Las sentencias de SQL

1) APARTADO A

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

```
ubuntu@ip-172-31-25-94:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 19
Server version: 8.0.44-0ubuntu0.22.04.1 (Ubuntu)

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owners.

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

mysql>
```

```
ubuntu@ip-172-31-19-99:~$ systemctl status mysql
● mysql.service - MySQL Community Server
     Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
     Active: active (running) since Mon 2025-11-24 07:44:13 UTC; 8min ago
   Main PID: 493 (mysqld)
     Status: "Server is operational"
      Tasks: 37 (limit: 1125)
     Memory: 410.2M
        CPU: 3.005s
     CGroup: /system.slice/mysql.service
             └─493 /usr/sbin/mysqld
```

2) Cambiar contraseña de root de MySQL.

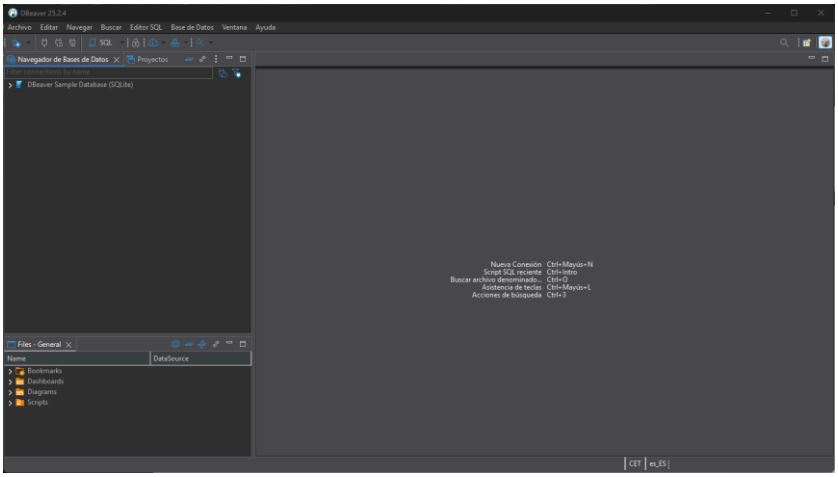
```
mysql> CREATE USER 'admin'@'localhost' IDENTIFIED BY '12345_SQL';
Query OK, 0 rows affected (0.01 sec)

mysql> GRANT ALL PRIVILEGES ON * . * TO 'admin'@'localhost';
Query OK, 0 rows affected (0.01 sec)
```

3) Habilitar conexiones remotas al servidor MySQL.

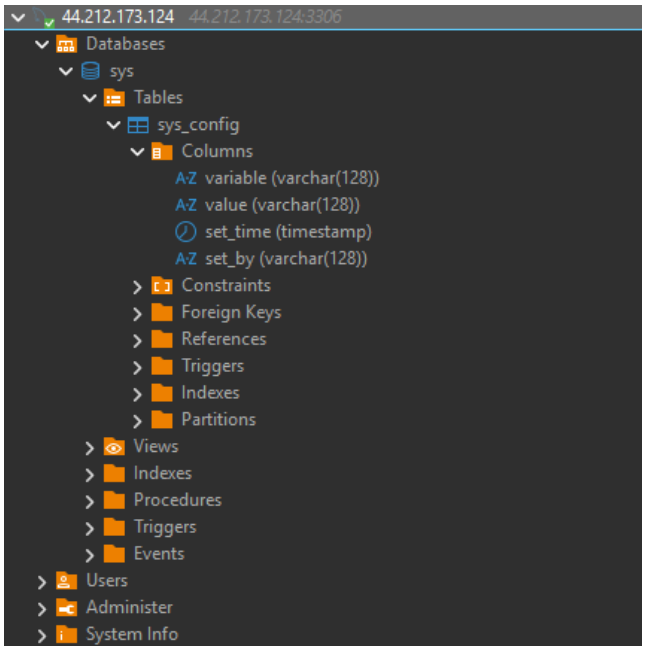
```
# If MySQL is running as a replication slave, this should be
# changed. Ref https://dev.mysql.com/doc/refman/8.0/en/server-system-variables
# tmpdir                = /tmp
#
# Instead of skip-networking the default is now to listen only on
# localhost which is more compatible and is not less secure.
bind-address            = 0.0.0.0
mysqlx-bind-address     = 127.0.0.1
#
# * Fine Tuning
#
key_buffer_size         = 16M
```

```
ubuntu@ip-172-31-25-94:~$ sudo ufw allow from 0.0.0.0 to any port 3306
Rules updated
```

4) Instalar DBeaver Community.



5) Conectarse con DBeaver al servidor MySQL.



2) APARTADO B

1) Crea desde DBeaver en tu servidor MySQL una base de datos llamada 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:

```sql
CREATE DATABASE IF NOT EXISTS empleados;

USE empleados;

CREATE TABLE dept (
    deptno INT PRIMARY KEY NOT NULL AUTO_INCREMENT,
    dname varchar(255),
    loc varchar(255)
);

CREATE TABLE salgrade (
    grade INT PRIMARY KEY NOT NULL AUTO_INCREMENT,
    losal INT,
    hisal INT
);

CREATE TABLE emp (
    eno INT PRIMARY KEY NOT NULL AUTO_INCREMENT,
    ename varchar(255),
    job varchar(255),
    mgr INT,
    hiredate DATE,
    sal INT,
    comm INT,
    deptno INT,

    FOREIGN KEY (mgr) REFERENCES emp(eno),
    FOREIGN KEY (deptno) REFERENCES dept(deptno)

);
```

3) Con las sentencias SQL adecuadas añade a cada tabla los registros siguientes.
4) 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.

```
SELECT eno, sal, comm, deptno, hiredate FROM emp;
```

emp 1

Enter a SQL expression to filter results (use Ctrl+Space)

	eno	sal	comm	deptno	hiredate
1	7.369	800	[NULL]	20	1980-12-17
2	7.499	1.600	300	30	1981-02-20
3	7.521	1.250	500	30	1981-02-22
4	7.566	2.975	[NULL]	20	1981-04-02
5	7.654	1.250	1.400	30	1981-09-28
6	7.698	2.850	[NULL]	30	1981-05-01
7	7.782	2.450	[NULL]	10	1981-06-09
8	7.788	3.000	[NULL]	20	1982-12-09
9	7.839	5.000	[NULL]	10	1981-11-17
10	7.844	1.500	0	30	1981-09-08
11	7.876	1.100	[NULL]	20	1983-01-12
12	7.900	950	[NULL]	30	1981-12-03
13	7.902	3.000	[NULL]	20	1981-12-03
14	7.934	1.300	[NULL]	10	1982-01-23

2. Seleccionar todas las columnas de la tabla DEPT.

```
SELECT * FROM dept;
```

emp 1 | dept 1 (2) | emp 1 (3) | emp 1 (4)

	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.

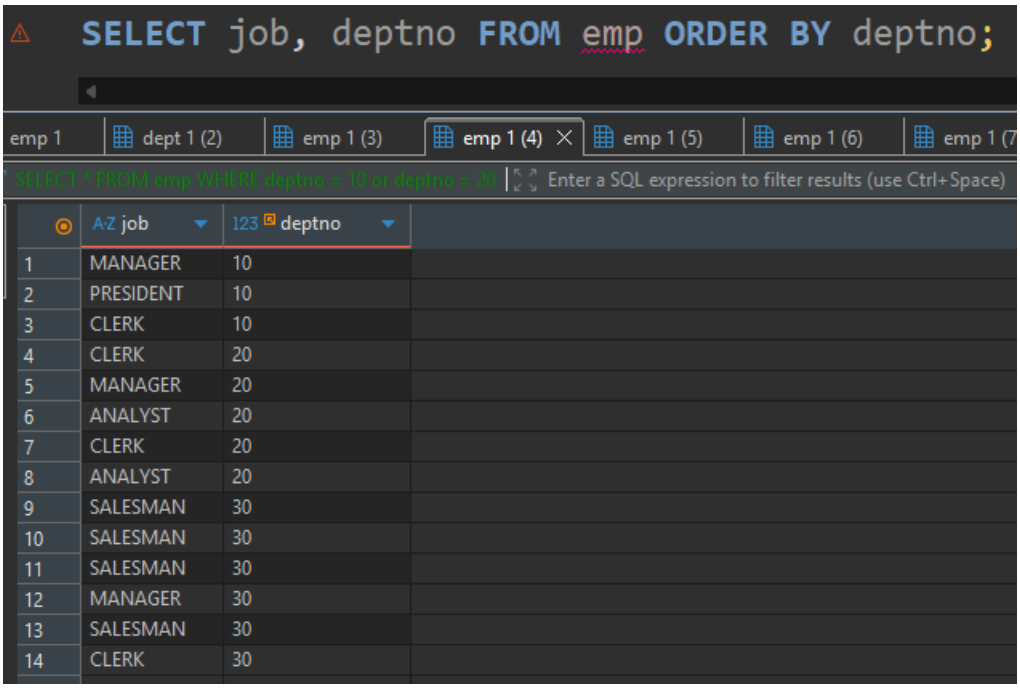
```
SELECT ename, job FROM emp ORDER BY job;
```

emp 1 | dept 1 (2) | emp 1 (3) | emp 1 (4) | emp 1 (5) | emp 1 (6)

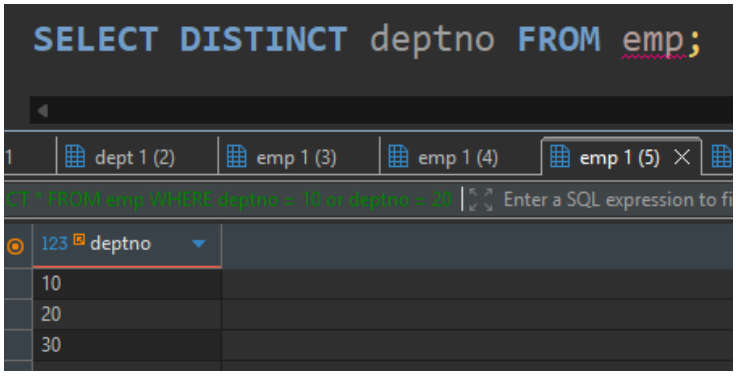
Enter a SQL expression to filter results (use Ctr

	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

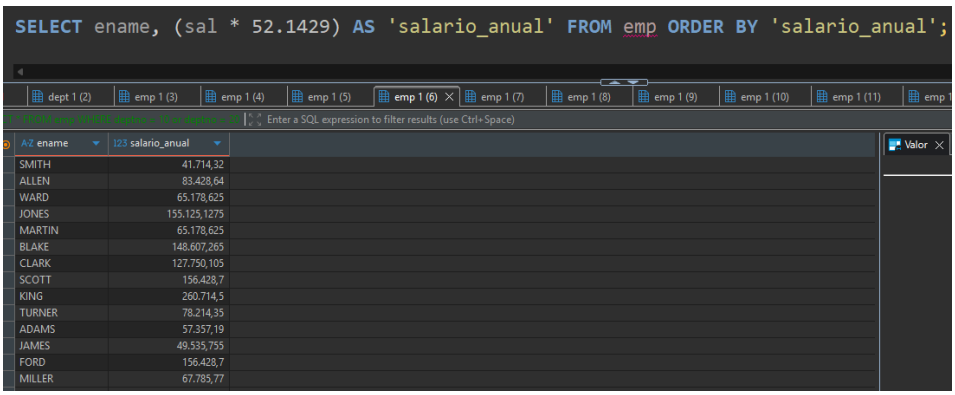
4. Seleccionar los empleos que hay en cada departamento, ordenados por departamento.



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



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



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

```
SELECT ename, (sal * 52.1429 * comm) AS 'salario_anual' FROM emp
WHERE comm IS NOT NULL
ORDER BY 'salario_anual';
```

ename	salario_anual
ALLEN	25.028.592
WARD	32.589.312,5
MARTIN	91.250.075
TURNER	0

8. Seleccionar aquellos empleados que sean "SALESMAN”.

```
SELECT * FROM emp WHERE job = 'SALESMAN';
```

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.499	ALLEN	SALESMAN	7.698	1981-02-20	1.600	300	30
7.521	WARD	SALESMAN	7.698	1981-02-22	1.250	500	30
7.654	MARTIN	SALESMAN	7.698	1981-09-28	1.250	1.400	30
7.844	TURNER	SALESMAN	7.698	1981-09-08	1.500	0	30

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

```
SELECT * FROM emp WHERE deptno != 30;
```

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.782	CLARK	MANAGER	7.839	1981-06-09	2.450	[NULL]	10
7.839	KING	PRESIDENT	[NULL]	1981-11-17	5.000	[NULL]	10
7.934	MILLER	CLERK	7.782	1982-01-23	1.300	[NULL]	10
7.369	SMITH	CLERK	7.902	1980-12-17	800	[NULL]	20
7.566	JONES	MANAGER	7.839	1981-04-02	2.975	[NULL]	20
7.788	SCOTT	ANALYST	7.566	1982-12-09	3.000	[NULL]	20
7.876	ADAMS	CLERK	7.788	1983-01-12	1.100	[NULL]	20
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.

```
SELECT ename FROM emp WHERE sal > 2000;
```

dept 1 (2) | emp 1 (3) | emp 1 (4) | emp 1 (5) | emp 1 (6)

Enter a SQL expression to filter results (use

ename
CLARK
BLAKE
JONES
SCOTT
FORD
KING

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

```
SELECT * FROM emp WHERE hiredate < '1982-01-01';
```

dept 1 (2) | emp 1 (3) | emp 1 (4) | emp 1 (5) | emp 1 (6) | emp 1 (7) | emp 1 (8) | emp 1 (9)

Enter a SQL expression to filter results (use Ctrl+Space)

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.369	SMITH	CLERK	7.902	1980-12-17	800	[NULL]	20
7.499	ALLEN	SALESMAN	7.698	1981-02-20	1.600	300	30
7.521	WARD	SALESMAN	7.698	1981-02-22	1.250	500	30
7.566	JONES	MANAGER	7.839	1981-04-02	2.975	[NULL]	20
7.654	MARTIN	SALESMAN	7.698	1981-09-28	1.250	1.400	30
7.698	BLAKE	MANAGER	7.839	1981-05-01	2.850	[NULL]	30
7.782	CLARK	MANAGER	7.839	1981-06-09	2.450	[NULL]	10
7.839	KING	PRESIDENT	[NULL]	1981-11-17	5.000	[NULL]	10
7.844	TURNER	SALESMAN	7.698	1981-09-08	1.500	0	30
7.900	JAMES	CLERK	7.698	1981-12-03	950	[NULL]	30
7.902	FORD	ANALYST	7.566	1981-12-03	3.000	[NULL]	20

12. Mostrar el nombre del empleado y su fecha de alta en la empresa de los empleados que son “ANALISTA”.

```
SELECT ename, hiredate FROM emp WHERE job = 'ANALYST';
```

dept 1 (2) | emp 1 (3) | emp 1 (4) | emp 1 (5) | emp 1 (6) | emp 1 (7) | emp 1 (8)

Enter a SQL expression to filter results (use Ctrl+Space)

ename	hiredate
SCOTT	1982-12-09
FORD	1981-12-03

13. Seleccionar los empleados cuyo salario sea superior al de “ADAMS”.

```
SELECT * FROM emp WHERE sal > (
    SELECT sal FROM emp WHERE ename = 'ADAMS'
);
```

dept 1 (2) | emp 1 (3) | emp 1 (4) | emp 1 (5) | emp 1 (6) | emp 1 (7) | emp 1 (8) | emp 1 (9)

Enter a SQL expression to filter results (use Ctrl+Space)

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.499	ALLEN	SALESMAN	7.698	1981-02-20	1.600	300	30
7.521	WARD	SALESMAN	7.698	1981-02-22	1.250	500	30
7.566	JONES	MANAGER	7.839	1981-04-02	2.975	[NULL]	20
7.654	MARTIN	SALESMAN	7.698	1981-09-28	1.250	1.400	30
7.698	BLAKE	MANAGER	7.839	1981-05-01	2.850	[NULL]	30
7.782	CLARK	MANAGER	7.839	1981-06-09	2.450	[NULL]	10
7.788	SCOTT	ANALYST	7.566	1982-12-09	3.000	[NULL]	20
7.839	KING	PRESIDENT	[NULL]	1981-11-17	5.000	[NULL]	10
7.844	TURNER	SALESMAN	7.698	1981-09-08	1.500	0	30
7.902	FORD	ANALYST	7.566	1981-12-03	3.000	[NULL]	20
7.934	MILLER	CLERK	7.782	1982-01-23	1.300	[NULL]	10

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

```
SELECT * FROM emp WHERE deptno = (
    SELECT deptno FROM emp WHERE ename = 'CLARK'
);
```

dept 1 (2) | emp 1 (3) | emp 1 (4) | emp 1 (5) | emp 1 (6) | emp 1 (7) | emp 1 (8) | emp 1 (9)

Enter a SQL expression to filter results (use Ctrl+Space)

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.782	CLARK	MANAGER	7.839	1981-06-09	2.450	[NULL]	10
7.839	KING	PRESIDENT	[NULL]	1981-11-17	5.000	[NULL]	10
7.934	MILLER	CLERK	7.782	1982-01-23	1.300	[NULL]	10

15. Encontrar a los empleados cuyo jefe es “BLAKE”.

```
SELECT * FROM emp WHERE mgr = (
    SELECT eno FROM emp WHERE ename = 'BLAKE'
);
```

emp 1 (3) | emp 1 (4) | emp 1 (5) | emp 1 (6) | emp 1 (7) | emp 1 (8) | emp 1 (9)

Enter a SQL expression to filter results (use Ctrl+Space)

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.499	ALLEN	SALESMAN	7.698	1981-02-20	1.600	300	30
7.521	WARD	SALESMAN	7.698	1981-02-22	1.250	500	30
7.654	MARTIN	SALESMAN	7.698	1981-09-28	1.250	1.400	30
7.844	TURNER	SALESMAN	7.698	1981-09-08	1.500	0	30
7.900	JAMES	CLERK	7.698	1981-12-03	950	[NULL]	30

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

```
SELECT ename FROM emp WHERE job = 'SALESMAN' AND sal > 1500;
```

emp 1 (4) | emp 1 (5) | emp 1 (6) | emp 1 (7) | emp 1 (8) | emp 1 (9) | emp 1 (10)

Enter a SQL expression to filter results (use Ctrl+Space)

ename
ALLEN

17. Seleccionar aquellos empleados que tienen comisión.

```
SELECT * FROM emp WHERE comm IS NOT NULL;
```

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.499	ALLEN	SALESMAN	7.698	1981-02-20	1.600	300	30
7.521	WARD	SALESMAN	7.698	1981-02-22	1.250	500	30
7.654	MARTIN	SALESMAN	7.698	1981-09-28	1.250	1.400	30
7.844	TURNER	SALESMAN	7.698	1981-09-08	1.500	0	30

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

```
SELECT * FROM emp WHERE ename = 'SMITH' OR ename = 'ALLEN' OR ename = 'SCOTT';
```

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.369	SMITH	CLERK	7.902	1980-12-17	800	[NULL]	20
7.499	ALLEN	SALESMAN	7.698	1981-02-20	1.600	300	30
7.788	SCOTT	ANALYST	7.566	1982-12-09	3.000	[NULL]	20

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

```
SELECT * FROM emp WHERE NOT(ename = 'SMITH' OR ename = 'ALLEN' OR ename = 'SCOTT');
```

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.521	WARD	SALESMAN	7.698	1981-02-22	1.250	500	30
7.566	JONES	MANAGER	7.839	1981-04-02	2.975	[NULL]	20
7.654	MARTIN	SALESMAN	7.698	1981-09-28	1.250	1.400	30
7.698	BLAKE	MANAGER	7.839	1981-05-01	2.850	[NULL]	30
7.782	CLARK	MANAGER	7.839	1981-06-09	2.450	[NULL]	10
7.839	KING	PRESIDENT	[NULL]	1981-11-17	5.000	[NULL]	10
7.844	TURNER	SALESMAN	7.698	1981-09-08	1.500	0	30
7.876	ADAMS	CLERK	7.788	1983-01-12	1.100	[NULL]	20
7.900	JAMES	CLERK	7.698	1981-12-03	950	[NULL]	30
7.902	FORD	ANALYST	7.566	1981-12-03	3.000	[NULL]	20
7.934	MILLER	CLERK	7.782	1982-01-23	1.300	[NULL]	10

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

```
SELECT * FROM emp WHERE deptno = (
    SELECT deptno FROM dept WHERE loc = 'CHICAGO'
);
```

eno	ename	job	mgr	hiredate	sal	comm	deptno
7.499	ALLEN	SALESMAN	7.698	1981-02-20	1.600	300	30
7.521	WARD	SALESMAN	7.698	1981-02-22	1.250	500	30
7.654	MARTIN	SALESMAN	7.698	1981-09-28	1.250	1.400	30
7.698	BLAKE	MANAGER	7.839	1981-05-01	2.850	[NULL]	30
7.844	TURNER	SALESMAN	7.698	1981-09-08	1.500	0	30
7.900	JAMES	CLERK	7.698	1981-12-03	950	[NULL]	30

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

```
SELECT * FROM emp WHERE deptno = 10 or deptno = 20;
```

1 (8) | emp 1 (9) | emp 1 (10) | emp 1 (11) | emp 1 (12) | emp 1 (13) | emp 1 (14) | emp 1 (15)

Enter a SQL expression to filter results (use Ctrl+Space)

123 eno	A-Z ename	A-Z job	123 mgr	hiredate	123 sal	123 comm	123 deptno
7.782	CLARK	MANAGER	7.839	1981-06-09	2.450	[NULL]	10
7.839	KING	PRESIDENT	[NULL]	1981-11-17	5.000	[NULL]	10
7.934	MILLER	CLERK	7.782	1982-01-23	1.300	[NULL]	10
7.369	SMITH	CLERK	7.902	1980-12-17	800	[NULL]	20
7.566	JONES	MANAGER	7.839	1981-04-02	2.975	[NULL]	20
7.788	SCOTT	ANALYST	7.566	1982-12-09	3.000	[NULL]	20
7.876	ADAMS	CLERK	7.788	1983-01-12	1.100	[NULL]	20
7.902	FORD	ANALYST	7.566	1981-12-03	3.000	[NULL]	20