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# DATA ANALYSIS

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# DATA

Data has been the buzzword for ages now. Either the data being generated from large-scale enterprises or the data generated from an individual, each and every aspect of data needs to be analyzed to benefit yourself from it.

But how do we do it?

Well, that's where the term 'Data Analytics' comes in.

## Course Outcomes

Gain the principle concepts and foundational understanding of data analytics and deploy the Data Analytics Lifecycle to address big data analytics projects.

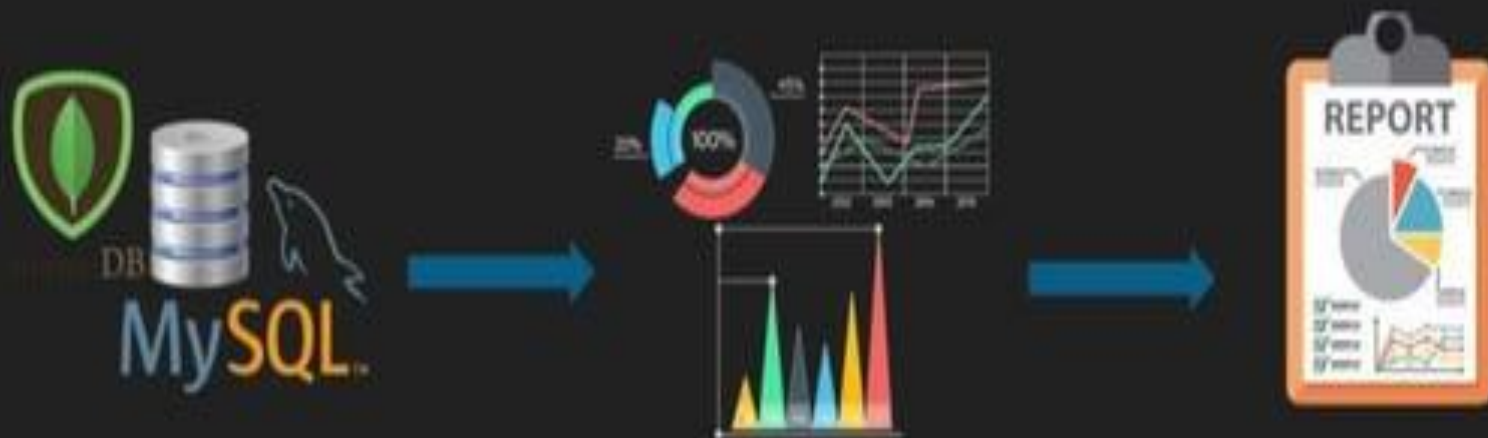


# Topics

- Why is Data Analytics important?
- What is Data Analytics?
- Top Data Analytics Tools
- How to Become a Data Analyst?

# Why is Data Analytics important?

Data Analytics has a key role in improving your business as it is used to gather hidden insights, generate reports, perform market analysis, and improve business requirements.



# What is the role of Data Analytics?

- **Gather Hidden Insights** – Hidden insights from data are gathered and then analyzed with respect to business requirements.
- **Generate Reports** – Reports are generated from the data and are passed on to the respective teams and individuals to deal with further actions for a high rise in business.
- **Perform Market Analysis** – Market Analysis can be performed to understand the strengths and weaknesses of competitors.
- **Improve Business Requirement** – Analysis of Data allows improving Business to customer requirements and experience.

Now that you know the need for Data Analytics, let me quickly elaborate on what is Data Analytics for you.



# What is Data Analytics for Beginners?

- Data Analytics refers to the techniques used to analyze data to enhance productivity and business gain. Data is extracted from various sources and is cleaned and categorized to analyze various behavioral patterns. The techniques and the tools used vary according to the organization or individual.
- So, in short, if you understand your Business Administration and have the capability to perform Exploratory Data Analysis, to gather the required information, then you are good to go with a career in Data Analytics.

So, now that you know what is Data Analytics, let me quickly cover the top tools used in this field.

# What are the tools used in Data Analytics?

With the increasing demand for Data Analytics in the market, many tools have emerged with various functionalities for this purpose.

Either open-source or user-friendly, the top tools in the data analytics market are as follows.



## Data Analytics: Tools



This tool is the leading analytics tool used for statistics and data modeling. R compiles and runs on various platforms such as UNIX, Windows, and Mac OS. It also provides tools to automatically install all packages as per user-requirement.



## Data Analytics: Tools Cont..



Python is an open-source, object-oriented programming language that is easy to read, write, and maintain. It provides various machine learning and visualization libraries such as Scikit-learn, TensorFlow, Matplotlib, Pandas, Keras, etc. It also can be assembled on any platform like SQL server, a MongoDB database or JSON

## Data Analytics: Tools Cont..

This is a free software that connects to any data source such as Excel, corporate Data Warehouse, etc. It then creates visualizations, maps, dashboards etc with real-time updates on the web.

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## Data Analytics: Tools Cont..

**QlikView**

This tool offers in-memory data processing with the results delivered to the end-users quickly. It also offers data association and data visualization with data being compressed to almost 10% of its original size.

## Data Analytics: Tools Cont..



A programming language and environment for data manipulation and analytics, this tool is easily accessible and can analyze data from different sources.

## Data Analytics: Tools Cont..



Excel

This tool is one of the most widely used tools for data analytics. Mostly used for clients' internal data, this tool analyzes the tasks that summarize the data with a preview of pivot tables



## Data Analytics: Tools Cont..



A powerful, integrated platform that can integrate with any data source types such as Access, Excel, Microsoft SQL, Tera data, Oracle, Sybase etc. This tool is mostly used for predictive analytics, such as data mining, text analytics,

## Data Analytics: Tools Cont..



Konstanz Information Miner (KNIME) is an open-source data analytics platform, which allows you to analyze and model data. With the benefit of visual programming, KNIME provides a platform for reporting and integration through its modular data pipeline concept.

## Data Analytics: Tools Cont..



Also known as GoogleRefine, this data cleaning software will help you clean up data for analysis. It is used for cleaning messy data, the transformation of data and moving data from one location to another.



## Data Analytics: Tools Cont..



One of the largest large-scale data processing engine, this tool executes applications in Hadoop clusters 100 times faster in memory and 10 times faster on disk. This tool is also popular for data pipelines and machine learning model

# Data Analyst?

- Now, that you know all this about Data Analysis, let me tell you what you can become by gaining knowledge about this field.
- Well, you can become a well-renowned Data Analyst. Now, if you ask me *Who is a Data Analyst?*, then my answer would be that a Data Analyst is a professional who can analyze data by applying various tool and techniques and gathering the required insights.

# How to Become a Data Analyst?

- Data analysts translate numbers into plain English. A Data Analyst delivers value to their companies by **taking information** about specific topics and then **interpreting, analyzing**, and presenting findings in comprehensive **reports**. So, if you have the capability to collect data from various sources, analyze the data, gather hidden insights, and generate reports, then you can become a Data Analyst.
- Apart from the above-mentioned capabilities, a Data Analyst should also possess skills such as Statistics, Data Cleaning, Exploratory Data Analysis, and Data Visualization. Also, if you have a knowledge of Machine Learning, then that would make you stand out from the crowd.