P5 - Create the Government of the Balearic Islands Database for telephone calls management using the shell

The Government of the Balearic Islands (CAIB), commissions wants to automate the management of calls by Telephone. The aim is to take into account, in addition to mobile phone calls and mobile phone users. To this end, the design team has decided that the basis of data should consist of the following tables: **USERS**, **TELEPHONES**, **COMPANIES** and **CALLS**, being their attributes that are described following in this document. **Do the requested report with the detailed process as usual.**

The **USERS** table has the following fields:

- NIF: User's NIF, identifies each of the users, so it will not support repeated values. It does not support null values too. This is the primary key in the USERS table. The values to support are character strings of a maximum length of 9 characters.
- Name: Name of the user. Identifies the name of the users. Does not support NULL values. The values it will support are character strings of maximum length 20 Characters.
- Last Name 1: User's first last name. Identifies the first last name of users. No supports null values. The values you will support are long character strings of 20 characters maximum.
- Last Name2: Second last name of the user. Identifies the second last name of users. Supports null values. The values you will support are long character strings 20 characters maximum.
- Fec_Nacim: Identifies the user's date of birth. The values it supports are dates not less than January 1, 1900.

The **PHONES** table has the following attributes:

- Numero: Phone number. It identifies each of the phone numbers, by which will not support repeated values, nor null values. The values it supports are Character strings with a maximum length of 13 characters. It's the main key TELEPHONES.
- NIF_Usuario: Identifies the phone owner's nif. It does not support null values. References to the USERS relationship.
- ID_Compania: Identifier of the telephone company associated with the phone. Values which it supports are numeric values between 0 and 9999. It refers to the COMPANY relationship.

The **COMPANIES** relationship has the following attributes:

- ID_Compania: Telephone company ID. Identify each of the telephone companies. This is the primary key of the table. The values it supports are numerical values between 0 and 9999. It does not support null values.
- Name: Describes the name of each company. The values it supports are strings of characters of a maximum length of 20 characters. It does not support null values.
- Anio_Fundacion: Year of founding of the company. Supports numeric values between 1900 and 2010. It does not support null values.

The **CALLS** table has the following attributes:

- Num_Llamante: Phone number making the call. It's part of the key primary of the table. Supports values that are character strings with a length 13 characters maximum. It does not support null values. It refers to the relationship Phones.
- Num_Llamado: The phone number to which the call is made. It's part of the key primary of the table. Supports values that are character strings with a length 13 characters maximum. It does not support null values. It refers to the relationship Phones.
- Date: The date and time the Call is made. It is part of the primary key to the board. Supports values that are dates and times after the year 1990.
- Time: Seconds the call lasts. Supports integer values between 0 and 9999999. No supports null values. Note: This table has one tuple for each call that is made.

Using the **MySQL shell**, perform the following tasks, saving it to a sql script:

1. Create a database called "TELEFONIA".
2. Create the tables and relationships described above.
3. In the PHONES relationship, modify the NUMERO attribute so that it can contain Character strings of up to 11 characters.
4. In the USERS relationship, add an attribute called ADDRESS that is after the LastName2 attribute. The new attribute will contain the user's address, it must contain Strings of a maximum of 100 characters. It may be empty.
5. In the USERS relationship change their identifier (USERS) to CUSTOMERS.
6. In the CUSTOMERS relationship, change the identifiers of the LastName1 and LastName2 by AP1 and AP2 respectively.
7. In the CUSTOMERS relationship, change their IDENTIFIER back to USERS.
8. In the USERS relationship, change the AP1 and AP2 attribute identifiers to Last Name1 and Last Name2.
9. In the CALLS relationship add a constraint so that a number cannot be called himself.
10. In the USERS relationship, delete the ADDRESS attribute.
11. Delete all relationships from the TELEFONIA database.
12. Delete the TELEFONIA database.

Indications for the activity submission

Take in mind that you have to:

• Use the corresponding task of our classroom to do the submission.
• Formatting: PDF.
• File name: GDB_YourGroup_(P5)_YourSurname1_YourSurname2_YourName
• Complete SQL script with the implementation **using the shell** must be uploaded to your Google Drive.
• Bibliography is mandatory.
• Typography and font size: Arial 11.