

En esta práctica realizaremos algunos ejercicios para repasar las sentencias SQL.

Vete haciendo capturas de pantalla de todos los pasos que vayas dando, acompañándolas de comentarios descriptivos de los mismos.

CONTENIDO

APARTADO A

INVESTIGA EN INTERNET:

1.- Instalar y habilitar servidor de Bases de Datos MySQL en Ubuntu 22.04

```
ubuntu@ip-172-31-47-157:~$ sudo apt install -y mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
```

2.- Cambiar contraseña de root de MySQL

```
mysql> sudo mysql
-> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'root123456';
```

3.- Habilitar conexiones remotas al servidor MySQL

```
ubuntu@ip-172-31-47-157:~$ sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf
```

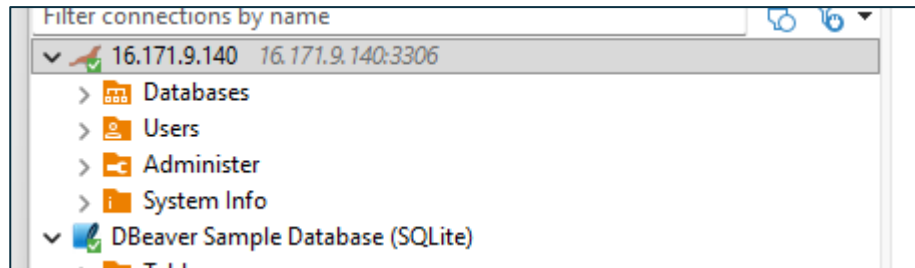
```
# Instead of skip-networking the default is now to listen on
# localhost which is more compatible and is what will be used
bind-address            = 0.0.0.0
mysqlx-bind-address     = 127.0.0.1
```

Modificamos el archivo mysql.cnf y añadimos la ip 0.0.0.0 para permitir la conexión desde cualquier IP.

4.- Instalar DBeaver Community



5.- Conectarse con DBeaver al servidor MySQL.

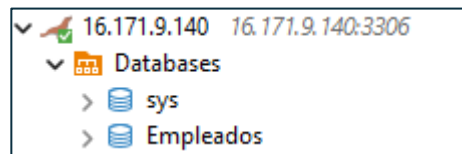
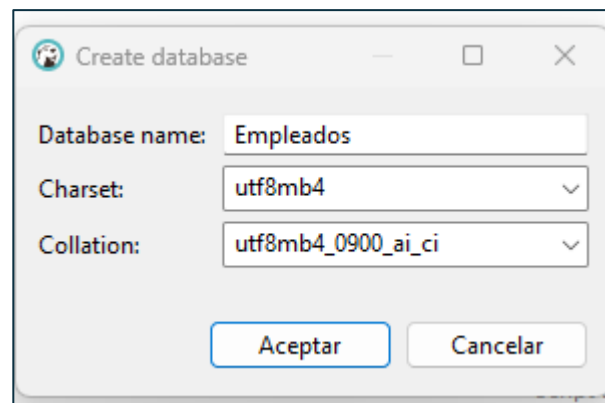


CONTENIDO

APARTADO B

1.- Crea desde *DBeaver* en tu servidor *MySQL* una base de datos llamada *empleados*.

Creemos directamente la base de daos desde DBeaver, también la podríamos hacer con el comando
CREATE DATABASE EMPLEADOS;



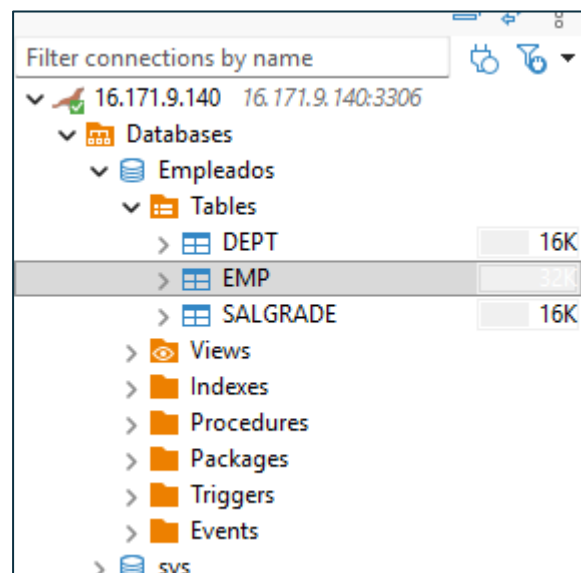
2.- Dentro de la base de datos anterior crea las tablas con los campos que se ven abajo y relaciones adecuadas entre las tablas:

- DEPT (DEPTNO, DNAME, LOC)
Cada fila representa un departamento, con su número de departamento, su nombre y la ciudad donde está localizado.
- EMP (ENO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
Cada fila representa un empleado. Sus columnas son: número de empleado, nombre del empleado, empleo, número del empleado que es su supervisor, fecha de ingreso, salario semanal, comisión y número de departamento al que está asignado.
- SALGRADE (GRADE, LOSAL, HISAL)
Cada fila representa un tramo de salarios, con el salario mínimo y el máximo, para ese tramo.

```
mysql> USE Empleados;
Database changed
mysql> CREATE TABLE DEPT (
    ->   DEPTNO INT PRIMARY KEY,
    ->   DNAME VARCHAR(20),
    ->   LOC VARCHAR(20)
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql>
mysql> CREATE TABLE EMP (
    ->   EMPNO INT PRIMARY KEY,
    ->   ENAME VARCHAR(20),
    ->   JOB VARCHAR(20),
    ->   MGR INT,
    ->   HIREDATE DATE,
    ->   SAL FLOAT,
    ->   COMM FLOAT,
    ->   DEPTNO INT,
    ->   FOREIGN KEY (DEPTNO) REFERENCES DEPT(DEPTNO)
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> 
mysql> CREATE TABLE SALGRADE (
    ->   GRADE INT,
    ->   LOSAL INT,
    ->   HISAL INT
    -> );
```



3.- Con las sentencias SQL adecuadas añade a cada tabla los registros siguientes:

DEPT

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

SALGRADE

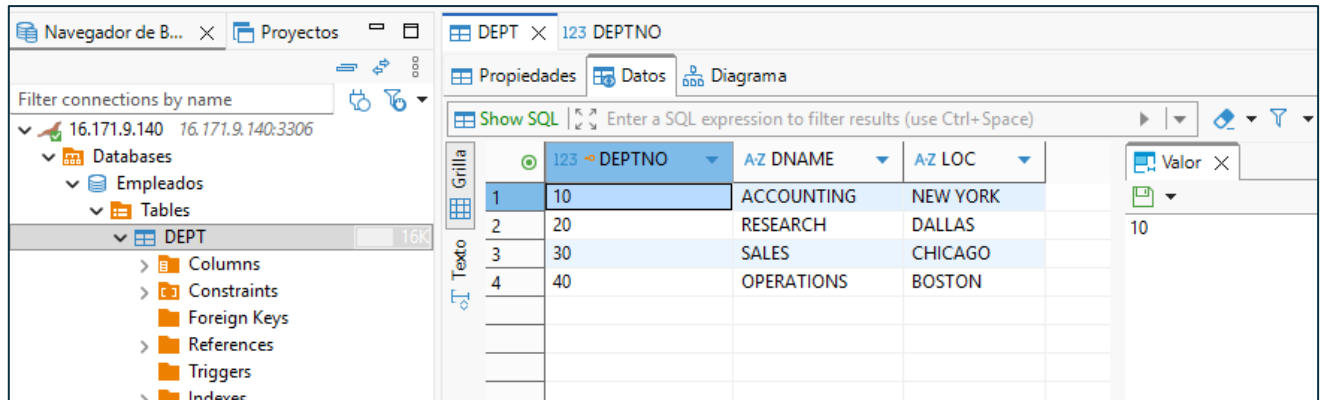
GRADE	LOSAL	HISAL
1	700	1200
2	1201	1400
3	1401	2000
4	2001	3000
5	3001	9999

EMP

ENO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17/12/80	800	NULL	20
7499	ALLEN	SALESMAN	7698	20/02/81	1600	300	30
7521	WARD	SALESMAN	7698	22/02/81	1250	500	30
7566	JONES	MANAGER	7839	02/04/81	2975	NULL	20
7654	MARTIN	SALESMAN	7698	28/10/81	1250	1400	30
7698	BLAKE	MANAGER	7839	01/05/81	2850	NULL	30
7782	CLARK	MANAGER	7839	09/06/81	2450	NULL	10
7788	SCOTT	ANALYST	7566	09/12/82	3000	NULL	20
7839	KING	PRESIDENT	NULL	17/11/81	5000	NULL	10
7844	TURNER	SALESMAN	7698	08/10/81	1500	0	30
7876	ADAMS	CLERK	7788	12/01/83	1100	NULL	20
7900	JAMES	CLERK	7698	03/12/81	950	NULL	30
7902	FORD	ANALYST	7566	03/12/81	3000	NULL	20
7934	MILLER	CLERK	7782	23/01/82	1300	NULL	10

```
mysql> INSERT INTO DEPT VALUES
-> (10, 'ACCOUNTING', 'NEW YORK'),
-> (20, 'RESEARCH', 'DALLAS'),
-> (30, 'SALES', 'CHICAGO'),
-> (40, 'OPERATIONS', 'BOSTON');
Query OK, 4 rows affected (0.01 sec)
Records: 4 Duplicates: 0 Warnings: 0

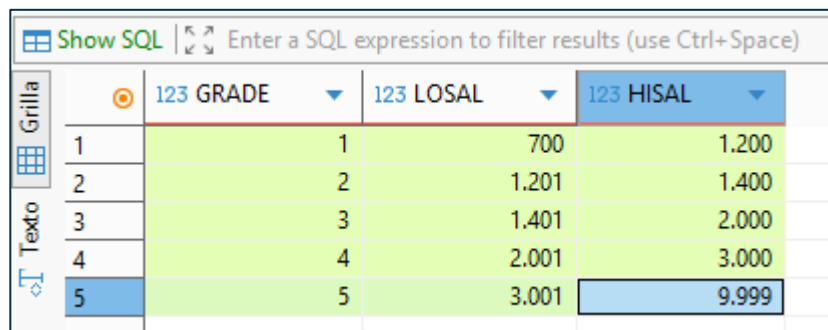
mysql>
```



The screenshot shows the DBeaver interface with the 'DEPT' table selected in the 'Navegador de Bases de Datos' pane. The table structure is displayed in the 'Propiedades' pane, and the data is shown in the 'Grilla' (Grid) view. The table has four columns: DEPTNO, DNAME, LOC, and a fourth column with a value of 10.

	DEPTNO	DNAME	LOC	
1	10	ACCOUNTING	NEW YORK	
2	20	RESEARCH	DALLAS	
3	30	SALES	CHICAGO	
4	40	OPERATIONS	BOSTON	

Añadimos directamente desde Dbeaver ya que son pocas líneas



The screenshot shows the DBeaver interface with the 'EMP' table selected. The table structure is displayed in the 'Propiedades' pane, and the data is shown in the 'Grilla' (Grid) view. The table has five columns: EMPNO, ENAME, JOB, SAL, and COMM.

	EMPNO	ENAME	JOB	SAL	COMM
1	7369	SMITH	CLERK	7902	1200
2	7499	ALLEN	SALESMAN	7698	1400
3	7521	WARD	SALESMAN	7698	2000
4	7566	JONES	MANAGER	7839	3000
5	7654	MARTIN	SALESMAN	7698	9999

```
mysql> INSERT INTO EMP VALUES
-> (7369, 'SMITH', 'CLERK', 7902, '1980-12-17', 800, NULL, 20),
-> (7499, 'ALLEN', 'SALESMAN', 7698, '1981-02-20', 1600, 300, 30),
-> (7521, 'WARD', 'SALESMAN', 7698, '1981-02-22', 1250, 500, 30),
-> (7566, 'JONES', 'MANAGER', 7839, '1981-04-02', 2975, NULL, 20),
-> (7654, 'MARTIN', 'SALESMAN', 7698, '1981-09-28', 1250, 1400, 30),
-> (7698, 'BLAKE', 'MANAGER', 7839, '1981-05-01', 2850, NULL, 30),
-> (7782, 'CLARK', 'MANAGER', 7839, '1981-06-09', 2450, NULL, 10),
-> (7788, 'SCOTT', 'ANALYST', 7566, '1987-04-19', 3000, NULL, 20),
-> (7839, 'KING', 'PRESIDENT', NULL, '1981-11-17', 5000, NULL, 10),
-> (7844, 'TURNER', 'SALESMAN', 7698, '1981-09-08', 1500, 0, 30),
-> (7876, 'ADAMS', 'CLERK', 7788, '1987-05-23', 1100, NULL, 20),
-> (7900, 'JAMES', 'CLERK', 7698, '1981-12-03', 950, NULL, 30),
-> (7902, 'FORD', 'ANALYST', 7566, '1981-12-03', 3000, NULL, 20),
-> (7934, 'MILLER', 'CLERK', 7782, '1982-01-23', 1300, NULL, 10);
```

Show SQL Enter a SQL expression to filter results (use Ctrl+Space)					Valor X
Grilla	123 EMPNO	AZ ENAME	AZ JOB	123 MGR	
1	7.369	SMITH	CLERK		
2	7.499	ALLEN	SALESMAN		7369
3	7.521	WARD	SALESMAN		
4	7.566	JONES	MANAGER		
5	7.654	MARTIN	SALESMAN		
6	7.698	BLAKE	MANAGER		
7	7.782	CLARK	MANAGER		
8	7.788	SCOTT	ANALYST		
9	7.839	KING	PRESIDENT		
10	7.844	TURNER	SALESMAN		
11	7.876	ADAMS	CLERK		
12	7.900	JAMES	CLERK		
13	7.902	FORD	ANALYST		
14	7.934	MILLER	CLERK		

6.- Realiza las siguientes consultas mostrando también su salida por pantalla.

1. **Seleccionar el nº de empleado, salario, comisión, nº de departamento y fecha de la tabla EMP.**

EMP Empleados * <16.171.9.140> Console X				
SELECT EMPNO, SAL, COMM, DEPTNO, HIREDATE FROM EMP;				
EMP 1 X				
SELECT EMPNO, SAL, COMM, HIREDATE Enter a SQL expression to filter results (use Ctrl+Space)				
Grilla	123 EMPNO	123 SAL	123 COMM	HIREDATE
1	7.369	800	[NULL]	1980-12-17
2	7.499	1.600	300	1981-02-20
3	7.521	1.250	500	1981-02-22
4	7.566	2.975	[NULL]	1981-04-02
5	7.654	1.250	1.400	1981-09-28
6	7.698	2.850	[NULL]	1981-05-01
7	7.782	2.450	[NULL]	1981-06-09
8	7.788	3.000	[NULL]	1987-04-19
9	7.839	5.000	[NULL]	1981-11-17
10	7.844	1.500	0	1981-09-08
11	7.876	1.100	[NULL]	1987-05-23
12	7.900	950	[NULL]	1981-12-03
13	7.902	3.000	[NULL]	1981-12-03
14	7.934	1.300	[NULL]	1982-01-23

2. **Seleccionar todas las columnas de la tabla DEPT.**

EMP Empleados * <16.171.9.140> Console X

```
SELECT * FROM DEPT;
```

DEPT 1 X

SELECT * FROM DEPT | Enter a SQL expression to filter results (use Ctrl+Space)

	DEPTNO	DNAME	LOC
1	10	ACCOUNTING	NEW YORK
2	20	RESEARCH	DALLAS
3	30	SALES	CHICAGO
4	40	OPERATIONS	BOSTON

3. Seleccionar los nombres y los empleos de todos los empleados, ordenados por empleo.

EMP 1 X

```
SELECT ENAME, JOB FROM EMP ORDER BY JOB;
```

SELECT ENAME, JOB FROM EMP ORDER B | Enter a SQL expression to filter results (use Ctrl+Sp)

	ENAME	JOB
1	SCOTT	ANALYST
2	FORD	ANALYST
3	SMITH	CLERK
4	ADAMS	CLERK
5	JAMES	CLERK
6	MILLER	CLERK
7	JONES	MANAGER
8	BLAKE	MANAGER
9	CLARK	MANAGER
10	KING	PRESIDENT
11	ALLEN	SALESMAN
12	WARD	SALESMAN
13	MARTIN	SALESMAN
14	TURNER	SALESMAN

4. Seleccionar los empleos que hay en cada departamento, ordenados por departamento.

EMP Empleados * <16.171.9.140> Console X

```
SELECT DEPTNO, JOB FROM EMP ORDER BY DEPTNO, JOB;
```

EMP 1 X

SELECT DEPTNO, JOB FROM EMP ORDER Enter a SQL expression to filter results (use Ctrl+S)

	123 DEPTNO	A-Z JOB
1	10	CLERK
2	10	MANAGER
3	10	PRESIDENT
4	20	ANALYST
5	20	ANALYST
6	20	CLERK
7	20	CLERK
8	20	MANAGER
9	30	CLERK
10	30	MANAGER
11	30	SALESMAN
12	30	SALESMAN
13	30	SALESMAN
14	30	SALESMAN

5. Seleccionar los **distintos** departamentos que existen en la tabla EMP.

EMP Empleados * <16.171.9.140> Console X

```
SELECT DISTINCT DEPTNO FROM EMP;
```

EMP 1 X

SELECT DISTINCT DEPTNO FROM EMP Enter a SQL expression to

	123 DEPTNO
1	10
2	20
3	30

6. Calcular el salario anual a percibir por cada empleado.

SELECT ENAME, SAL * 12 AS SALARIO_ANUAL FROM EMP;

EMP 1 x

SELECT ENAME, SAL * 12 AS SALARIO_AN

Grilla

	AZ ENAME	123 SALARIO_ANUAL
1	SMITH	9.600
2	ALLEN	19.200
3	WARD	15.000
4	JONES	35.700
5	MARTIN	15.000
6	BLAKE	34.200
7	CLARK	29.400
8	SCOTT	36.000
9	KING	60.000
10	TURNER	18.000
11	ADAMS	13.200
12	JAMES	11.400
13	FORD	36.000
14	MILLER	15.600

Texto

7. **Mostrar el nombre del empleado y una columna que contenga el salario multiplicado por la comisión cuya cabecera sea "BONO".**

El BONO lo calculamos como $BONO = \text{salario} \times \text{comisión}$

EMP Empleados * <16.171.9.140> Console X

```
SELECT ENAME, SAL * IFNULL(COMM,0) AS BONO FROM EMP;
```

EMP 1 X

SELECT ENAME, SAL * IFNULL(COMM,0) / Enter a SQL expression to filter results (use Ctrl+Space)

	AZ ENAME	123 BONO
1	SMITH	0
2	ALLEN	480.000
3	WARD	625.000
4	JONES	0
5	MARTIN	1.750.000
6	BLAKE	0
7	CLARK	0
8	SCOTT	0
9	KING	0
10	TURNER	0
11	ADAMS	0
12	JAMES	0
13	FORD	0
14	MILLER	0

8. Seleccionar aquellos empleados que sean "SALESMAN".

EMP Empleados * <16.171.9.140> Console X

```
SELECT * FROM EMP WHERE JOB = 'SALESMAN';
```

EMP 1 X

SELECT * FROM EMP WHERE JOB = 'SALE' Enter a SQL expression to filter results (use Ctrl+Space)

	123 EMPNO	AZ ENAME	AZ JOB	123 MGR	HIREDATE	123 SAL	123 COMM	123 DEPTNO
1	7.499	ALLEN	SALESMAN	7.698	1981-02-20	1.600	300	30
2	7.521	WARD	SALESMAN	7.698	1981-02-22	1.250	500	30
3	7.654	MARTIN	SALESMAN	7.698	1981-09-28	1.250	1.400	30
4	7.844	TURNER	SALESMAN	7.698	1981-09-08	1.500	0	30

9. Seleccionar aquellos empleados que no trabajen en el departamento 30.

EMP Empleados * <16.171.9.140> Console X

```
SELECT * FROM EMP WHERE DEPTNO <> 30;
```

EMP 1 X

SELECT * FROM EMP WHERE DEPTNO <> 30 Enter a SQL expression to filter results (use Ctrl+Space)

	123 EMPNO	A-Z ENAME	A-Z JOB	123 MGR	HIREDATE	123 SAL	123 COMM	123 DEPT
1	7.782	CLARK	MANAGER	7.839	1981-06-09	2.450	[NULL]	10
2	7.839	KING	PRESIDENT	[NULL]	1981-11-17	5.000	[NULL]	10
3	7.934	MILLER	CLERK	7.782	1982-01-23	1.300	[NULL]	10
4	7.369	SMITH	CLERK	7.902	1980-12-17	800	[NULL]	20
5	7.566	JONES	MANAGER	7.839	1981-04-02	2.975	[NULL]	20
6	7.788	SCOTT	ANALYST	7.566	1987-04-19	3.000	[NULL]	20
7	7.876	ADAMS	CLERK	7.788	1987-05-23	1.100	[NULL]	20
8	7.902	FORD	ANALYST	7.566	1981-12-03	3.000	[NULL]	20

10. Seleccionar el nombre de aquellos empleados que ganen más de 2000.

EMP Empleados * <16.171.9.140> Console X

```
SELECT ENAME, SAL FROM EMP WHERE SAL > 2000;
```

EMP 1 X

SELECT ENAME, SAL FROM EMP WHERE SAL > 2000 Enter a SQL expression to filter results (use Ctrl+Space)

	A-Z ENAME	123 SAL
1	JONES	2.975
2	BLAKE	2.850
3	CLARK	2.450
4	SCOTT	3.000
5	KING	5.000
6	FORD	3.000

11. Seleccionar aquellos empleados que hayan entrado antes del 1/1/82

EMP Empleados * <16.171.9.140> Console X

```
SELECT ENAME, HIREDATE FROM EMP WHERE HIREDATE < '1982-01-01';
```

EMP 1 X

SELECT ENAME, HIREDATE FROM EMP WHERE HIREDATE < '1982-01-01'; Enter a SQL expression to filter results (use C)

	AZ ENAME	HIREDATE
1	SMITH	1980-12-17
2	ALLEN	1981-02-20
3	WARD	1981-02-22
4	JONES	1981-04-02
5	MARTIN	1981-09-28
6	BLAKE	1981-05-01
7	CLARK	1981-06-09
8	KING	1981-11-17
9	TURNER	1981-09-08
10	JAMES	1981-12-03
11	FORD	1981-12-03

12. **Mostrar el nombre del empleado y su fecha de alta en la empresa de los empleados que son "ANALIST".**

EMP Empleados * <16.171.9.140> Console X

```
SELECT ENAME, HIREDATE FROM EMP WHERE JOB = 'ANALYST';
```

EMP 1 X

SELECT ENAME, HIREDATE FROM EMP WHERE JOB = 'ANALYST'; Enter a SQL expression to filter results (use C)

	AZ ENAME	HIREDATE
1	SCOTT	1987-04-19
2	FORD	1981-12-03

13. **Seleccionar los empleados cuyo salario sea superior al de "ADAMS".**

EMP Empleados * <16.171.9.140> Console X

```
SELECT ENAME, SAL FROM EMP WHERE SAL > (SELECT SAL FROM EMP WHERE ENA
```

Salida X
Enter a part of a

EMP 1 X

SELECT ENAME, SAL FROM EMP WHERE SAL > (Enter a SQL expression to filter results (use Ctrl+Space)

	A-Z ENAME	123 SAL
1	ALLEN	1.600
2	WARD	1.250
3	JONES	2.975
4	MARTIN	1.250
5	BLAKE	2.850
6	CLARK	2.450
7	SCOTT	3.000
8	KING	5.000
9	TURNER	1.500
10	FORD	3.000
11	MILLER	1.300

14. Seleccionar los empleados que trabajan en el mismo departamento que "CLARK".

SELECT * FROM EMP
WHERE DEPTNO = (SELECT DEPTNO FROM EMP WHERE ENAME='CLARK');

Salida X
Enter a part

EMP 1 X

SELECT * FROM EMP WHERE DEPTNO = (SELEC Enter a SQL expression to filter results (use Ctrl+Space)

	123 EMPNO	A-Z ENAME	A-Z JOB	123 MGR	HIREDATE	123 S
1	7.782	CLARK	MANAGER	7.839	1981-06-09	
2	7.839	KING	PRESIDENT	[NULL]	1981-11-17	
3	7.934	MILLER	CLERK	7.782	1982-01-23	

15. Encontrar a los empleados cuyo jefe es "BLAKE".

EMP	Empleados	<16.171.9.140> Console
<pre>SELECT * FROM EMP WHERE MGR = (SELECT EMPNO FROM EMP WHERE ENAME='BLAKE');</pre>		
EMP 1		
<pre>SELECT * FROM EMP WHERE MGR = (SELECT EN</pre>		
Grilla	123 EMPNO	AZ ENAME
1	7.499	ALLEN
2	7.521	WARD
3	7.654	MARTIN
4	7.844	TURNER
5	7.900	JAMES
Texto	AZ JOB	123 MGR
1	SALESMAN	7.698
2	SALESMAN	7.698
3	SALESMAN	7.698
4	SALESMAN	7.698
5	CLERK	7.698
	HIREDATE	123 S
	1981-02-20	
	1981-02-22	
	1981-09-28	
	1981-09-08	
	1981-12-03	

16. Seleccionar el nombre de los vendedores que ganen más de 1500.

EMP	Empleados	<16.171.9.140> Console
<pre>SELECT ENAME, SAL FROM EMP WHERE SAL > 1500;</pre>		
EMP 1		
<pre>SELECT ENAME, SAL FROM EMP WHERE SAL > 1</pre>		
Grilla	AZ ENAME	123 SAL
1	ALLEN	1.600
2	JONES	2.975
3	BLAKE	2.850
4	CLARK	2.450
5	SCOTT	3.000
6	KING	5.000
7	FORD	3.000
Texto		

17. Seleccionar aquellos empleados que tienen comisión.

EMP Empleados * <16.171.9.140> Console X

```
SELECT ENAME, COMM FROM EMP WHERE COMM > 0;
```

EMP 1 X

SELECT ENAME, COMM FROM EMP WHERE COMM > 0; Enter a SQL expression to filter results (use Ctrl+Sp)

	AZ ENAME	123 COMM
1	ALLEN	300
2	WARD	500
3	MARTIN	1.400

18. Seleccionar aquellos que **se llamen** "SMITH", "ALLEN" o "SCOTT".

EMP Empleados * <16.171.9.140> Console X

```
SELECT ENAME FROM EMP WHERE ENAME IN ('SMITH', 'ALLEN', 'SCOTT');
```

EMP 1 X

SELECT ENAME FROM EMP WHERE ENAME IN ('SMITH', 'ALLEN', 'SCOTT'); Enter a SQL expression to filter results (use Ctrl+Sp)

	AZ ENAME
1	SMITH
2	ALLEN
3	SCOTT

19. Seleccionar aquellos que **no se llamen** "SMITH", "ALLEN" o "SCOTT".

EMP Empleados * <16.171.9.140> Console X

```
SELECT ENAME FROM EMP WHERE ENAME NOT IN ('SMITH','ALLEN','SCOTT');
```

EMP 1 X

SELECT ENAME FROM EMP WHERE ENAME NO | Enter a SQL expression to filter results (use Ctrl+Spa

Grilla

AZ ENAME

1	WARD
2	JONES
3	MARTIN
4	BLAKE
5	CLARK
6	KING
7	TURNER
8	ADAMS
9	JAMES
10	FORD
11	MILLER

Texto

20. Seleccionar los empleados que trabajen en "CHICAGO".

EMP Empleados * <16.171.9.140> Console X AZ LOC

```
SELECT ENAME FROM EMP WHERE DEPTNO = (SELECT DEPTNO FROM DEPT WHERE LOC='CHICAGO');
```

EMP 1 X

SELECT ENAME FROM EMP WHERE DEPTNO = (| Enter a SQL expression to filter results (use Ctrl+Spa

Grilla

AZ ENAME

1	ALLEN
2	WARD
3	MARTIN
4	BLAKE
5	TURNER
6	JAMES

Texto

21. Seleccionar aquellos empleados que trabajen en el departamento 10 o en el 20.

EMP

Empleados

*<16.171.9.140> Console

A-Z LOC

▶

+

📄

↶

SELECT ENAME, DEPTNO, JOB FROM EMP WHERE DEPTNO IN (10,20);

EMP 1

SELECT ENAME, DEPTNO, JOB FROM EMP WHE

Enter a SQL expression to filter results (use Ctrl)

Grilla

123

DEPTNO

A-Z

ENAME

A-Z

JOB

1	CLARK	10	MANAGER
2	KING	10	PRESIDENT
3	MILLER	10	CLERK
4	SMITH	20	CLERK
5	JONES	20	MANAGER
6	SCOTT	20	ANALYST
7	ADAMS	20	CLERK
8	FORD	20	ANALYST

Texto