

Activity 2.1 - SQLite

The objective of this activity is to practice installing a lightweight SQLite database and handling it in console mode, from the Command Prompt window.

Upload a document with the code and explanations on how you are solving the activity. Upload also the database file.

1. Create a Database with SQLite

Use SQLite to create a database called act2.1.db in a path like ./Unit2/Act2.1-SQLite.

Create the tables Departments and Teachers, with the following structure:

Departments	
<u>dept_num</u>	<u>int primary key</u>
name	varchar(20)
office	varchar(20)

Teachers	
<u>id</u>	<u>int primary key</u>
name	varchar(15)
surname	varchar(40)
email	varchar(50)
start_date	date
dept_num	<i>References Departments</i>

```
CREATE TABLE Departments
(
    dept_num int primary key,
    name     varchar(20),
    office   varchar(20)
);
CREATE TABLE Teachers
(
    id          int primary key,
    name        varchar(15),
```

```
    surname    varchar(40),  
    email      varchar(50),  
    start_date date,  
    dept_num References Departments (dept_num)  
);
```

2. Insert data

Insert these data in Departments:

```
10, INFORMATICA, DESPA6  
20, COMERCIO, DESPA7  
30, ADMINISTRATIVO, DESPA8  
40, FOL, DESPA5
```

```
INSERT INTO Departments (dept_num, name, office)  
VALUES (10, 'INFORMATICA', 'DESPA6'),  
       (20, 'COMERCIO', 'DESPA7'),  
       (30, 'ADMINISTRATIVO', 'DESPA8'),  
       (40, 'FOL', 'DESPA5');
```

Insert these data in Teachers:

```
1, Luz Martinez, luz.martinez@iesabastos.org, 01/01/90  
2, Cristina Ausina, c.ausina@iesabastos.org, 01/02/90  
3, Imma Cabanes, i.cabanes@iesabastos.org, 01/03/90  
4, Mercedes Sánchez, m.sanchez@iesabastos.org
```

```
INSERT INTO Teachers(id, name, surname, email, start_date, dept_num)  
VALUES (1, 'Luz', 'Martinez', 'luz.martinez@iesabastos.org',  
       '90-01-01', 10),  
       (2, 'Cristina', 'Ausina', 'c.ausina@iesabastos.org', '90-02-01',  
       10),  
       (3, 'Imma', 'Cabanes', 'i.cabanes@iesabastos.org', '90-03-01',  
       10),  
       (4, 'Mercedes', 'Sánchez', 'm.sanchez@iesabastos.org', NULL,  
       40);
```

3. Queries

Make the following queries:

1. All teachers from the INFORMATICA department.

Query

```
SELECT Teachers.id, Teachers.name, Teachers.surname,  
Teachers.email,  
Teachers.start_date, Departments.name  
FROM Teachers,  
Departments  
WHERE Teachers.dept_num = Departments.dept_num  
AND Departments.name = 'INFORMATICA';
```

Result

```
1|Luz|Martinez|luz.martinez@iesabastos.org|01/01/90|INFORMATICA  
2|Cristina|Ausina|c.ausina@iesabastos.org|01/02/90|INFORMATICA  
3|Imma|Cabaner|i.cabaner@iesabastos.org|01/03/90|INFORMATICA
```

2. For each department, obtain all its data and the number of teachers it has.

Query

```
SELECT COUNT(*), Departments.name  
FROM Teachers,  
Departments  
WHERE Teachers.dept_num = Departments.dept_num  
GROUP BY Teachers.dept_num;
```

Result

```
3|INFORMATICA  
1|FOL
```

3. Show the name and surname of each teacher and their department, ordered alphabetically by surname.

Query

```
SELECT Teachers.name, Teachers.surname, Departments.name  
FROM Teachers,  
      Departments  
WHERE Teachers.dept_num = Departments.dept_num  
ORDER BY surname;
```

Result

```
Cristina|Ausina|INFORMATICA  
Imma|Cabanes|INFORMATICA  
Luz|Martinez|INFORMATICA  
Mercedes|Sánchez|FOL
```