

## 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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