Data Analysis, Analytics Goal and Approach

Data Analysis helps the business to understand problems facing an organization, and explore data in meaningful ways.

As a Data Analyst you will collect data, organize, interpret, structure, and present the data into useful information to provide business context.

Data science is a multi disciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from structured and unstructured data.

Statistics is Heart of Analytics

Data Analysis is required in business for the following reasons.
• Understand business direction and objectives
• Explore the meaning behind the numbers and figures in data
• Analyze the causes of certain events based on data findings
• Contribute to business decision making by offering educated opinions

Data Analysis Steps:
1. Define the problem
2. Get relevant data
3. Draw Hypothesis
4. Size the problem
5. Get it vetted!
6. Do RCA
7. Get it vetted!
8. Design Solution as required

Types of Data Analysis:

Prescriptive — What should we do?
Predictive — What is likely to happen?
Diagnostic — Why is it happening?
Descriptive — What is happening?

Complexity of analysis (vertical axis)
Potential value to businesses (horizontal axis)

DATA SCIENCE LIFECYCLE

01 BUSINESS UNDERSTANDING
Ask relevant questions and define objectives for the problem that needs to be tackled.

02 DATA MINING
Gather and scrape the data necessary for the project.

03 DATA CLEANING
Fix the inconsistencies within the data and handle the missing values.

04 DATA EXPLORATION
Form hypotheses about your defined problem by visually analyzing the data.

05 FEATURE ENGINEERING
Select important features and construct more meaningful ones using the raw data that you have.

06 PREDICTIVE MODELING
Train machine learning models, evaluate their performance, and use them to make predictions.

07 DATA VISUALIZATION
Communicate the findings with key stakeholders using plots and interactive visualizations.