

SQL + Python Data Analytics Automation Training Curriculum



What will the training cover?

This boot camp is designed to help students gain a comprehensive understanding of the data analytics cycle through automation using **SQL** and **Python**. The program begins with a strong foundation in SQL, where students will learn how to extract data efficiently from databases. They will start with the basics, writing simple queries to retrieve and manipulate data. As they progress, they will build upon their skills, advancing from beginner to intermediate SQL concepts and ultimately mastering more complex SQL functions. By the end of this phase, students will transition from writing basic one-page queries to constructing multi-page queries of up to three pages, enabling them to extract and analyze large datasets effectively.

Once students develop proficiency in SQL and learn how to work with complex queries, they will move on to the Python for automation module. This phase focuses on using Python to streamline data workflows and automate repetitive tasks. Students will learn the fundamentals of Python, including scripting, working with databases, and handling various data file types such as CSVs and Excel files stored in shared drives. Through hands-on exercises, they will integrate Python with SQL databases, allowing them to automate data extraction, transformation, and loading (**ETL**) processes.

The final stage of the boot camp will bring all concepts together, where students will develop an automated Python application that connects to an SQL database, retrieves data, and seamlessly integrates it into a pre-built Excel report. This project will provide practical, real-world experience in automating data processes, preparing students for careers in data analytics, business intelligence, and automation. By the end of the training, students will not only have strong technical skills in SQL and Python but also the ability to design and implement efficient, automated data solutions that optimize business processes.

Part 1: Beginner to Intermediate SQL Training Topics

During this portion of the training, you will receive **8 hours of training** that will cover core beginner to intermediate SQL training topics that will educate you on how to comfortably extract data from a database.

Database structure

Order by

Where

Aggregate functions

Date functions

Calculated fields

Text, dates, and numeric data types

Part 2: Intermediate SQL Training Topics

During this portion of the training, you will receive **8 hours of training** that will cover core intermediate SQL training topics that will educate you on how to ramp up your SQL skills to the next level. After this portion of the training, you will be able to write up to 2 – 3-page queries.

Unions

Beginner and intermediate joins (Inner, full, and left joins)

Part 3: Beginner Python Automation Training Topics

During this portion of the training, you will receive **20 hours of training** that will cover core beginner Python training topics that will teach you how to set up a Python environment, work with variables, data types, loops, and conditional operators, and begin using Python libraries. You will also learn how to read, write, clean, and transform data files such as CSV, Excel, and TXT using Pandas. By the end of this portion, you will be able to use Python to efficiently manage and prepare data for analysis.

Introduction to Python for Data Analytics

Setting up Python Environment

Variables

Data Types

Loops

Conditional Operators

Libraries

Data Management with Python

Intro to Pandas

Reading/Writing CSV, Excel, TXT Files

Data Cleaning and Transformation



DATA TELLS A STORY. BE THE STORYTELLER