Data Analytics and Machine Learning for Finance Professionals

Course Duration: 02 Days

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**Introduction to Course & Setting up Agenda

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Module 1: SQL Basics (1 hr 15 mins)

- Introduction to SQL
- Database Structure & Schema
- Writing Basic Queries
- Hands-on Exercise: Querying a Database -**Finance Data**

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Module 2: Intermediate SQL (1 hr 45 mins)

- Joins, Aggregations, and Subqueries
- Data Cleaning Techniques in SQL
- Hands-on Exercise: Creating Complex Queries
- Case Study: Using SQL in Risk Consulting -**Finance Data**

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Module 3: Introduction to Python (1 hr 30 mins)

- Introduction to Python for Data Manipulation
- Basic Data Types and Structures
- Using Libraries like Pandas for Data Manipulation
- Hands-on Exercise: Loading & Inspecting Data - **Insurance/BFSI -Finance Data**

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Module 4: Data Visualization with Python (45 mins)

- Introduction to Matplotlib & Seaborn
- Creating Basic Plots and Customizing Visuals
- Hands-on Exercise: Visualizing Data with Python –**Insurance/BFSI- Finance Data**

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**Wrap-Up & Day 1 Recap

**Review of Day 1 & Expectation Setting for Day 2 (30 mins)

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Module 5: Advanced Data Manipulation with Python (1 hr 15 mins)

- Data Transformation & Aggregation with Pandas
- Handling Missing Data

- Hands-on Exercise: Cleaning and Transforming a Real Dataset – **Insurance/BFSI- Finance Data**

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Module 6: Advanced Data Visualization (1 hr 45 mins)

- Interactive Visualization with Plotly
- Dashboard creation with Dash
- Hands-on Project: Building a Data Dashboard –**Insurance/BFSI- Finance Data**

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Module 7: Introduction to Machine Learning (1 hr 30 mins)

- What is Machine Learning & Why It Matters?
- Introduction to Scikit learn
- Introductory Machine Learning Models (e.g., Linear Regression, Logistic Regression)
- Hands-on Exercise: Building a Simple Predictive Model – **House Price Prediction, Loan Approval Prediction**

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Module 8: Real-world Applications & Case Studies (1 hr 15 mins)

- Applying Machine Learning in Risk Consulting – **Anomaly Detection, Fraud detection**
- Discussion on Ethical Considerations - **Data Security, Data Privacy**
- Case Study Discussions – **BFSI, Insurance**

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