```
WHERE ...... > ......... < ........ →
```

```
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

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 ②

--* → 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

<pre>SELECT DISTINCT <columnname>,</columnname></pre>	<columnname>,</columnname>	
<pre>FROM <tablename>;</tablename></pre>		

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:

```
INSERT INTO author (first_name, last_name, email, birthday)
   2
           ('Görkem', 'Töre', 'gorkemtore1@gmail.com', '2002-09-24'),
   3
           ('Mustafa','Çetindağ', 'mcetindag@hotmail.com', '1988-12-24'),
  4
   5
           ('Beyza','Töre','beyza@yandex.com','2004-8-10'),
           ('Selin', 'Güler', 'selinglr@gmail.com', '1999-02-20'),
   6
           ('Hasret','Yavuz','hasret02@hotmail.com','1995-04-21');
   7
OUTPUT:
 Query Query History
  1 SELECT * FROM author;
 Data Output Messages
                        Notifications
                                                         email
                  first_name
                                      last_name
                                                                              birthday
      [PK] integer
                                                         character varying (100)
                  character varying (50)
                                      character varying (50)
                                                                              date
1
                  Görkem
                                                          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
                  Selin
                                      Güler
                                                          selinglr@gmail.com
                                                                              1999-02-20
 4
                4
5
                  Hasret
                                      Yavuz
                                                          hasret02@hotmail.com
                                                                              1995-04-21
COPYING TABLE SCHEMA :
      --copy table
      CREATE TABLE author2 (LIKE author);
  2
 Query Query History
    SELECT * FROM author2;
 Data Output
             Messages
                         Notifications
 =,
```

Copied schema but author2 table has not any data!

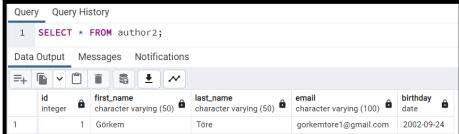
character varying (50)

character varying (100)

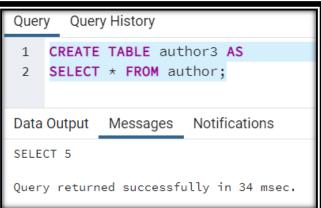
character varying (50)

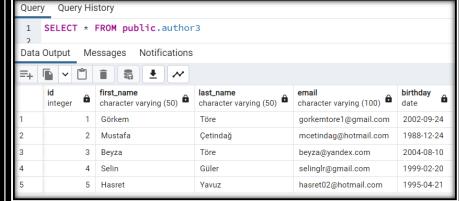
INSERTING author TO author2:





COPYING TABLE WITH DATAS:





DROP TABLE:

```
Query Query History

1 --DROP TABLE author2;
2 --DROP TABLE IF EXISTS author2;
3 --both are usable
```

UPDATE SYNTAX

DELETE SYNTAX

```
DELETE FROM <tablo_adi>
WHERE <kosul_adi>;
```

```
Query Query History
            CREATE TABLE employee(
    2
                      id INT,
                       name VARCHAR(50),
   3
                      birthday DATE,
   4
   5
                       email VARCHAR(100)
    6
           );
   7
   8
        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', 'tswales@wp.com');
        insert into employee (id, name, birthday, email) values (7, 'Jay', '1922-07-10', 'jrehn6@cafepress.com');
15
       insert into employee (id, name, birthday, email) values (7, Jay , 1922-07-10 , ]] employee (id, name, birthday, email) values (8, 'Lucina', '1952-03-12', 'lfinnimore7@com.com'); insert into employee (id, name, birthday, email) values (9, 'Lavena', '1934-05-12', 'lsmye8@reuters.com');
16
        insert into employee (id, name, birthday, email) values (10, 'Caterina', '1945-07-26', 'cscarrott9@360.cn');
19
        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', 'wtommerb@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');
20
21
22
        insert into employee (id, name, birthday, email) values (15, 'Pierrette', '1972-09-10', 'pmariellee@edublogs.org');
23
       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');
24
25
       insert into employee (id, name, birthday, email) values (18, 'Virginia', '2004-11-20', 'wmathieuh@phoca.cz'); insert into employee (id, name, birthday, email) values (19, 'Andromache', '1922-08-27', 'adenyukhini@baidu.com');
27
       insert into employee (id, name, birthday, email) values (20, 'Brucie', '1965-06-11', 'bnorthcott]œwhitehouse.gov'); insert into employee (id, name, birthday, email) values (21, 'Barrie', '1919-12-24', 'bminerdok@fema.gov');
28
        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, 'Gibbertina', '1934-03-01', 'gdeschellem@cargocollective.com'); insert into employee (id, name, birthday, email) values (24, 'Sylvester', '2019-11-07', 'smayburyn@fastcompany.com');
31
32
       insert into employee (id, name, birthday, email) values (25, 'Joshua', '2019-11-09', 'Smayburynerastcompany.com'); insert into employee (id, name, birthday, email) values (26, 'Amery', '2003-08-17', 'azanetellop@phpbb.com'); insert into employee (id, name, birthday, email) values (26, 'Amery', '2003-08-17', 'azanetellop@phpbb.com'); 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');
35
       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');
39
40
                                                                                                                            'Fawne', '1988-09-01', 'fmccritchiew@msu.edu');
        insert into employee (id, name, birthday, email) values (33,
        insert into employee (id, name, birthday, email) values (34,
                                                                                                                            'Lazare', '2000-04-19', 'lstealyx@blogs.com');
42
        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');
43
                                                                                                                             'Colet', '1925-02-25', 'cmartignon11@sogou.com');
        insert into employee (id, name, birthday, email) values (38,
        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');
47
48
        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');
52
        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');
56
59
      SELECT * FROM employee;
60
61
        UPDATE employee
         SET name = 'Mia'
        WHERE id = 50:
64
65
        SELECT * FROM employee WHERE id = 50;
66
67
68
69
        UPDATE employee
        SET birthday = '1990-05-30'
 70
 72
73
        DELETE FROM employee
74
        WHERE id = 1;
76 SELECT * FROM employee;
```

PRIMARY KEY - FOREIGN KEY

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

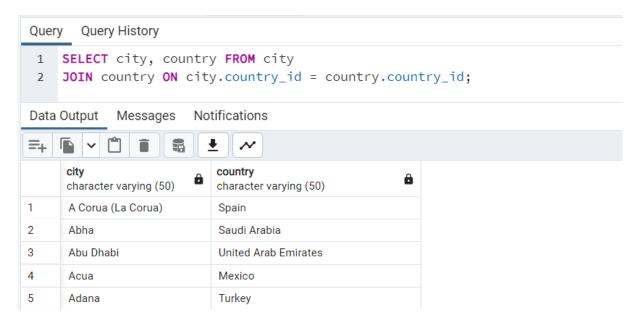
```
ALTER TABLE <table_name>
ADD CHECK (age>=18)
```

INNER JOIN = JOIN

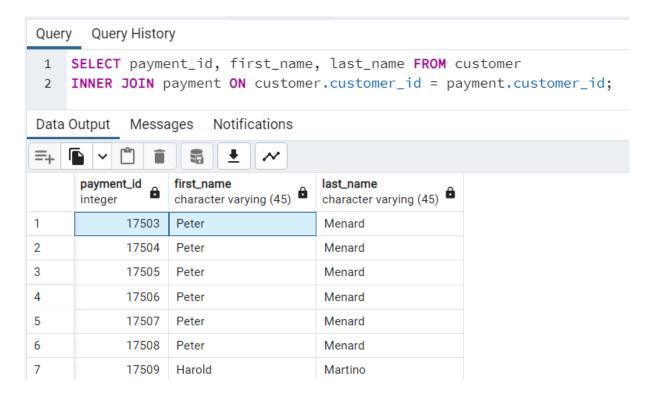
```
SELECT book.title, author.first_name, author.last_name
FROM book
JOIN author ON author.id = book.author_id;
```

Homework-9

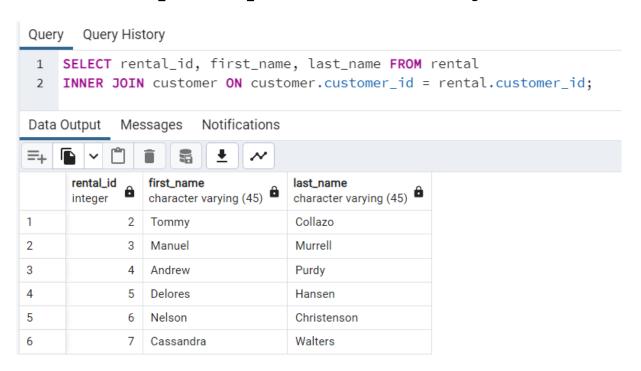
1- Write the INNER JOIN query where we can see the city and country names in the city table and the country table together.



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.



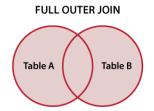
3- Write the INNER JOIN query where we can see the customer table and the rental_id in the rental table and the first_name and last_name names in the customer table together.





FULL JOIN = FULL OUTER JOIN

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



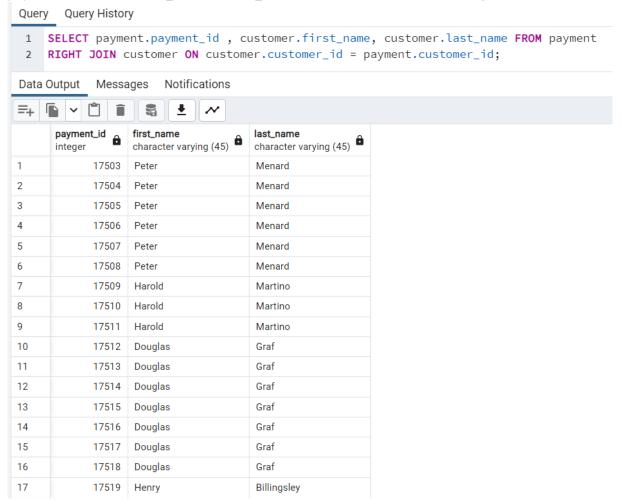
We can use, FULL JOIN WITH WHERE CONDITION as INNER JOIN!

Homework-10

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

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

2- Write the RIGHT 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.



3- Write the FULL 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.

