LABORATORIO N° 1 BASES DE DATOS

PARTE 1.

A. *Se encuentra en el archivo Astah guardado como diagrama_logico y diagrama_conceptos*

B.

¿Cuál es el número de bandas que tiene? ¿De qué países?

SELECT place_country, **COUNT**(band_no) **AS** Cantidad

FROM band,place

WHERE band_home= place_no **GROUP BY**(place_country)

¿Qué conciertos ha ofrecido? ¿Entre qué años?

SELECT m_name **AS** Nombre,**COUNT**(concert_orgniser) **AS**

'Cantidad conciertos', **MIN**(con_date) **AS** Primero, **MAX**(con_date)

AS Ultimo **FROM** musician, concert

WHERE concert_orgniser= m_no **GROUP BY**(m_name)

¿Qué tipo de música maneja? ¿Cuáles?

SELECT DISTINCT(comp_type**) FROM** composer

¿Cuáles músicos son compositores? ¿Cuántas composiciones tiene cada uno?

SELECT m_name AS Autor, **COUNT**(cmpr_no) **AS** Cantidad

FROM composer,musician,has_composed

WHERE comp_is= m_no **AND** cmpr_no = comp_no **GROUP BY** (m_name)

¿Cuántos conciertos se han dado?¿Qué lugar?

SELECT place_town **AS** Ciudad, **COUNT**(concert_no) **AS** 'Conciertos dados'

FROM concert,place

WHERE concert_in= place_no **GROUP** BY(place_town)

C.

¿Cuál creen que es la misión de la organización?

La misión de la organización es facilitar a la comunidad el conocimiento de artistas que

hacen o hicieron parte de la música Jazz, Clásica y Rock. De igual forma dar a conocer

sus composiciones y su participación en bandas.

¿Qué ofrece a sus clientes?

Ofrece al usuario una completa información, de forma virtual acerca de músicos

que se han enfocado en diferentes generos, tales como: Jazz,Rock y música clásica. Además, se

dan a conocer las bandas donde pertenecieron, sus composiciones, conciertos y distintas

actuaciones de sus carreras.

John David Ibañez   Ana Maria Rincon

    D. *Se encuentra ubicado en el archivo Astah guardado como parte_1.d*

PARTE 2.

Easy questions 1....5

1. *Give the organiser's name of the concert in the Assembly Rooms after the first of Feb, 1997.*

   CALCULO:

   {m:musician, c:concert | c. concert_venue = 'Assembly Rooms' ^ con_date > 01-02-1997 ^ concert_orgniser = m_no : m.name }

   ALGEBRA:

   π m_name (σ concert_venue = 'Assembly Rooms' AND con_date > 01-02-1997 AND concert_orgniser (concert, musician))

   SQL:

   SELECT m_name **AS** organiser **FROM** musician,concert **WHERE** concert_venue= 'Assembly Rooms' **AND** con_date>01/02/97 **AND** concert_orgniser = m_no

2. *Find all the performers who played guitar or violin and were born in England.*

   CALCULO:

   {m:musician, p:performer, p l: place | p.perf_is = m.m_no ^ (p.instrument = 'violin' v p.instrument = 'guitar') ^ m.born_in = pl.place_no ^ pl.place_country = 'England' : m.m_name

   ALGEBRA:

   π m_name (σ perf_is = m_no AND (instrument = 'guitar' OR instrument = 'violin') AND born_in = place_no AND place_country = 'England'

   SQL:

   SELECT DISTINCT m_name

   FROM musician,performer,place

   WHERE (instrument='violin' or instrument = 'guitar')

   AND (place_no = born_in AND place_country='England' AND perf_is = m_no)

3. *List the names of musicians who have conducted concerts in USA together with the towns and dates of these concerts.*

   CALCULO:

   {c:concert, m:musician, p:place | p.place_no = c.concert_in ^ p.place_country = 'USA' ^ m.m_no = c.concert_orgniser : m.m_name, p.place_town, c.con_date}

   ALGEBRA:

π m_name, place_town, con_date, con_date σ concert_in = place_no AND place_country = 'USA' AND m_no = concert_orgniser

SQL:

> **SELECT DISTINCT** m_name,place_town,con_date
>
> **FROM** musician,concert,performance,place
>
> **WHERE** concert_orgniser = m_no **AND** concert_in=place_no **AND** place_country='USA'

4. *How many concerts have featured at least one composition by Andy Jones? List concert date, venue and the composition's title.*

CALCULO:

> {c:composition, m:musician, cm:composer, hc: has_composed, p:perfomance, cn:concert | m.m_name = 'Andy Jones' ^ m.m_no = cm.comp_is ^ cm.comp_no = hs.cmpr_no ^ hs.cmpn_no = c.c_no ^ c.c_no = p.performed ^ p.performed_in = cn.concert_no: cn.con_date, cn.concert_venue, c.c_title }

ALGEBRA:

> π con_date, concert_venue, c_title ((σ m_name = 'Andy Jones' AND m_no = comp_is AND comp_no = cmpr_no AND cmpn_no = c_no AND c_no = performed AND performed_in = concert_no) (composition, musician, composer, has_composed, concert, performance)

SQL:

> **SELECT DISTINCT** con_date, concert_venue , c_title
>
> **FROM** place,musician,concert,composition,has_composed,composer,performance
>
> **WHERE** c_no = cmpn_no **AND** cmpr_no=comp_no **AND** comp_is=m_no **AND** m_name = ' Andy Jones' **AND** concert_no = performed_in **AND** performed = c_no

5. *list the different instruments played by the musicians and avg number of musicians who play the instrument*

CALCULO:

> {e: {# x: performer | y.instrument }: x.instrument = y.instrument} |: e.num / (# x.musicians,y.performer | x.m_no = y.perf_is : y.instrument)}

ALGEBRA:

SQL:

> **SELECT** instrument,**COUNT**(instrument) **AS** 'Cantidad de personas',
>
> **COUNT**(instrument) / (**SELECT COUNT**(**DISTINCT**(perf_is))   **FROM** musician,performer   **WHERE** m_no=perf_is) **AS** 'Promedio'
>
> **FROM** musician,performer
>
> **WHERE** m_no = perf_is
>
> **GROUP BY** instrument

Medium questions 6....10

6. *List the names, dates of birth and the instrument played of living musicians who play a instrument which Theo also plays.*

> **CALCULO:**
>
> {m:musicians, p.performer | m.m_no = p.perf_is ^ died = null ^ instrument ∈ {m:musicians, p:performer |: m.m_no = p.perf_is ^ m.m_name = 'Theo'} ^ name != 'Theo' : m_name, born, instrument}

> **SQL:**
>
> **SELECT** m_name, born, instrument **FROM** musician,performer
>
> **WHERE** instrument **IN** (**SELECT DISTINCT** instrument **FROM** performer,musician   **WHERE** m_name= 'Theo Mengel' **AND** m_no= perf_is)
>
> **AND** m_no= perf_is **AND** died is **NULL AND** m_name <>'Theo Mengel'

7. *List the name and the number of players for the band whose number of players is greater than the average number of players in each band.*

No lo pudimos realizar

8. *List the names of musicians who both conduct and compose and live in Britain.*

> **CALCULO:**
>
> {c:composer, m:musician, p:place, pr:performance | m.m_no = c.comp_is ^ p.conducted_by = m.m_no ^ m.living_in = p.place_no ^ p.place_country = 'England' : m_name}

> **SQL:**
>
> **SELECT DISTINCT** m_name
>
> **FROM** musician,performance,composer,place
>
> **WHERE** conducted_by = m_no **AND** comp_is=m_no **AND** living_in **IN** (**SELECT** place_no **FROM** place **WHERE** place_country= 'England' **OR** place_country= 'Scotland')

9. *Show the least commonly played instrument and the number of musicians who play it.*

CALCULO:

$$\{e:\{p.performer|:n.instrument,(\#|:n.perf\_no)\} \mid$$

$$(\#n.performer \mid: n.perf\_no) <= \{p:performer \mid: (\#|: p.perf\_no)\} :$$
$$e.instrument, (\#|:e.instrument)\}$$

SQL:

SELECT instrument

from (**SELECT** count(perf_is) as n,instrument **FROM** performer **GROUP BY** instrument) **AS** NN

WHERE n <= **ALL**(**SELECT** count(perf_no) **FROM** performer **GROUP BY** instrument)

10. *List the bands that have played music composed by Sue Little; Give the titles of the composition in each case.*

- **CALCULO:**

  {c:composition, hs:has_composed, cm:composer, m:musician, p:performance, b:band | cm.comp_is = m.m_no ^ m.m_name = 'Sue Litlle' ^ c.comp_no = hs.cmpr_no AND hs.cmpn_no = c.c_no ^ c.c_no = p.performed}

SQL:

SELECT band_name , c_title

FROM musician,composer,has_composed,composition,performance,band

WHERE m_no=comp_is **AND** comp_no=cmpr_no **AND** cmpn_no=c_no **AND** c_no=performed **AND** m_name ='Sue Little' **AND** band_no=gave

Hard questions 12....15

12. *Create a list showing for EVERY musician born in Britain the number of compositions and the number of instruments played.*

SELECT m_name **AS** name, compositions,**COALESCE**(instrument, 0) **AS** instrument **FROM**

(**SELECT** m_name,**COALESCE**(compositions, 0) **AS** compositions **FROM** (**SELECT DISTINCT** m_name from musician,place **WHERE** born_in= place_no **AND** (place_country= 'England' **OR** place_country= 'Scotland')) **AS** PRINCIPAL

LEFT JOIN

(**SELECT COUNT**(cmpr_no) **AS** compositions, m_name **AS** name **FROM** musician,composer,has_composed WHERE m_no= comp_is **AND** comp_no= cmpr_no **GROUP BY** (name)) **AS** COMPOSICIONES **ON** name= m_name) **AS** UNO

LEFT JOIN

(**SELECT COUNT**(perf_is) **AS** instrument , m_name **AS** name2 **FROM** musician,performer **WHERE** perf_is= m_no **GROUP BY** (name2)) **AS** DOS

ON m_name= name2

13. *Give the band name, conductor and contact of the bands performing at the most recent concert in the Royal Albert Hall.*

John David Ibañez   Ana Maria Rincon

SELECT band_name **AS** banda, m_name **AS** conductor, m_name1 **AS** contact

FROM

(**SELECT** band_name,m_name **FROM** performance,musician,band **WHERE** performed_in **IN** (**SELECT** concert_no **FROM** concert **WHERE** con_date **IN** (**SELECT MAX**(con_date) **AS** date **FROM** concert **WHERE** concert_venue= 'Royal Albert Hall')) **AND** m_no= conducted_by **AND** band_no= gave) **AS** X

INNER JOIN

(**SELECT** band_name **AS** band_name1,m_name **AS** m_name1 **FROM** performance,musician,band **WHERE** performed_in **IN** (**SELECT** concert_no **FROM** concert **WHERE** con_date **IN** (**SELECT MAX**(con_date) **AS** date **FROM** concert **WHERE** concert_venue= 'Royal Albert Hall')) **AND** band_no= gave **AND** m_no= performed_in) **AS** Y

ON band_name= band_name1

14. Give a list of musicians associated with Glasgow. Include the name of the musician and the nature of the association - one or more of 'LIVES_IN', 'BORN_IN', 'PERFORMED_IN' AND 'IN_BAND_IN'.

SELECT 'BORN IN', m_name **FROM** musician,place **WHERE** (born_in = place_no) **AND** place_town= 'Glasgow' **UNION ALL**

SELECT 'LIVES IN',m_name **FROM** musician,place **WHERE** (living_in= place_no) **AND** place_town= 'Glasgow'

UNION ALL

SELECT 'IN_BAND_IN',m_name **FROM** band,place,musician,performer,plays_in **WHERE** band_home= place_no **AND** place_town= 'Glasgow'

AND band_id= band_no **AND** player= perf_no **AND** perf_is=m_no **ORDER BY** m_name

15. Jeff Dawn plays in a band with someone who plays in a band with Sue Little. Who is it and what are the bands?

SELECT re **AS** Name,band_name **AS** 'Jeff''s band' ,n **AS** 'Sue''s band'

FROM

(**SELECT DISTINCT** m_name **AS** re,band_name **FROM** band,place,musician,performer,plays_in **WHERE** perf_is=m_no **AND** player= perf_no **AND** band_id= band_no **AND** band_name **IN** (**SELECT** band_name **FROM** band,place,musician,performer,plays_in **WHERE** perf_is=m_no **AND** player= perf_no **AND** band_id= band_no **AND** m_name = 'Jeff Dawn')) **AS** X

RIGHT OUTER JOIN

(**SELECT DISTINCT** m_name,band_name **AS** n **FROM** band,place,musician,performer,plays_in **WHERE** perf_is=m_no **AND** player= perf_no **AND** band_id= band_no **AND** band_name **IN** (**SELECT** band_name **FROM** band,place,musician,performer,plays_in **WHERE** perf_is=m_no **AND** player= perf_no **AND** band_id= band_no **AND** m_name = 'Sue Little')) **AS** Y

ON re=m_name

WHERE re **IS NOT NULL**

PARTE 3.

3.1　Se encuentra ubicado en el archivo Astah guardado como parte_3.1

3.2　Se encuentra ubicado en el archivo Astah guardado como parte_3.2

3.3 Se encuentra ubicado en el archivo Astah guardado como parte_3.3

RETROSPECTIVA

1. ¿Cuál fue el tiempo total invertido en el laboratorio por cada uno de ustedes? (Horas/Nombre)

Ana María Rincón: 24 horas

John David Ibáñez: 24 horas

2. ¿Cuál es el estado actual del laboratorio? ¿Por qué?

Falta un punto de un numeral que no supimos cómo desarrollar.

3. ¿Cuál consideran fue el mayor logro? ¿Por qué?

Terminar el laboratorio, ya que es de gran satisfacción y además aprendimos muchas cosas.

4. ¿Cuál consideran que fue el mayor problema técnico? ¿Qué hicieron para resolverlo?

El tiempo, para esto organizamos horarios y trabajamos de forma virtual igualmente.

5. ¿Qué hicieron bien como equipo? ¿Qué se comprometen a hacer para mejorar los resultados?

John David Ibañez   Ana Maria Rincon