



# PostgreSQL Cheat Sheet

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## SELECT Query

```
SELECT col1, col2
FROM table
JOIN table2 ON table1.col = table2.col
WHERE condition
GROUP BY column_name
HAVING condition
ORDER BY col1 ASC|DESC;
```

## SELECT Keywords

DISTINCT: Removes duplicate results	SELECT DISTINCT product_name FROM product;
BETWEEN: Matches a value between two other values (inclusive)	SELECT product_name FROM product WHERE price BETWEEN 50 AND 100;
IN: Matches to any of the values in a list	SELECT product_name FROM product WHERE category IN ('Electronics', 'Furniture');
LIKE: Performs wildcard matches using _ or %	SELECT product_name FROM product WHERE product_name LIKE '%Desk%';

## Joins

```
SELECT t1.*, t2.*
FROM t1
join_type t2 ON t1.col = t2.col;
```

Table 1	Table 2
A	A
B	B
C	D

INNER JOIN: show all matching records in both tables.

A	A
B	B

LEFT JOIN: show all records from left table, and any matching records from right table.

A	A
B	B
C	

RIGHT JOIN: show all records from right table, and any matching records from left table.

A	A
B	B
	D

FULL JOIN: show all records from both tables, whether there is a match or not.

A	A
B	B
C	
	D

## CASE Statement

Simple Case	CASE name WHEN 'John' THEN 'Name John' WHEN 'Steve' THEN 'Name Steve' ELSE 'Unknown' END
Searched Case	CASE WHEN name='John' THEN 'Name John' WHEN name='Steve' THEN 'Name Steve' ELSE 'Unknown' END

## Common Table Expression

```
WITH queryname AS (  
  SELECT col1, col2  
  FROM firsttable)  
SELECT col1,col2..  
FROM queryname...;
```

## Modifying Data

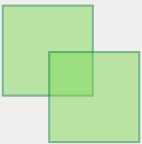
Insert	INSERT INTO tablename (col1, col2...) VALUES (val1, val2);
Insert from a Table	INSERT INTO tablename (col1, col2...) SELECT col1, col2...
Insert Multiple Rows	INSERT INTO tablename (col1, col2...) VALUES (valA1, valB1), (valA2, valB2), (valA3, valB3);
Update	UPDATE tablename SET col1 = val1 WHERE condition;
Update with a Join	UPDATE t SET col1 = val1 FROM tablename t INNER JOIN table x ON t.id = x.tid WHERE condition;
Delete	DELETE FROM tablename WHERE condition;

## Indexes

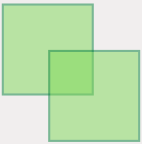
Create Index	CREATE INDEX indexname ON tablename (cols);
Drop Index	DROP INDEX indexname;

## Set Operators

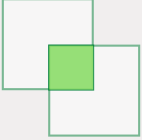
UNION: Shows unique rows from two result sets.



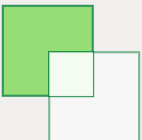
UNION ALL: Shows all rows from two result sets.



INTERSECT: Shows rows that exist in both result sets.



EXCEPT: Shows rows that exist in the first result set but not the second.



## Aggregate Functions

- SUM: Finds a total of the numbers provided
- COUNT: Finds the number of records
- AVG: Finds the average of the numbers provided
- MIN: Finds the lowest of the numbers provided
- MAX: Finds the highest of the numbers provided

## Common Functions

- LENGTH(string): Returns the length of the provided string
- POSITION(string IN substring): Returns the position of the substring within the specified string.
- CAST(expression AS datatype): Converts an expression into the specified data type.
- NOW: Returns the current date, including time.
- CEIL(input\_val): Returns the smallest integer greater than the provided number.
- FLOOR(input\_val): Returns the largest integer less than the provided number.
- ROUND(input\_val, [round\_to]): Rounds a number to a specified number of decimal places.
- TRUNC(input\_value, num\_decimals): Truncates a number to a number of decimals.
- REPLACE(whole\_string, string\_to\_replace, replacement\_string): Replaces one string inside the whole string with another string.
- SUBSTRING(string, [start\_pos], [length]): Returns part of a value, based on a position and length.

## Create Table

Create Table	CREATE TABLE tablename ( column_name data_type );
Create Table with Constraints	CREATE TABLE tablename ( column_name data_type NOT NULL, CONSTRAINT pkname PRIMARY KEY (col), CONSTRAINT fkname FOREIGN KEY (col) REFERENCES other_table(col_in_other_table), CONSTRAINT ucname UNIQUE (col), CONSTRAINT ckname CHECK (conditions) );
Create Temporary Table	CREATE TEMP TABLE tablename ( colname datatype );
Drop Table	DROP TABLE tablename;

## Alter Table

Add Column	ALTER TABLE tablename ADD COLUMN columnname datatype;
Drop Column	ALTER TABLE tablename DROP COLUMN columnname;
Modify Column	ALTER TABLE tablename ALTER COLUMN columnname TYPE newdatatype;
Rename Column	ALTER TABLE tablename RENAME COLUMN currentname TO newname;
Add Constraint	ALTER TABLE tablename ADD CONSTRAINT constraintname constrainttype (columns);
Drop Constraint	ALTER TABLE tablename DROP constraint_type constraintname;
Rename Table	ALTER TABLE tablename RENAME TO newtablename;

## Window/Analytic Functions

```
function_name ( arguments ) OVER (  
  [query_partition_clause]  
  [ORDER BY order_by_clause  
  [windowing_clause] ] )
```

Example using RANK, showing the student details and their rank according to the fees\_paid, grouped by gender:

```
SELECT  
student_id, first_name, last_name, gender, fees_paid,  
RANK() OVER (  
  PARTITION BY gender ORDER BY fees_paid  
) AS rank_val  
FROM student;
```

## Subqueries

Single Row	SELECT id, last_name, salary FROM employee WHERE salary = ( SELECT MAX(salary) FROM employee );
Multi Row	SELECT id, last_name, salary FROM employee WHERE salary IN ( SELECT salary FROM employee WHERE last_name LIKE 'C%' );