PYTHON WITH
DATA ANALYTICS

Professional Certificate

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PYTHON WITH
DATA ANALYTICS

Data Analytics is the key to unlocking insights and making informed decisions in today's data-driven world. By learning data analytics, you'll gain the skills to collect, clean, and interpret data, turning raw information into actionable insights. It's essential in various fields like business, healthcare, finance, and social sciences. Mastering data analytics tools and techniques, such as Excel, SQL, Python, and visualization tools, will empower you to solve complex problems, improve efficiency, and drive strategic decisions. Dive into data analysis today and transform how you understand and leverage data to create meaningful impact

Course Syllabus

Introduction to Data Analytics

- Data Analytics with real-world Examples
- Applications using Data Analytics
- Applications using PowerBI
- Applications using Tableau
- Applications using WebScrapping
- SQL and Databases

Python Basics

- Data types
- variables
- operators
- print
- precision and fied width
- Python Installation and Running
- Installation and Running
- Jupyter Notebook
- .py file from terminal
- Google Colab
- String
- list
- tuple
- sets
- dictionary

Python Intermediate

- For loops
- While loops
- if
- else
- elif
- break
- continue
- functions
- lambda function
- comprehensions

Course Syllabus

Python Advanced

- Error / Exception Handling
- File Handling
- JSON Module
- OS Module
- Pickle Module
- Datetime Module
- Copy Module
- oops concept
- class
- object
- constructor
- inheritance
- polymorphism
- abstraction
- excapsulation

Python Production level

- what is process
- what is multiprocessing
- what is multithreading
- start
- join
- kill
- terminate

Mathematics Basics

- Matrix Algebra
- Vector Matrix
- Multiplication Matrix
- Eigen values and Eigen vectors
- Regression lines etc

Python Essential Packages

- Numpy
- Pandas
- Data Visualization Library: Matplotlib
- Seaborn

Statistics Advanced

- Descriptive Statistics
- Measure of Central tendency
- Measure of Dispersion
- outliers
- covariance
- correlation
- testing
- hypothesis testing
- mean
- median
- mode etc..

Probability

- Conditional probability
- Bayes Rule
- Probability distribution: Discrete and Continuous
- Normal distribution etc..

SQL

- SELECT statement
- FROM clause
- WHERE clause
- JOINs INNER JOIN
- LEFT JOIN
- RIGHT JOIN
- FULL JOIN
- GROUP BY clause
- HAVING clause
- ORDER BY clause
- Aggregate functions (SUM AVG COUNT MIN MAX)
- Subqueries (Nested queries)
- UNION and UNION ALL
- Views (CREATE VIEW ALTER VIEW DROP VIEW)
- Indexes (CREATE INDEX DROP INDEX)
- Transactions BEGIN TRANSACTION
- COMMIT
- ROLLBACK

- Constraints PRIMARY KEY
- FOREIGN KEY
- UNIQUE
- CHECK
- Data manipulation INSERT
- UPDATE
- DELETE
- DMl operations
- DQL Operations
- DDl Operations
- Alter
- drop
- sprename
- truncate

Excel

- Formulas and Functions
- math formulas
- LOOKUP
- INDEX-MATCH
- PivotTables (Creating Filtering Grouping)
- Charts and Graphs
- Column chart
- Line chart
- Pie chart etc
- Conditional Formatting
- Data Validation
- Named Ranges
- Excel Tables
- Functions for Text Manipulation
- LEFT
- RIGHT
- CONCATENATE etc
- Functions for Date and Time
- DATE
- TODAY
- MONTH etc
- Data Import and Export

Power BI

- Data Visualization
- Power Query
- DAX (Data Analysis Expressions)
- Power BI Desktop
- Power BI Service
- Data Modeling
- DirectQuery and Import Mode
- Advanced Visualization Techniques
- Power BI Mobile App
- Data Connectivity
- Collaboration and Sharing

Tableau

- Data Visualization
- Tableau Desktop
- Tableau Server
- Tableau Online
- Data Connectors
- Calculated Fields (Tableau Calculations)
- Parameters and Sets
- Dashboards
- Maps and Spatial Analysis
- Filters and Actions
- Hierarchies
- Tableau Public
- Ad-Hoc Analysis
- Collaboration and Sharing

Web Scrapping

- Python Request Modules
- html content

Course **Syllabus**

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