

## ① Types of Analytics and Statistics involved in data analysis.

### ② Descriptive Analysis.

- Most commonly used analytical method by customers, to understand the overall performance at an aggregate level.
- Important to build core competencies first in descriptive analytics.

Core competencies: Data modeling  
Visualization and communicating data  
Dashboard design skill.

Answers the question "What happened"

### → <sup>Diagnostic</sup> Descriptive Analysis.

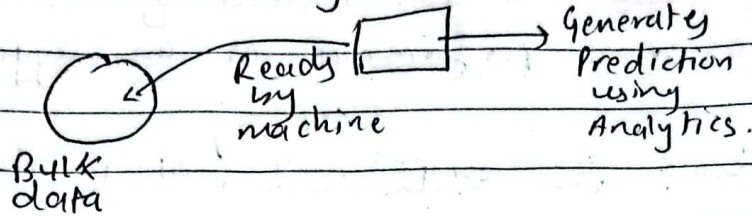
↳ Like descriptive analysis uses historical data analysis but diagnostic Analysis addresses critical question of why an error or anomaly occurred in data.

This type of Analysis usually triggers for the question "Why did it happen".



## Predictive Analytics.

↳ Advanced analytics that determines what is likely to happen based on historical data using machine learning.



## Prescriptive Analytics.

↳ Guided Analytics

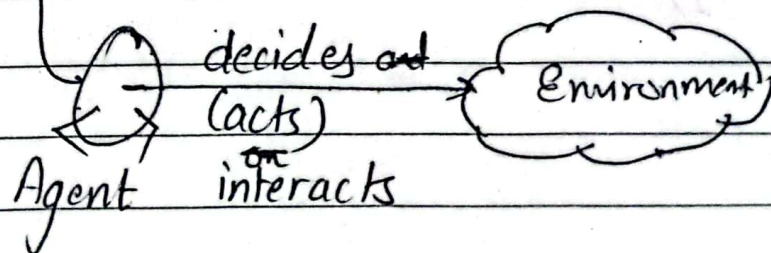
↳ Merging of descriptive, diagnostic and predictive analysis.

↳ Automatic adjustment of product pricing based on anticipated customer demand and external factors.

↳ Primary aim is to make an educated guess or assessment out of analytics and streamline the decision-making process.

(Qno2)

→ Trade off between Exploration and Exploitation in Reinforcement Learning.



Agents decides and acts/interacts with environment to achieve certain goal. Based on Reward and Punishment. Agent Improves Overtime.



## Shaping of How agent decides (Exploration Vs Exploitation)

It refers to trade-off between exploring (trying out new things) and leveraging knowledge of actions that have already been proven to be effective (exploitation).

The tradeoff is crucial because,

If agent explores too much, it may never settle on high reward action policy, leading to inefficient learning.

If agent exploits too much, it will not discover ~~new~~ new things, stuck in a local optimum.

## Qno3) Basic Workflow in Machine Learning project

→ Define the Problem.

↳ Understand parameters available, objectives and way formulation and Evaluation.

→ Collect and Understand Data.

↳ All relevant data to train and evaluate model.  
Data collection, Exploration, Annotation, limitation understandings.

→ Data Processing and Cleaning.

→ Selecting Algorithm.

→ Training Model

→ Evaluating Model

→ Optimizing Model

→ Deploying Model