



SQL for Beginners

What is SQL? SQL stands for **Structured Query Language**. This language allows you to query databases, create databases, and add new information to them. It can work with coding languages, such as Python, PHP, and others.

Is SQL the only way to interact with a database? Of course not! SQL is perhaps the oldest, becoming a standard in the mid-1980s, but there are many ways to interact with databases. Learning SQL is important because it is still the standard for most databases, and if you end up using something else, the concepts are important to learn. SQL's ability to talk with programming languages, such as Python, make it still a versatile and robust choice.

What does SQL look like?

SQL uses several standard commands to access and manipulate databases. Once you've mastered a few of these, you can easily talk to a database, or even create one.

```
CREATE TABLE users (  
  User_id INT(6),  
  Last_name VARCHAR(30),  
  First_Name VARCHAR(30),  
  Email VARCHAR(45)  
);  
  
INSERT INTO users ('123456','Smith','Sally','ssmith@email.com');  
  
SELECT * FROM users;
```

User id	Last name	First name	Email
123456	Smith	Sally	ssmith@email.com

To learn more, visit: www.w3schools.com/sql

SQL COMMANDS

Command	What it Does	Syntax	Example
SELECT ALL	Select all results from a table	SELECT * FROM <i>tablename</i> ;	SELECT * FROM users;
SELECT	Query your data and return a result	SELECT <i>column1</i> FROM <i>tablename</i> ;	SELECT lastName FROM users;
CREATE TABLE	Creates a new table within your database	CREATE TABLE <i>tablename</i> (<i>column1 datatype, column2 datatype, column3 datatype</i>);	CREATE TABLE users (userID INT(10), lastName VARCHAR(35), firstName VARCHAR(45));
INSERT INTO	Add data to your table	INSERT INTO <i>tablename</i> VALUES (<i>value1, value2, value3</i>);	INSERT INTO users VALUES (<i>'1234567891', 'Smith','Sally'</i>);
UPDATE	Update data in a record of your table	UPDATE <i>tablename</i> SET <i>column1 = value1, ...</i> WHERE <i>condition</i> ;	UPDATE users SET lastName = 'Smith' WHERE lastName = 'Green';
WHERE	Give your select query a condition	SELECT <i>column1</i> FROM <i>table_name</i> WHERE <i>condition</i> ;	SELECT * FROM users WHERE Country='Mexico';
DROP TABLE	Delete Table from DB	DROP TABLE <i>tablename</i> ;	DROP TABLE users;
JOIN	Link two tables using a common field	SELECT * FROM <i>table1, table 2</i> WHERE <i>id=personid</i> ;	SELECT * FROM users, locations WHERE ID=userID;
CREATE DATABASE	Creates a new database	CREATE DATABASE <i>databasename</i> ;	CREATE DATABASE mydatabase;

SQL DATATYPES

Datatype	Definition	Example
int(size)	An integer with length specified in parenthesis.	UserID INT(14)
smallint	An integer type that only takes up 2 bytes for storage.	UserID SMALLINT(6)
varchar(size)	Variable length string containing letters, numbers, special characters.	Retiring soon, do not use.
varchar2(size)	Variable length string containing letters, numbers, special characters.	LastName VARCHAR2(50)
char(size)	Fixed length string containing letters, numbers, special characters.	abbrevMonth CHAR(3)
date	Creates a date in format of YYYY-MM-DD	Start_Date DATE
year	A year in a four-digit format, from 1901 to 2155, and 0000.	meetYear YEAR