**TOPIC 1**

**DATA ANALYTICS**

Analytics is a critical step in the discovery of information that includes theories, methodologies and instruments to reveal patterns in the data.  
It is essential to know the rationale behind the techniques so that instruments and techniques fit  the data and pattern recognition goal properly. There may be several choices available for a dataset, like learning the datasets, predicting the future datasets, analyzing the Company’s growth by the datasets etc. There are various phases under the field of data analytics:-

* Data Collection
* Data processing
* Data Cleaning
* Exploratory Data analysis
* Data Modeling
* Data product

All these phases ensure the proper Analysis of Data.

The various fields where Data Analytics plays a vital role are:-

* Weather Forecasting
* Time Series Analysis
* Predicting the Growth of a Firm
* Discrete Choice Modeling,etc

From the perspective of Service Oriented Companies, this field plays an important role in analyzing the performance and growth of the company.

Now-a-days almost all Service Oriented Companies offer the post of Data Analyst, whose job is to monitor the productivity on a daily basis.

Data Analytics can be applied on a dataset by using various mathematical techniques. Some of the most popular techniques used in analyzing data are:-

* Statistics
* Probability
* Regression
* Randomization
* Induction,etc

**TOPIC 2**

**Designing an AI Chatbot using IBM Watson Assistant**

A Chatbot (also known as Virtual Assistant) is artificial intelligence (AI) software that can simulate a conversation (or a chat) with a user in natural language through messaging applications, websites, and mobile apps or through the telephone.

There are various varieties of chatbots like, Text Based Chatbots, Speech Based Chatbots, Graphics based chatbots, etc.

Many companies use chatbots in their devices like Google uses “Google Assistant”, Apple uses “Siri”, and Microsoft uses “Cortana” ,etc.

IBM Watson Assistant is a [white label cloud service](https://searchitchannel.techtarget.com/definition/white-label-cloud-service) that allows enterprise-level software developers to embed an artificial intelligence ([AI](https://searchenterpriseai.techtarget.com/definition/AI-Artificial-Intelligence)) virtual assistant ([VA](https://searchcrm.techtarget.com/definition/virtual-assistant)) in the software they are developing and brand the assistant as their own. The service, which gives consumers access to [Watson AI](https://searchenterpriseai.techtarget.com/definition/IBM-Watson-supercomputer), is delivered through the IBM Cloud.

In other words The Watson can be used as a programming-less platform to create an interactive AI Chatbot using the concepts of Data Structures. These chatbots uses the concept of JSON (JavaScript Object Notation) and can be easily embedded in Websites, Recognition systems , etc.

IBM Watson Assistant is marketed as a solution for companies of any size looking to build their own voice or touch-activated virtual assistant.

Types of Chatbots which can be built using the IBM Watson Assistant are:-

* Support Chatbots
* Skills Chatbots
* Assistant Chatbots

Advantages of using the Chatbots are:-

* Improved Customer Service
* Better Engagement
* Cost Savings
* Monitoring Consumer Data and Gaining Insights
* Rapid and Increasing Growth in Messenger apps