ASSIGNMENT – 1

1, what is the difference between data analysis and machine learning?

Data Analysis	Machine Learning
Data analysis is a process of inspecting, cleansing, transforming, and modeling data with the goal of discovering useful information	Machine learning (ML) is the study of computer algorithms that can improve automatically through experience and by the use of data.
A simple example of Data analysis is whenever we take any decision in our day-to-day life is by thinking about what happened last time or what will happen by choosing that particular decision.	Example of Medical diagnosis, image processing, classification, learning association, regression
Types of Data Analysis Descriptive Analysis, Diagnostic Analysis, Predictive Analysis, Prescriptive Analysis.	These are three types of machine learning Supervised learning, unsupervised learning, Reinforcement learning.
These are the seven methods of data analysis: Qualitative Analysis, Quantitative Analysis, Text analysis, Statistical analysis, Diagnostic analysis, Predictive analysis, Prescriptive Analysis.	These are the ten methods of Machine learning: Regression, Classification, Clustering, Dimensionality Reduction, Ensemble Methods, Neural Nets and Deep Learning, Transfer Learning, Reinforcement Learning.

2, what is big data?

Big data is a combination of structured, semi structured and unstructured data collected by organizations that can be mined for information and used in machine learning projects, predictive modeling and other advanced analytics applications.

Systems that process and store big data have become a common component of data management architectures in organizations, combined with tools that support big data analytics uses. Big data is often characterized by the three V's:

- The large volume of data in many environments.
- The wide variety of data types frequently stored in big data systems.
- The velocity, at which much of the data is generated, collected and processed.

3, what are the four main things we should know before studying data analysis?

- We should about the meaning of data analysis and uses of data analysis. Then know about the big data, data analysis.
- Learn the basic things of the data analysis that types and techniques and method of data analysis
- Learn the basics of python or R programming. Start interacting with data using SQL (Structured Query Language).
- Brush up on your spreadsheet skills with an Excel class. Get a refresher in statistics or linear algebra. Enroll in one of the free Excel courses and learn how to use this powerful software.

4, Most common characteristics used in descriptive statistics?

- Frequency Distribution,
- Measures of Central Tendency,
- Measures of Variability data set

5,What is quantitative data and qualitative data?

Quantitative Data:

Quantitative data is numerical data. It includes data that is discrete (can be counted) and data that is continuous (can be measured).Examples of continuous data include anything that can be measured, such as the height of your mom, the length of a football field, and the weight of a wolf.

Qualitative data:

Qualitative data can be observed and recorded. This data type is non-numerical in nature. This type of data is collected through methods of observations, one-to-one interviews, conducting focus groups, and similar methods. Qualitative data in statistics is also known as categorical data. Examples: The cake is orange, blue, and black in color. Females have brown, black, blonde, and red hair.