Data Analytics in a Nutshell

Data Analytics in a Nutshell

Making sense of **Big Data** is the domain of **Data Analytics**. There are various tools and techniques which are deployed in order to collect, transform, cleanse, classify, and convert that data into easily understandable data visualization and reporting formats.

1. What is Data Analytics?

Data Analytics refers to the set of **quantitative** and **qualitative** approach in order to derive valuable insights from data.

- It involves many **processes** that include extracting data, categorizing it in order to analyze the various patterns, relations, connections and other such valuable insights from it.

- Today almost every organization has morphed itself into a data-driven organization and this means they are **deploying** an approach in order to collect more data that is related to the customers, markets and business processes.

- This data is then categorized, stored and analyzed in order to make sense of it and derive valuable **insights** out of it.

Comparison between the domains of Data Analysis and Data Science :

Criteria	Data Analysis	Data Science
Data Type	Mostly structured data	Any type of data
Tools Used	Statistics and data modeling	Hadoop, programming languages, machine learning
Span of domain	Comparatively smaller	Very expansive
Exploration & new ideas	Not needed	Needed

2. Understanding Data Analytics

Though the term Data Analytics might seem simple it is anything but simple. Data Analytics is most complex when it is deployed for big data applications. The three most important attributes of big data include volume, velocity and variety.

The need for big Data Analytics springs from all the data that is created at breakneck speeds on the internet. Our digital lives will make big data even bigger thanks to the ever increasing penchant of individuals to see that their lives are ever-connected to the online world.

- It is estimated that by 2020 the cumulative data that will be generated will amount to 1.7 MB every second for every individual on the planet.

This shows the amount of data that is generated and hence the need for big Data Analytics tools in order to make sense of all that data.

It organizes, transforms and models the data based on the requirements in order to draw the necessary conclusions and for identifying patterns in the data.

## 3. How Data Analytics makes working so easy?

There are various tools in Data Analytics that can be successfully deployed in order to parse the data and derive valuable insights out of it. The computational and data-handling challenges that are faced at scale means that the tools need to be specifically able to work with such kinds of data.

The advent of big data changed analytics forever thanks to the inability of the traditional data handling tools like relational database management systems to work with big data in its varied forms. Also the data warehouses cannot handle data that is of extremely big size.

The era of big data drastically changed the requirements for extracting meaning from business data. In the world of relational databases, administrators easily generated reports on data contents for business use, but these provided little or no broad business intelligence. For that, they employed data warehouses, but data warehouses generally cannot handle the scale of big data cost-effectively.

While data warehouses are certainly a relevant form of Data Analytics, the term Data Analytics is slowly acquiring a specific subtext related to the challenge of analyzing data of massive volume, variety, and velocity.

4. Types of Data Analytics
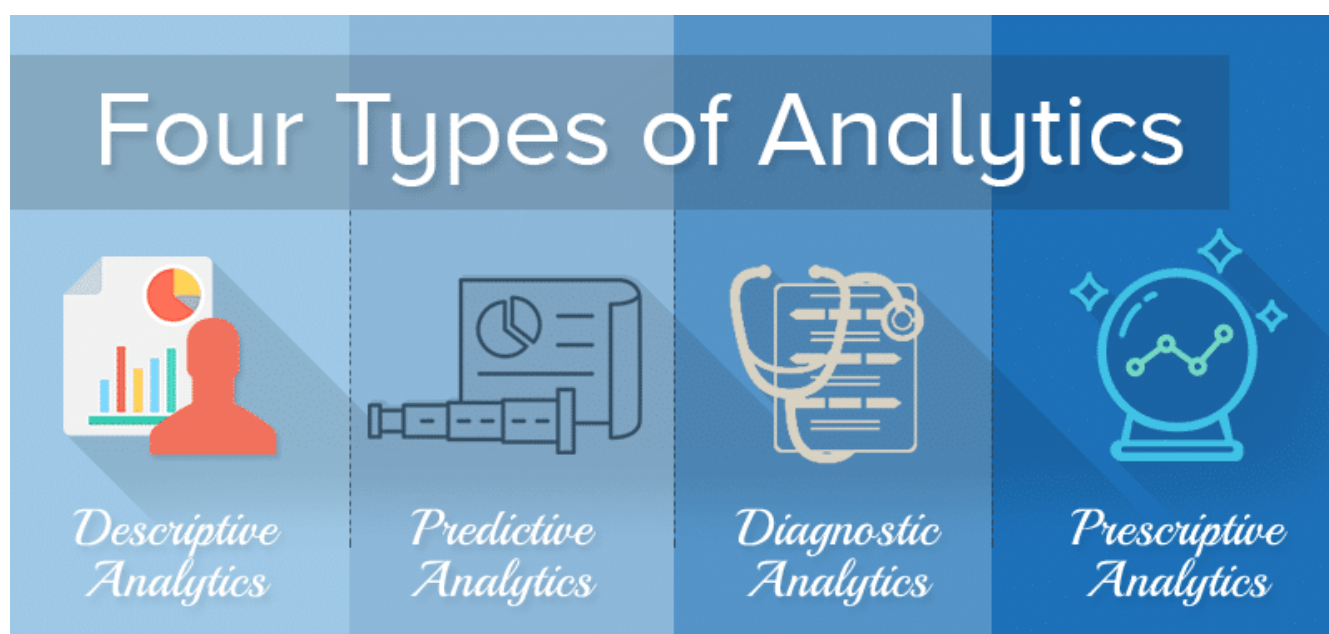
- **Prescriptive Analytics**: This is the type of analytics that talks about the analysis based on the rules and recommendations in order prescribe a certain analytical path for the organization.
- **Predictive Analytics**: This type of analytics ensures that the path is predicted for the future course of action.
- **Diagnostic Analytics**: This is about looking into the past and determining why a certain thing happened. This type of analytics usually revolves around working on a dashboard.
- **Descriptive Analytics**: In this type of analytics we work based on the incoming data and the mining of this data we deploy analytics and come up with a description based on the data.

5. Working with Big Data Analytics

The subject of Data Analytics is a very vast one and hence the possibilities are also immense. **Prescriptive analytics** ensures the big data analytics can *shed the light on the various aspects of the business and provide you a sharp focus on what you need to do in terms of Data Analytics*.

Prescriptive analytics adds a lot of value to any organization thanks to the specificity and conciseness of this domain. We can deploy the prescriptive analytics regardless of the industry vertical based on the same rules and regulations.

The domain of **predictive analytics** can ensure that the domain of big data can be deployed for **predicting the future** based on the present data.


A good **example** of predictive analytics is the deployment of analytical aspects to sales cycle of an enterprise. It starts with the lead source analysis, analyzing the type of communication, the number of communications, the channels of communication along with the sentiment analysis through heightened use of machine learning algorithms and more in order to come up with a perfect predictive analysis methodology for any enterprise.

Diagnostic analytics is used for the *specific purpose of discovering or determining why a certain course of action happened*.

As an **example** you can work with diagnostic analytics in order to review a certain social media campaign for coming up with the number of mentions for a post, the number of followers, page views, reviews, fans and such other metrics in order to diagnose why a certain thing happened.

Descriptive analytics is one of the least popular which is basically used for coming with the methodology of **uncovering patterns** that can add value to an organization.
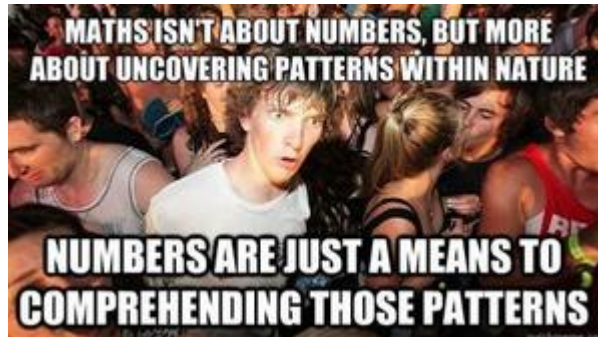
As an **example** you can think about the credit risk assessment. It involves predicting how likely a certain customer to default is based on his credit history. It takes into consideration the various aspects like the financial performance of the customer, getting inputs from past financial institutions that the person might have approached and other platforms like the social media, online presence based on the web-based solution.

Since no organization today can stay without being inundated with data, **it is imperative that Data Analytics is an indispensable part of the data journey of any organization today**. So based on the various types of Data Analytics, today's forward-looking enterprises can actually go ahead and design a very robust path to success based on the data that they have.

6. Companies using Data Analytics

Today regardless of the industry type we are seeing rapid deployment of the various **analytical tools** and **technologies**. It could be the various tools for parsing of the data or the one's which are used for making sense of the data in terms of easy-to-understand **visualization tools**. Some of the industries that are using Data Analytics tools include:

These are digital-first enterprises for which the data analytical tools are the most important **weapons in their arsenal**.

These could be the **Amazon**, **Facebook**, **Google** and **Microsoft** which cannot survive without the use of Data Analytics.

- **Amazon** widely deploys analytics in order to **recommend** you the **right product** based on the product that you bought in the past or the one that you just bought.

- They also make use of data in order to **build customer profile** in order to sell them better. This way they can provide a very **customized experience to their customers**.


- A company like **Facebook** will deploy Data Analytics to find out what their **users are talking about** so that they can understand what are the *products and services that they would be interested in*.

- Since it works on **ads** they need to have the pulse of the users by making sure that the ads that they serve are up to date in terms of customization and other aspects.

- **Google** is sitting on the mother-lode of all data. They serve a few billion searches every day of the year making it **one of the most data intensive companies on planet earth**. Due to this the need for analytical tools at Google is one of the most pressing.
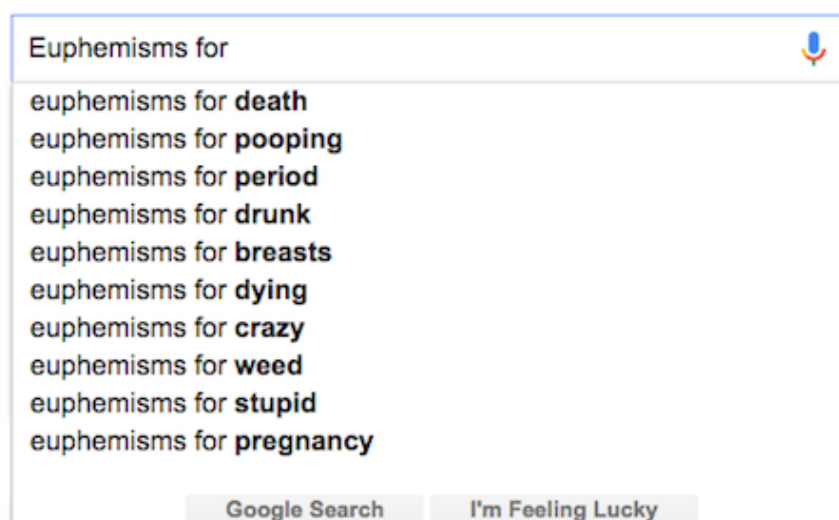
- **Google** is the company that is **hiring the maximum number of data scientists** and all this shows the importance of Data Analytics at one of the biggest companies on earth.

7. Conclusion

Data Analytics is one of the most vital aspects that is driving some of the biggest and best companies forward today. The **enterprises which can convert data into information and information into insights** are the ones which will own the future in a **hypercompetitive world** where your next competitor can come from any industry vertical.

Uber disrupted the taxi hailing business, **Airbnb** disrupted the hospitality business. Both these organizations are thriving on the sheer power of their **deep data analytical mindset**. So the way forward for any company worth its salt is have a clear data-driven approach and harnessing the power of big data using transformational data analytical techniques.