



ISO : 9001-2015

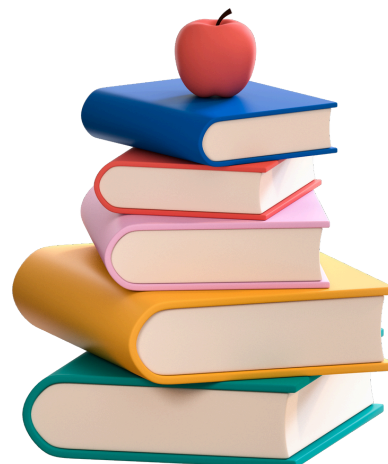
JP TECH INSTITUTE

DATA ANALYTICS & DATA SCIENCE

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Data Science

Data science combines math and statistics, specialized programming, advanced analytics, artificial intelligence (AI) and machine learning with specific subject matter expertise to uncover actionable insights hidden in an organization's data.



Introduction to Data Science

- Combines statistics, programming, and domain knowledge for insights.
- Involves data collection, analysis, and decision-making.
- Used in healthcare, finance, and marketing.



Mathematics & Statistics

- Foundation for data analysis and modeling.
- Covers probability, algebra, and hypothesis testing.
- Helps in predictive analytics and decision-making.



Programming Language

- Essential for data manipulation and analysis.
- Python, R, and SQL are commonly used.
- Supports machine learning and automation.



Data Cleaning & Preprocessing

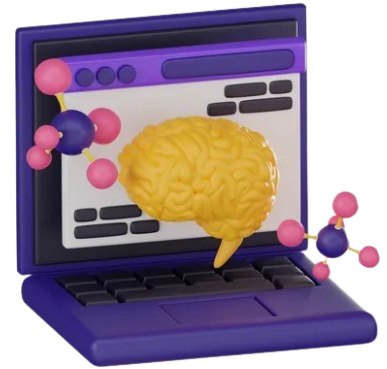
- Removes inconsistencies and missing values.
- Includes normalization and duplicate handling.
- Improves model accuracy and reliability.

Data Science



Machine Learning

- Enables computers to learn from data.
- Covers supervised, unsupervised, and reinforcement learning.
- Uses algorithms like decision trees and neural networks.



Deep Learning

- Advanced ML using neural networks.
- Powers AI, NLP, and image recognition.
- Uses frameworks like TensorFlow and PyTorch



Big Data Technologies

- Manages large-scale structured and unstructured data.
- Uses Hadoop, Spark, and Kafka for processing.
- Enables real-time analytics and insights.



Data Storage & Database

- Removes inconsistencies and missing values.
- Includes normalization and duplicate handling.
- Improves model accuracy and reliability.



Data Analytics

Data analytics is the process of collecting, transforming, and organizing data in order to draw conclusions, make predictions, and drive informed decision making. The field encompasses data analysis, data Science, and data engineering.



Python

- Introduction to Python programming and syntax.
- Variables, data types, and basic operations.
- Writing and executing Python scripts.



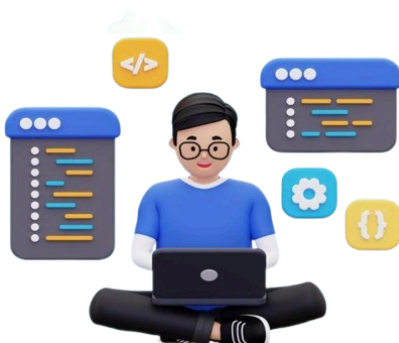
Python - Loop & List

- For, while, and nested loops for iteration.
- List creation, indexing, and manipulation.
- List comprehensions for efficient coding.



Python - Loop & List

- Immutable tuples and their usage.
- Dictionaries for key-value data storage.
- Sets for unique data handling and operations.



Python Functions & Modules

- Defining and calling functions in Python.
- Built-in and user-defined functions.
- Importing and creating modules for reusability.

Data Analytics



Numpy & Data Manipulation

- Introduction to NumPy for numerical computing.
- Creating and manipulating arrays efficiently.
- Performing mathematical operations on datasets.



Matplotlib for Data Visualization

- Creating line, bar, and scatter plots.
- Customizing graphs with labels and colors.
- Plotting multiple data trends effectively.



MySQL for Data Analytics

- Introduction to relational databases and SQL.
- Querying and filtering data with SELECT, JOIN, and WHERE.
- Data aggregation and manipulation in MySQL.



Excel for Data Analytics

- Data cleaning, sorting, and filtering in Excel.
- Using formulas, pivot tables, and charts.
- Automating tasks with Excel functions and macros.



Power BI Essential

- Connecting data sources and creating dashboards.
- Designing interactive visual reports.
- Applying DAX functions for advanced analytics.

