**Different Implementations of SQL**

The term **"implementations of SQL"** refers to the various **database systems** (also called **RDBMSs**) that implement the **Structured Query Language (SQL)** standard, often with their own extensions or custom features.

Here are some of the most widely used **SQL implementations**, categorized by type:

**Popular Open-Source SQL Implementations**

| **RDBMS** | **Key Features** |
| --- | --- |
| **MySQL** | Widely used, fast, great for web apps, supports replication, used in LAMP stack. |
| **PostgreSQL** | Advanced SQL compliance, supports complex queries, full-text search, custom data types, and ACID compliance. |
| **MariaDB** | Fork of MySQL by its original developers, more open, compatible with MySQL. |
| **SQLite** | Lightweight, serverless, used in mobile apps, browsers, and embedded systems. |
| **CockroachDB** | Distributed SQL database with strong consistency and PostgreSQL compatibility. |
| **TiDB** | Distributed SQL database inspired by Google Spanner, MySQL compatible. |

**Commercial SQL Implementations**

| **RDBMS** | **Key Features** |
| --- | --- |
| **Oracle Database** | Advanced performance features, PL/SQL, strong security, used in enterprise systems. |
| **Microsoft SQL Server** | Integrates with Windows and .NET, uses T-SQL, widely used in corporate environments. |
| **IBM Db2** | Known for high performance, analytics, and legacy enterprise use. |
| **SAP HANA** | In-memory database, optimized for analytics and real-time data. |

**Cloud-Based SQL Implementations**

| **Cloud DB** | **Based On / Compatible With** |
| --- | --- |
| **Amazon RDS** | Supports MySQL, PostgreSQL, Oracle, SQL Server, MariaDB |
| **Amazon Aurora** | MySQL and PostgreSQL-compatible, faster with cloud optimizations |
| **Google Cloud SQL** | Managed MySQL, PostgreSQL, SQL Server |
| **Azure SQL Database** | Managed version of Microsoft SQL Server |
| **Snowflake** | Cloud-native, supports SQL for analytics at scale |

**Key Differences Among Implementations**

| **Feature** | **Varies Among** |
| --- | --- |
| SQL Dialects (T-SQL, PL/pgSQL, PL/SQL) | Each system has its own procedural extensions |
| Performance & Scalability | PostgreSQL for complex logic, MySQL for speed, Oracle for scale |
| ACID Compliance | Most are ACID-compliant, but with different strengths |
| Licensing | Open-source (PostgreSQL, MariaDB) vs. commercial (Oracle, SQL Server) |
| Tooling & Ecosystem | Integration with BI tools, backup utilities, monitoring tools |