**MySQL**

MySQL is an open-source relational database management system (RDBMS) that allows you to store, manage, and retrieve data. It's one of the most widely used databases for web applications, business applications, and various software systems. MySQL is popular because of its performance, reliability, and ease of use.

The database design life cycle using MySQL as an example:

**Planning:**

* Define what information you want to store in the database (e.g., customer details, orders).
* Determine how different pieces of data relate to each other (e.g., one customer can have multiple orders).

**Design:**

* Create an Entity-Relationship Diagram (ERD) on paper or using a tool. This outlines tables, fields, and relationships.
* Identify primary keys (unique identifiers) for each table.
* Define relationships between tables using foreign keys.

**Implementation:**

* Open a MySQL database management tool (like MySQL Workbench).
* Write SQL statements to create tables, define fields, and set up relationships.

**Testing:**

* Insert sample data into the tables to test the structure and relationships.
* Run queries to ensure data retrieval and manipulation work as expected.

**Deployment:**

* Set up a MySQL server for production use.
* Load the database schema and initial data.
* Configure user accounts and permissions for security.

**Maintenance:**

* Regularly backup the database to prevent data loss.
* Monitor server performance and query execution times.
* Optimize slow queries using indexes and query optimization techniques.

**Adaptation:**

* Modify the database structure to accommodate new requirements. For example, adding new fields or tables.
* Use ALTER TABLE statements to make changes to existing tables.

**Retirement:**

* If the database is no longer needed, you can use DROP TABLE to delete tables and associated data.
* Ensure any critical data is archived before retiring the database.