

The resource page that I decided to choose to study from is the Khan Academy and the reason that I chose this is because this seems to be more organized and it has video lessons from the most basic technique of using SQL to more advanced levels of it. I've spent nearly four hours practicing and learning from the website. The basics of SQL includes creating a table and insert elements into it using the following keyword: CREATE TABLE and INSERT. The syntax for this is CREATE TABLE tablename (variableName variableType). An example of using this would be CREATE TABLE table (id int primary key not null, object text not null) The NOT NULL keyword enforce that it must have an element for it. Inserting data would be INSERT INTO table (1, tableobject1).

After the table being created, the next step is to query on them because that is one of the main reasons for having a table and using SQL. The query uses the keyword SELECT to display the table content and many conditions can be applied to this query, examples include ORDER BY, WHERE, etc. Not only this, but we can also limit what we wanted to demonstrate on the table by putting limitations before the FROM keyword, such as a specific column, or by using the aggregate functions in SQL. Some useful aggregating functions include AVG, COUNT, MAX, MIN, SUM, etc. While using the aggregate functions, the query must uses GROUP BY to specify conditions on either the column or other attribute. Not only one condition can be used in a query but many of them, sometimes it can be specified by using the AND and OR keyword for the more complex queries. The AS keyword can change the column name temporarily while displaying it using the SELECT keyword. Another useful clause is the ORDER BY which can allow you to order the item in the table in a different order, either ASC ascending order or DESC descending order.

Not only that query can be used on one table only in the database but also many tables together. Ways to join the two tables together include inner join, outer join, cross join, etc. There's also explicit inner join or implicit inner join and that there are left join and right join depending on the tables it had been query on.

We can also always change the information on the database by altering the data inside the table. Keywords for doing that would be UPDATE. Deleting rows or columns would be using the DELETE keyword. DROP can also allow you to delete either a column, database or table. Below I have listed the keywords that are often used in SQL and each of their function.

- ❖ ALTER Adds, deletes, or modifies columns in a table, or changes the data type of a column in a table
- ❖ AND Only includes rows where both conditions are true
- ❖ ASC Sorts the result set in ascending order
- ❖ BETWEEN Selects values within a given range
- ❖ CREATE Creates a database, index, view, table, or procedure
- ❖ CREATE TABLE Creates a new table in the database
- ❖ DELETE Deletes rows from a table
- ❖ DESC Sorts the result set in descending order
- ❖ DISTINCT Selects only distinct (different) values
- ❖ DROP Deletes a column, constraint, database, index, table, or view
- ❖ FROM Specifies which table to select or delete data from

- ❖ GROUP BY Groups the result set (used with aggregate functions: COUNT, MAX, MIN, SUM, AVG)
- ❖ HAVING Used instead of WHERE with aggregate functions
- ❖ INNER JOIN Returns rows that have matching values in both tables
- ❖ INSERT INTO Inserts new rows in a table
- ❖ JOIN Joins tables
- ❖ LEFT JOIN Returns all rows from the left table, and the matching rows from the right table
- ❖ NOT NULL A constraint that enforces a column to not accept NULL values
- ❖ OR Includes rows where either condition is true
- ❖ ORDER BY Sorts the result set in ascending or descending order
- ❖ OUTER JOIN Returns all rows when there is a match in either left table or right table
- ❖ PRIMARY KEY A constraint that uniquely identifies each record in a database table
- ❖ RIGHT JOIN Returns all rows from the right table, and the matching rows from the left table
- ❖ SELECT Selects data from a database
- ❖ WHERE Filters a result set to include only records that fulfill a specified condition