***Chapter 1. Intro to ML***

Ml mimics data to gain knowledge and make date driven prediction. In volves a development of self learning algorithms.

1. **Types of analysis**:

* **Descriptive analysis** - “What has happened?”

Data Aggregation methods includes having a summary about the date using the concepts of count, summation, grouping, join operations and statistical summaries like mean , median , mode etc.(standard deviation, variation).

Collection of Data using EDA and representation of data in graphical form.

* **Predictive analytics** – “What might happen?”
  + 1. Uses statistical data using ML/DL.(Expectation is to achieve clustering /prediction/recommendation)
    2. Forecast technique (Time series Data)
* **Prescriptive analysis** – “What should be done?”

1. Optimization
2. Simulation Algorithms

**Example of a prediction :**

**Predicting** – Walking, Running, Cycling

**Traditional programming** –

If speed < 6km:

Print(“Running”)

Elif speed < 13 km:

Print(“Running”)

Else:

Print(“Cycling”)

**Machine Learning Approach** –

Speed(as Input)

ML Model Program

Walk,run, Cycle(as Output)

* **Deep learning is a subset of ML which is inspired by our brain’s neurons (Artificial Neural Network).**

**Neural Network**