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השאילתות

**********1**********

SELECT count(*) FROM Album WHERE album_Date_Start >= 'dateStart ' AND album_Date_End <= ' dateEnd ';

Πcount(*)**σ**album_Data_Start>="dateStart"AND album_Data_End<="dateEnd"**(Album)**

**********2**********

SELECT musician_Name FROM Musician WHERE musician_Name=' fullName ';

Πmusician_Name **σ**musician_Name=' fullName '**(Musician)**

```
SELECT count(*) FROM A_Musical_Scene_And_Album WHERE album_ID in (
        SELECT album_ID FROM Musician_And_Album WHERE album_ID in (
                SELECT album_ID FROM Album WHERE album_Date_Start >= 'dateStart' AND
        album_Date_End <= 'dateEnd'
        )
        AND musician_ID in(
                SELECT musician_ID FROM Musician WHERE musician_Name='fullName'
        )
)
```

1.ALBUM_ID←Πalbum_ID**σ**album_Data_Start>="dateStart"AND album_Data_End<="dateEnd"**(Album)**

2.MUSICIAN_ID←Πmusician_ID**σ**musician_Name="fullName"**(Album)**

3.(1+2) ALBUM_IDNEW←Πalbum_ID**σ**album_ID in **ALBUM_ID AND** musician_ID in **MUSICIAN_ID(Album)**

4.(3) Πcount(*)**σ**album_ID in **ALBUM_IDNEW (A_Musical_Scene_And_Alnum)**

**********3**********

```
SELECT musician_Name FROM Musician WHERE musician_Name=' fullName ';
```

Πmusician_Name **σ**musician_Name=' fullName '**(Musician)**

```
SELECT count(*) FROM Musician_And_Album WHERE album_ID in (
        SELECT album_ID FROM Album WHERE album_Date_Start >= 'dateStart' AND
        album_Date_End <=  'dateEnd'
)
AND musician_ID in(
        SELECT musician_ID FROM Musician WHERE musician_Name='fullName'
);
```

1.ALBUM_ID←Πalbum_ID**σ**album_Data_Start>="dateStart"AND album_Data_End<="dateEnd"**(Album)**

2.MUSICIAN_ID←Πmusician_ID**σ**musician_Name="fullName"**(Album)**

Πcount(*)**σ**album_ID in **ALBUM_ID AND** musician_ID in **MUSICIAN_ID(Musician_And_Album)**

**********4**********

```
SELECT a_Musical_Instrument_Type FROM a_musical_scene_and_a_musical_instruments GROUP
by a_Musical_Instrument_Type order by count(a_Musical_Instrument_Type) desc limit 1;
```

σ rownum() > 0 and rownum() ≤ 1 **T** count(a_Musical_Instrument_Type) desc **Τ** a_Musical_Instrument_Type **Τ** a_Musical_Instrument_Type a_musical_scene_and_a_musical_instruments **(a_musical_scene_and_a_musical_instruments)**

**********5**********

```
SELECT album_Name FROM Album WHERE album_Name='albumFullName';
```

Πalbum_Name **σ**album_Name=' albumFullName '**(Album)**

```
SELECT a_Musical_Instrument_Type FROM a_musical_scene_and_a_musical_instruments WHERE
a_Musical_Scene_Name in(
        SELECT a_Musical_Scene_Name FROM A_Musical_Scene_And_Album WHERE album_ID
        in (
                SELECT album_ID FROM Album WHERE album_Name='albumFullName'
        )
);
```

1. **ALBUM_ID**←**Π**album_ID**σ**album_Name="albumFullName"**(Album)**
2. **A_Musical_Scene_Name**←**Π**a_Musical_Scene_Name**σ**album_ID in **ALBUM_ID** ***(A_Musical_Scene_And_Album)***
3. **Π**a_Musical_Instrument_Type **σ**a_Musical_Scene_Name in **A_Musical_Scene_Name** **(a_musical_scene_and_a_musical_instruments)**

**********6**********

```
SELECT producer_Name FROM producer,(
        SELECT *  FROM(
                SELECT  count(producer_ID) AS A,producer_ID FROM producer_and_album AS
                B,album WHERE B.album_ID=album.album_ID AND
                album.album_Date_Start>='dateStart'  AND album.album_Date_End<='dateEnd'
                group by producer_ID
                )
        AS B  ORDER BY B.A desc limit 1
)
AS W Where producer.producer_ID = W.producer_ID
```

1. **tblProducer**←**Π** ρAcount(producer_ID) , producer_ID **σ** B.album_ID=album.album_ID AND album.album_Data_Start>="dateStart"AND album.album_Data_End<="dateEnd" **(**ρB **producer_and_album x album)**
2. **tblPN**←σ rownum() > 0 and rownum() ≤ 1 T B.A desc ρ B tblProducer
3. π producer_Name σ T.d = W.d producer □ ρ B tblPN

**********7**********

```
SELECT a_Musical_Instrument_Maker FROM a_musical_instruments,(
        SELECT *  FROM(
                SELECT  count(a_Musical_Instrument_Type) AS A,a_Musical_Instrument_Type
                FROM a_musical_scene_and_a_musical_instruments AS B group by
                a_Musical_Instrument_Type
        )AS B  ORDER BY B.A desc limit 1
)AS W WHERE W.a_Musical_Instrument_Type=a_musical_instruments.a_Musical_Instrument_Type
```

1. **tbl1**<- **π** ρAcount(producer_ID) , a_Musical_instrument_Type **π** a_Musical_instrument_Type
   (ρB **a_musical_scene_and_a_musical_instruments)**
2. tbl2 <-σ rownum() > 0 and rownum() ≤ 1 **T** B.A desc **π** a_Musical_Instrument_Type
   (ρB**tbl1)**
3. **π** a_Musical_instrument_Maker σ w.a_musical_instrument_Type=a_musical_instruments.a_Musical_instrument_Type
   (a_musical_instruments x ρw**tbl2)**

**********8**********

```
SELECT musician_Name FROM musician WHERE musician_ID in(
        SELECT distinct musician_ID FROM musician_and_album
)
```

tb1<- **tbl1**<- **π** distinct musician_ID**(**musician_and_album **)**

π musician_Name σ musician_ID in tbl1 **(**musician **)**

**********9**********

```
SELECT musician_Name FROM Musician WHERE  musician_ID =(
        SELECT musician_ID FROM(
                SELECT musician_ID FROM musician_and_album WHERE album_ID in (
                        SELECT album_ID FROM musician_and_album GROUP BY album_ID
                        Having COUNT(*)>1 ORDER BY Count(*) DESC
                )
        ) AS A  GROUP BY A.musician_ID ORDER BY count(*) DESC LIMIT 1
)
```

1. **tbl1**<- σ count(*)>1 T Count(*) desc π album_ID π album_ID (musician_and_album)
2. **tbl2<-**π musician_ID σ album_ID in tbl1(musician_and_album)
3. **tbl3 <-**σ rownum() > 0 and rownum() ≤ 1 **T** count(a_Musical_Instrument_Type) desc **π** musican_ID **π** A.musician_ID **(tbl2)**
4. π musician_ID σ musician_ID = tbl3(Musician)

**********10**********

```
SELECT a_Musical_Scene_Type FROM a_musical_scene GROUP BY a_Musical_Scene_Type
ORDER BY count(a_Musical_Scene_Type) DESC LIMIT 1
```

σ rownum() > 0 and rownum() ≤ 1 τ count(a_Musical_Scene_Type) desc π a_Musical_Scene_Type π a_Musical_Scene_Type **(a_musical_scene)**

**********11**********

```
SELECT recording_Technician_Name FROM Recording_Technician,(
        SELECT *  FROM(
                SELECT  count(recording_Technician_ID) AS A,recording_Technician_ID FROM
                a_musical_scene  WHERE a_Musical_Scene_Date>='dateStart' AND
                a_Musical_Scene_Date<='dateEnd'  group by recording_Technician_ID
                )AS B  ORDER BY B.A desc limit 1
)AS W Where Recording_Technician.recording_Technician_ID = W.recording_Technician_ID
```

1.tbl1-<πρAcount(recording_Technician_ID),recording_Technician_ID σ a_Musical_Scene_Date>='dateStart' AND a_Musical_Scene_Date<='dateEnd' π recording_Technician_ID **(a_musical_scene)**

2. tbl2<-σ rownum() > 0 and rownum() ≤ 1 τ B.A desc π ρAcount(recording_Technician_ID),recording_Technician_ID (ρB**tbl1**)

3. π recording_Technician_Name σ Recording_Technician.recording_Technician_ID = W.recording_Technician_ID **(Recording_Techncian xρw tbl2)**

**********12**********

```
SELECT album_Name FROM Album WHERE album_Date_Start in (
        SELECT MIN(album_Date_Start) FROM Album
)
```

1. tbl1<-π MIN(album_Date_Start) **(Album)**
2. π album_Name σ album_Date_Start in tbl1 **(Album)**

**********13**********

```
SELECT a_Musical_Scene_Name FROM (
        SELECT a_Musical_Scene_Name,Count(a_Musical_Scene_Name) AS countSong FROM
        a_musical_scene_and_album group by a_Musical_Scene_Name ORDER BY
        a_Musical_Scene_Name DESC
) AS S WHERE countSong>1
```

1. tbl1<-T a_Musical_Scene_Name DESC Π

   a_Musical_Scene_Name,ρcountSongCount(a_Musical_Scene_Name) Π

   a_Musical_Scene_Name **(a_musical_scene_and_album group)**

2. Π a_Musical_Scene_Name σ countSong >1 **(ρwtb1)**

**********14**********

```
SELECT distinct recording_Technician_Name FROM
album,recording_technician,a_musical_scene,a_musical_scene_and_album
WHERE recording_technician.recording_Technician_ID=a_musical_scene.recording_Technician_ID
AND a_musical_scene_and_album.album_ID=album.album_ID GROUP BY
recording_technician.recording_Technician_Name,
album.album_Name, album.album_Count_a_Musical_Scene  HAVING
count(a_musical_scene.a_Musical_Scene_Name)=album_Count_a_Musical_Scene;
```

Π distinct recording_Technician_Name σ recording_technician.recording_Technician_ID=a_musical_scene.recording_Technician_ID AND a_musical_scene_and_album.album_ID=album.album_ID Π distinct recording_Technician_Name,recording_technician.recording_Technician_Name, album.album_Name, album.album_Count_a_Musical_Scene σ count(a_musical_scene.a_Musical_Scene_Name)=album_Count_a_Musical_Scene **(album X recording_technician X a_musical_scene X a_musical_scene_and_album)**

**********15**********