**Data**

Data refers to raw facts, figures, or symbols that represent real-world phenomena. It can be in various forms, including text, numbers, images, audio, and video. Data by itself lacks context and meaning until it is processed and organized.

**Information**

Information is processed and organized data that provides context, meaning, and relevance. It is the result of analyzing, interpreting, and presenting data in a structured format to facilitate understanding and decision-making. Information adds value by providing insights, patterns, and relationships derived from data.

**Database**

A database is an organized collection of structured data stored electronically in a computer system. It is designed to efficiently manage, store, retrieve, and manipulate data according to predefined rules and relationships. Databases provide a centralized and structured way to store and access data, making it easier to manage and utilize information effectively.

**Database Management System (DBMS)**

A Database Management System (DBMS) is a software application that enables users to interact with a database. It provides a set of tools and functionalities to create, manage, and manipulate databases efficiently. DBMS handles tasks such as data storage, retrieval, modification, and security. Examples of DBMS include MySQL, PostgreSQL, Oracle Database, Microsoft SQL Server, and MongoDB.

**SQL QUERIES EXPLAINED**

**1. Question: How can I retrieve all columns and rows from the "employees" table?**

sql

SELECT \* FROM employees;

SQL Solution:

This query selects all columns (`\*`) from the "employees" table.

**2. Question: How can I insert a new employee record with the name "John Doe", age 30, and department "IT" into the "employees" table?**

sql

INSERT INTO employees (name, age, department) VALUES ('John Doe', 30, 'IT');

SQL Solution:

This query inserts a new record into the "employees" table with the specified values for the "name", "age", and "department" columns.

**3. Question: How can I update the department of the employee named "John Doe" to "HR" in the "employees" table?**

sql

UPDATE employees SET department = 'HR' WHERE name = 'John Doe';

SQL Solution:

This query updates the "department" column for the employee named "John Doe" to "HR" in the "employees" table.

**4. Question: How can I delete records of employees over 60 years old from the "employees" table?**

sql

DELETE FROM employees WHERE age > 60;

SQL Solution:

This query deletes records from the "employees" table where the "age" column is greater than 60.

**5. Question: How can I create a new table named "customers" with columns for "id", "name", and "email" in the database?**

sql

CREATE TABLE customers (

id INT PRIMARY KEY,

name VARCHAR(50),

email VARCHAR(100)

);

SQL Solution:

This query creates a new table named "customers" with columns for "id", "name", and "email", where "id" is the primary key.

**6. Question: How can I add a new column named "salary" with data type DECIMAL(10, 2) to the "employees" table?**

sql

ALTER TABLE employees ADD COLUMN salary DECIMAL(10, 2);

SQL Solution:

This query adds a new column named "salary" with the specified data type to the "employees" table.

**7. Question: How can I retrieve all records from the "products" table sorted by price in descending order?**

sql

SELECT \* FROM products ORDER BY price DESC;

SQL Solution:

This query selects all columns from the "products" table and sorts the result set by the "price" column in descending order.

**8. Question: How can I retrieve the order ID and customer name for each order from the "orders" and "customers" tables, where orders are associated with customers based on their IDs?**

sql

SELECT orders.order\_id, customers.name

FROM orders

INNER JOIN customers ON orders.customer\_id = customers.customer\_id;

SQL Solution:

This query retrieves the order ID from the "orders" table and the customer name from the "customers" table, joining the two tables on the "customer\_id" column.