

DATA SCIENCE & MACHINE LEARNING



DURATION: 12 MONTHS

IT Tools & Network Basics

- Introduction to computers
- Introduction to Operating System
- Word Processing using Ms-Word
- Spreadsheet Using Ms-Excel
- Presentations Using Ms-PowerPoint
- Introduction to Internet, WWW and Web
- Email, Social Networking and e-Governance Services
- Digital Financial Tools and Applications
- Overview on Futuristic IT Technology and Cyber Security

Python

- Introduction To Python
- Writing and Executing First Python Program
- Python Language Fundamentals
- Python Conditional Statements
- Looping Statements
- Standard Data Types
- String Handling
- Python List
- Python Tuple
- Python Set
- Python Dictionary
- Python Functions
- Modules & Packages
- File I/O
- Regular Expressions (Regex)
- Object Oriented Programming
- Exception Handling
- GUI Programming
- Multi-Threading Programming

SQL using My SQL

- Introduction to RDBMS
- What is Relational Database Package
- Difference between SQL & Database

- Installing MySQL Server database
- SQL Basic
- DDL: Create, Alter, Drop, etc.
- DML: Insert, Update, Delete, etc.
- DQL: Select
- Autoincrement field
- SQL Comments
- SQL Aliases
- Savepoint & rollback
- SQL Constraints
- NOT NULL, Unique key Primary key, Check Default, Foreign key
- SQL Operators Arithmetic operators
- Logical operators' Conditional operators
- Like, between, in operators
- SQL Clauses Order by, Where Limit/top, Group by, having
- SQL Joins - Inner Join, Left Join, Right Join, Full Join
- SQL View - creating view, updating view, fetching data from view
- String functions
- Aggregate functions
- Date & time functions
- Stored Procedures & Functions
- Understanding stored procedures and their key benefits
- Working with stored procedures
- Studying user-defined functions
- Working with CSV Files:
- How to write result to csv file
- How to read csv file
- Python Database Connectivity
- Database Drivers and connectors
- Creating connection object
- Understanding cursor object
- Executing SQL statements using cursor
- Executing SQL statements using cursor
- Storing and retrieving Date and Time

MongoDB

- Introduction To MongoDB
- Understanding NoSQL DB
- NoSQL vs. SQL DB
- NoSQL vs. SQL DB
- Downloading & Installation
- Introduction of MongoDB shell and Compass
- Understanding database, collection & document
- Crud Operations
- Crud Operations

- Delete Document
- Update Document
- Query Document
- Operators In MongoDB
- Query and Projection operators
- Update operator
- Aggregation Pipeline operators
- Methods In MongoDB
- limit and sort
- bulk methods
- other methods
- Indexing And Relationships
- Types of Indexes
- Creating an Indexes
- Dropping an Indexes
- Defining Relationships between Documents
- Python Connectivity With MongoDB
- Introduction to pymongo
- Installing pymongo module
- MongoClient
- Getting database and collection
- CRUD operations
- Range Queries

Statistics & Analytics

- Numpy Package
- Difference between list and numpy array
- Vector and matrix operations
- Array indexing and slicing
- Pandas Package
- Introduction to pandas
- Labeled and structured data
- Series and dataframe objects
- How to load datasets
- From excel
- From csv
- From html table
- Accessing data from Data Frame
- At & iat
- Loc & iloc
- Head() & tail()
- Exploratory Data Analysis (EDA)
- describe()
- groupby()
- crosstab()

- Boolean slicing / query()
- Data Manipulation & Cleaning
- Map(), apply()
- Combining data frames
- Adding/removing rows & columns
- Sorting data
- Handling missing values
- Handling duplicacy
- Handling data error
- Handling Date and Time
- Data Visualization using matplotlib and seaborn packages
- Scatter plot, lineplot, bar plot
- Histogram, pie chart
- Jointplot, pairplot, heatmap
- Jointplot, pairplot, heatmap

Power Bi

INTRODUCTION TO POWER BI

- Introduction to Business Intelligence (BI)
- Various BI tools Introduction to Power BI
- Why Power BI Power BI Components
- Introduction of Power BI Desktop
- Installation of Power BI Desktop

DATA VISUALIZATION

- Understanding Power View and Power Map
- Data visualization techniques
- Page layout & Formatting
- Power BI Desktop visualization
- Formatting and customizing visuals
- Column chart, Pie chart, Donut chart
- Scatter chart, Funnel chart
- Include & exclude
- Geographical data visualization using Maps
- Drill down
- Drill through
- Page navigations
- Bookmarks
- Selection pane to show/hide visuals
- Comparing volume and value-based analytics
- Combinations charts (dual axis charts)
- Filter pane
- Slicers

- Use of Hierarchies in drill down analysis
- Sync slicers
- Tooltips & custom tooltips
- Tables & matrix
- Conditional formatting on visuals

POWER BI SERVICE, PUBLISHING & SHARING

- Introduction to Power BI Service
- Introduction of workspaces
- Dashboard
- Creating & Configuring Dashboards
- Dashboard theme
- Reports vs Dashboards
- Sharing reports & dashboards

DATA TRANSFORMATION – SHAPING & COMBINING DATA

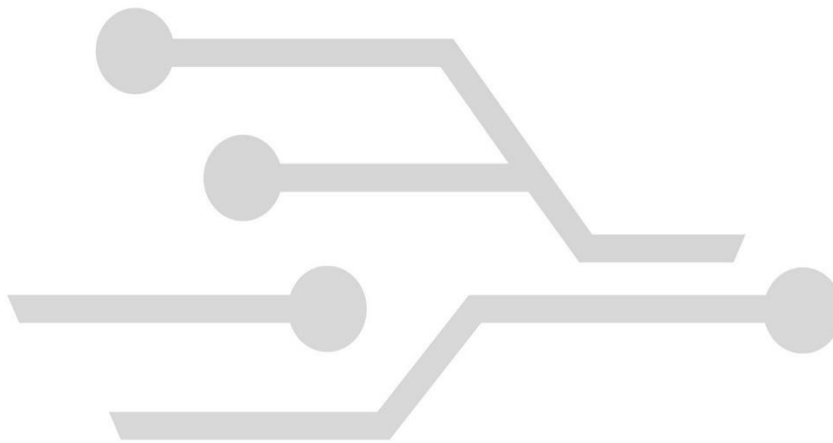
- Shaping data using Power Query Editor
- Formatting data
- Transformation of data
- Understanding of Data types
- Naming conventions & best practices to consider
- Working with Parameters
- Merge Query
- Append Query
- Group by of data (aggregation of data)
- Duplicate & Reference tables
- Fill
- Pivot & Un-pivot of data
- Custom columns
- Conditional columns
- Replace data from the tables
- Split columns values
- Move columns & sorting of data
- Detect data type, count rows & reverse rows
- Promote rows as column headers
- Hierarchies in Power BI

DATA MODELING & DAX

- Introduction of relationships
- Creating relationships
- Cardinality
- Cross filter direction
- Use of inactive relationships

- Introduction of DAX
- Why DAX is used
- DAX syntax
- DAX functions
- Context in DAX
- Calculated columns using DAX
- Measures using DAX
- Calculated tables using DAX
- Learning about table, information, logical, text, iterator,
- Time intelligence functions (YTD, QTD, MTD)
- Cumulative values, calculated tables, and ranking and rank over groups
- Date and time functions

Machine Learning using R Programming



Partners :



SAKET

33 B Saiduljaib Extension,
MB Road, Saket, New Delhi
110030

Chatarpur

D-3/79, Chattarpur Pahari,
60ft Road, New Delhi
10074

E-mail : enquiry@technokaksha.com
Visit us: www.technokaksha.com
@technokaksha 