Data Analysis with SQL

Course Overview:

This course is the first portion of a 2-course series working with SQL and Python to perform data analysis tasks. This first course covers SQL, a ubiquitous standard for working with "relational databases" including OracleDB, MySQL, PostgreSQL, Microsoft SQL Server, and more.

In two days students will learn about querying SQL databases, schema design, and a tiny bit about database administration.

Course Duration: This course will be delivered in 2 days

Prerequisites:

- This course introduces SQL, so there are no prerequisites.

- Comfort with the terminal / command line interface may help students configure and access the database more easily, but is not required.

Course Objectives:

After this course, you will be able to:

- Define "relational databases."

- Write queries to fetch, modify, and create data in relational databases, including the use of:

  - Joins, to merge data from multiple tables.

  - Aggregates, to compute statistics across various groupings of data.

  - Subqueries, to create complex multi-step queries.

This course does include:

- Fundamentals of SQL (select, from, join, where, group by, having, limit, order by)

This course does NOT include:

- Intermediate or advanced administration tools related to SQL databases.

- A discussion of indexing or performance optimization for large datasets and queries.

Course Outline:

- What is a "relational database"
- Create, insert, and update
- Select, where, limit, and order by
- Relationships and schema design basics
- joins
- operations
- Aggregates and group by
- Then, if time permits…
    - Subqueries
    - common table expressions
    - indexing