Welcome to
INTERNSHIP STUDIO

Module 03 | Lesson 01
Introduction to SQL

Explaining SQL in Data Analytics

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What is SQL?

- SQL stands for Structured Query Language.

- It is a programming language designed for managing and manipulating relational databases.

- SQL allows users to interact with databases by executing queries to retrieve, insert, update, and delete data.

Key Concepts in SQL

- **<u>Relational Databases</u>**: SQL is used primarily with relational databases, which organize data into tables with predefined relationships.

- **<u>Queries</u>**: SQL queries are used to retrieve specific data from databases based on specified criteria.

- **<u>Data Manipulation</u>**: SQL provides commands to insert, update, and delete data within a database.

- **<u>Data Definition</u>**: SQL includes commands for creating, altering, and dropping database structures and objects.

- **<u>Data Control</u>**: SQL offers capabilities to grant or revoke access permissions to users and manage security.

Common SQL Statements

- **SELECT**: Retrieves data from one or more tables based on specified conditions.

- **INSERT**: Inserts new records into a table.

- **UPDATE**: Modifies existing records in a table.

- **DELETE**: Removes records from a table.

- **CREATE**: Creates a new database, table, or other database objects.

- **ALTER**: Modifies the structure of an existing database object.

SQL in Data Analytics

•**<u>Data Retrieval:</u>** SQL is used to query databases and retrieve specific data sets for analysis.

•**<u>Data Transformation</u>**: SQL statements can be used to manipulate and transform data within databases.

•**<u>Data Aggregation</u>**: SQL offers aggregation functions such as SUM, AVG, COUNT, etc., for summarizing and analyzing data.

•**<u>Data Filtering</u>**: SQL allows filtering data based on specific criteria to focus on relevant subsets.

•**<u>Data Joins</u>**: SQL supports joining multiple tables to combine related data for analysis.

Benefits of SQL in Data Analytics

- **Efficient Data Retrieval**: SQL enables efficient retrieval of large data sets from databases.

- **Scalability**: SQL databases can handle large amounts of data and complex queries.

- **Standardization**: SQL is a widely adopted standard for database management, providing consistency across different systems.

- **Data Integrity**: SQL supports integrity constraints to enforce data consistency and accuracy.

- **Flexibility**: SQL offers a flexible and powerful language for data manipulation and analysis.

SUMMARY

You got this

- SQL is a fundamental language in data analytics for managing and manipulating relational databases.

- Understanding SQL enables professionals to effectively interact with databases and extract insights from data.

- SQL's querying and manipulation capabilities make it a valuable tool for data analysis and decision-making in various industries.

Next session

Installing and setting up SQL