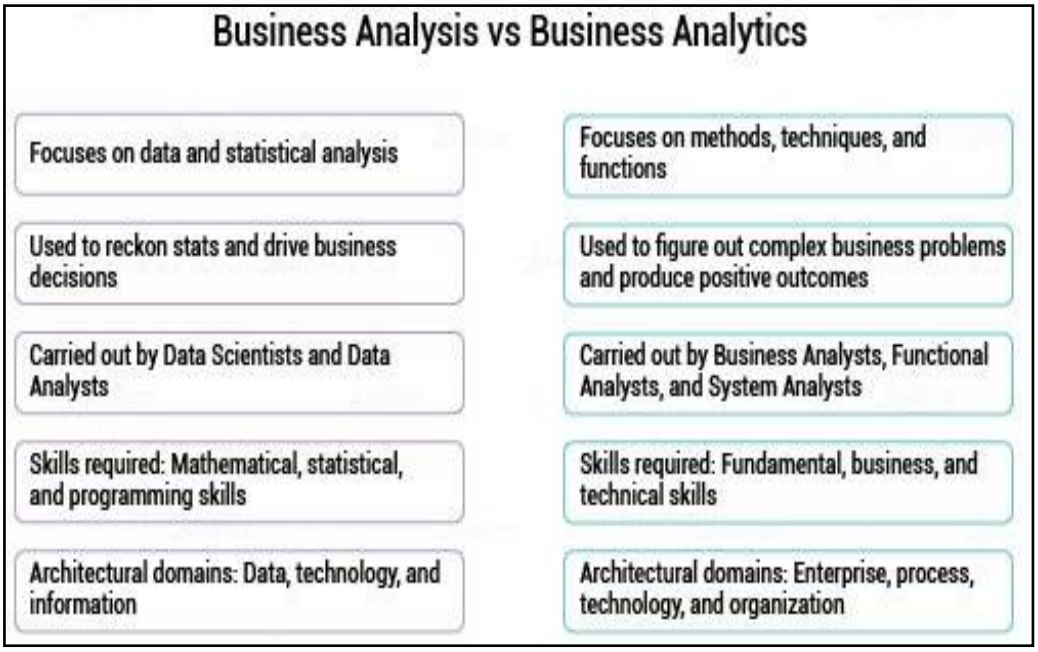
- Mathematical, statistical, and programming skills are needed for executing business analytics.
- The architectural domains for business analytics include data architecture, technology architecture, and information architecture.



➢ ***Business Analysis vs. Analytics: Similarities Explained***

Business analysis and business analytics have some commonalities. They both:

- Examine and enhance businesses
- Determine solutions to issues
- Establish things based on the requirements

Business analysis is a practice of identifying business requirements and figuring out solutions to specific business problems. This has a heavy overlap with the analysis of business needs to function normally and to enhance how they function. Sometimes, the solutions include a system's development feature. It can also incorporate business change, process enhancement or strategic planning, and policy improvement.

On the contrary, business analytics is all about the group of tools, techniques, and skills that help the investigation of previous business performance. It also aids to gain insights into future performance. In general, business analytics aims mostly at data and statistical analysis.

Categorization of Analytical Models

4 Types of Business Analytics

There are mainly four types of Business Analytics, each of these types are increasingly complex. They allow us to be closer to achieving real-time and future situation insight application. Each of these types of business analytics have been discussed below.

1. **Descriptive Analytics**
2. **Diagnostic Analytics**
3. **Predictive Analytics**
4. **Prescriptive Analytics**

1. Descriptive Analytics

It summarizes an organisation's existing data to understand what has happened in the past or is happening currently. Descriptive Analytics is the simplest form of analytics as it employs data aggregation and mining techniques. It makes data more accessible to members of an organisation such as the investors, shareholders, marketing executives, and sales managers.

It can help identify strengths and weaknesses and provides an insight into customer behaviour too. This helps in forming strategies that can be developed in the area of targeted marketing.

2. Diagnostic Analytics

This type of Analytics helps shift focus from past performance to the current events and determine which factors are influencing trends. To uncover the root cause of events, techniques such as data discovery, data mining and drill-down are employed. Diagnostic analytics makes use of probabilities, and likelihoods to understand why events may occur. Techniques such as sensitivity analysis and training algorithms are employed for classification and regression.

3. Predictive Analytics

This type of Analytics is used to forecast the possibility of a future event with the help of statistical models and ML techniques. It builds on the result of descriptive analytics to devise models to extrapolate the likelihood of items. To run predictive analysis, Machine Learning experts are employed. They can achieve a higher level of accuracy than by business intelligence alone.

One of the most common applications is sentiment analysis. Here, existing data collected from social media and is used to provide a comprehensive picture of an users opinion. This data is analysed to predict their sentiment (positive, neutral or negative).

4. Prescriptive Analytics

Going a step beyond predictive analytics, it provides recommendations for the next best action to be taken. It suggests all favourable outcomes according to a specific course of action and also recommends the specific actions needed to deliver the most desired result. It mainly relies on two things, a strong feedback system and a constant iterative analysis. It learns the relation between actions and their outcomes. One common use of this type of analytics is to create recommendation systems.

Business Analytics	Questions	Tools	Outcomes	Focus
Prescriptive (Automation)	• What should I do? • Why should I do it?	• Decision modeling • Optimization • Simulation • Expert systems	• Optimization-Best possible business decisions	• Focus on decision making and efficiency
Predictive (Foresight)	• What is likely to happen? • What will happen? • Why will it happen	• Data mining • Text/media mining • Predictive modeling • Artificial Neural Networks (ANN)	• Accurate projections of the future conditions and states	• Identify past patterns to predict the future
Diagnostic (Insight)	• Why did it happen?	• Enterprise data warehouse • Data discovery • Data mining and correlations • Drill-down/roll-up	• Accurate projections of the future conditions and states	• Identify past patterns to predict the future
Descriptive (Hindsight)	• What happened? • What is happening?	• Data modeling • Business reporting • Visualization • Dashboard • Regression	• Well defined business problems or opportunities	• Uncovering patterns that offer insight

❖ Business Analytics Tools

Business Analytics tools help analysts to perform the tasks at hand and generate reports which may be easy for a layman to understand. These tools can be obtained from open source platforms, and enable business analysts to manage their insights in a comprehensive manner. They tend to be flexible and user-friendly. Various business analytics tools and techniques like.

- **Python** is very flexible and can also be used in web scripting. It is mainly applied when there is a need for integrating the data analyzed with a web application or the statistics is to be used in a database production. The I Python Notebook facilitates and makes it easy to work with Python and data. One can share notebooks with other people without necessarily telling them to install anything which reduces code organizing overhead
- **SAS** The tool has a user-friendly GUI and can churn through terabytes of data with ease. It comes with an extensive documentation and tutorial base which can help early learners get started seamlessly.
- **R** is open source software and is completely free to use making it easier for individual professionals or students starting out to learn. Graphical capabilities or data visualization is the strongest forte of R with R having access to packages like GGPlot, RGIS, Lattice, and GGVIS among others which provide superior graphical competency.
- **Tableau** is the most popular and advanced data visualization tool in the market. Story-telling and presenting data insights in a comprehensive way has become one of the trademarks of a competent business analyst Tableau is a great platform to develop customized visualizations in no time, thanks to the drop and drag features.

Python, R, SAS, Excel, and Tableau have all got their unique places when it comes to usage.