

Activity 2.3 - HSQLDB

The objective of this activity is to be able to find solutions to problems that we face for the first time. You should read and understand some information that you need to solve the problem. **Upload a document with the code and explanations on how you are solving the activity. Upload also the database file.**

1. Install HSQLDB

Download HSQLDB and install it. Explore the directory tree of the installation folder.

2. Create a Database with HSQLDB

Read this [web](#).

The web shows how to connect to a database on HSQLDB, using an included utility called sqltool, in \lib directory. Find the reference manual of sqltool [here](#).

Use HSQLDB to create a database called act2.3 in a path like ./Unit2/Act2.3.HSQLDB.

Type \? for help and look for the option to execute commands from an external file.

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    int References Departments (dept_num)
);
```

3. 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. Show the teachers of the department of FOL.

Query

```
SELECT id, Teachers.name, surname
FROM TEACHERS,
      DEPARTMENTS
WHERE Teachers.dept_num = Departments.dept_num
      AND Departments.name = 'FOL';
```

Result

4, Mercedes, Sánchez

2. Show all teachers in the office DESPA6.

Query

```
SELECT Teachers.id, Teachers.name, surname, office
FROM Teachers,
      Departments
WHERE Teachers.dept_num = Departments.dept_num
      AND Departments.office = 'DESPA6';
```

Result

1,Luz,Martinez,DESPA6
2,Cristina,Ausina,DESPA6
3,Imma,Cabanes,DESPA6

3. Add a new column to the table Teachers, called Salary

Query

```
ALTER TABLE Teachers  
  ADD COLUMN Salary DOUBLE;
```