

Simple SQL Commands

The following shows a couple of basic SQL commands and auxiliary keywords for database searches, updates, and deletion.

Basic Terminology

All SQL reserved keywords are capitalized.

tuple = database table row

attribute = database table column

view = a view of the database created by the user (e.g. results of a search query)

Quick Reference

http://www.w3schools.com/sql/sql_quickref.asp

Basic Searches

- `SELECT * FROM table;`
Return all tuples from table `table1` indiscriminately
- `SELECT column1, column2,... FROM table;`
Return a view of all tuples of columns with name `column1, column2, ...` from table `table`.
- `SELECT t1.column1,t2.column1,... FROM table1 t1, table2 t2;`
Aliased `table1` to `t1` and `table2` to `t2` and creating a view of only `column1` of `table1` and `column1` of `table2`.
- `SELECT * FROM table1 WHERE (column1 = 'some strings' AND column2 = 15) OR (column3 >= 1000 AND column3 <> 3);`
Selectively create a view of `table1` that satisfies some search criteria
- `SELECT * FROM table1 ORDER BY column1, column2;`
Ordering the tuples in the output view by attributes `column1` and `column2`
- `SELECT DISTINCT column1 FROM table1;`
Creating a view that eliminates all tuples with duplicate values of `column1`.

More Advanced Searches

- Natural Join
- Outer Join
- Other joins include Equijoin, Cross Join, Theta Join, among others.

Joins

The main use of joins is to bind primary key and its foreign keys across tables.

- `SELECT * FROM table1 t1 INNER JOIN table2 t2 ON t1.primarykey = t2.foreignkey;`

The inner join returns all tuples from both tables where there is a match on the search criteria. If there are tuples in table1 that do not have matches in table2, those tuples will not be listed in the output view.

Insert Tuples into Table

- `INSERT INTO table1 VALUES (value1,value2,...);` or
- `INSERT INTO table1 (column1,column2,...) VALUES (value1,value2,...);`
Insert a tuple into table1 with values value1, value2, ...; specifying the column names is optional.

Updating Tuples in Table

- `UPDATE table1 SET column1=newvalue WHERE column2=somevalue;`
Altering values in table1 that satisfy the search criteria in the WHERE clause

Deleting Tuples from Table

- `DELETE FROM table1 WHERE column1=somevalue;`
Delete tuples from table1 that satisfy the search criteria in the WHERE clause.

Create/Delete a Table

- `CREATE TABLE table1(
 column1 VARCHAR(30),
 column2 CHAR(10),
 column3 INT(3)
 column4 DATE);`

Create a table with 3 columns where the column1 is a variable character array of maximum length of 30; column2 is a fixed length character array of length 10; column3 is an integer with a maximum of 3 digits; column4 as date.

- `DROP TABLE table1;`
Delete table1 from database.

Altering Table

- `ALTER TABLE table1 ADD column5 datatype;`
- `ALTER TABLE table1 DROP COLUMN column5;`
Adding/Dropping column5 in table1