

SQL FAQ

- SQL is short for **Structured Query Language**
- SQL is a declarative programming language for interaction with Relational Database Management Systems (RDBMS)
- SQL is pronounced as either "S-Q-L" or "sequel"
- SQL was originally developed at IBM in the 1970s.
- RDBMS store data in tables

Popular Relational Database Management Systems

- Microsoft SQL Server (Microsoft Corporation)
- DB2 (IBM)
- Oracle (Oracle Corporation)
- MySQL (Oracle Corporation)
- PostgreSQL (Open Source)
- Microsoft Access (Microsoft Corporation)

Creating a Database Table

```
CREATE TABLE <TableName>
( ColumnName1 DataType,
  ColumnName2 DataType,
  ColumnName3 DataType,
  .... )
```

```
CREATE TABLE Cars
( Company VARCHAR(100),
  Country VARCHAR(100),
  Model VARCHAR(255),
  Year INT )
```

Selecting Data from a Database Table

```
SELECT <List of Table Columns>
FROM <TableName>
WHERE <Search Criteria>
```

Example:

```
SELECT Company, Country, Model, Year
FROM Cars
WHERE Year > 2012
```

Inserting Data in a Database Table

```
INSERT INTO <TableName>
(<List of Table Columns>) VALUES (<Values>)
```

Example:

```
INSERT INTO Cars
(Company, Country, Model, Year) VALUES
('Toyota ', 'Japan ', 'Camry ', 2014)
```

Updating Data in a Table

```
UPDATE <TableName>
SET <Column1> = <Value1>, <Column2> = <Value2>, ...
WHERE <Search Criteria>
```

Example:

```
UPDATE Cars
SET Country = 'Japan'
WHERE Company = 'Toyota'
```

Deleting Data from a Table

```
DELETE FROM <TableName>
WHERE <Search Criteria>
```

Example:

```
DELETE FROM Cars
WHERE Year < 1990
```

Grouping Data and Using Aggregate Functions

```
SELECT <List of Table Columns>
FROM <TableName>
WHERE <Search Criteria>
GROUP BY < List of Table Columns>
```

Example: SELECT Company, COUNT(*)

```
FROM Cars
WHERE Year = 2014
GROUP BY Company
```

Ordering Data Results

```
SELECT <List of Table Columns>
FROM <TableName>
WHERE <Search Criteria>
ORDER BY < List of Table Columns>
```

Example: SELECT Company, Model, Year

```
FROM Cars
WHERE Country = 'Japan'
ORDER BY Company, Model
```

Selecting Data from Multiple Tables

```
SELECT < List of Table Columns>
FROM <TableName1> INNER JOIN <TableName2>
ON <TableName1>.<Column1> = <TableName2>.<Column5>
```

Example:

```
SELECT Customers.Name, Orders.CarModel
FROM Customers JOIN Orders ON
Customers.ID = Orders.CustomerID
```

Using UNION Operator

```
SELECT < List of Table Columns > FROM <TableName1>
UNION
SELECT < List of Table Columns > FROM <TableName2>
```

Example:

```
SELECT Company, Country, Model, Year FROM Cars
UNION
SELECT Company, Country, Model, Year FROM Trucks
```