



Become Job-Ready in Data Analytics + Gen AI

Learn from Industry Experts | Live Projects | Placement Support

LN AI Academy is dedicated to providing industry-focused training that helps students build real skills for real jobs in Data Science, AI, Machine Learning, and modern development tools.

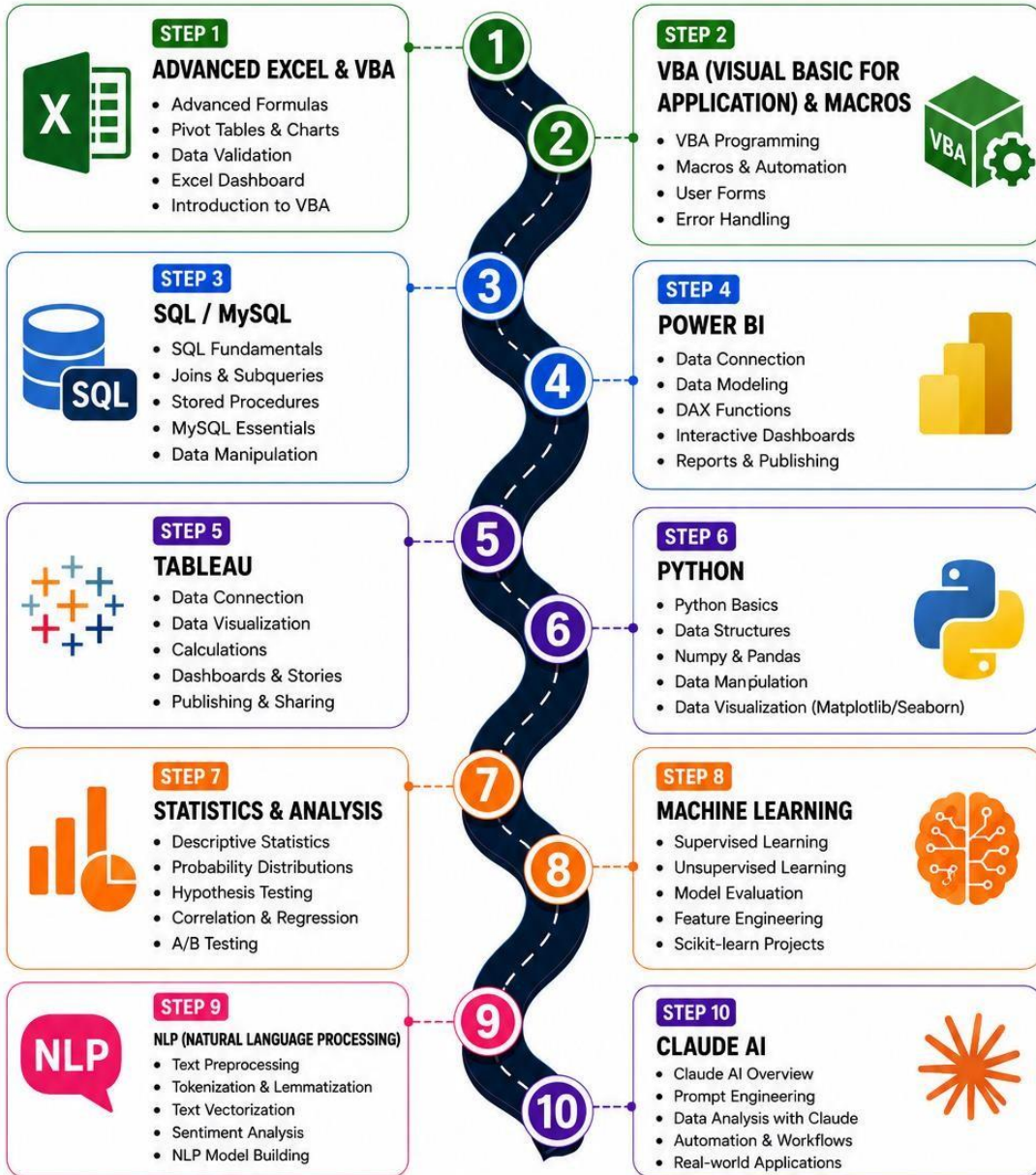
Our mission is to make high-quality tech education accessible for everyone. With expert mentors, practical projects, and job-oriented modules, we help learners build the confidence and expertise needed to grow in the IT industry. Whether you're starting from scratch or upgrading your skills, LN AI Academy ensures you gain the knowledge required to succeed.



10K+ Student Trained	250+ Real-World Projects	100% Placement Assistant
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DATA ANALYTICS + GEN AI LEARNING ROADMAP

Step-by-step roadmap based on the provided courses.



B-70, G.F, Sec. 2
(Near Gate 3, Sec. 15 Metro Station), Noida



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Advanced Excel & VBA

Advanced Excel Course - Overview of the Basics of Excel

- Customizing common options in Excel
- Absolute and relative cells
- Protecting and un-protecting worksheets and cells

Working with Functions

- Writing conditional expressions (using IF)
- Using logical functions (AND, OR, NOT)
- Using lookup and reference functions (VLOOKUP, HLOOKUP, MATCH, INDEX)
- VlookUP with Exact Match, Approximate Match
- Nested VlookUP with Exact Match
- VlookUP with Tables, Dynamic Ranges
- Nested VlookUP with Exact Match
- Using VLOOKUP to consolidate Data from Multiple Sheets

Advanced Excel Course - Data Validations

- Specifying a valid range of values for a cell
- Specifying a list of valid values for a cell
- Specifying custom validations based on formula for a cell

Advanced Excel Course - Working with Templates

- Designing the structure of a template
- Using templates for standardization of worksheets

Advanced Excel Course - Sorting and Filtering Data

- Sorting tables
- Using multiple-level sorting
- Using custom sorting
- Filtering data for selected view (AutoFilter)
- Using advanced filter options

Advanced Excel Course - Working with Reports

- Creating subtotals
- Multiple-level subtotals
- Creating Pivot tables
- Formatting and customizing Pivot tables
- Using advanced options of Pivot tables
- Pivot charts
- Consolidating data from multiple sheets and files using Pivot tables
- Using external data sources
- Using data consolidation feature to consolidate data
- Show Value As (% of Row, % of Column, Running Total, Compare with Specific Field)
- Viewing Subtotal under Pivot
- Creating Slicers (Version 2010 & Above)

Advanced Excel Course - More Functions

- Date and time functions
- Text functions
- Database functions
- Power Functions (CountIf, CountIFS, SumIF, SumIFS)

Advanced Excel Course - Formatting

- Using auto formatting option for worksheets
- Using conditional formatting option for rows, columns and cells

Advanced Excel Course - Macros

- Relative & Absolute Macros
- Editing Macro's

Advanced Excel Course - WhatIf Analysis

- Goal Seek
- Data Tables
- Scenario Manager

Advanced Excel Course - Charts

- Using Charts
- Formatting Charts
- Using 3D Graphs
- Using Bar and Line Chart together
- Using Secondary Axis in Graphs
- Sharing Charts with PowerPoint / MS Word, Dynamically
- (Data Modified in Excel, Chart would automatically get updated)

Advanced Excel Course - New Features Of Excel

- Sparklines, Inline Charts, data Charts
- Overview of all the new features

Advanced Excel Course - Final Assignment

- The Final Assignment would test contains questions to be solved at the end of the Course

VBA (VISUAL BASIC FOR APPLICATION) & MACROS

Create a Macro

- Swap Values, Run Code from a Module, Macro Recorder, Use Relative References,
- FormulaR1C1, Add a Macro to the Toolbar, Macro Security, Protect Macro

MsgBox

- MsgBox Function, Input Box Function.

Workbook and Worksheet Object:

- Path and Full Name, Close and Open, Loop through Books and Sheets, Sales Calculator, Files in a Directory, Import Sheets, Programming Charts.

Range Object

- Current Region, Dynamic Range, Resize, Entire Rows and Columns, Offset, From Active Cell to Last Entry, Union and Intersect, Test a Selection, Possible Football Matches, Font, Background Colors, Areas Collection, Compare Ranges.

Variables

- Option Explicit, Variable Scope, Life of Variables.

If Then Statement

- Logical Operators, Select Case, Tax Rates, Mod Operator, Prime Number Checker, Find Second Highest Value, Sum by Color, Delete Blank Cells.

Loop

- Loop through Defined Range, Loop through Entire Column, Do Until Loop, Step Keyword, Create a Pattern, Sort Numbers, Randomly Sort Data, Remove Duplicates, Complex Calculations, Knapsack Problem.

Macro Errors

- Debugging, Error Handling, Err Object, Interrupt a Macro, Macro Comments.

String Manipulation

- Separate Strings, Reverse Strings, Convert to Proper Case, Count Words.

Date and Time

- Compare Dates and Times, DateDif Function, Weekdays, Delay a Macro, Year Occurrences, Tasks on Schedule, Sort Birthdays.

Events

- Before DoubleClick Event, Highlight Active Cell, Create a Footer Before Printing, Bills and Coins, Rolling Average Table

Array

- Dynamic Array, Array Function, Month Names, Size of an Array.

Function and Sub

- User Defined Function, Custom Average Function, Volatile Functions, ByVal and ByRef.

Application Object

- Status Bar, Read Data from Text File, Write Data to Text File.

ActiveX Controls

- Text Box, List Box, Combo Box, Check Box, Option Buttons, Spin Button, Loan Calculator.

User form:

- User form and Ranges, Currency Converter, Progress Indicator, Multiple List Box Selections, Multicolumn Combo Box, Dependent Combo Boxes, Loop through Controls, Controls Collection, User form with Multiple Pages, Interactive User form

SQL/My SQL

Introduction to RDBMS

- Understanding data storage options
- Relational Database (RDBMS) Concept
- Installing MySQL Server database
- MySQL editors
- Difference between SQL & MySQL

MySQL Data Types

- Numeric types
- tinyint, smallint, mediumint, int, bigint, float, double, decimal
- Text types
- char, varchar, tinytext, text, mediumtext, longtext
- Date/Time types
- date, time, datetime, timestamp, year

MySQL Operators

- Arithmetic operators (+, -, *, /)
- Logical operators (and, or, not)
- Conditional operators (>, <, <>, =, like, between, in, is etc.)

MySQL CRUD operations

- C-creating rows
- R-Retrieving (Selecting) rows
- U-Updating rows
- D-Deleting rows

MySQL Constraints

- Not null, unique key
- Primary key, composite key
- Foreign key
- Default & check

MySQL Union & Joins

- Union, union all, except, intersect
- Inner Join, Natural Join
- Left Join, Right Join
- Full Join, Cross Join
- Self Join

MySQL View

- creating view
- updating view
- fetching data from view

MySQL Built-in Functions

- String functions
- Aggregate functions
- Date & time functions
- Window functions

Subquery & CTE

- Understanding SQL subqueries, their rules
- Statements and operators with which subqueries can be used
- Using the set clause to modify subqueries

- Understanding different types of subqueries, such as where, select, insert, update, delete, etc.
- Methods to create and view subqueries
- Common table expression (CTE)

Stored Procedures & Functions

- Why define user defined functions
- Limitations with functions
- Understanding stored procedures and their key benefits
- Working with stored procedures
- Studying user-defined functions

Event Handling using Triggers

- Understanding triggers
- Procedure versus trigger
- Why define logic inside trigger
- Types of triggers
- Old and New modifiers in trigger

Other Concepts

- Query optimization using index
- Savepoint
- Rollback
- Importing/exporting database

Python Database Connectivity

- Understanding driver/connector
- Creating database connection
- Understanding Cursor
- Executing queries
- Parameterized queries

Power BI

INTRODUCTION TO POWER BI

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

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

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
- Power Query View

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)
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- 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

Tableau

Overall curriculum of Tableau

- Tableau Introduction
- Comparing Tableau with Power bi
- Understanding Data Source
- Dimension & Measure
- Tableau Charts
- Tableau Filters
- Tableau Dashboards
- Tableau Objects
- Tableau Story
- Calculated Fields
- LOD expressions
- Tableau Unions
- Tableau Joins
- Tableau Relationships
- Data Cleaning
- Publishing Report to Server

Python

Introduction To Python

- Why Python
- Application Areas of Python
- Installing Python
- Python Interpreter Architecture +
 - Python Byte Code Compiler
 - Python Virtual Machine(PVM)

Writing and Executing First Python Program

- Using Interactive Mode
- Using Script Mode
 - General Text Editor and Command Window
 - IDLE Editor and IDLE Shell
- Understanding print() function

- How to compile python program explicitly

Python Language Fundamentals

- Character Set
- Keywords
- Comments
- Variables
- Literals
- Operators
- User input
- Datatypes & Conversion

Python Control Statements

- Conditional Statement
- Looping Statements
- Pass, break, continue

String Handling

- What is string
- String representations
- Unicode String
- String Functions, Methods
- String Repetition and concatenation
- String Indexing and Slicing
- String Formatting

Python List

- Creating and Accessing Lists
- Indexing and Slicing Lists
- List Methods
- Nested Lists
- List Comprehension

Python Tuple

- Creating Tuple
- Accessing Tuple
- Immutability of tuple

Python Set

- How to create a set
- Iteration Over Sets Python
- Set Methods Python
- Frozenset

Python Dictionary

- Creating a Dictionary
- Dictionary Methods
- Accessing values from Dictionary
- Updating dictionary

- Iterating dictionary
- Dictionary Comprehension

Python Functions

- Defining a Function
- Calling a Function
- Types of Functions
- Function v/s Method
- Function Arguments
 - Positional arguments , Keyword arguments ,
 - Default arguments , Non default arguments ,
 - Arbitrary arguments ,Keyword Arbitrary arguments Function Return Statement
- Nested Function
- Function as argument
- Function as return statement
- Decorator function
- Closure
- map(),filter() ,reduce(),any() functions
- Anonymous or lambda Function

Modules & Packages

- Why Modules
- Script v/s Module
- Importing Module
- Standard & Third Party Modules
- Why Packages
- Understanding pip utility

File I/O

- Introduction to File Handling
- File modes
- Functions and methods related to File Handling
- Understanding with block

Regular Expressions(Regex)

- Need of regular Expressions
- Re module
- Functions /Methods related to regex
- Meta Characters & Special Sequences

Object Oriented Programming

- Defining a Class & Object Creation
- Inheritance, Encapsulation
- Polymorphism, Abstraction

Exception Handling

- Difference Between Syntax Errors and Exceptions
- Keywords used in Exception Handling
- try , except , finally , raise , assert
- ypes of Except Blocks

GUI Programming

- Introduction to Tkinter Programming
- Tkinter Widgets

- Tk , Label , Entry , TextBox , Buttons
- Frame , messagebox , filedialogetc
- Layout Managers
- Event handling
- Displaying image

Multi-Threading Programming

- Multi-processing v/s Multi-threading
- Need of threads
- Creating child threads
- Functions /methods related to threads
- Thread synchronization and locking

Statistics & Analysis

Introduction to Statistics

- Types of statistics
- Use of statistics
- Measures of Central Tendency
- Arithmetic Mean
- Harmonic Mean
- Geometric Mean
- Mode
- Quartile
- Standard Deviation
- Data Distributions
- Normal Distribution
- Uniform Distribution
- Right & Left Skewed Distribution
- Hypothesis Testing
- Normality Test
- Central Limit Theorem
- Mean Test
- T-test
- Z-test
- ANOVA test
- Chi Square Test
- Correlation and Covariance

Numpy Library

- Difference between list and numpy array
- Array and Matrix operations
- Array indexing and slicing

Pandas Library

- Labeled and structured data
- Series and DataFrame Objects
- From excel
- From csv

- From html table
- at & iat
- loc & iloc

- head() & tail()
- Exploratory Data Analysis (EDA)
- Data Manipulation & Cleaning
- Combining data frames
- Adding/removing rows & columns
- Sorting data
- Handling missing values
- Handling duplicate values
- Handling Data Error
- Label Encoding
- One Hot Encoding
- Handling Date and Time

Web Scraping

- Introduction to html & it's tags and attributes
- Requests & beautiful soup libraries
- Understanding methods to parse data
- Static versus dynamic data in web scraping

Data Visualization (matplotlib , seaborn & plotly libs)

- Scatter plot,lineplot,bar plot
- Histogram,pie chart
- Jointplot,pairplot,Heatmap
- Outlier detection using boxplot

Machine Learning

Introduction To Machine Learning

- Traditional v/s Machine Learning Programming
- Real life examples based on ML
- Steps of ML Programming
- Data Preprocessing revised
- Terminology related to ML

Supervised Learning

- Classification
- Regression

Unsupervised Learning

- Clustering

KNN Classification

- Math behind KNN
- KNN implementation
- Understanding hyper parameters

Performance metrics

- Confusion Matrix
- Accuracy Score

- Recall & Precision
- F-1 Score
- R2 Score

Regression

- Math behind Regression
- Simple Linear Regression
- Multiple Linear Regression
- Polynomial Regression
- Boston Price Prediction
- Cost or Loss Functions
 - Mean absolute error
 - Mean squared error
 - Root mean squared error
 - Least Square Error
- Regularization

Logistic Regression for classification

- Theory of Logistic Regression
- Binary and Multiclass classification
- Implementing titanic dataset
- Implementing iris dataset
- Sigmoid and softmax functions

Feature Selection & Dimensionality Reduction

- ANOVA Test
- Ridge/Lasso
- Decision Tree
- Principal Component Analysis (PCA)

Support Vector Machines

- Theory of SVM
- SVM Implementation
- kernel,gamma,alpha

Decision Tree Classification

- Theory of Decision Tree
- Node Splitting
- Implementation with iris dataset
- Visualizing Tree

Ensemble Learning

- Random Forest
- Bagging and Boosting
- Voting Classifier

Model Selection Techniques

- Cross Validation
- Grid and Random Search for hyper parameter tuning

Clustering

- K-means Clustering
- Hierarchical Clustering

- Elbow technique
- Silhouette coefficient

NLP

Text Analysis

- Install NLTK
- Tokenize words
- Tokenizing sentences
- Stop words customization
- Stemming and Lemmatization
- Feature Extraction
- Sentiment Analysis
- Count Vectorizer
- TfidfVectorizer
- Naive Bayes Algorithms

Recommendation System

- Content based technique
- Collaborative filtering technique
- Evaluating similarity based on correlation
- Classification-based recommendations

Claude AI

Introduction to Claude AI

- What is Claude AI?
- Claude Models Overview
- Claude vs ChatGPT vs Gemini
- Claude Interface and Features
- Claude Projects
- Claude Artifacts
- Real-World Use Cases

Prompt Engineering with Claude

- Fundamentals of Prompting
- Role-Based Prompting
- Context Engineering
- Zero-Shot and Few-Shot Prompting
- Chain of Thought Prompting
- Structured Output Generation
- Prompt Templates and Best Practices

Content Creation and Productivity

- Blog Writing
- Social Media Content

- Email Writing
- SEO Content Generation
- Report Writing

- Research Assistance
- Presentation and Course Content Creation

Claude for Programming and Data Analysis

- Python Code Generation
- Java Development Support
- SQL Query Writing
- Code Debugging and Optimization
- Data Analysis with Claude
- CSV and Excel Analysis
- Documentation Generation

Claude Projects, Artifacts, and AI Agents

- Creating and Managing Projects
- Building Knowledge Bases
- Interactive Artifacts
- AI Agent Fundamentals
- Agent Workflows
- Multi-Step Task Automation
- Practical AI Agent Use Cases

Claude API, MCP, and Automation

- Claude API Fundamentals
- API Integration with Python
- Introduction to MCP (Model Context Protocol)
- Connecting External Tools
- Automation with Zapier and Make
- Business Workflow Automation
- Building End-to-End AI Applications



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