**SQL Study Notes**

SQL is short form for **Structured Query Language.** SQL is specifically designed for working with databases. It can create, manipulate, and share data from relational database management systems. A ***query*** – a piece of code – is used to induce the computer to perform certain operations, like a function in other programming languages for a desired output.

SQL allows you to write queries.

**SQL Object Types**

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| --- | --- |
| Object Type | Description |
| TABLE |  |
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**SQL Data Types**

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| --- | --- |
| Data Type | Description |
| INT | A integer aka a number. This can be in between -2147483648 to 2147483647. |
| DATE | A date in the format YYYY-MM-DD. This can be in between 1000-01-01 to 9999-12-31. |
|  |  |
| CHAR(size) | A fixed string of text which can contain letters, numbers and special characters. The size parameter can be between 0-255. The default is 1. |
| VARCHAR(size) | A variable string of text which can contain letters, numbers and special characters. The size parameter can be between 0-255. The default is 1. |
| BOOLEAN | Yes or no. 0 or 1. True or false. Doesn’t matter, it’s BOOL |
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**SQL Table Definition Keywords**

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| --- | --- | --- |
| Keyword | Description | Syntax |
| CREATE | Used for creating databases, database objects and tables. | CREATE object\_type object\_name (column\_name data\_type);  ---  CREATE TABLE customers (customer\_id INT); |
| DROP | Used for deleting objects/tables. | DROP object\_name table\_name;  ---  DROP TABLE customers; |
| ALTAR | Used for modifying data within an existing object.  ADD, REMOVE and RENAME can be used to modify objects which includes adding, removing, or renaming existing columns within a table. | ALTAR object\_type object\_name  ADD COLUMN column\_name data\_type;  ----  ALTAR TABLE customers  ADD COLUMN purchase\_date DATE; |
| RENAME | Used to rename tables/objects. | RENAME object\_type object\_name TO new\_object\_name;  ----  RENAME TABLE customers TO old\_customers; |
| TRUNCATE | Used to delete all data within a table, but does not delete the table itself. | TRUNCATE object\_type object\_name;  ----  TRUNCATE TABLE customers; |

**SQL Manipulation Keywords**

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| Keyword | Description | Syntax |
| SELECT | Used to retrieve date from database objects, like tables. | SELECT \* FROM table\_name  ---  SELECT \* FROM customers; |
| INSERT | Used to insert data into tables | INSERT INTO table\_name (column 1 column2) VALUES data  \_\_\_  INSERT INTO customers (name DOB) VALUES ‘Travis’, ‘1997-01-21’; |
| SET | Used in the UPDATE keyword to set new data in an existing cell containing data. |  |
| UPDATE | Allows you to renew/update existing data | UPDATE customers  SET DOB = ‘1999-02-21’  WHERE  name = “Travis”; |
| DELETE | Works like TRUNCATE, except you can specify precisely what you would like to be removed. | DELETEfrom customers;  ---  DELETE from customers  WHERE  Name = ‘Travis’; |
| COMMIT | Used at the end of INSERT, DELETE and UPDATE to immediately commit changes for all users. This only works with INSERT, DELETE and UPDATE. |  |
| WHERE |  |  |
| JOIN |  |  |
| LEFT JOIN |  |  |
| RIGHT JOIN |  |  |
| UNION |  |  |
| UNION ALL |  |  |
| AS |  |  |
| GRANT | Grants user permissions. Can be used for certain databases/tables. | GRANT type\_of\_permission ON database\_name.table.name TO ‘username’@’localhost”  ---  GRANT SELECT ON database\_name.table.name TO ‘Travis’@’localhost”  ---  GRANT ALL ON database\_name.\* TO ‘Travis’@’localhost” |
| REVOKE | Revokes user permissions. Can be used for certain databases/tables. | REVOKE type\_of\_permission ON database\_name.table.name TO ‘username’@’localhost”  ---  REVOKE SELECT ON database\_name.table.name TO ‘Travis’@’localhost”  ---  REVOKE ALL ON database\_name.\* TO ‘Travis’@’localhost” |