

**Complete Practical, Real-time
Job Oriented Training**

*Learn Today
Lead Tomorrow*

Python Analytics Training

About this course:
Python is a great language used by Data Analysts, Data Engineers, Data Scientists and AI Engineers. In this course, we teach you from Python Fundamentals to Python Data Handling, Pandas, NumPy, File Handling, Transformations, Data Mashup and more...

This unique course includes:

1. Python IDE
2. Python Internal Architecture
3. Python Notebooks
4. Python VM, Environments
5. Python Concepts
6. Python File Handling

7. Python SQL DB Handling
8. Python with Web Sources
9. Python Transformations
10. Python Data Structures
11. Python Optimizations
12. More..

Learn In-Demand Skills

- ✓ Python Fundamentals
- ✓ Pandas & NumPy
- ✓ File Handling
- ✓ Data Transformations
- ✓ Data Mashup
- ✓ SQL Database Access
- ✓ Real-time Case Studies
- ✓ And More...

From Basics to Real-World Skills

Build Analyze Grow

Hands-on Practice

Real-time Projects

Expert Trainers

Job Oriented Training

Certification Support

Start Your Journey Today! >

www.sqlschool.com

For Free Demo: Reach us on
+91 9666 44 0801 or +91 9666 64 0801

PYTHON ANALYTICS TRAINING

Complete Practical • Real-time • Job-Oriented Curriculum

From Python Fundamentals to Data Handling, Pandas, NumPy, SQL Integration, Transformations & Real-time Analytics

**HANDS-ON
Practice**

**REAL-TIME
Case Study**

**JOB-READY
Skills**

**AI-ASSISTED
Debugging**

Learn Today, Lead Tomorrow

Course Overview

Python is widely used across Data Analytics, Data Engineering, Data Science and AI workflows. This curriculum builds practical Python skills from the fundamentals and progressively moves into data structures, file handling, Pandas/NumPy dataframes, SQL database access, transformations, functions, object-oriented programming, regular expressions and a real-time Banking / Finance analytics case study.

START FROM FUNDAMENTALS Python setup, architecture, syntax and core programming	WORK WITH REAL DATA Files, Dataframes, Pandas, NumPy and SQL databases	TRANSFORM & ANALYZE Cleaning, joins, date/time processing and reusable functions
BUILD PROGRAMMING DEPTH Functions, lambda, classes, objects and regular expressions	USE AI ASSISTANCE AI-assisted debugging is introduced during practical coding	APPLY IN A CASE STUDY Banking / Finance scenario focused on data analysis

Who Can Enroll?

- Beginners who want to build a strong foundation in Python for data work
- Aspiring Data Analysts who need Python for data preparation and analysis
- Data Engineers who want Python skills for file, database and transformation workflows
- Professionals working with SQL who want to add Python-based data processing skills
- Learners preparing for Data Science / AI pathways who need practical Python fundamentals

Learning Outcomes

- Understand how Python executes code and how common development environments are used
- Write Python programs using variables, operators, data types, conditions and loops
- Create and manipulate Pandas dataframes and use NumPy for data-oriented tasks
- Connect Python with SQL databases and execute DDL/DML and analytical queries
- Clean, combine, join and transform datasets using practical dataframe operations
- Build reusable functions and apply lambda, recursion and object-oriented concepts
- Use regular expressions for text matching and extraction
- Apply the complete workflow in a real-time Banking / Finance analytics case study

Curriculum Roadmap

Phase	Focus	Chapters	What You Build
PHASE 1	Python Foundation	Ch 1–7	Introduction, architecture, setup, print, variables, operators and data types
PHASE 2	Core Programming	Ch 8–12	Lists, dictionaries, tuples, conditions, loops and file handling
PHASE 3	Analytics & Data Access	Ch 13–17	Pandas/NumPy dataframes, SQL access and dataframe transformations
PHASE 4	Advanced Python	Ch 18–20	Functions, lambda, classes, objects, inheritance and regular expressions
PHASE 5	Real-time Application	Ch 21	Banking / Finance case study for data analysis

Core Tools & Technologies Covered

Python	Jupyter Notebooks	Pandas	NumPy
--------	-------------------	--------	-------

SQL / pyodbc

Files & OS

Regular Expressions

AI Assistants

Job-Relevant Skill Mapping

- Data Analyst: data cleaning, dataframe analysis, SQL access, transformations and case-study practice
- Data Engineer: Python fundamentals, file handling, database integration and data transformation patterns
- Data Science / AI Foundation: Python programming, NumPy/Pandas, functions and structured data handling
- SQL Professional: extend database skills with Python connectivity, dataframes and programmatic transformations

Detailed Course Curriculum

Chapter 1: Python Introduction

- ✓ Python introduction
- ✓ Python versions
- ✓ Python job roles
- ✓ Role of Python in data projects

Chapter 2: Python Architecture

- ✓ Python architecture
- ✓ PVM: Python Virtual Machine
- ✓ Compiler and byte code
- ✓ Execution process
- ✓ Python implementations

Chapter 3: Python Installations

- ✓ Python installation
- ✓ Anaconda installation
- ✓ Python IDE and usage
- ✓ Jupyter Notebooks

Chapter 4: Python Print Statement

- ✓ Python print statement
- ✓ Using print()
- ✓ Testing case sensitivity
- ✓ Single-line and multi-line output
- ✓ Working with single quotations
- ✓ Debugging with AI assistants

Chapter 5: Python Variables

- ✓ Python variables
- ✓ Assigning values
- ✓ Purpose and naming rules
- ✓ Reading variable values
- ✓ Multiple variables and print()

Chapter 6: Python Operators & String Literals

- ✓ Arithmetic operators
- ✓ Python string literals
- ✓ Single and double quotes
- ✓ Formatted strings (f-strings)
- ✓ Comparison and indexing operators

Chapter 7: Python Data Types

- ✓ Python data types
- ✓ Integer, float and string data types
- ✓ Type casting

- ✓ Type identification
- ✓ Multiple-value assignments

Chapter 8: Python Lists

- ✓ Creating Python lists
- ✓ Printing list items
- ✓ List slicing
- ✓ Length and type
- ✓ Empty lists and append
- ✓ Loops and list updates

Chapter 9: Python Dictionaries

- ✓ Python dictionaries
- ✓ Indexing dictionaries
- ✓ Editing key values
- ✓ Lists inside dictionaries
- ✓ Delete and clear operations

Chapter 10: Python Tuples

- ✓ Defining and indexing tuples
- ✓ len() and type()
- ✓ Mixed values in tuples
- ✓ Tuple reassignment / overwriting concepts

Chapter 11: IF...ELSE Conditions

- ✓ if / else conditions
- ✓ if / elif / else and shorthand if
- ✓ Composite conditions
- ✓ Indentation and pass statement
- ✓ in and negation operators
- ✓ Range-based conditions

Chapter 12: Python Loops

- ✓ for loops
- ✓ for loop with range
- ✓ for loop with sequence values
- ✓ while loop and exit conditions
- ✓ Nested loops
- ✓ Control statements
- ✓ break, continue and pass

Chapter 13: Python File Handling

- ✓ File handling activities
- ✓ Open, read, write and close files
- ✓ Appending and overwriting
- ✓ Using os and path.exists
- ✓ File read/write methods

Chapter 14: Python DataFrames

- ✓ DataFrame creation
- ✓ Pandas DataFrames
- ✓ DataFrames from a single list
- ✓ DataFrames from dictionaries
- ✓ Displaying DataFrames and list items
- ✓ Identifying and replacing nulls; NumPy usage

Chapter 15: Python SQL Database Access

- ✓ SQL database access with Python
- ✓ Pandas DataFrame integration
- ✓ pyodbc module and SQL functions
- ✓ SQL database cursor connections
- ✓ SQL query execution: DDL and DML
- ✓ Filters and aggregations with SQL
- ✓ DataFrame usage with SQL

Chapter 16: DataFrame Transformations - I

- ✓ DataFrame transformations
- ✓ Concat and append concepts
- ✓ Merge function
- ✓ Joining multiple DataFrames
- ✓ Data type checks and conversions
- ✓ Loops with DataFrames

Chapter 17: DataFrame Transformations - II

- ✓ Pandas data cleaning
- ✓ Replace and transform columns
- ✓ Data discovery and column fill
- ✓ Identify and remove duplicates
- ✓ dropna() and fillna() functions

Chapter 18: DataFrame Transformations - III

- ✓ Python functions for date and time
- ✓ now() function
- ✓ Date and time functions
- ✓ Calendar data generation

Chapter 19: Python Functions & Lambda

- ✓ Python functions and usage
- ✓ Function parameters
- ✓ Default and list parameters
- ✓ Python lambda functions
- ✓ Recursive functions and usage
- ✓ Return and output with lambda

Chapter 20: Python Classes, Objects & OOP

- ✓ Class variables and instances
- ✓ Built-in class attributes
- ✓ Objects and constructors
- ✓ self variable / modifiers
- ✓ Python garbage collection
- ✓ Hierarchical inheritance
- ✓ Multilevel, multiple and hybrid inheritance
- ✓ Overloading and overriding
- ✓ Polymorphism and abstraction

Chapter 21: Regular Expressions

- ✓ Regular expression patterns
- ✓ Literals and repetition cases
- ✓ Groups and grouping
- ✓ Common expressions such as `\w+`, `^` and `\s`
- ✓ `re.split()`
- ✓ `re.match()`
- ✓ `re.search()` and `re.findall()` for text

Real-time Case Study: Banking / Finance Data Analysis

The curriculum concludes with a real-time case study that brings together the core Python analytics skills covered throughout the course. Learners apply programming, file/data handling, dataframe operations, SQL connectivity and transformation techniques in a practical data-analysis scenario.

Suggested Project Workflow

Step	Activity	Practical Focus
1	Understand the Data	Review source structure, columns, data types and business context.
2	Ingest & Prepare	Load data from files and/or SQL sources into Python dataframes.
3	Clean the Data	Handle nulls, duplicates, type conversions and inconsistent values.
4	Transform & Combine	Use filters, joins, merge/concat and calculated transformations.
5	Analyze	Apply aggregations, conditions, functions and date/time logic.
6	Validate & Present	Cross-check results and prepare analysis-ready outputs.

Skills Demonstrated in the Project

- Python programming fundamentals and control flow
- Pandas / NumPy dataframe handling
- File handling and SQL database connectivity
- Data cleaning, null handling and duplicate management
- Data joins, merges, concatenation and transformations
- Date/time processing, reusable functions and analytical logic

Training Approach & Learner Experience

Step-by-Step Learning	Concepts progress from Python basics to practical analytics so learners can build confidence systematically.
Hands-on Practice	The curriculum is designed around coding practice rather than theory-only learning.
Real-time Orientation	Database access, transformations and the Banking / Finance case study connect learning to workplace-style tasks.
AI-Assisted Debugging	Learners are introduced to using AI assistants as a support mechanism while debugging code.
Career Relevance	The skill set supports pathways in Data Analytics, Data Engineering, Data Science and AI-oriented roles.

Recommended Practice Pattern

- Attend the concept demonstration and reproduce the code independently
- Practice each topic with small variations instead of copying the same example
- Maintain a notebook of reusable Python, Pandas and SQL patterns
- Complete mini exercises after each major topic and integrate them into the final case study
- Review errors and debugging steps to build problem-solving confidence

Start Your Python Journey

Build • Analyze • Transform • Grow

This curriculum is structured to help learners progress from core Python Concepts to practical data analytics workflows with Pandas, NumPy, SQL integration and a real-time case study. Consistent hands-on practice is essential for the best learning outcomes.

BUILD REAL SKILLS. WORK ON REAL PROJECTS. BECOME JOB READY.



 Ready to Become an Expert?

 Join Our Next Batch. Reach us today!

 Call/WhatsApp: +91 9951440801

 Course Details: <https://sqlschool.com/python-analyst-training/>

Wish you all the best!

Thank you for your time. Wishing you the very best in your learning journey!