➢ Indroduction to Data Analytics

• Data Analysis

Data analysis is a process of inspecting, cleansing, transforming, and modelling data with the goal of discovering useful information, informing conclusions, and supporting decision-making. Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, and is used in different business, science, and social science domains. In today's business world, data analysis plays a role in making decisions more scientific and helping businesses operate more effectively.

Tools useful for data analysis

1. Microsoft Excel
2. Python
3. R
4. Jupyter notebook
5. SAS
6. Microsoft Power BI
7. Apache Spark
8. Tableau

Various Steps involved in analytics Project

Understand the business problem

Explore the data and become familiar with it. Prepare the data for modelling by detecting outliers, treating missing values, transforming variables, etc. After data preparation, start running the model, analyse the result and weak the approach. This is an iterative step till the best possible outcome is achieve. Validate the model using a new data set. Start implementing the model and track the result to analyse the performance of the model over the period of time.

Responsibilities of Data Analyst

A data analyst is responsible for organizing data related to sales numbers, market research, logistics, linguistics, or other behaviours. They utilize

technical expertise to ensure data is accurate and high-quality. Data is then analyzed, designed, and presented in a way that assists individuals, businesses, and organizations make better decisions.

Using automated tools to extract data from primary and secondary sources. Removing corrupted data and fixing coding errors and related problems. Developing and maintaining database, data systems – reorganizing data in a readable format. Performing analysis to assess quality and meaning of data. Filter Data by reviewing reports and performance indicators to identify and correct code problems. Working with programmers, engineers, and management heads to identify process improvement opportunities, propose system modifications, and strategies. Preparing final analysis reports for the stakeholders to understand the data-analysis steps, enabling them to take important decisions based on various facts and trends.

Key skill required for a data analyst

1.SQL

2.Statistical Programming

3.Machine Learning

4.Probability and statistics

5.Data Management

6.Statistical Visualization

7.Econometrics

Common problems that data analysts encounter during analysis.

1. Lack of skilled resources with understanding of big data analytics.
2. Gaining meaningful insights using big data analytics.
3. Bringing extensive data to big data platform.
4. Uncertainty of data management landscape.
5. Data storage and fast retrieval.

Difference between Data analytics and data science

Data scientists model data to make predictions, identify opportunities, and support strategy. They use data to understand the future. The role of the data analyst is to solve problems and spot trends. They work with the data as a snapshot of what exists now.

Data scientists use algorithms and machine learning to improve the ways that data supports business goals. Data analysts collect, store, and maintain data and analyze results.

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