

Course: Database management
Unit: Intermediate SQL 2
Material: Referential integrity and data types

1. In a database, create the department and instructor tables connected with a foreign key.

```
create table department
(dept_name varchar(20),
 building varchar(15),
 budget      numeric(12,2) check (budget > 0),
 primary key (dept_name)
);
```

```
create table instructor
(ID varchar(5),
 name varchar(20) not null,
 dept_name varchar(20),
 salary numeric(8,2) check (salary > 29000),
 primary key (ID),
 foreign key (dept_name) references department(dept_name)
);
```

```
insert into department values ('Infor.', 'C', 30000);
```

```
insert into instructor values ('11111', 'Jaume', 'Infor.', 30000);
```

2. Is it possible to delete the row in the department table?
3. Is it possible to drop the department table?
4. Is it possible to update the name of the department?

```
update department set dept_name='Inform.' where dept_name='Infor.';
```

5. Modify the instructor table in such a way that when a row of the department table is deleted, the instructors of that department are also deleted. If you don't know how to modify the instructor table, you can drop it and create it again.
6. Modify the instructor table in such a way that when a row of the department table is deleted, the dept_name column of the corresponding instructors is set to null.
7. Modify the instructor table in such a way that when the name of a department is updated in the department table, it is also updated in the instructor table.
8. Drop the department and instructor tables and create them again with the code of exercise number 1. Now disable foreign key checks and attempt to delete the row of the department table. Does it work?

9. Create a table named "my_table" with a column named "my_date" (type:date), "my_time" (type:time) and "my_timestamp" (type timestamp).
10. Insert a row that contains a value for each of the three columns of the table.
11. Now insert a row that contains a value only for the first two columns. What is the default value for the timestamp column?
12. Explain how to extract the fields year, month, day, hour, minute and second from a timestamp value.
13. Explain the use of the following functions: current_date, current_time, localtime, current_timestamp, localtimestamp.
14. What is the use of the keyword "interval"? Give an example.
15. Drop the tables instructor and department and create them again as in exercise 1. Create an index named "instructor_name". Why are indexes important?
16. Create a table called my_table with a column called my_column of type "text". Introduce a text of several pages into the table. Then use select to show the text.
17. Load the university database and create a new table and a view with the following statements:

```
create table t1 as (select * from instructor where dept_name='Music');  
create view v1 as (select * from instructor where dept_name='Music');
```

Show the contents of t1 and then show the contents of v1. Delete Mozart from the instructor table. Show the contents of t1 and v1 again and explain what happened.