

6. SQL

Structured Query Language

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6. SQL

Structured Query Language

Defined and implemented by IBM in early 1970s

Originally called as **SEQUEL**
(**S**tructured **E**nglish **Q**Uery **L**anguage)

First implementation: IBM's SYSTEM R (DB/2, UDB)

The first ANSI and ISO standard in 1986 (SQL-86)

The first ANSI/ISO revision in 1989 (SQL-89)

The second ANSI/ISO revision in 1992 (SQL-92)

The updated ANSI/ISO standard in 1999 (SQL-99)

Then ANSI/ISO standard in 2003 (SQL-2003)

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The next ANSI/ISO standard in 2006 (SQL:2006)

The next ANSI/ISO standard in 2008 (SQL:2008)

The current ANSI/ISO standard in 2011 (SQL:2011)

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Industry accepted SQL standard

Currently

- ORACLE: most SQL:2003, part of SQL:2006.
- MySQL: SQL:2008.
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Characteristics

Command oriented

Declarative (non-procedural)

Common for all relational database management systems

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How SQL works

- It works with data at logic level.
- It does not deal with data row by row.
- It has been supported by all major relational DBMS.
- It includes statements for different kinds of tasks.
- It is a sub-language.

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Functionality
Data definition statements: CREATE TABLE , CREATE INDEX , CREATE VIEW , ALTER TABLE , ...
Data retrieval statement: SELECT
Data manipulation statements: UPDATE , INSERT , DELETE
Access control statements: GRANT , REVOKE
System administration statements: CREATE DATABASE , CREATE TABLESPACE , ALTER TABLESPACE , CREATE SNAPSHOT , ...
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