eXcelerate
DATA TELLS A STORY. BE THE STORYTELLER

Data Analytics 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 25 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
Joins (Inner, and Full)
Calculated fields
Text, dates, and numeric data types

Part 2: Advanced SQL Training Topics

During this portion of the training, you will receive 25 hours of training that will cover core advanced 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 3-page queries.

Having
Subqueries
Unions
Group By
Case statements
Complex and nested join (Inner, full, left, and right joins)

Part 3: Beginner Python Training Topics

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

Part 4: Python Automation Training Topics

SQL Integration with Python
Exporting SQL query results to Excel using Python
Develop a script to connect to a database, execute queries, and save results to Excel

Automating File Processing
Google Drive API setup
Automating file downloads
Reading multiple file formats
Build a script to download files from Google Drive and process them into an Excel workbook

Data Automation and Workflow Building
Writing modular functions
Automating workflows
Error handling and logging
Create a workflow to automate processing files from Google Drive into a master Excel sheet

Class Project Objective:
Develop a Python application automating SQL queries and Google Drive file processing

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