WHERE ……………… > ……….. AND ……….. < ……….. →

```
SELECT *
FROM actor
WHERE first_name = 'Penelope' AND last name = 'Monroe' ;
```

```
WHERE first_name = 'Penelope' OR first_name = 'Bob' ;
```

WHERE NOT → CLAUSE

```
WHERE NOT (rental_rate = 4.99 OR rental_rate = 2.99)
```

Homework-1

1- **Sort the data in the title and description columns in the first film table.**

SELECT title, description FROM film;

2- **Sort the data in all columns in the movie table with the film length greater than 60 AND less than 75.**

SELECT * FROM film
WHERE length >60 and length < 75;

3- **Sort the data in all columns in the film table with rental_rate 0.99 AND replacement_cost 12.99 OR 28.99.**

SELECT * from film
WHERE rental_rate = 0.99
AND replacement_cost = 28.99;

4- **What is the value in the last_name column of the customer whose value is 'Mary' in the first_name column of the customer table?**

SELECT first_name, last_name FROM customer
WHERE first_name = 'Mary';

5- **Sort the data in the movie table whose length is NOT greater than 50, but whose rental_rate is NOT 2.99 or 4.99.**

SELECT * FROM film
WHERE NOT (length<50)
AND NOT (rental_rate = 2.99 OR rental_rate = 4.99);

BETWEEN AND SYNTAX

```
SELECT <column_name>, <column_name>, ...
FROM <table_name>
WHERE <condition>;
-------------------------------------------------------------------------------
SELECT *
FROM film
WHERE length BETWEEN 100 AND 140;
------------------------------------------------------------------------------

-- WHERE length > 100 AND length < 140
```

IN SYNTAX

```
SELECT *
FROM film
WHERE length IN (30,60,90,120);
```

We can also use the NOT IN construct for values out of the list.

Homework-2

1- **Sort all column data in the film table provided that the replacement cost value is greater than 12.99, equal and less than 16.99 (Use BETWEEN - AND structure.)**

   SELECT * FROM film
   WHERE replacement_cost BETWEEN 12.98 AND 16.98;
   --12.99 and 16.99 included

2- **Sort the data in the first_name and last_name columns in the actor table provided that first_name is the values 'Penelope' or 'Nick' or 'Ed'. (Use the IN operator.)**

   SELECT first_name, last_name FROM actor
   WHERE first_name IN ('Penelope', 'Nick', 'Ed');

3- **Sort the data in all columns in the film table with rental_rate 0.99, 2.99, 4.99 AND replacement_cost 12.99, 15.99, 28.99. (Use the IN operator.)**

   SELECT * FROM film
   WHERE rental_rate IN (0.99, 2.99, 4.99)
   AND replacement_cost IN (12.99, 15.99, 28.99);

LIKE / NOT LIKE

For multi character use '%' but for single character use '_' symbol

```
SELECT *
FROM actor
WHERE first_name LIKE 'P%';
```

```
SELECT *
FROM actor
WHERE first_name -- 'P%';

Both uses are same 😉

--* ➔ ILIKE
--  ➔ LIKE
!-- ➔ NOT LIKE
!--* ➔ NOT ILIKE

NOTE : The ILIKE operator is the case - insensitive version of the LIKE operator!
```

Homework-3

1- **List the country names in the country column of the country table, starting with the 'A' character and ending with the 'a' character.**

```
SELECT * FROM country
WHERE country ILIKE 'A%a';
```

2- **List the country names in the country column of the country table, consisting of at least 6 characters and ending with the 'n' character.**

```
SELECT country FROM country
WHERE country ILIKE '_____%n';
```

3- **In the title column of the film table, list the movie names containing at least 4 'T' characters, regardless of upper- or lower-case letters.**

```
SELECT title FROM film
WHERE title ILIKE '%T%T%T%T%';
```

4- **From the data in all the columns in the film table, sort the data that starts with the title 'C' character, has a length greater than 90 and a rental_rate of 2.99.**

```
SELECT title, length, rental_rate FROM film
WHERE title LIKE 'C%' AND
length > 90 AND rental_rate = 2.99;
```

SELECT DISTINCT SYNTAX

```
SELECT DISTINCT <columnName>, <columnName>, ...
FROM <tableName>;
```

SELECT COUNT SYNTAX

```
SELECT COUNT(*)
FROM actor
WHERE first_name = 'Penelope';
```

MORE

```
SELECT COUNT(DISTINCT <columnName>)
FROM actor
```

Homework-4

1- **Sort the different values in the replacement cost column in the film table.**

   SELECT DISTINCT replacement_cost FROM film;

2- **How many different data are there in the replacement cost column in the film table?**

   SELECT COUNT(DISTINCT replacement_cost) FROM film;

3- **How many of the film titles in the film table start with the character T and at the same time the rating is equal to 'G'?**

   SELECT COUNT(title) FROM film
   WHERE title LIKE 'T%' AND
   rating = 'G';

4- **How many of the country names (country) in the country table consist of 5 characters?**

   SELECT COUNT(country) FROM country

   WHERE country LIKE '_____';

5- **How many of the city names in the city table end with the character 'R' or r?**

   SELECT COUNT(city) FROM city

   WHERE city ILIKE '%r';

ORDER BY SYNTAX

```
SELECT <columnName>, <columnName>, ...
FROM <tableName>
ORDER BY <columnName>, <columnName>, ... ASC|DESC;
```

ASC ➔ INCREASING

DESC ➔ DECREASING

```
SELECT *
FROM film
WHERE title LIKE 'A%'
ORDER BY title ASC length DESC;
```

LIMIT

```
SELECT *
FROM film
WHERE title LIKE 'B%'
ORDER BY length DESC
LIMIT 10;
```

➔ Gives the 10 longest films.

OFFSET

```
SELECT *
FROM film
WHERE title LIKE 'B%'
ORDER BY length DESC
OFFSET 6
LIMIT 4;
```

➔ Skips the 6 longest film and gives other 4 film.

Homework-5

1- **List the 5 longest (length) films in the film table and the film title (title) ends with the 'n' character.**

SELECT * FROM film
WHERE title LIKE '%n'
ORDER BY length DESC
LIMIT 5;

2- **List the shortest (length) second (6,7,8,9,10) 5 films (6,7,8,9,10) in the film table and the film title ends with the 'n' character.**

SELECT * FROM film
WHERE title LIKE '%n'
ORDER BY length DESC
OFFSET 1
LIMIT 5;

3- **Sort the first 4 data, provided that store_id is 1 in the descending order according to the last_name column in the customer table.**

```
SELECT * from customer
WHERE store_id = 1
ORDER BY last_name DESC
LIMIT 4;
```

Aggregate Functions - MIN, MAX, SUM, AVG

```
SELECT AVG(length)
FROM film;
```

Homework-6

1- **What is the average of the values in the rental_rate column in the film table?**

```
SELECT AVG(rental_rate) FROM film;
```

2- **How many of the movies in the film table start with the character 'C'?**

```
SELECT COUNT(title) FROM film
WHERE title LIKE 'C%';
```

3- **Among the movies in the film table, how many minutes is the longest (length) film with a rental_rate equal to 0.99?**

```
SELECT MAX(length) FROM film
WHERE rental_rate = 0.99;
```

4- **How many different replacement_cost values are there for the films longer than 150 minutes in the film table?**

```
SELECT COUNT(replacement_cost) FROM film
WHERE length > 150 ;
```

GROUP BY

```
SELECT rental_rate, MAX(length)
FROM film
GROUP BY rental_rate;
```

HAVING

```
SELECT rental_rate, COUNT(*)
FROM film
GROUP BY rental_rate
HAVING COUNT(*) > 325;
```

Homework-7

1- Group the films in the film table according to their rating values.

```
SELECT rating FROM film
GROUP BY rating;
```

2- When we group the films in the film table according to the replacement_cost column, list the replacement_cost value with more than 50 films and the corresponding number of films.

```
SELECT replacement_cost, COUNT(*) FROM film
GROUP BY replacement_cost
HAVING COUNT(*) > 50;
```

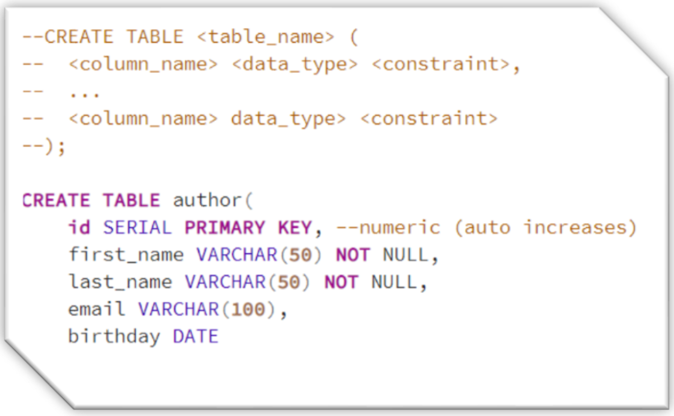
3- What are the customer numbers corresponding to the store_id values in the customer table?

```
SELECT store_id, COUNT(*) FROM customer
GROUP BY store_id;
```

4- After grouping the city data in the city table according to the country_id column, share the country_id information with the highest number of cities and the number of cities.

```
SELECT country_id, COUNT(*) FROM city
GROUP BY country_id
ORDER BY COUNT(*) DESC
LIMIT 1; --maximum city
```

CREATING TABLE

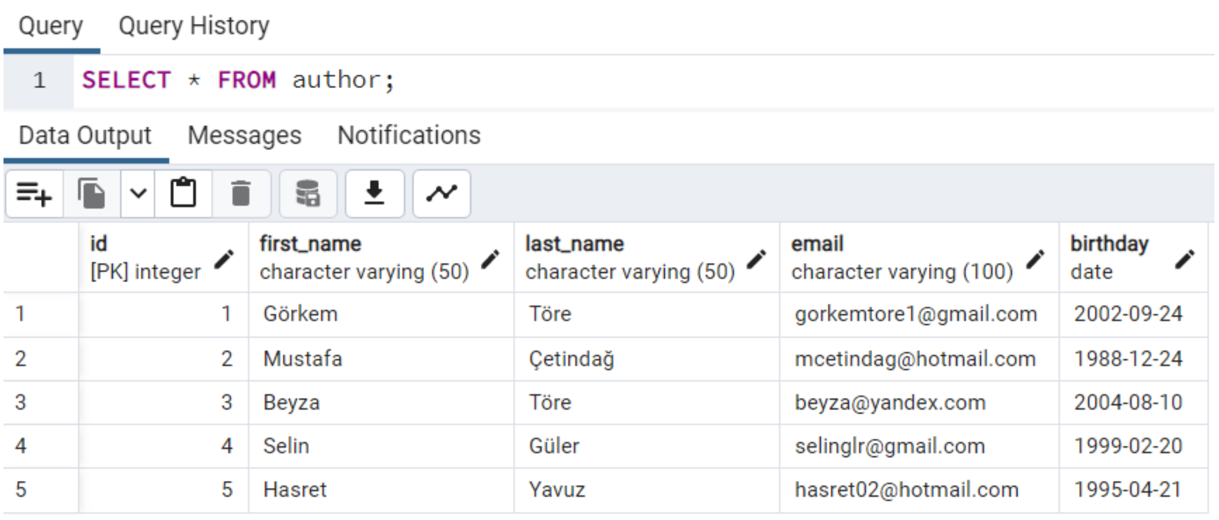


```
--CREATE TABLE <table_name> (
--  <column_name> <data_type> <constraint>,
--  ...
--  <column_name> data_type> <constraint>
--);

CREATE TABLE author(
    id SERIAL PRIMARY KEY, --numeric (auto increases)
    first_name VARCHAR(50) NOT NULL,
    last_name VARCHAR(50) NOT NULL,
    email VARCHAR(100),
    birthday DATE
```

INSERT USES:

```sql
INSERT INTO author (first_name, last_name, email, birthday)
VALUES
    ('Görkem', 'Töre','gorkemtore1@gmail.com', '2002-09-24'),
    ('Mustafa','Çetindağ', 'mcetindag@hotmail.com', '1988-12-24'),
    ('Beyza','Töre','beyza@yandex.com','2004-8-10'),
    ('Selin','Güler','selinglr@gmail.com','1999-02-20'),
    ('Hasret','Yavuz','hasret02@hotmail.com','1995-04-21');
```

OUTPUT :



Query Query History

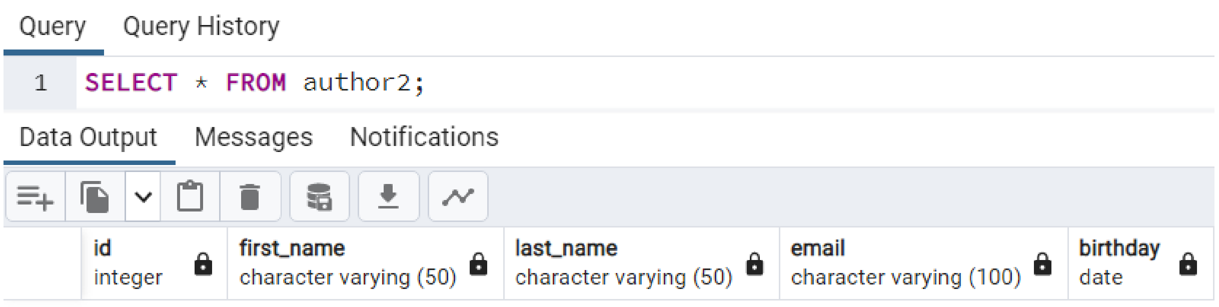
```sql
SELECT * FROM author;
```

Data Output Messages Notifications

	id [PK] integer	first_name character varying (50)	last_name character varying (50)	email character varying (100)	birthday date
1	1	Görkem	Töre	gorkemtore1@gmail.com	2002-09-24
2	2	Mustafa	Çetindağ	mcetindag@hotmail.com	1988-12-24
3	3	Beyza	Töre	beyza@yandex.com	2004-08-10
4	4	Selin	Güler	selinglr@gmail.com	1999-02-20
5	5	Hasret	Yavuz	hasret02@hotmail.com	1995-04-21

COPYING TABLE SCHEMA :

```sql
--copy table
CREATE TABLE author2 (LIKE author);
```



Query Query History

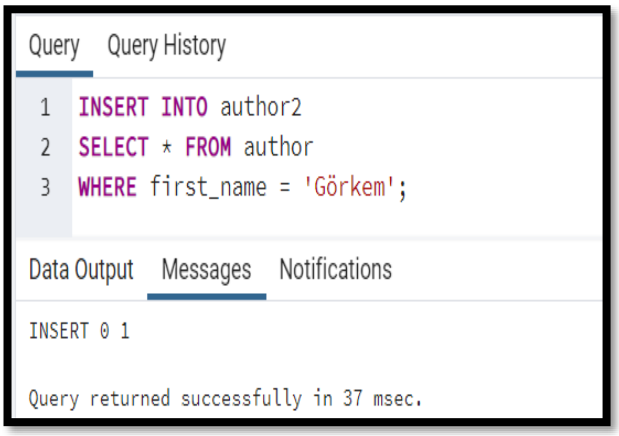
```sql
SELECT * FROM author2;
```

Data Output Messages Notifications

	id integer	first_name character varying (50)	last_name character varying (50)	email character varying (100)	birthday date

- ***Copied schema but author2 table has not any data!***

INSERTING author TO author2 :

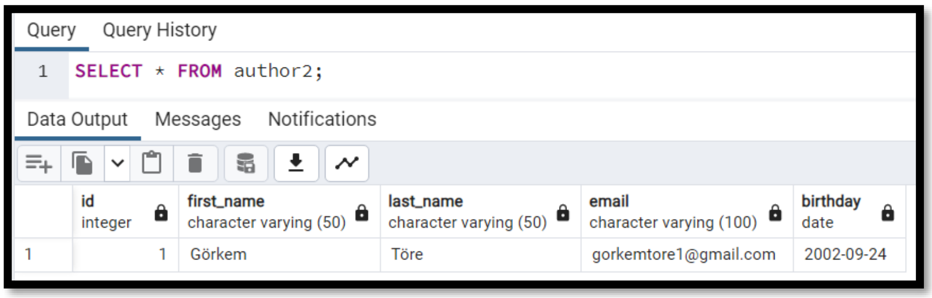


Query   Query History

```sql
INSERT INTO author2
SELECT * FROM author
WHERE first_name = 'Görkem';
```

Data Output   Messages   Notifications

```
INSERT 0 1

Query returned successfully in 37 msec.
```



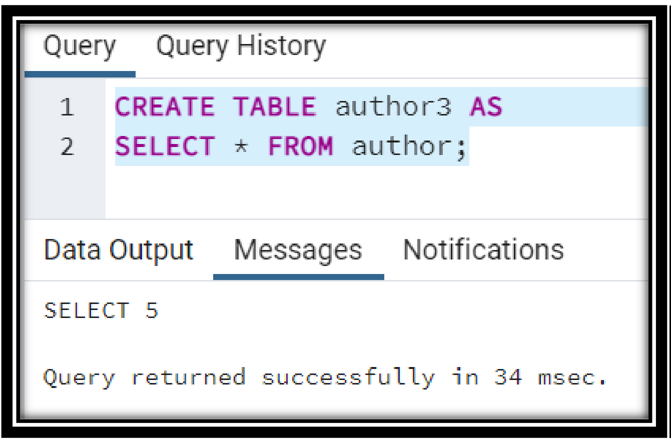
Query   Query History

```sql
SELECT * FROM author2;
```

Data Output   Messages   Notifications

	id integer	first_name character varying (50)	last_name character varying (50)	email character varying (100)	birthday date
1	1	Görkem	Töre	gorkemtore1@gmail.com	2002-09-24

COPYING TABLE WITH DATAS:

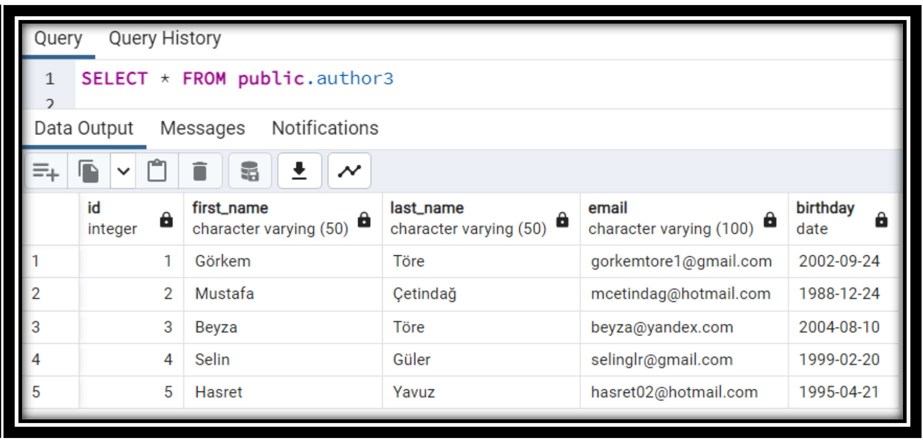


Query   Query History

```sql
CREATE TABLE author3 AS
SELECT * FROM author;
```

Data Output   Messages   Notifications

```
SELECT 5

Query returned successfully in 34 msec.
```



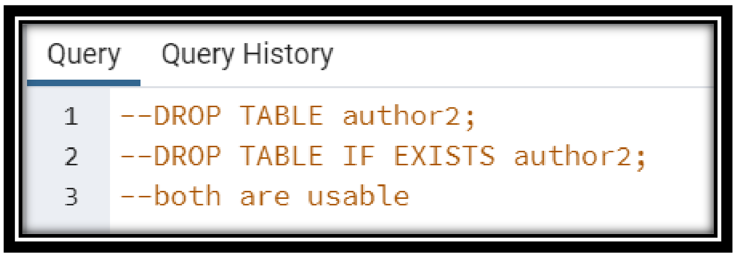
Query   Query History

```sql
SELECT * FROM public.author3
```

Data Output   Messages   Notifications

	id integer	first_name character varying (50)	last_name character varying (50)	email character varying (100)	birthday date
1	1	Görkem	Töre	gorkemtore1@gmail.com	2002-09-24
2	2	Mustafa	Çetindağ	mcetindag@hotmail.com	1988-12-24
3	3	Beyza	Töre	beyza@yandex.com	2004-08-10
4	4	Selin	Güler	selinglr@gmail.com	1999-02-20
5	5	Hasret	Yavuz	hasret02@hotmail.com	1995-04-21

DROP TABLE:



Query   Query History

```sql
--DROP TABLE author2;
--DROP TABLE IF EXISTS author2;
--both are usable
```

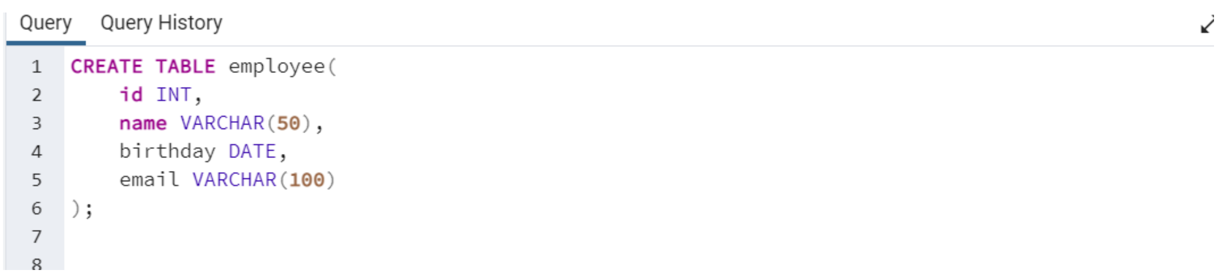
UPDATE SYNTAX

```sql
UPDATE <tableName>
SET <columnName> = value,
    <columnName> = value,
    ----
WHERE <condition>;
```

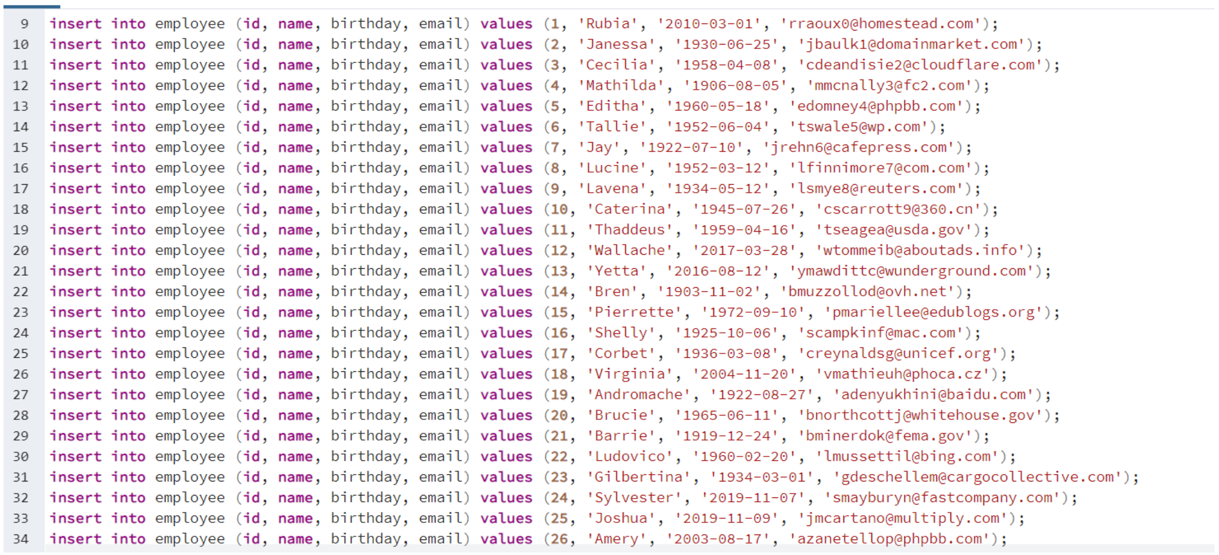
DELETE SYNTAX

```sql
DELETE FROM <tablo_adı>
WHERE <koşul_adı>;
```

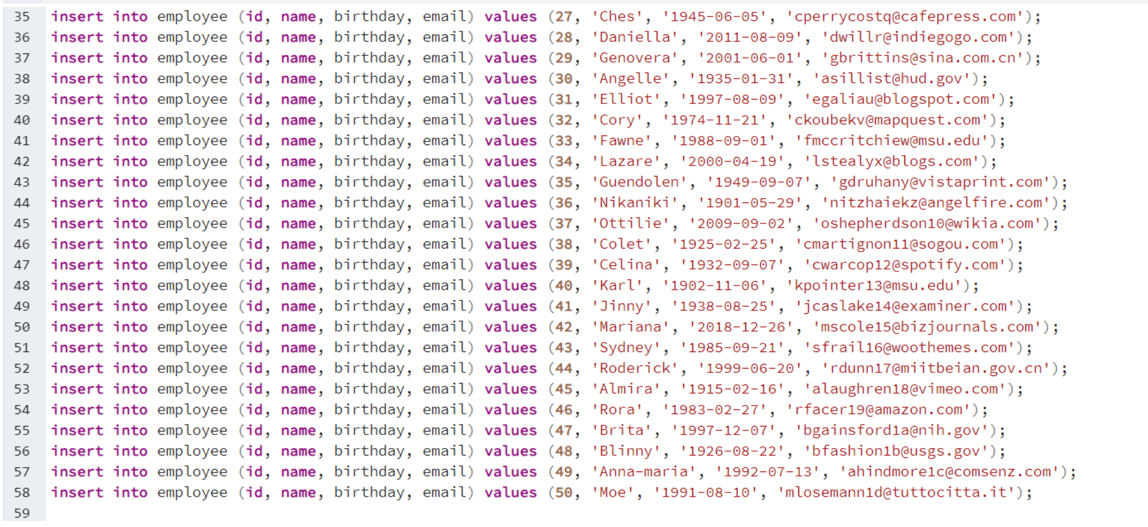
Homework-8



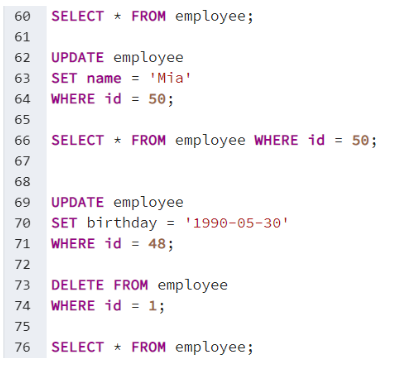
```sql
CREATE TABLE employee(
    id INT,
    name VARCHAR(50),
    birthday DATE,
    email VARCHAR(100)
);
```



```sql
insert into employee (id, name, birthday, email) values (1, 'Rubia', '2010-03-01', 'rraoux0@homestead.com');
insert into employee (id, name, birthday, email) values (2, 'Janessa', '1930-06-25', 'jbaulk1@domainmarket.com');
insert into employee (id, name, birthday, email) values (3, 'Cecilia', '1958-04-08', 'cdeandisie2@cloudflare.com');
insert into employee (id, name, birthday, email) values (4, 'Mathilda', '1906-08-05', 'mmcnally3@fc2.com');
insert into employee (id, name, birthday, email) values (5, 'Editha', '1960-05-18', 'edomney4@phpbb.com');
insert into employee (id, name, birthday, email) values (6, 'Tallie', '1952-06-04', 'tswale5@wp.com');
insert into employee (id, name, birthday, email) values (7, 'Jay', '1922-07-10', 'jrehn6@cafepress.com');
insert into employee (id, name, birthday, email) values (8, 'Lucine', '1952-03-12', 'lfinnimore7@com.com');
insert into employee (id, name, birthday, email) values (9, 'Lavena', '1934-05-12', 'lsmye8@reuters.com');
insert into employee (id, name, birthday, email) values (10, 'Caterina', '1945-07-26', 'cscarrott9@360.cn');
insert into employee (id, name, birthday, email) values (11, 'Thaddeus', '1959-04-16', 'tseagea@usda.gov');
insert into employee (id, name, birthday, email) values (12, 'Wallache', '2017-03-28', 'wtommeib@aboutads.info');
insert into employee (id, name, birthday, email) values (13, 'Yetta', '2016-08-12', 'ymawdittc@wunderground.com');
insert into employee (id, name, birthday, email) values (14, 'Bren', '1903-11-02', 'bmuzzollod@ovh.net');
insert into employee (id, name, birthday, email) values (15, 'Pierrette', '1972-09-10', 'pmariellee@edublogs.org');
insert into employee (id, name, birthday, email) values (16, 'Shelly', '1925-10-06', 'scampkinf@mac.com');
insert into employee (id, name, birthday, email) values (17, 'Corbet', '1936-03-08', 'creynaldsg@unicef.org');
insert into employee (id, name, birthday, email) values (18, 'Virginia', '2004-11-20', 'vmathieuh@phoca.cz');
insert into employee (id, name, birthday, email) values (19, 'Andromache', '1922-08-27', 'adenyukhini@baidu.com');
insert into employee (id, name, birthday, email) values (20, 'Brucie', '1965-06-11', 'bnorthcottj@whitehouse.gov');
insert into employee (id, name, birthday, email) values (21, 'Barrie', '1919-12-24', 'bminerdok@fema.gov');
insert into employee (id, name, birthday, email) values (22, 'Ludovico', '1960-02-20', 'lmussettil@bing.com');
insert into employee (id, name, birthday, email) values (23, 'Gilbertina', '1934-03-01', 'gdeschellem@cargocollective.com');
insert into employee (id, name, birthday, email) values (24, 'Sylvester', '2019-11-07', 'smayburyn@fastcompany.com');
insert into employee (id, name, birthday, email) values (25, 'Joshua', '2019-11-09', 'jmcartano@multiply.com');
insert into employee (id, name, birthday, email) values (26, 'Amery', '2003-08-17', 'azanetellop@phpbb.com');
```

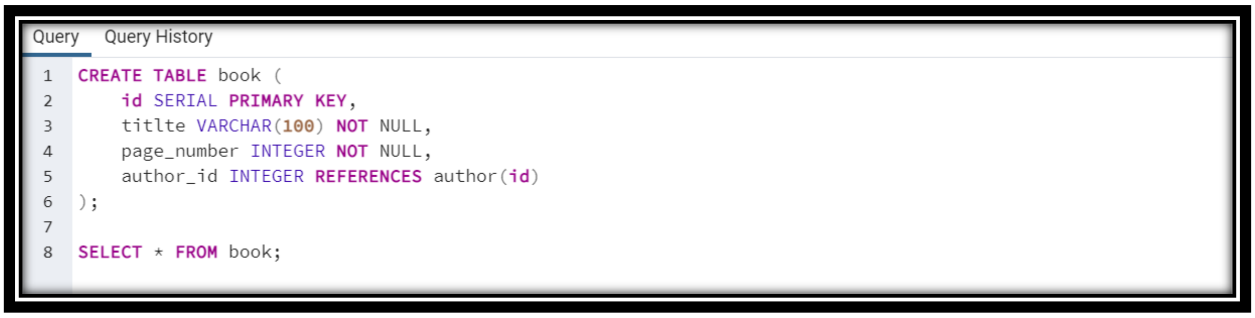


```sql
insert into employee (id, name, birthday, email) values (27, 'Ches', '1945-06-05', 'cperrycostq@cafepress.com');
insert into employee (id, name, birthday, email) values (28, 'Daniella', '2011-08-09', 'dwillr@indiegogo.com');
insert into employee (id, name, birthday, email) values (29, 'Genovera', '2001-06-01', 'gbrittins@sina.com.cn');
insert into employee (id, name, birthday, email) values (30, 'Angelle', '1935-01-31', 'asillist@hud.gov');
insert into employee (id, name, birthday, email) values (31, 'Elliot', '1997-08-09', 'egaliau@blogspot.com');
insert into employee (id, name, birthday, email) values (32, 'Cory', '1974-11-21', 'ckoubekv@mapquest.com');
insert into employee (id, name, birthday, email) values (33, 'Fawne', '1988-09-01', 'fmccritchiew@msu.edu');
insert into employee (id, name, birthday, email) values (34, 'Lazare', '2000-04-19', 'lstealyx@blogs.com');
insert into employee (id, name, birthday, email) values (35, 'Guendolen', '1949-09-07', 'gdruhany@vistaprint.com');
insert into employee (id, name, birthday, email) values (36, 'Nikaniki', '1901-05-29', 'nitzhaiekz@angelfire.com');
insert into employee (id, name, birthday, email) values (37, 'Ottilie', '2009-09-02', 'oshepherdson10@wikia.com');
insert into employee (id, name, birthday, email) values (38, 'Colet', '1925-02-25', 'cmartignon11@sogou.com');
insert into employee (id, name, birthday, email) values (39, 'Celina', '1932-09-07', 'cwarcop12@spotify.com');
insert into employee (id, name, birthday, email) values (40, 'Karl', '1902-11-06', 'kpointer13@msu.edu');
insert into employee (id, name, birthday, email) values (41, 'Jinny', '1938-08-25', 'jcaslake14@examiner.com');
insert into employee (id, name, birthday, email) values (42, 'Mariana', '2018-12-26', 'mscole15@bizjournals.com');
insert into employee (id, name, birthday, email) values (43, 'Sydney', '1985-09-21', 'sfrail16@woothemes.com');
insert into employee (id, name, birthday, email) values (44, 'Roderick', '1999-06-20', 'rdunn17@miitbeian.gov.cn');
insert into employee (id, name, birthday, email) values (45, 'Almira', '1915-02-16', 'alaughren18@vimeo.com');
insert into employee (id, name, birthday, email) values (46, 'Rora', '1983-02-27', 'rfacer19@amazon.com');
insert into employee (id, name, birthday, email) values (47, 'Brita', '1997-12-07', 'bgainsford1a@nih.gov');
insert into employee (id, name, birthday, email) values (48, 'Blinny', '1926-08-22', 'bfashion1b@usgs.gov');
insert into employee (id, name, birthday, email) values (49, 'Anna-maria', '1992-07-13', 'ahindmore1c@comsenz.com');
insert into employee (id, name, birthday, email) values (50, 'Moe', '1991-08-10', 'mlosemann1d@tuttocitta.it');
```



```sql
SELECT * FROM employee;

UPDATE employee
SET name = 'Mia'
WHERE id = 50;

SELECT * FROM employee WHERE id = 50;


UPDATE employee
SET birthday = '1990-05-30'
WHERE id = 48;

DELETE FROM employee
WHERE id = 1;

SELECT * FROM employee;
```

PRIMARY KEY – FOREIGN KEY



```
CREATE TABLE book (
    id SERIAL PRIMARY KEY,
    titlte VARCHAR(100) NOT NULL,
    page_number INTEGER NOT NULL,
    author_id INTEGER REFERENCES author(id)
);

SELECT * FROM book;
```

ALTER

The ALTER keyword is used to modify an existing table.

```
ALTER TABLE <table_name>
ALTER COLUMN <column_name>
SET --NOT NULL–(constraint);
```

UNIQUE

```
CREATE TABLE Employees (
    ---
    email VARCHAR(100) UNIQUE,
    ----
);
```

ALTER and UNIQUE

```
ALTER TABLE <table_name>
ADD UNIQUE <column_name>
```

CHECK

```
CREATE TABLE Employees (
    ---
    age INTEGER CHECK (age>=18)
    ----
);
```

ALTER and CHECK

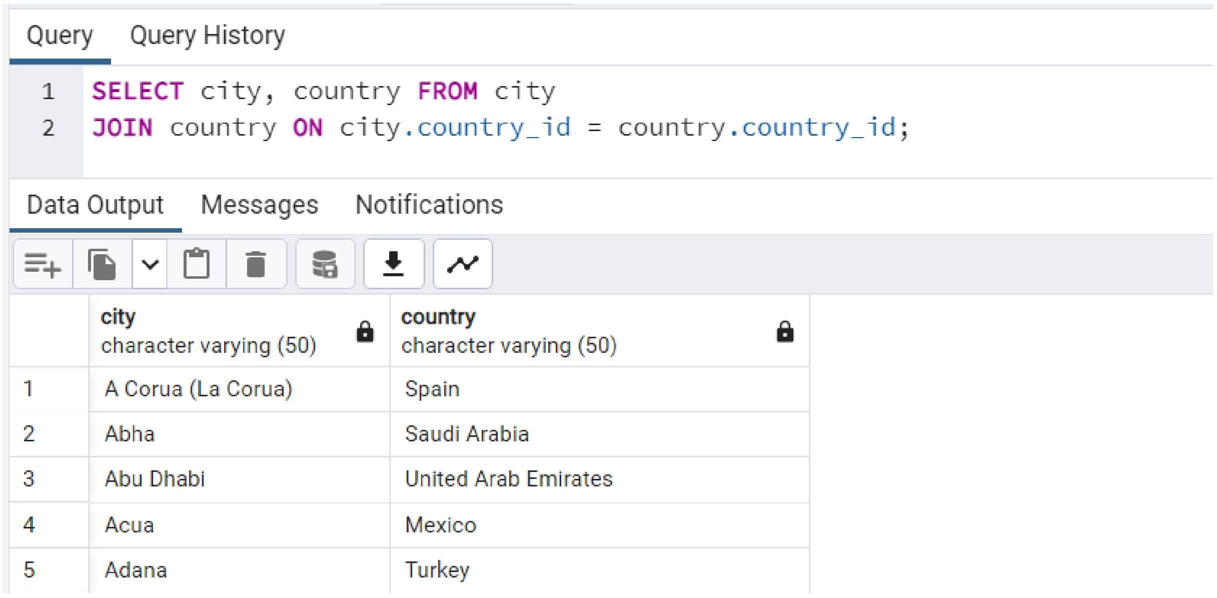
```
ALTER TABLE <table_name>
ADD CHECK (age>=18)
```

INNER JOIN

```
SELECT book.title, author.first_name, author.last_name
FROM book
JOIN author ON author.id = book.author_id;
```

Homework-9

1- **Write the INNER JOIN query where we can see the city and country names in the city table and the country table together.**



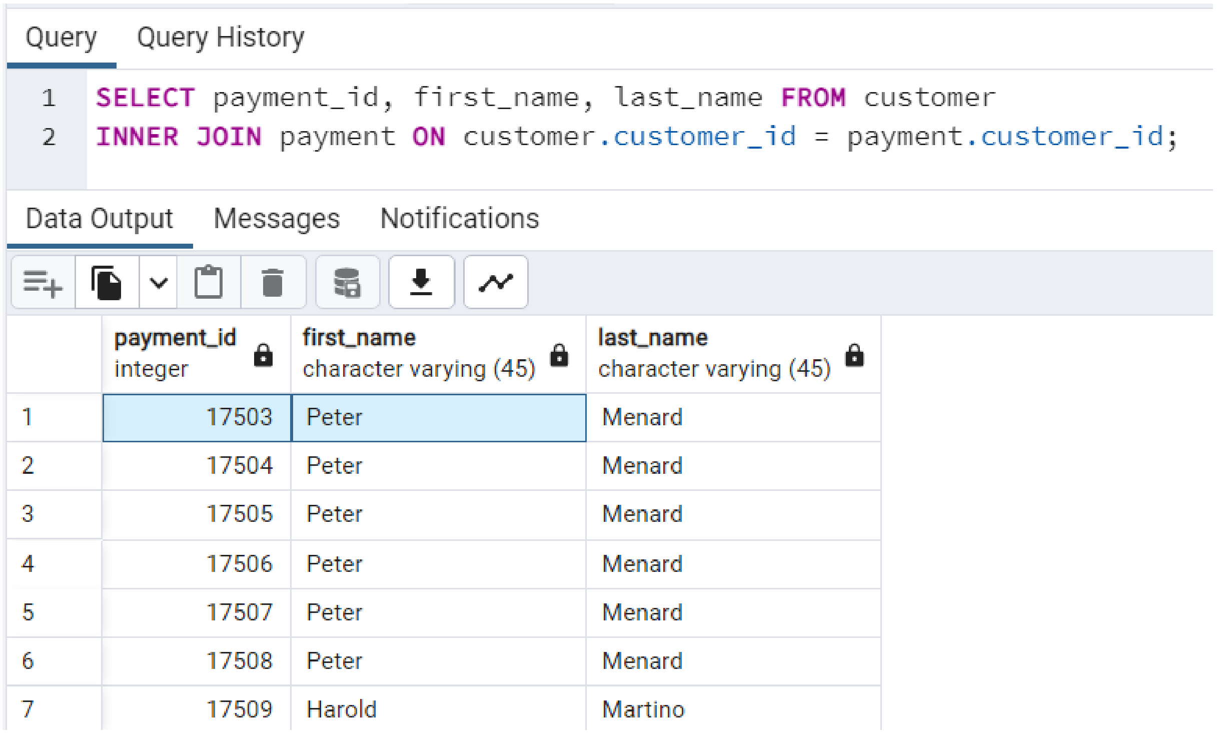
Query | Query History

```
SELECT city, country FROM city
JOIN country ON city.country_id = country.country_id;
```

Data Output | Messages | Notifications

	city character varying (50)	country character varying (50)
1	A Corua (La Corua)	Spain
2	Abha	Saudi Arabia
3	Abu Dhabi	United Arab Emirates
4	Acua	Mexico
5	Adana	Turkey

2- **Write the INNER JOIN query where we can see the customer table and the payment_id in the payment table and the first_name and last_name names in the customer table together.**



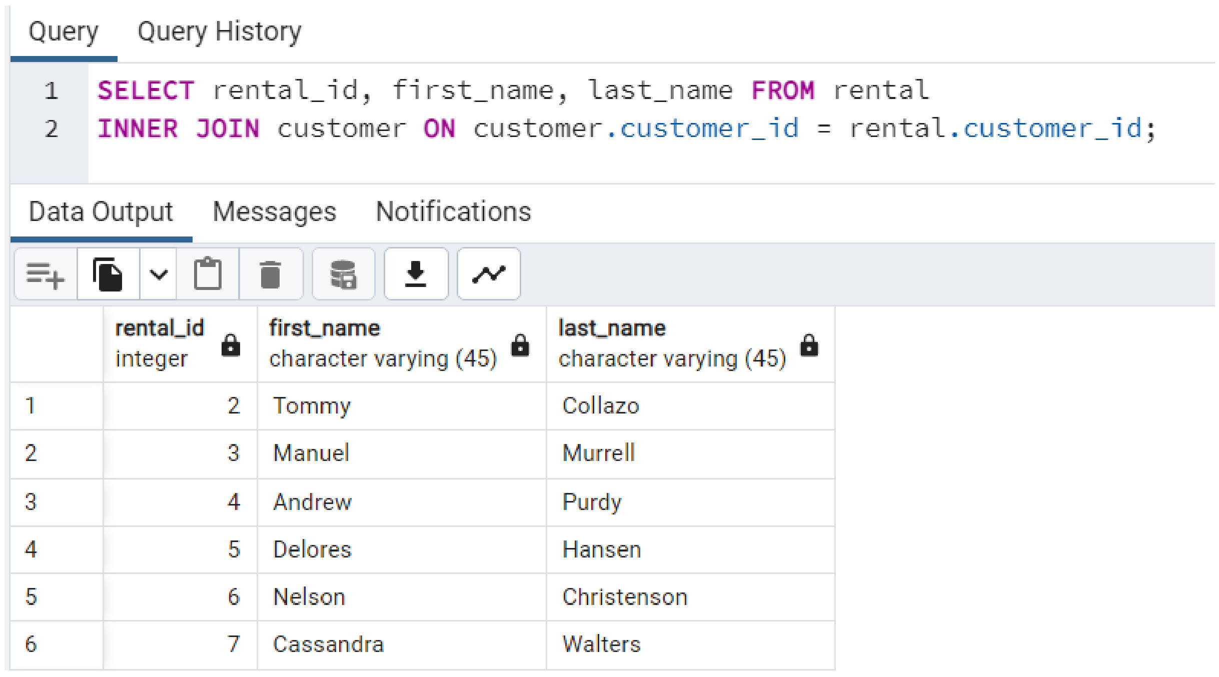
Query | Query History

```
SELECT payment_id, first_name, last_name FROM customer
INNER JOIN payment ON customer.customer_id = payment.customer_id;
```

Data Output | Messages | Notifications

	payment_id integer	first_name character varying (45)	last_name character varying (45)
1	17503	Peter	Menard
2	17504	Peter	Menard
3	17505	Peter	Menard
4	17506	Peter	Menard
5	17507	Peter	Menard
6	17508	Peter	Menard
7	17509	Harold	Martino

3- Write the INNER JOIN query where we can see the customer table and the rental_id in the rental table and the first_name and last_name names in the customer table together.



```sql
SELECT rental_id, first_name, last_name FROM rental
INNER JOIN customer ON customer.customer_id = rental.customer_id;
```

	rental_id integer	first_name character varying (45)	last_name character varying (45)
1	2	Tommy	Collazo
2	3	Manuel	Murrell
3	4	Andrew	Purdy
4	5	Delores	Hansen
5	6	Nelson	Christenson
6	7	Cassandra	Walters