

Data Analytics Project

15. Relational Databases & SQL



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Introduction to Relational DB & SQL

1. In a data-driven world, **databases** play a crucial role in managing vast amounts of information.
2. **Relational Databases** are fundamental in data science, enabling efficient data organization and retrieval.
3. **Relational Databases** form the backbone of data storage systems.
4. **SQL (Structured Query Language)** is the standard language for interacting with relational databases.

Relational Databases

Relational databases organize data into tables, each consisting of rows and columns.

1. **Tables** store related data entities.
2. **Columns** represent characteristics or attributes
3. **Rows** contain individual records or data instances.



3

SQL: Structured Query Language

SQL is a powerful tool for retrieving, manipulating, and managing data stored in relational databases.

1. SQL enables users to perform various operations, including querying, inserting, updating, and deleting data.
2. Its syntax is standardized across database management systems, ensuring portability and ease of use.



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Importance of Relational DB & SQL

Mastering relational databases and SQL opens doors to efficient data handling, analysis, and decision-making.

1. **Relational databases** offer **structured storage** for organized data management.
2. **SQL** facilitates **seamless data retrieval, manipulation, and reporting**, empowering data professionals to derive valuable insights.



Example Use Case

In a ***retail sales database***, **SQL queries** unveil top-selling products, customer demographics, and revenue trends. These insights empower informed business decisions.

1. **SQL queries** enable dynamic analysis and reporting.
2. **Relational databases** provide a scalable and robust foundation for managing diverse datasets.

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