

PostgreSQL

DDL

Create Database:

create database student_data

```
crud_data=# create database student_data
crud_data=# ;
```

Creating a Table:

```
CREATE TABLE students_details (
    student_id SERIAL PRIMARY KEY,
    name VARCHAR(50),
    email VARCHAR(50),
);
```

```
CREATE TABLE
```

Altering a Table (Adding a Column):

ALTER TABLE students_details ADD COLUMN ph_number VARCHAR(100);

```
student_data=# ALTER TABLE students_details ADD COLUMN ph_number VARCHAR(100);
ALTER TABLE
student_data=#
```

Dropping a Table:

DROP TABLE students;

```
CREATE TABLE
student_data=# DROP TABLE students;
DROP TABLE
student_data=#
```

Creating an Index:

CREATE INDEX index_name ON students_details (name);

```
student_data=# CREATE INDEX index_name ON students_details (name);
CREATE INDEX
student_data=#
```

Creating a Primary Key Constraint:

ALTER TABLE students_details ADD CONSTRAINT primaryKey_id PRIMARY KEY (student_id);

```
student_data=# ALTER TABLE students_details ADD CONSTRAINT primaryKey_id PRIMARY KEY (student_id);
ERROR:  multiple primary keys for table "students_details" are not allowed
student_data=#
```

Creating a Foreign Key Constraint:

ALTER TABLE entrollment ADD CONSTRAINT fk_student_id FOREIGN KEY (student_id) REFERENCES students_details (student_id);

```
student_data=# CREATE TABLE entrollment (student_id SERIAL, course VARCHAR(50));
CREATE TABLE
student_data=# ALTER TABLE entrollment ADD CONSTRAINT fk_student_id FOREIGN KEY (student_id) REFERENCES students_details (student_id);
ALTER TABLE
student_data=#
```

TRUNCATE

TRUNCATE table students_details, entrollment;

```
student_data=# TRUNCATE table students_detail, entrollment;
TRUNCATE TABLE
student_data=#
```

RENAME

ALTER TABLE students_details RENAME to students_detail;

```
student_data=# ALTER TABLE students_details RENAME to students_detail;
ALTER TABLE
student_data=#
```

DML

INSERT

INSERT INTO students_detail VALUES ('1', 'Gokul', 'gokul@gmail.com', '9855455677');

```
student_data=# INSERT INTO students_detail VALUES ('1', 'Gokul', 'gokul@gmail.com', '9855455677');
INSERT 0 1
student_data=#
```

SELECT

SELECT * FROM students_detail;

```
student_data=# SELECT * FROM students_detail;
 student_id | name |      email      | ph_number
-----+-----+-----+-----
          1 | Gokul | gokul@gmail.com | 9855455677
(1 row)

student_data=#
```

SELECT name FROM students_detail;

```
student_data=# SELECT name FROM students_detail;
 name
-----
 Gokul
(1 row)

student_data=#
```

UPDATE

UPDATE students_detail SET email = 'gokulrajalp@gmail.com' WHERE student_id='1';

```
student_data=# UPDATE students_detail SET email = 'gokulrajalp@gmail.com' WHERE student_id='1';
UPDATE 1
student_data=#
```

DELETE

DELETE FROM students_detail WHERE student_id='1';

```
student_data=# DELETE FROM students_detail WHERE student_id='1';
DELETE 1
student_data=#
```

SELECT

SELECT * FROM students_detail;

```
student_data=# SELECT * FROM students_detail;
 student_id | name | email | ph_number
-----+-----+-----+-----
          1 | Gokul | gokul@gmail.com | 9855455677
(1 row)

student_data=#
```

SELECT name FROM students_detail;

```
student_data=# SELECT name FROM students_detail;
 name
-----
 Gokul
(1 row)

student_data=#
```

Functions

```
CREATE OR REPLACE FUNCTION add_numbers(a INTEGER, b INTEGER)
RETURNS INTEGER AS $$
BEGIN
    RETURN a + b;
END;
$$ LANGUAGE plpgsql;
```

```
student_data=# CREATE OR REPLACE FUNCTION add_numbers(a INTEGER, b INTEGER)
student_data=# RETURNS INTEGER AS $$
student_data$# BEGIN
student_data$# RETURN a + b;
student_data$# END;
student_data$# $$ LANGUAGE plpgsql;
CREATE FUNCTION
student_data=#
```

SELECT add_numbers(5, 3);

```

CREATE FUNCTION
student_data=# SELECT add_numbers(5, 3);
  add_numbers
-----
           8
(1 row)

student_data=#

```

DISTINCT

SELECT DISTINCT name FROM students_detail;

```

student_data=# SELECT DISTINCT name FROM students_detail;
  name
-----
Gokul
Gokulraja
Gokulrajalp
(3 rows)

student_data=#

```

GROUP BY

SELECT name, COUNT(*) as name FROM students_detail GROUP BY name;

```

student_data=# SELECT name, COUNT(*) as name FROM students_detail GROUP BY name;
  name | name
-----+-----
Gokul |    2
Gokulraja |    1
Gokulrajalp |    1
(3 rows)

student_data=#

```

ORDER BY

SELECT * FROM students_detail ORDER BY name DESC;

```
student_data=# SELECT * FROM students_detail ORDER BY name DESC;
 student_id |   name   |      email      | ph_number
-----+-----+-----+-----
          4 | Gokulrajalp | gokulrajalp@gmail.com | 9456455477
          3 | Gokulraja  | gokulr@gmail.com    | 9455455477
          2 | Gokul      | gokul@gmail.com     | 9855455477
          5 | Gokul      | gokull@gmail.com    | 9865455477
(4 rows)

student_data=#
```

Indexes

CREATE INDEX index_name ON students_details (name);

```
student_data=# CREATE INDEX index_name ON students_details (name);
CREATE INDEX
student_data=#
```

Sub queries (With)

WITH name AS (SELECT name, email FROM students_detail WHERE name = 'Gokul')
SELECT * FROM name;

```
student_data=# WITH name AS (SELECT name, email FROM students_detail WHERE name = 'Gokul')
SELECT * FROM name;
 name |      email
-----+-----
 Gokul | gokul@gmail.com
 Gokul | gokull@gmail.com
(2 rows)

student_data=#
```