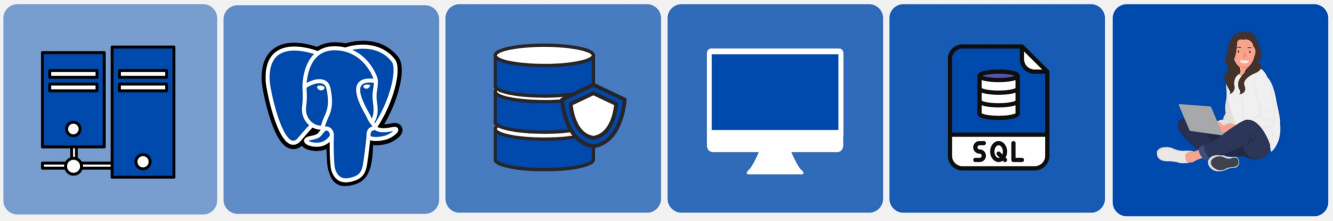
Sources

- W3Schools.com
- DataQuest.io

SQL CHEATSHEET

CONSIDER SUPPORTING ME

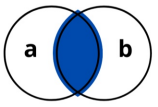
@AbzAaron



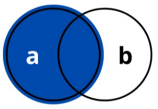
Commands / Clauses

SELECT	Select data from database
FROM	Specify table we're pulling from
WHERE	Filter query to match a condition
AS	Rename column or table with alias
JOIN	Combine rows from 2 or more tables
AND	Combine query conditions. All must be met
OR	Combine query conditions. One must be met
LIMIT	Limit rows returned. See also FETCH & TOP
IN	Specify multiple values when using WHERE
CASE	Return value on a specified condition
IS NULL	Return only rows with a NULL value
LIKE	Search for patterns in column
COMMIT	Write transaction to database
ROLLBACK	Undo a transaction block
ALTER TABLE	Add/Remove columns from table
UPDATE	Update table data
CREATE	Create TABLE, DATABASE, INDEX or VIEW
DELETE	Delete rows from table
INSERT	Add single row to table
DROP	Delete TABLE, DATABASE, or INDEX
GROUP BY	Group data into logical sets
ORDER BY	Set order of result. Use DESC to reverse order
HAVING	Same as WHERE but filters groups
COUNT	Count number of rows
SUM	Return sum of column
AVG	Return average of column
MIN	Return min value of column
MAX	Return max value of column

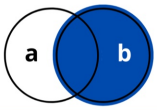
Joins



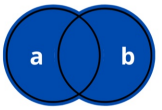
a INNER JOIN b



a LEFT JOIN b



a RIGHT JOIN b



a FULL OUTER JOIN b

Data Definition Language

CREATE

```
CREATE DATABASE MyDatabase;

CREATE TABLE MyTable (
    id int,
    name varchar(10));

CREATE INDEX IndexName
ON TableName(col1);
```

ALTER

```
ALTER TABLE MyTable
DROP COLUMN col5;

ALTER TABLE MyTable
ADD col5 int;
```

DROP

```
DROP DATABASE MyDatabase;
DROP TABLE MyTable;
```

Data Manipulation Language

UPDATE

```
UPDATE MyTable
SET col1 = 56
WHERE col2 = 'something';
```

INSERT

```
INSERT INTO MyTable (col1, col2)
VALUES ('value1', 'value2');
```

DELETE

```
DELETE FROM MyTable
WHERE col1 = 'something';
```

SELECT

```
SELECT col1, col2
FROM MyTable;
```

Order Of Execution

1. FROM
2. WHERE
3. GROUP BY
4. HAVING
5. SELECT
6. ORDER BY
7. LIMIT

Examples

Select all columns with filter applied

```
SELECT * FROM tbl
WHERE col > 5;
```

Select first 10 rows for two columns

```
SELECT col1, col2
FROM tbl LIMIT 10;
```

Select all columns with multiple filters

```
SELECT * FROM tbl
WHERE col1 > 5 OR col2 < 2;
```

Select all rows from col1 & col2 ordering by col1

```
SELECT col1, col2
FROM tbl ORDER BY 1;
```

Return count of rows in table

```
SELECT COUNT(*)
FROM tbl;
```

Return sum of col1

```
SELECT SUM(col1)
FROM tbl;
```

Return max value for col1

```
SELECT MAX(col1)
FROM tbl;
```

Compute summary stats by grouping col2

```
SELECT AVG(col1) FROM tbl
GROUP BY col2;
```

Combine data from 2 tables using left join

```
SELECT * FROM tbl1 AS t1 LEFT JOIN
tbl2 AS t2 ON t2.col1 = t1.col1;
```

Aggregate and filter result

```
SELECT col1,
       COUNT(*) AS total
FROM tbl
GROUP BY col1
HAVING COUNT(*) > 10;
```

Implementation of CASE statement

```
SELECT col1,
CASE
    WHEN col1 > 10 THEN 'more than 10'
    WHEN col1 < 10 THEN 'less than 10'
    ELSE '10'
END AS NewColumnName
FROM tbl;
```

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QUERYING DATA FROM A TABLE

```
SELECT c1, c2 FROM t;
```
Query data in columns c1, c2 from a table

```
SELECT * FROM t;
```
Query all rows and columns from a table

```
SELECT c1, c2 FROM t
WHERE condition;
```
Query data and filter rows with a condition

```
SELECT DISTINCT c1 FROM t
WHERE condition;
```
Query distinct rows from a table

```
SELECT c1, c2 FROM t
ORDER BY c1 ASC [DESC];
```
Sort the result set in ascending or descending order

```
SELECT c1, c2 FROM t
ORDER BY c1
LIMIT n OFFSET offset;
```
Skip *offset* of rows and return the next n rows

```
SELECT c1, aggregate(c2)
FROM t
GROUP BY c1;
```
Group rows using an aggregate function

```
SELECT c1, aggregate(c2)
FROM t
GROUP BY c1
HAVING condition;
```
Filter groups using HAVING clause

QUERYING FROM MULTIPLE TABLES

```
SELECT c1, c2
FROM t1
INNER JOIN t2 ON condition;
```
Inner join t1 and t2

```
SELECT c1, c2
FROM t1
LEFT JOIN t2 ON condition;
```
Left join t1 and t1

```
SELECT c1, c2
FROM t1
RIGHT JOIN t2 ON condition;
```
Right join t1 and t2

```
SELECT c1, c2
FROM t1
FULL OUTER JOIN t2 ON condition;
```
Perform full outer join

```
SELECT c1, c2
FROM t1
CROSS JOIN t2;
```
Produce a Cartesian product of rows in tables

```
SELECT c1, c2
FROM t1, t2;
```
Another way to perform cross join

```
SELECT c1, c2
FROM t1 A
INNER JOIN t2 B ON condition;
```
Join t1 to itself using INNER JOIN clause

USING SQL OPERATORS

```
SELECT c1, c2 FROM t1
UNION [ALL]
SELECT c1, c2 FROM t2;
```
Combine rows from two queries

```
SELECT c1, c2 FROM t1
INTERSECT
SELECT c1, c2 FROM t2;
```
Return the intersection of two queries

```
SELECT c1, c2 FROM t1
MINUS
SELECT c1, c2 FROM t2;
```
Subtract a result set from another result set

```
SELECT c1, c2 FROM t1
WHERE c1 [NOT] LIKE pattern;
```
Query rows using pattern matching %, _

```
SELECT c1, c2 FROM t
WHERE c1 [NOT] IN value_list;
```
Query rows in a list

```
SELECT c1, c2 FROM t
WHERE  c1 BETWEEN low AND high;
```
Query rows between two values

```
SELECT c1, c2 FROM t
WHERE  c1 IS [NOT] NULL;
```
Check if values in a table is NULL or not

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MANAGING TABLES

```
CREATE TABLE t (
    id INT PRIMARY KEY,
    name VARCHAR NOT NULL,
    price INT DEFAULT 0
);
```
Create a new table with three columns

```
DROP TABLE t ;
```
Delete the table from the database

```
ALTER TABLE t ADD column;
```
Add a new column to the table

```
ALTER TABLE t DROP COLUMN c ;
```
Drop column c from the table

```
ALTER TABLE t ADD constraint;
```
Add a constraint

```
ALTER TABLE t DROP constraint;
```
Drop a constraint

```
ALTER TABLE t1 RENAME TO t2;
```
Rename a table from t1 to t2

```
ALTER TABLE t1 RENAME c1 TO c2 ;
```
Rename column c1 to c2

```
TRUNCATE TABLE t;
```
Remove all data in a table

USING SQL CONSTRAINTS

```
CREATE TABLE t(
   c1 INT, c2 INT, c3 VARCHAR,
   PRIMARY KEY (c1,c2)
);
```
Set c1 and c2 as a primary key

```
CREATE TABLE t1(
   c1 INT PRIMARY KEY,
   c2 INT,
   FOREIGN KEY (c2) REFERENCES t2(c2)
);
```
Set c2 column as a foreign key

```
CREATE TABLE t(
   c1 INT, c1 INT,
   UNIQUE(c2,c3)
);
```
Make the values in c1 and c2 unique

```
CREATE TABLE t(
  c1 INT, c2 INT,
  CHECK(c1> 0 AND c1 >= c2)
);
```
Ensure c1 > 0 and values in c1 >= c2

```
CREATE TABLE t(
    c1 INT PRIMARY KEY,
    c2 VARCHAR NOT NULL
);
```
Set values in c2 column not NULL

MODIFYING DATA

```
INSERT INTO t(column_list)
VALUES(value_list);
```
Insert one row into a table

```
INSERT INTO t(column_list)
VALUES (value_list),
       (value_list), ....;
```
Insert multiple rows into a table

```
INSERT INTO t1(column_list)
SELECT column_list
FROM t2;
```
Insert rows from t2 into t1

```
UPDATE t
SET c1 = new_value;
```
Update new value in the column c1 for all rows

```
UPDATE t
SET c1 = new_value,
    c2 = new_value
WHERE condition;
```
Update values in the column c1, c2 that match the condition

```
DELETE FROM t;
```
Delete all data in a table

```
DELETE FROM t
WHERE condition;
```
Delete subset of rows in a table

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MANAGING VIEWS

```
CREATE VIEW v(c1,c2)
AS
SELECT c1, c2
FROM t;
```
Create a new view that consists of c1 and c2

```
CREATE VIEW v(c1,c2)
AS
SELECT c1, c2
FROM t;
WITH [CASCADED | LOCAL] CHECK OPTION;
```
Create a new view with check option

```
CREATE RECURSIVE VIEW v
AS
select-statement -- anchor part
UNION [ALL]
select-statement; -- recursive part
```
Create a recursive view

```
CREATE TEMPORARY VIEW v
AS
SELECT c1, c2
FROM t;
```
Create a temporary view

```
DROP VIEW view_name;
```
Delete a view

MANAGING INDEXES

```
CREATE INDEX idx_name
ON t(c1,c2);
```
Create an index on c1 and c2 of the table t

```
CREATE UNIQUE INDEX idx_name
ON t(c3,c4);
```
Create a unique index on c3, c4 of the table t

```
DROP INDEX idx_name;
```
Drop an index

SQL AGGREGATE FUNCTIONS

AVG returns the average of a list

COUNT returns the number of elements of a list

SUM returns the total of a list

MAX returns the maximum value in a list

MIN returns the minimum value in a list

MANAGING TRIGGERS

```
CREATE OR MODIFY TRIGGER trigger_name
WHEN EVENT
ON table_name TRIGGER_TYPE
EXECUTE stored_procedure;
```
Create or modify a trigger

WHEN
- **BEFORE** – invoke before the event occurs
- **AFTER** – invoke after the event occurs

EVENT
- **INSERT** – invoke for INSERT
- **UPDATE** – invoke for UPDATE
- **DELETE** – invoke for DELETE

TRIGGER_TYPE
- **FOR EACH ROW**
- **FOR EACH STATEMENT**

```
CREATE TRIGGER before_insert_person
BEFORE INSERT
ON person FOR EACH ROW
EXECUTE stored_procedure;
```
Create a trigger invoked before a new row is inserted into the person table

```
DROP TRIGGER trigger_name;
```
Delete a specific trigger