| BS DEGREE IN INFORMATICS ENGINEERING<br>Academic year: 2022/2023 - 2nd year, 2nd term<br>Subject: File Structures and Databases<br>First Assignment's Report: Relational Design and Impl. | uc3m \| Universidad Carlos III de Madrid |
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# 1 Introduction

We are given a statement with the requirements for a new Database we need to design and create for a company.

First of all, we will create a relational design that satisfies as best as possible with the demands of the company. At the same time, we will annotate the implicit semantics we have made in order to create our graph, as well as the non-observed explicit semantics that we will try to cover later on in the implementation.

After that, we will create all the tables of the design in Oracle SQL (creation.sql script). Thanks to the use of constraints, we will be able to cover some of the previously non-observed explicit semantics, noted in the re-incorporated semantics table.

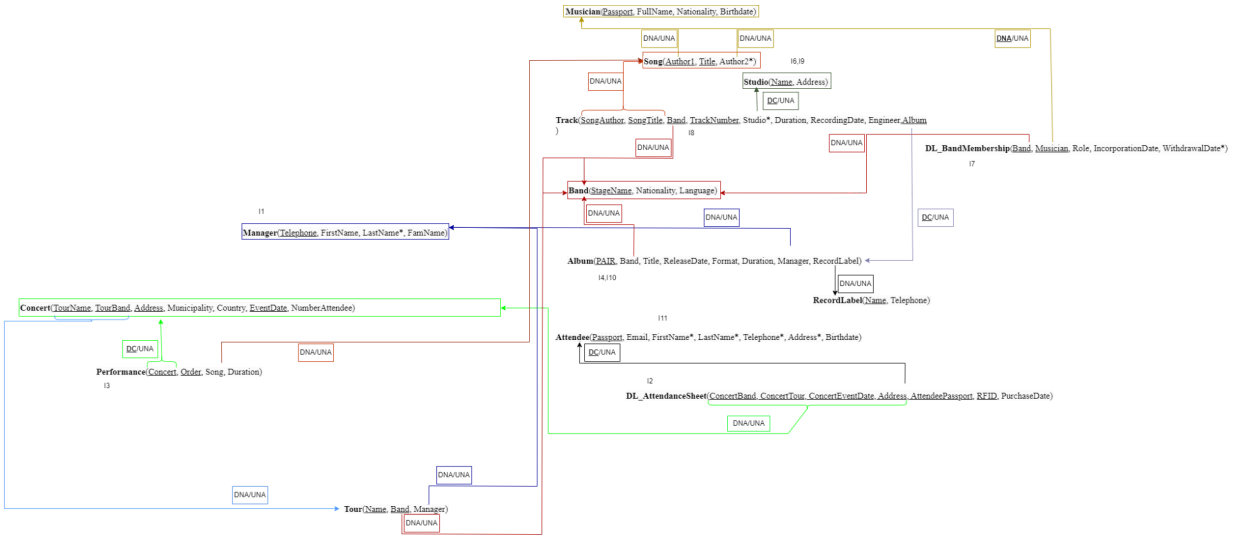
After populating the tables with the data given by the company (upload.sql script), some new implicit semantics will be added.

Lastly, we will state the final excluded semantics, and comment on the problems we detected when populating our tables.

# 2 Relational Design

This section is subdivided into three subsections:

- Relational Schema: the complete design (despite the restrictions of Oracle SQL).




Language and Nationality (check they are valid) are separate entities: they have repeated values
Concerts can have no performances (0..n)
check age by trigger

deliver only report.pdf for second delivery (design for queries and views (relational algebra), trigger (characteristics), sql (no screenshot -> 0 point, use txt), testing (use different states of database(insert/delete/update), predict result of new state, verify the program gives the same result. If the test shows no mistake -> test fails, if not, test succeeds, we need to explain) Just one or two good tests. Not exhaustive. Just show that we can design good testings.

test the trigger. mutating table error occurs when we are taking more than 1 row. We should do test with more than 1 rows.

40% sql code 30% design / 30% test

- Implicit semantics: semantic presuppositions that are not found in the explicit description, but which are required to complete the relational design.

| Presp_id | Stage | Mechanism | Description |
|---|---|---|---|
| $I_1$ | Design | Primary key | It is assumed that a manager only has one telephone (this telephone is unique). |
| $I_2$ | Design | Primary key | It is assumed that an attendee can have more than one ticket. |
| $I_3$ | Design | Primary key | It is assumed that the same performance can be done twice in the same concert. |
| $I_4$ | Design | Primary key | It is assumed that an album that is rereleased with a different format has a different PAIR. |

| | | | |
|---|---|---|---|
| $I_5$ | Design | Integrity Choice | We use DNA/UNA as integrity choices when it is no specified |
| $I_6$ | Design | Primary key | Two studios with different addresses with the same name are the same studio. |
| $I_7$ | Design | Primary key | It is assumed that a musician can only have one role. |
| $I_8$ | Design | Primary key | It is assumed that there are tracks of the same song, band and number but in different albums. |
| $I_9$ | Design | Foreign Key | It is assumed that if we add studio to a track, we add both the name and the address. |
| $I_{10}$ | Design | Primary key | When refounded, a different PAIR number is given. |
| $I_{11}$ | Design | Not null | The birthdate of an attendee is compulsory. |

**Table 1: Implicit semantics incorporated into the relational graph**

- Non-observed explicit semantics: each of the explicit presuppositions (stated in the problem description) that could not be included in the relational graph, will be identified (with a label, such as S1, S2, …) and described in this section.

| Presp_id | Description |
|---|---|
| $S_1$ | In the relation Album, the attribute format should be Vinyl, Single, CD, MP3, Audio File or Streaming. |
| $S_2$ | The duration of a track should be less than 90 mins (5400 seconds) |
| $S_3$ | The total duration of an album is the sum of duration of the tracks |
| $S_4$ | There could be two rows that will be stored where authors are repeated. Example: Song('Love', 'Maria', 'Diego') and Song('Love', 'Diego', 'María') |
| $S_5$ | Concerts cannot be deleted when ticket sales have already been recorded for them. |
| $S_6$ | The date/time of the event must be after the purchase date, and 18 years after the client's date of birth |
| $S_7$ | A record label won't be removed from the database whenever there exists any album released under it. |

**Table 2: Non-observed explicit semantics**

# 3 Relational Statics Implementation in SQL (DDL)

This section must include the creation of each table. In addition to the code (*NEWcreation.sql* script) for creating tables (valid syntax in PL/SQL), you should include the correspondent subsections referring to the excluded semantics that are re-incorporated, the newly incorporated

implicit semantics, and the explicit semantics that were observed but are now excluded. All these sections will be accomplishing by fulfilling the correspondent table (see tables 3, 4 and 5). Any of these tables is empty (in case), the table should be omitted and replaced by a phrase such as "Has not been reported."

Re-incorporated semantics: (identifiers referred to those assigned in table 1)

| Presp_id | Solution Description |
|---|---|
| $S_1$ | Format should be Vynil, Single, CD, MP3, Audio File or Streaming; a constraint chk_Album_Format CHECK (Format IN ('Vynil', 'Single', 'CD', 'MP3', 'Audio File', 'Streaming')) is added to the table Album. |
| $S_2$ | Duration of a track should be at most 90 min; constraint check_Track_Duration CHECK(Duration <= 5400) is added to table track (since the input is given in seconds and 5400 seconds are 90 mins). |

**Table 3: re-incorporated explicit semantics**

Incorporated implicit semantics: (numbering continues where ended in table 2)

| Presp_id | Stage | Mechanism | Description |
|---|---|---|---|
| $I_{12}$ | Implem. | Check | If a band has no start_date, it will be set to today (after checking, no import had start_date to Null and end date, which would make this semantic wrong) |
| $I_{13}$ | Implem. | Check | It is assumed that the introduced data for Author in fsdb.recordings is, at maximum, 14 characters, like the Passport of an artist. |
| $I_{14}$ | Implem. | Check | The Last Name of Manager is optional. |
| $I_{15}$ | Implem. | Check | The Stage Name of a Band is equal to the Name of the Musician in case this Band is a Soloist. |
| $I_{16}$ | Implem. | Check | It is assumed that the datatype VARCHAR2(10) of Birthdate in Musician can be converted into DATE |

**Table 1(cont.): implicit semantics incorporated in the definition of each table**

Excluded semantics:

| Presp_id | Description | Cause | Explicit/ Implicit |
|---|---|---|---|
| $E_1$ | The date/time of the event must be 18 years after the client's date of birth | We consider this could be checked with a trigger later on. | Explicit |
| $E_2$ | A record label won't be removed from the database whenever there exists any album released under it. | No Implementable | Explicit |

| | | | |
|---|---|---|---|
| $E_3$ | Concerts cannot be deleted when ticket sales have already been recorded for them. | No implementable | Explicit |
| $E_4$ | There could be two rows that will be stored where authors are repeated. Example: Song('Love', 'Maria', 'Diego') and Song('Love', 'Diego', 'María') | No implementable | Explicit |

**Table 5: explicit semantics excluded in the creation of each table**

# 4 Workload (DML)

This section will describe the uploading of the workload (*NEWload.sql* script) from the tables provided (and described in the statement). To this end, we will analyze the problem of populating the tables with the workload. The solution will be described, with emphasis on:

- The specific order of tables to dump data into them (reasoned).
- The problems that arise (obligatory field value, inconsistencies in the original data, etc...) and the solutions adopted to overcome them.

We are going to study each problem found in the order of creation of our tables. This order is fundamental, as some tables point to other ones via foreign keys, so those that are pointed to must be created first. Taking into account our own order:

1.In Musician, we found a **problem**: when we were trying to insert the values, we found an error of 'unique constraint violated'. We localized the problem and realized it is due to duplicate rows, which is solved by simply adding 'distinct' after 'SELECT'. There were 75 repeated rows and 0 rows with null values, which means that only **1649** distinct and not null-valued (non-optional) rows were inserted (out of a total of 1724).

```
SQL> INSERT INTO MUSICIAN A (A.Passport, A.FullName, A.Nationality, A.BirthDate) SELECT  B.PASSPORT, B.MUSICIAN, B.NATIONALITY, to_date(B.BIRTHDATE, 'DD-MM-YYYY') FROM fsdb.artists B;
INSERT INTO MUSICIAN A (A.Passport, A.FullName, A.Nationality, A.BirthDate) SELECT  B.PASSPORT, B.MUSICIAN, B.NATIONALITY, to_date(B.BIRTHDATE, 'DD-MM-YYYY') FROM fsdb.artists B
*
ERROR en linea 1:
ORA-00001: restriccion unica (FSDB253.PK_MUSICIAN) violada


SQL>
```

```
PASSPORT       MUSICIAN                                          NATIONALITY          TO_DATE(
-------------- ------------------------------------------------- -------------------- --------
SE>>0049110567 Fulano Lopez                                      Swede                31/12/39
SE>>0245458128 Lluc Delgado                                      Swede                26/03/41
SE>>0960039754 Venci                                             Swede                05/01/42
SE>>0786843588 Francisca Leonila Infante                         Swede                10/07/35
SE>>0636333994 Ofely                                             Swede                20/05/35
SE>>0288540365 Maria Geraldina Inga-Menacho                      Swede                04/11/32
SE>>0733396044 Elesci                                            Swede                19/01/42
SE>>0468827810 Prudencia                                         Swede                22/11/33
SE>>0333836387 Prosi                                             Swede                21/10/37
SE>>0063274453 Pastor Marroquin                                  Swede                01/02/32

1649 filas seleccionadas.

SQL>
```

2.In Band, we found a **problem**: there was a row with all of its attributes NULL (BAND, BAND_NATION, BAND_LANGUAGE) taking null values. However, it was solved by using 'is not null' for band (we found that whenever band is not null the rest of the attributes are not null also). Regarding repeated rows, there were **695** distinct and not null-valued (non-optional) rows inserted (out of a total of 1724).

```
SQL> SELECT distinct BAND, BAND_NATION, BAND_LANGUAGE FROM fsdb.artists WHERE BAND is NULL;

BAND                                              BAND_NATION          BAND_LANGUAGE
------------------------------------------------- -------------------- --------------------


SQL>
```

```
BAND                                              BAND_NATION          BAND_LANGUAGE
------------------------------------------------- -------------------- --------------------
Rosa Bartola Gomez                                Portuguese           English
Beltran                                           British              English

695 filas seleccionadas.

SQL>
```

3.In DL_BandMembership, we found a **problem**: a row that contained a null START_DATE. It was solved by replacing that null date by SYSDATE, which was not a contradiction with END_DATE, as this row had no END_DATE either. Regarding repeated rows, there were **1224** distinct and not null-valued (non-optional) rows inserted.

```
SQL> INSERT INTO DL_BANDMEMBERSHIP (Band, Musician, Role, IncorporationDate, WithdrawalDate) SELECT distinct B.band, B.p
assport, B.role, to_date(B.start_date,  'DD-MM-YYYY'), to_date(B.end_date, 'DD-MM-YYYY') FROM fsdb.artists B WHERE B.ban
d IS NOT NULL;
INSERT INTO DL_BANDMEMBERSHIP (Band, Musician, Role, IncorporationDate, WithdrawalDate) SELECT distinct B.band, B.passpo
rt, B.role, to_date(B.start_date,  'DD-MM-YYYY'), to_date(B.end_date, 'DD-MM-YYYY') FROM fsdb.artists B WHERE B.band IS
NOT NULL
            *
ERROR en linea 1:
ORA-01400: no se puede realizar una insercion NULL en
("FSDB253"."DL_BANDMEMBERSHIP"."INCORPORATIONDATE")
```

```
SQL> SELECT band,start_date,end_date from fsdb.artists where Band is not null and start_date is Null;

BAND                                               START_DATE END_DATE
-------------------------------------------------- ---------- ----------
Cunegunda
```

```
BAND                                               PASSPORT       NVL(B.ROLE,'SOL NVL(TO_D TO_DATE(
-------------------------------------------------- -------------- --------------- -------- --------
The Speedy Gamo Band                               IS>>0434280633 Percussion      04/07/64 28/09/64
Chapela Cal?                                       US>>0638315635 Percussion      02/11/80 24/07/84
Recuerdos de Ayer                                  FR>>0362826477 Percussion      11/05/14 28/01/18

1224 filas seleccionadas.

SQL>
```

4.In Song, we found **no problems**. Regarding repeated rows, there were **123698** distinct and not null-valued (non-optional) rows inserted.

```
WRITER                                             SONG                                               COWRITER
-------------------------------------------------- -------------------------------------------------- --------------------------------------------------
SE>>0811312298                                     Wise and dreamer
SE>>0206964155                                     Jewels
SE>>0973902484                                     Devil of shining

123698 filas seleccionadas.

SQL>
```

5.In Studio, we found **no problems**, no Studio nor Address were null. Regarding repeated rows, there were **40** distinct and not null-valued (non-optional) rows inserted.

```
STUDIO                                             STUD_ADDRESS
-------------------------------------------------- ----------------------------------------------------------------------------------------------------
Estudios Casita                                    Street Quevedo, N 140, AS-65865, American Samoa
Walnut Tree Recordings                             Street Walnut Tree, N 46, PL-14344, Poland
Manazas Studios                                    Walk Shepherds, N 45, SM-59321, San Marino
Crowdy Studios                                     Slope Crowdy, N 51, ES-76270, Spain
Estudios de Grabaci?n Teodora Livia                Street Saint Eulalia, N 140, CR-67333, Costa Rica
Estudios de Grabaci?n Rosa Eva                     Lane Linen, N 78, SR-68338, Suriname
Remuzgo Guzman Inc.                                Avenue Perez-Reverte, N 69, TT-70142, Trinidad and Tobago

40 filas seleccionadas.

SQL>
```

6.In Manager, we found some **problems** related to many managers not having a surname. Our solution involved making this attribute optional. Regarding repeated rows, there were **126** distinct and not null-valued (non-optional) rows inserted.

```
SQL> SELECT distinct to_number(MAN_MOBILE), MANAGER_NAME, MAN_SURNAME, MAN_FAM_NAME FROM fsdb.recordings WHERE MAN_SURNAME IS NULL;

TO_NUMBER(MAN_MOBILE) MANAGER_NAME                       MAN_SURNAME          MAN_FAM_NAME
--------------------- ---------------------------------- -------------------- --------------------
           555779088 Jose                                                    Moreira
           555953252 Dulce                                                   Gomez
           555757894 Mariluz                                                 Diaz
           555645760 Armando                                                 Laverio
```

```
555095465 Esteban Enrique                                          Gomez
555440180 Grazia                                                   Galdos
555376897 Alejandra                                                Estrella
555428819 Eva Ovidia                                               Bernal

TO_NUMBER(MAN_MOBILE) MANAGER_NAME                       MAN_SURNAME          MAN_FAM_NAME
--------------------- ---------------------------------- -------------------- --------------------
           555186120 Maria Jose                                                 Vazquez
           555792433 Marilia                                                    Palacin
           555163184 Maria de las Aguas Vivas "Tijeras"                         Jimenez
           555754076 Maria del Henar                                            Sanz
           555336234 Editta                                                     Carrillo
           555855423 Jillian                                                    Latorre
           555602670 Antonio Fernando                                           Bernedo
           555097557 Desiderio "Mari"                                           Maranon
           555848458 Olimpio                                                    Ortega
           555541405 Ramses                                                     Sanchez-Laque
           555352222 Antonio "Antonio Angulo"                                   Angulo

44 filas seleccionadas.

SQL> _
```

```
TO_NUMBER(MAN_MOBILE) MANAGER_NAME                       MAN_SURNAME          MAN_FAM_NAME
--------------------- ---------------------------------- -------------------- --------------------
           555671107 Urbano                             Cubo                 Canari
           555399004 Silvia Feodora                     Rincon               Rimachi
           555803402 Petra Patricia                     Pomez                Galarza
           555138583 Candidiano                         Garcia               Bueno
           555421035 Cesarea                            Marquina             Parco

126 filas seleccionadas.

SQL> _
```

7.In RecordLabel, we found **no problems**. Regarding repeated rows, there were **30** distinct and not null-valued (non-optional) rows inserted.

```
PUBLISHER                 TO_NUMBER(PUB_PHONE)
------------------------- --------------------
G?alter Music                        555908230
United Vinyls                        555196939
Armaggedom Rec.                      555123881
Omega Recordings                     555908774
Fuerteventura  Inc.                  555180191
SilkRecord                           555368650
JJJ                                  555155764
Hispano Vos                          555838851

30 filas seleccionadas.

SQL> _
```

8.In Album, we found **no problems**. Regarding repeated rows, there were **21561** distinct and not null-valued (non-optional) rows inserted.

```
ALBUM_PAIR      PERFORMER                                TO_NUMBER(MAN_MOBILE) PUBLISHER              ALBUM_TITLE                                TO_DATE( FORMAT      TO_NUMBER(ALBUM_LENGTH)
--------------- ---------------------------------------- --------------------- ---------------------- ------------------------------------------ -------- ---------- -----------------------
H9444JDX935695D The Great Pretending Modesty                        555885969 Monz?n                 Distancia gravedad                         01/05/84 Single                         330

21561 filas seleccionadas.

SQL> _
```

9.In Track, we found **no problems**. Regarding repeated rows, there were **146278** distinct and not null-valued (non-optional) rows inserted.

```
SONG                                     WRITER                                   PERFORMER                                TRACKNUM STUDIO                                    TO_NUMBER(DURATION) TO
---------------------------------------- ---------------------------------------- ---------------------------------------- -------- ----------------------------------------- ------------------- --
Plut?n de t. N. T.                       ES>>0233204105                           Roqui                                      12 Nakama Hernandez-Llorente Recordings                 394 08
Carnations bandit                        GB>>0232291710                           Beltran                                    10 Estudios Madonna Lily                                210 27
Tunnel in the steppe                     SE>>0787845940                           Begga Ruiz                                  1 Escriba Ruiz Studios                                 186 10
Puzzle                                   US>>0476184140                           Francia Farro                               5 Jurado Studios                                       194 29
Gorrino o sauces                         ES>>0233204105                           Roqui                                       1 Estudios de Grabaci?n Orni                           349 23
Amapolas o soul                          SE>>0659088141                           Babito                                      7 Escriba Ruiz Studios                                 155 11
Caminos nadie                            SE>>0432425243                           Cantadores                                  4 Lonely Recordings                                    351 08
Amigo o toros                            SE>>0581486851                           Cantadores                                  4 Estudios de Grabaci?n Our Lady of the Sanctuary      340 23
Feeling                                  SE>>0632057815                           Clasico                                     4 Estudios de Grabaci?n Our Lady of the Sanctuary      255 24
Equivocado y enamorado                   SE>>0327304509                           Bezzubikoff Ampuero                        13 Actress Recordings                                   222 11
Landscape or sensation                   SE>>0269858646                           Clemente Sanchez                            2 Estudios de Grabaci?n Marino                         176 20

146278 filas seleccionadas.

SQL> _
```

10.In Tour, we found **some problems**. There were some null values in Tour, and a Manager whose Phone was null, also had a null value in Tour, so we avoided it ('555097555', 'The '88 Dude Tour'). Regarding repeated rows, there were **5331** distinct and not null-valued (non-optional) rows inserted.

```
SQL> INSERT INTO Tour (Manager, Name, Band) SELECT distinct to_number(A.MAN_MOBILE), A.TOUR, A.PERFORMER FROM fsdb.livesingings A;
INSERT INTO Tour (Manager, Name, Band) SELECT distinct to_number(A.MAN_MOBILE), A.TOUR, A.PERFORMER FROM fsdb.livesingings A
                                                      *

ERROR en linea 1:
ORA-01400: no se puede realizar una insercion NULL en ("FSDB253"."TOUR"."NAME")
```

```
SQL> INSERT INTO Tour (Manager, Name, Band) SELECT distinct to_number(A.MAN_MOBILE), A.TOUR, A.PERFORMER FROM fsdb.livesingings A wher
INSERT INTO Tour (Manager, Name, Band) SELECT distinct to_number(A.MAN_MOBILE), A.TOUR, A.PERFORMER FROM fsdb.livesingings A where A.T
*
ERROR en linea 1:
ORA-02291: restriccion de integridad (FSDB253.FK_TOUR_MANAGER) violada - clave principal no encontrada
```

```
SQL> SELECT DISTINCT TO_NUMBER(A.MAN_MOBILE), A.TOUR
  2  FROM fsdb.livesingings A
  3  WHERE A.TOUR IS NOT NULL
  4  AND A.MAN_MOBILE NOT IN (SELECT DISTINCT Telephone FROM Manager);

TO_NUMBER(A.MAN_MOBILE) TOUR
----------------------- ----------------------------------------------------------------------------------------------------
              555097555 The '88 Dude Tour
```

```
TO_NUMBER(A.MAN_MOBILE) TOUR                                                                                 PERFORMER
----------------------- ---------------------------------------------------------------------------------------------------
              555779088 The '95 Tasy Tour                                                                    Tasy
              555759588 La of like '87                                                                       Telemaco Sanchez
              555577793 La luces 2001                                                                        Virila ?vila
              555208112 Pond 1990 Tourn?e                                                                    Silky Pond
              555456551 Malpartida 2005 Tourn?e                                                              Sandra Eustaquia Malpartida
              555707910 distress 2011                                                                        Violeta "Pingo" Benitez
              555792433 La Wenceslao 1991 Gira                                                               Wenceslao

5331 filas seleccionadas.

SQL> _
```

11.In Concert, we found **some problems**: that the column Attendance was empty string. We solved it by taking 0 as default value according to the statement. We also found that there was one tour that was not registered ('The '88 Dude Tour' and 'Yamashiro'. Regarding repeated rows, there were **58813** distinct and not null-valued (non-optional) rows inserted.

```
SQL> select attendance from fsdb.livesingings where attendance is not null;

ninguna fila seleccionada
```

```
INSERT INTO Concert (Address, Municipality, Country, TourName, TourBand, EventDate, NumberAttendee) SELECT distinct A.AD
DRESS, A.MUNICIPALITY, A.COUNTRY, NVL(A.TOUR, 'One-off'), A.PERFORMER, to_date(A.WHEN), 0 FROM fsdb.livesingings A
*
ERROR en linea 1:
ORA-02291: restriccion de integridad (FSDB253.FK_DL_TOURSCHEDULE_TOUR) violada
- clave principal no encontrada
```

```
SQL> SELECT DISTINCT A.TOUR, A.PERFORMER
  2  FROM fsdb.livesingings A
  3  WHERE A.TOUR IS NOT NULL
  4  AND (A.TOUR, A.PERFORMER) NOT IN (SELECT DISTINCT Name, Band FROM Tour);

TOUR
--------------------------------------------------------------------------------
PERFORMER
--------------------------------------------------------------------------------
The '88 Dude Tour
Yamashiro
```

```
ADDRESS                                            MUNICIPALITY                                       COUNTRY
-------------------------------------------------- -------------------------------------------------- --------------------------------------------------
32 Our Lady of the Sanctuary  Street               Honeyborough on Oder                               Pitcairn
110 Soldier Roundabout                             Lemmonland on Mississippi                          Netherlands Antilles
130 Our Lady of the Sanctuary  Slope               Shadowside on Minyo                                Belize
172 Bullring Street                                Vortexside on Jucar                                Netherlands Antilles
95 Orange Street                                   Butterland on Manzanares                           Lebanon
101 Our Lady of the Happiness Street               Nearland on Manzanares                             Latvia
94 Flax Road                                       Wolvesborough                                      Tonga

58813 filas seleccionadas.

SQL>
SQL>
```

12.In Performance, we found **some problems**: as there was an unregistered song 'Something jazzes GB>>0600283845', so we avoided it. Regarding repeated rows, there were **658141** distinct and not null-valued (non-optional) rows inserted.

```
SQL> INSERT INTO Performance (SongAuthor, SongTitle, Duration, ConcertBand, ConcertTour, ConcertEventDate, Order_) SELEC
T distinct WRITER, SONG, to_number(DURATION_MIN), PERFORMER, NVL(TOUR, 'One-off'), to_date(WHEN,'DD-MM-YYYY'), to_number
(SEQNUMBER) FROM fsdb.livesingings WHERE TOUR is not null and TOUR != 'The ''88 Dude Tour' AND PERFORMER != 'Yamashiro'
;
INSERT INTO Performance (SongAuthor, SongTitle, Duration, ConcertBand, ConcertTour, ConcertEventDate, Order_) SELECT dis
tinct WRITER, SONG, to_number(DURATION_MIN), PERFORMER, NVL(TOUR, 'One-off'), to_date(WHEN,'DD-MM-YYYY'), to_number(SEQN
UMBER) FROM fsdb.livesingings WHERE TOUR is not null and TOUR != 'The ''88 Dude Tour' AND PERFORMER != 'Yamashiro'
*
ERROR en linea 1:
ORA-02291: restriccion de integridad (FSDB253.FK_SONG) violada - clave
principal no encontrada
```

```
SQL> SELECT DISTINCT A.Song, A.writer
  2  FROM fsdb.livesingings A
  3  WHERE (A.song, A.writer) NOT IN (SELECT DISTINCT Title, author1 FROM Song);

SONG
--------------------------------------------------------------------------------
WRITER
--------------------------------------------------------------------------------
Something jazzes
GB>>0600283845
```

```
WRITER                                             SONG                                               TO_NUMBER(DURATION_MIN) PERFORMER
-------------------------------------------------- -------------------------------------------------- ----------------------- --------------------
SE>>0453558267                                     Le?ador culpar                                                         113 Ormi
SE>>0062591908                                     Uranus                                                                 124 Retis Garci
GB>>0292537522                                     Ship dancing                                                           124 Retis Garci
US>>0010613866                                     Enigma                                                                 113 Rici
SE>>0376710439                                     Mars                                                                   117 Ricardo Mar
SE>>0881471407                                     Hand                                                                   117 Regardotop?
SE>>0087648528                                     Lightening and crazy                                                   133 Recuerdos d
SE>>0572037422                                     Hallelujah patio                                                       110 Rami
SE>>0057088353                                     Absurdity and owner                                                    110 Rami
SE>>0738238105                                     Taste                                                                  132 Ramon Jesus
SE>>0898402023                                     Lady                                                                   138 Raul Alduna

658141 filas seleccionadas.

SQL>
```

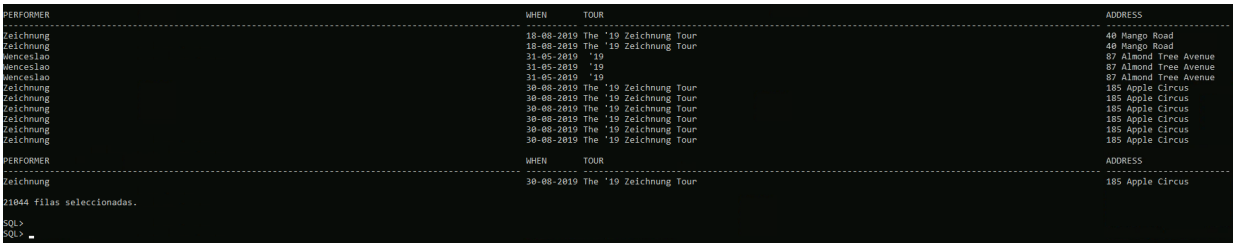
13.In Attendee, we found **no problems**. Regarding repeated rows, there were **1500** distinct and not null-valued (non-optional) rows inserted.

```
DNI      E_MAIL                                                NAME                                               SURN1
-------- ----------------------------------------------------- -------------------------------------------------- --------------------
42761290 rosalielialiagasulca@clients.vinylinc.com             Rosalie                                            Osorio
41064136 ritamamani@clients.vinylinc.com                       Rita                                               Ochoa
52943856 rosalopez@clients.vinylinc.com                        Rosa Leopoldina                                    Martin
08632801 riccica@clients.vinylinc.com                          Francisca Luna                                     Ricci

1500 filas seleccionadas.

SQL>
```

14.In DL_AttendanceSheet, we found **no problems**. Regarding repeated rows, there were **21044** distinct and not null-valued (non-optional) rows inserted.



```
PERFORMER                                          WHEN       TOUR                                               ADDRESS
-------------------------------------------------- ---------- -------------------------------------------------- --------------------
Zeichnung                                          18-08-2019 The '19 Zeichnung Tour                             40 Mango Road
Zeichnung                                          18-08-2019 The '19 Zeichnung Tour                             40 Mango Road
Wenceslao                                          31-05-2019 '19                                                87 Almond Tree Avenue
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Zeichnung                                          30-08-2019 The '19 Zeichnung Tour                             185 Apple Circus
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PERFORMER                                          WHEN       TOUR                                               ADDRESS
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