

SQL in Real-World Applications

1. Foreign Key Cascading – Powerful but Risky:

In relational databases, foreign key constraints help maintain relationships between tables.

Options like ON DELETE CASCADE and ON UPDATE CASCADE apply automatic changes to related tables when updates or deletions occur in the parent table. These features support data integrity but can be dangerous if used carelessly, potentially causing unwanted data loss.

2. The Power of SELECT in Applications:

The SELECT statement is essential in nearly every data-driven application. It is used by companies like Amazon and Netflix to fetch user profiles, transaction history, and personalized recommendations. It is used to display the data in tables.

3. Scrolling and Lazy Loading with SQL:

Applications like Shein or Instagram use infinite scrolling, which involves SQL queries with pagination. This ensures that only a few records load at a time, improving performance and user experience.

4. Performance Optimization Using Indexes:

Indexes in SQL are used to speed up data retrieval. They reduce the time required for SELECT queries, especially on large datasets. However, too many indexes can slow down insert and update operations.

5. SQL in Real-Time Systems:

Real-time applications such as ride-hailing apps or banking systems use SQL to instantly fetch and display data like locations or transactions. Efficient use of SQL ensures these systems remain responsive and reliable.