

# CONCEPTOS FUNDAMENTALES DE DOCKER

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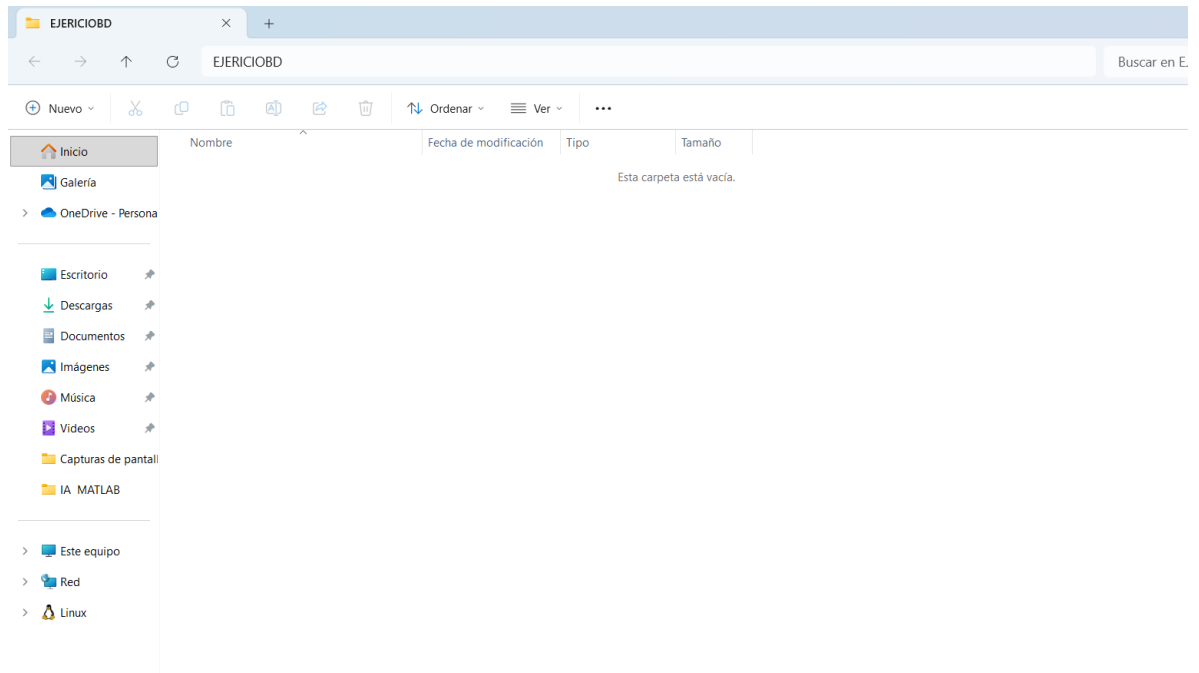
GESTOR DE EL CONOCIMIENTO: Alexander Matallana

CHIA, CUNDINAMARCA

23 sep. 25

## 1. Crear base de datos

### Crear carpeta



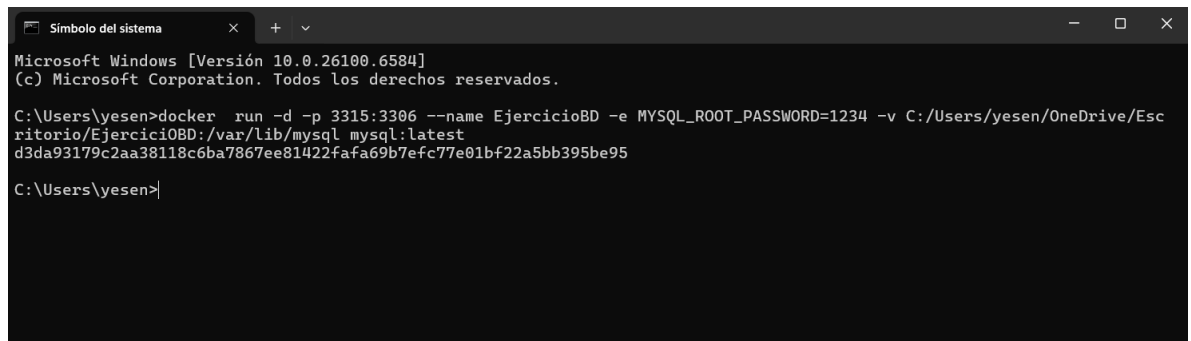
ingresar a la terminal

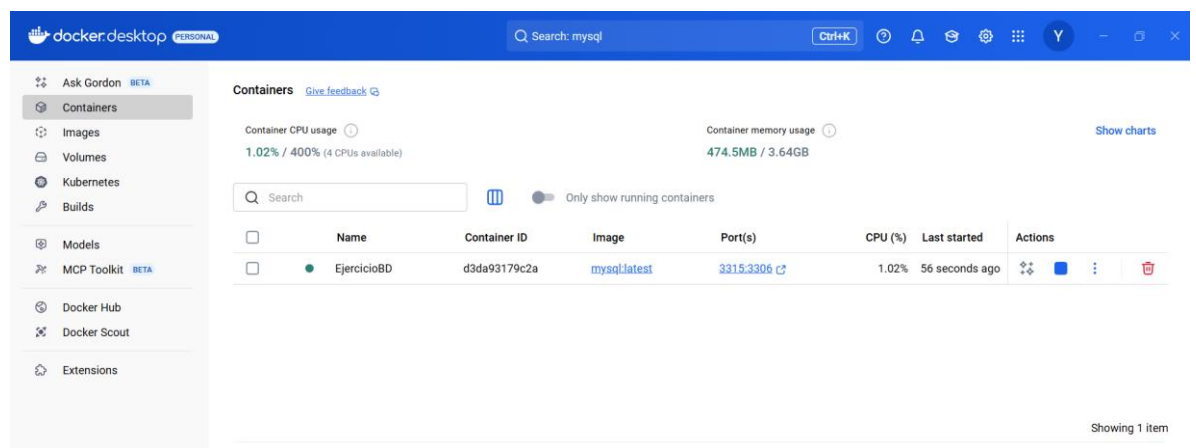
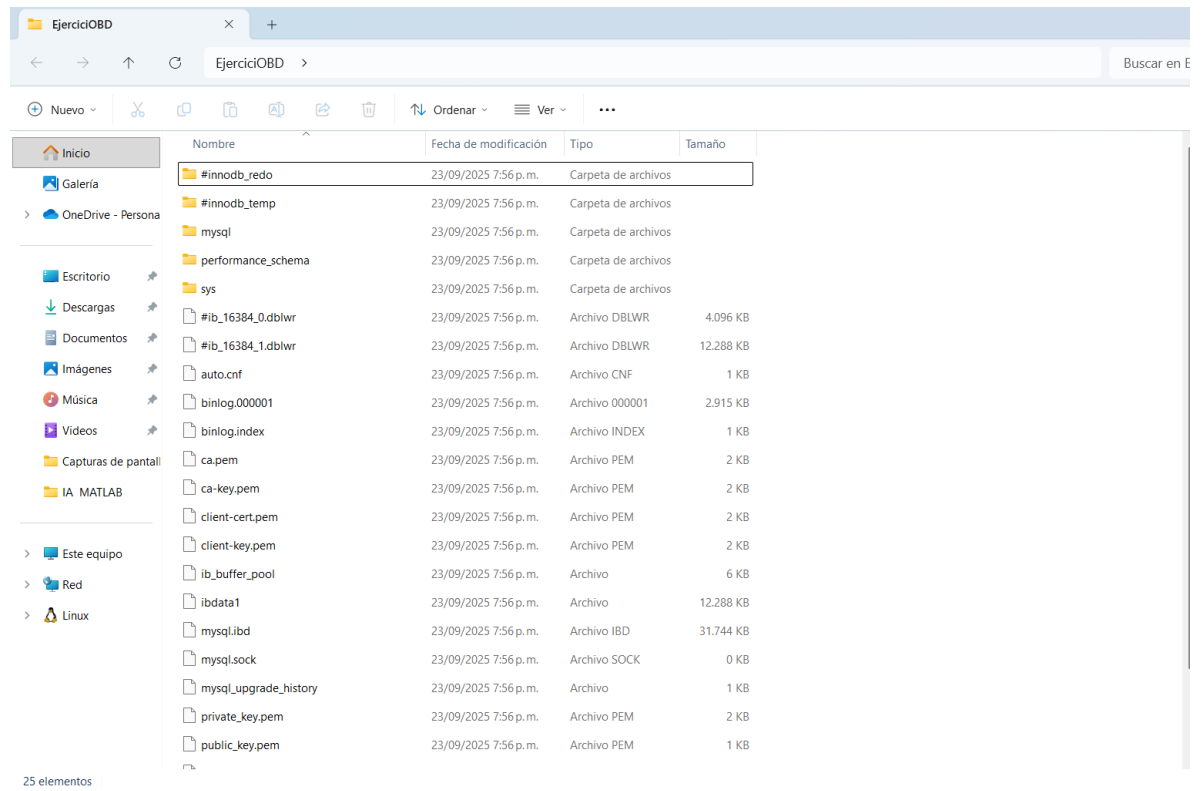
comando:

```
docker run -d -p 3315:3306 --name EJERCICIOBD -e
```

```
MYSQL_ROOT_PASSWORD=1234 -v
```

```
C:/Users/yesen/OneDrive/Escritorio/EJERCICIOBD :/var/lib/mysql mysql:lates
```





Ingresamos al contenedor

```
C:\Users\yesen>docker exec -it EjercicioBD mysql -u root -p1234
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 9.4.0 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> |
```

```
mysql> create database EjercicioBD;
Query OK, 1 row affected (0.021 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| EjercicioBD |
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.033 sec)

mysql> |
```

## 2. Crear tablas con las respectivas relaciones

```
mysql> show tables;
+-----+
| Tables_in_ejerciciobd |
+-----+
| cliente |
| comercial |
| pedido |
+-----+
3 rows in set (0.014 sec)

mysql> |
```

TABLA 1

```
create table persona(ID int auto_increment primary key, nombre varchar(100)
not null, apellido1 varchar(100) not null, apellido2 varchar(100) not null,ciudad
varchar(100) not nul
l, comision float not null);
```

```
mysql> use EjercicioBD
Database changed
mysql> create table comercial(ID int auto_increment primary key, nombre varchar(100) not null, apellido1 varchar(100) not null, apellido2 varchar(100) not null, ciudad varchar(100) not null, comision float not null);
Query OK, 0 rows affected (0.082 sec)

mysql>
```

```
mysql> show table
-> show tables;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 's
how tables' at line 2
mysql> show table show tables;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 's
how tables' at line 1
mysql> show tables;
+-----+
| Tables_in_ejerciciobd |
+-----+
| comercial              |
+-----+
1 row in set (0.005 sec)

mysql> describe comercial
-> describe comercial;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'd
escribe comercial' at line 2
mysql> describe comercial;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| ID     | int  | NO   | PRI | NULL    | auto_increment |
| nombre | varchar(100) | NO   |     | NULL    |               |
| apellido1 | varchar(100) | NO   |     | NULL    |               |
| apellido2 | varchar(100) | NO   |     | NULL    |               |
| ciudad | varchar(100) | NO   |     | NULL    |               |
| comision | float | NO   |     | NULL    |               |
+-----+
6 rows in set (0.016 sec)

mysql>
```

## TABLA 2

create table pedido(ID int (10) auto\_increment primary key,cantidad double not null,fecha date not null,id\_cliente int (10) not null,comercial\_id int (10) not null, foreign key (comercial\_id) references comercial(ID));

```
mysql> create table pedido(ID int (10) auto_increment primary key,cantidad double not null,fecha date not null,id_cliente int (10) not null,comercial_id int (10) not null, foreign key (comercial_id) references comercial(ID));
Query OK, 0 rows affected, 3 warnings (0.186 sec)

mysql> show tables;
+-----+
| Tables_in_ejerciciobd |
+-----+
| comercial              |
| pedido                 |
+-----+
2 rows in set (0.017 sec)

mysql> describe pedido
-> describe pedido;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'describe pedido' at line 2
mysql> describe pedido;
+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| ID     | int  | NO   | PRI | NULL    | auto_increment |
| cantidad | double | NO   |     | NULL    |               |
| fecha  | date | NO   |     | NULL    |               |
| id_cliente | int  | NO   |     | NULL    |               |
| comercial_id | int  | NO   | MUL | NULL    |               |
+-----+
5 rows in set (0.006 sec)
```

## Tabla 3

create table cliente (id INT AUTO\_INCREMENT PRIMARY KEY, nombre VARCHAR(100) NOT NULL,apellido1 VARCHAR(100) NOT NULL,apellido2

VARCHAR(100) NOT NULL, ciudad VARCHAR(100) NOT NULL, categoria INT NOT NULL);

```
mysql> describe cliente;
```

| Field     | Type         | Null | Key | Default | Extra          |
|-----------|--------------|------|-----|---------|----------------|
| id        | int          | NO   | PRI | NULL    | auto_increment |
| nombre    | varchar(100) | NO   |     | NULL    |                |
| apellido1 | varchar(100) | NO   |     | NULL    |                |
| apellido2 | varchar(100) | NO   |     | NULL    |                |
| ciudad    | varchar(100) | NO   |     | NULL    |                |
| categoria | int          | NO   |     | NULL    |                |

```
6 rows in set (0.007 sec)

mysql> |
```

### 3. Insertar 10 registros en cada tabla

#### Comercial

```
mysql> insert into comercial (nombre, apellido1, apellido2, ciudad, comision) VALUES('Juan','Santos','Garcia','Bogot',0.15),('Maria','Hernandez','Rojas','Cajic',0.20),('Carlos','Lopez','Diaz','Cha',0.10),('Laura','Torres','Mendoza','Zipaquir',0.18),('Diego','Gutierrez','Suarez','Bogot',0.25),('Carolina','Vega','Ortiz','Cajic',0.12),('Felipe','Rodriguez','Perez','Cha',0.14),('Juliana','Martinez','Castro','Bogot',0.22),('Sebastian','Ramirez','Morales','Zipaquir',0.19),('Valentina','Cruz','Lopez','Cha',0.17);
Query OK, 10 rows affected (0.013 sec)
Records: 10 Duplicates: 0 Warnings: 0

mysql> SELECT * FROM comercial;
```

| ID | nombre    | apellido1 | apellido2 | ciudad   | comision |
|----|-----------|-----------|-----------|----------|----------|
| 1  | Juan      | Santos    | Garcia    | Bogot    | 0.15     |
| 2  | Maria     | Hernandez | Rojas     | Cajic    | 0.2      |
| 3  | Carlos    | Lopez     | Diaz      | Cha      | 0.1      |
| 4  | Laura     | Torres    | Mendoza   | Zipaquir | 0.18     |
| 5  | Diego     | Gutierrez | Suarez    | Bogot    | 0.25     |
| 6  | Carolina  | Vega      | Ortiz     | Cajic    | 0.12     |
| 7  | Felipe    | Rodriguez | Perez     | Cha      | 0.14     |
| 8  | Juliana   | Martinez  | Castro    | Bogot    | 0.22     |
| 9  | Sebastian | Ramirez   | Morales   | Zipaquir | 0.19     |
| 10 | Valentina | Cruz      | Lopez     | Cha      | 0.17     |

```
10 rows in set (0.002 sec)

mysql> |
```

#### Pedido

```
mysql> SELECT * FROM pedido;
```

| id | cantidad | fecha      | id_cliente | id_comercial |
|----|----------|------------|------------|--------------|
| 1  | 500      | 2025-03-01 | 1          | 1            |
| 2  | 1200     | 2025-09-02 | 2          | 2            |
| 3  | 800      | 2025-07-03 | 3          | 3            |
| 4  | 2000     | 2024-10-05 | 4          | 4            |
| 5  | 1500     | 2025-05-07 | 5          | 5            |
| 6  | 600      | 2025-11-08 | 6          | 6            |
| 7  | 3000     | 2025-08-10 | 7          | 7            |
| 8  | 700      | 2025-06-12 | 8          | 8            |
| 9  | 2500     | 2025-02-15 | 9          | 9            |
| 10 | 4000     | 2025-05-20 | 10         | 10           |

```
10 rows in set (0.001 sec)

mysql> |
```

## Cientes

```
mysql> insert into cliente (nombre, apellido1, apellido2, ciudad, categoria) VALUES('Andres','Lopez','Perez','Bogot',1),('Dana','Martinez','Suarez','Cajic',3),('Pablo','Gomez','Diaz','Zipaquir',3),('Paula','Rojas','Castro','Cha',1),('Antonio','Vargas','Lozano','Bogot',2),('Paco','Moreno','Gutierrez','Cajic',1),('Alejandro','Sanchez','Torres','Cha',3),('Pablo','Ramirez','Ortiz','Bogot',2),('Adrian','Diaz','Martinez','Zipaquir',1),-> ('Camila','Cruz','Fernandez','Cajic',2);
Query OK, 10 rows affected (0.020 sec)
Records: 10 Duplicates: 0 Warnings: 0

mysql> SELECT *
-> FROM cliente;
+----+-----+-----+-----+-----+
| id | nombre | apellido1 | apellido2 | ciudad | categoria |
+----+-----+-----+-----+-----+
| 1 | Andres | Lopez | Perez | Bogot | 1 |
| 2 | Dana | Martinez | Suarez | Cajic | 3 |
| 3 | Pablo | Gomez | Diaz | Zipaquir | 3 |
| 4 | Paula | Rojas | Castro | Cha | 1 |
| 5 | Antonio | Vargas | Lozano | Bogot | 2 |
| 6 | Paco | Moreno | Gutierrez | Cajic | 1 |
| 7 | Alejandro | Sanchez | Torres | Cha | 3 |
| 8 | Pablo | Ramirez | Ortiz | Bogot | 2 |
| 9 | Adrian | Diaz | Martinez | Zipaquir | 1 |
| 10 | Camila | Cruz | Fernandez | Cajic | 2 |
+----+-----+-----+-----+-----+
10 rows in set (0.004 sec)
```

4. Devuelve un listado con todos los pedidos que se han realizado. Los pedidos deben estar ordenados por la fecha de realización, mostrando en primer lugar los pedidos más recientes.

```
mysql> select * from pedido order by fecha desc;
+----+-----+-----+-----+-----+
| id | cantidad | fecha | id_cliente | id_comercial |
+----+-----+-----+-----+-----+
| 6 | 600 | 2025-11-08 | 6 | 6 |
| 2 | 1200 | 2025-09-02 | 2 | 2 |
| 7 | 3000 | 2025-08-10 | 7 | 7 |
| 3 | 800 | 2025-07-03 | 3 | 3 |
| 8 | 700 | 2025-06-12 | 8 | 8 |
| 10 | 4000 | 2025-05-20 | 10 | 10 |
| 5 | 1500 | 2025-05-07 | 5 | 5 |
| 1 | 500 | 2025-03-01 | 1 | 1 |
| 9 | 2500 | 2025-02-15 | 9 | 9 |
| 4 | 2000 | 2024-10-05 | 4 | 4 |
+----+-----+-----+-----+-----+
10 rows in set (0.001 sec)
```

```
mysql> |
```

```
paquira ,0.19),('Valentina','Cruz','Lopez','Chia',0.17);
```

5. Listar todos los datos de los dos pedidos de mayor valor.

```
select * from pedido ORDER BY cantidad DESC LIMIT 5;
```

```
mysql> select * from pedido ORDER BY cantidad DESC LIMIT 6;
+-----+-----+-----+-----+-----+
| id | cantidad | fecha      | id_cliente | id_comercial |
+-----+-----+-----+-----+-----+
| 10 | 4000     | 2025-05-20 | 10         | 10           |
| 7  | 3000     | 2025-08-10 | 7          | 7            |
| 9  | 2500     | 2025-02-15 | 9          | 9            |
| 4  | 2000     | 2024-10-05 | 4          | 4            |
| 5  | 1500     | 2025-05-07 | 5          | 5            |
| 2  | 1200     | 2025-09-02 | 2          | 2            |
+-----+-----+-----+-----+-----+
6 rows in set (0.001 sec)

mysql> |
```

6. Devuelve un listado con los identificadores de los clientes que han realizado algún pedido. Tenga en cuenta que no debe mostrar identificadores que estén repetidos.

```
select distinct id_cliente from pedido;
```

```
mysql> select distinct id_cliente from pedido;
+-----+
| id_cliente |
+-----+
| 1          |
| 2          |
| 3          |
| 4          |
| 5          |
| 6          |
| 7          |
| 8          |
| 9          |
| 10         |
+-----+
```

7. Devuelve el valor de la comisión de mayor valor que existe en la tabla comercial.

```
SELECT MAX(comision) AS mayor_comision FROM comercial;
```



```

Reference Manual
mysql> SELECT MAX(comision) AS mayor_comision FROM comercial;
+-----+
| mayor_comision |
+-----+
|          0.25 |
+-----+
1 row in set (0.009 sec)

mysql> |

```

8. Devuelve un listado de los nombres de los clientes que empiezan por A y terminan por N y también los nombres que empiezan por P. El listado deberá estar ordenado alfabéticamente.

SELECT nombreFROM cliente WHERE (nombre LIKE 'A%n') OR (nombre LIKE 'P%') ORDER BY nombre ASC;

```

mysql> SELECT nombreFROM cliente WHERE (nombre LIKE 'A%n') OR (nombre LIKE 'P%') ORDER BY nombre ASC;
ERROR 1054 (42S22): Unknown column 'nombreFROM' in 'field list'
mysql> SELECT nombre FROM cliente WHERE (nombre LIKE 'A%n') OR (nombre LIKE 'P%') ORDER BY nombre ASC;
+-----+
| nombre |
+-----+
| Adrian |
| Pablo  |
| Pablo  |
| Paco   |
| Paula  |
+-----+
5 rows in set (0.012 sec)

mysql> |

```

9. Devuelve un listado con el identificador, nombre y los apellidos de todos los clientes que han realizado algún pedido. El listado debe estar ordenado alfabéticamente y se deben eliminar los elementos repetidos.

select distinct c.id, c.nombre, c.apellido1, c.apellido2 from cliente c join  
pedido p on c.id = p.id\_clienteorder by c.nombre ASC,c.apellido1 ASC,  
c.apellido2 ASC;

```
Símbolo del sistema - docker x + v
mysql>
mysql>
mysql>
mysql> SELECT DISTINCT c.id, c.nombre, c.apellido1, c.apellido2 FROM cliente c JOIN pedido p ON c.id = p.id_cliente ORDER BY c
.nombre ASC, c.apellido1 ASC, c.apellido2 ASC;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for
the right syntax to use near 'BY c.nombre ASC, c.apellido1 ASC, c.apellido2 ASC' at line 1
mysql> SELECT DISTINCT c.id, c.nombre, c.apellido1, c.apellido2
-> FROM cliente c
-> JOIN pedido p ON c.id = p.id_cliente
-> ORDER BY c.nombre ASC, c.apellido1 ASC, c.apellido2 ASC;
+----+-----+-----+-----+
| id | nombre | apellido1 | apellido2 |
+----+-----+-----+-----+
| 9 | Adrian | Diaz | Martinez |
| 7 | Alejandro | Sanchez | Torres |
| 1 | Andres | Lopez | Perez |
| 5 | Antonio | Vargas | Lozano |
| 10 | Camila | Cruz | Fernandez |
| 2 | Dana | Martinez | Suarez |
| 3 | Pablo | Gomez | Diaz |
| 8 | Pablo | Ramirez | Ortiz |
| 6 | Paco | Moreno | Gutierrez |
| 4 | Paula | Rojas | Castro |
+----+-----+-----+-----+
10 rows in set (0.047 sec)

mysql>
```

10. Devuelve un listado que muestre todos los pedidos que ha realizado cada cliente. El resultado debe mostrar todos los datos de los pedidos y del cliente. El listado debe mostrar los datos de los clientes ordenados alfabéticamente.

select c.id, c.nombre, c.apellido1, c.apellido2, p.\* from cliente c join pedido p  
ON c.id = p.id\_cliente order c.nombre ASC, c.apellido1 ASC;

```
the right syntax to use near 'pedido p ON c.id = p.id_cliente ORDER BY c.nombre ASC, c.apellido1 ASC' at line 1
mysql> SELECT c.id, c.nombre, c.apellido1, c.apellido2, p.* FROM cliente c JOIN pedido p ON c.id = p.id_cliente ORDER BY c.no
bre ASC, c.apellido1 ASC;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for
the right syntax to use near 'pedido p ON c.id = p.id_cliente ORDER BY c.nombre ASC, c.apellido1 ASC' at line 1
mysql> SELECT c.id, c.nombre, c.apellido1, c.apellido2, p.* FROM cliente c JOIN pedido p ON c.id = p.id_cliente ORDER BY c.no
mbre ASC, c.apellido1 ASC;
+----+-----+-----+-----+----+-----+-----+-----+-----+
| id | nombre | apellido1 | apellido2 | id | cantidad | fecha | id_cliente | id_comercial |
+----+-----+-----+-----+----+-----+-----+-----+-----+
| 9 | Adrian | Diaz | Martinez | 9 | 2500 | 2025-02-15 | 9 | 9 |
| 7 | Alejandro | Sanchez | Torres | 7 | 3000 | 2025-08-10 | 7 | 7 |
| 1 | Andres | Lopez | Perez | 1 | 500 | 2025-03-01 | 1 | 1 |
| 5 | Antonio | Vargas | Lozano | 5 | 1500 | 2025-05-07 | 5 | 5 |
| 10 | Camila | Cruz | Fernandez | 10 | 4000 | 2025-05-20 | 10 | 10 |
| 2 | Dana | Martinez | Suarez | 2 | 1200 | 2025-09-02 | 2 | 2 |
| 3 | Pablo | Gomez | Diaz | 3 | 800 | 2025-07-03 | 3 | 3 |
| 8 | Pablo | Ramirez | Ortiz | 8 | 700 | 2025-06-12 | 8 | 8 |
| 6 | Paco | Moreno | Gutierrez | 6 | 600 | 2025-11-08 | 6 | 6 |
| 4 | Paula | Rojas | Castro | 4 | 2000 | 2024-10-05 | 4 | 4 |
+----+-----+-----+-----+----+-----+-----+-----+-----+
10 rows in set (0.022 sec)

mysql> |
```