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-- Ex 1 X,Y should replace DATE("2018-01-01")
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select count(a.name)
FROM music_world.album a
where a.start_date >= DATE("2018-01-01")
and a.end_date <=DATE("2018-01-02");
```

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-- Ex 2 X,Y1,Y2 should replace the dates and the name of the musician
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```
select count(t.id) songs
from music_world.track t,
     music_world.persona m,
     music_world.musician_tracks mt,
     music_world.persona_roles pr,
     music_world.role r
where t.id = mt.track_id
and m.id = mt.musician_id
and m.id = pr.persona_id
and r.id = pr.role_id
and r.name in ('Singer','Player')
and t.recording_date between DATE("2018-01-01") and DATE("2018-01-01")
and m.name = 'Shalom Hanoch';
```

```
-- Ex 3 X,Y1,Y2 should replade the dates and the name of the musician
```

```
select count(a.id) albums
from music_world.track t,
     music_world.persona m,
     music_world.musician_tracks mt,
     music_world.persona_roles pr,
     music_world.role r,
     music_world.album a,
     music_world.album_tracks atr
where t.id = mt.track_id
and m.id = mt.musician_id
and m.id = pr.persona_id
and r.id = pr.role_id
and r.name in ('Singer','Player')
and a.id = atr.album_id
and t.id = atr.track_id
and ((a.start_date between DATE("2018-01-01") and DATE("2018-01-01")) OR (a.end_date between DATE("2018-01-01") and DATE("2018-01-01")))
OR (DATE("2018-01-01") between a.start_date and a.end_date))
and m.name = 'Shalom Hanoch';
```

```
-- Ex 4
with tracks_per_instrument as
(select ti.instrument_id, count(ti.track_id) cnt
from music_world.track_instruments ti
group by ti.instrument_id)
select i.name
from tracks_per_instrument t,
     music_world.instrument i
where t.cnt = (select max(t1.cnt)
              from tracks_per_instrument t1)
and t.instrument_id = i.id;

-- Ex 5 should replade the name of the album
select distinct(i.name)
from music_world.instrument i,
     music_world.album a,
     music_world.track t,
     music_world.track_instruments ti,
     music_world.album_tracks atr
where atr.album_id = a.id
and atr.TRACK_ID = t.id
and ti.track_id = t.id
and ti.instrument_id = i.id
and a.name = 'The Best of Arik Einstein';

-- Ex 6 Y1,Y2 should replade the dates
-- select t.name, max(album_cnt) from
with albums_per_producer as
(select p.name, p.id, count(a.id) album_cnt
from music_world.album a,
     music_world.album_producers ap,
     music_world.persona p,
     music_world.role r,
     music_world.persona_roles pr
where r.name = 'Producer'
and pr.role_id = r.id
and pr.persona_id = p.id
and ap.album_id = a.id
and ap.producer_id = p.id
and a.start_date between DATE("2018-01-01") and DATE("2018-01-02")
and a.end_date between DATE("2018-01-01") and DATE("2018-01-02")
group by p.name, p.id)
select t.name from albums_per_producer t
where t.album_cnt = (select max(album_cnt) from albums_per_producer t1);
```

```
-- Ex 7
with tracks_per_instrument as
(select ti.instrument_id, count(ti.track_id) cnt
from music_world.track_instruments ti
group by ti.instrument_id)
select i.manufacturer_name
from tracks_per_instrument t,
     music_world.instrument i
where t.cnt = (select max(t1.cnt)
               from tracks_per_instrument t1)
and t.instrument_id = i.id;

-- EX 8
select count(distinct mt.musician_id) musician_cnt
from music_world.musician_tracks mt;

-- Ex 9
with partners as
(select mt.musician_id, p.name, count(*) partners_cnt
from music_world.musician_tracks mt,
     music_world.track t,
     music_world.persona p,
     music_world.role r,
     music_world.persona_roles pr,
     music_world.musician_tracks mt1,
     music_world.role r1,
     music_world.persona_roles pr1
where mt.musician_id = p.id
and mt.track_id = t.id
and pr.persona_id = p.id
and pr.role_id = r.id
and r.name in ('Singer', 'Player')
and mt.TRACK_ID = mt1.TRACK_ID
and pr1.role_id = r1.id
and r1.name in ('Singer', 'Player')
and pr1.persona_id = mt1.musician_id
and mt.musician_id != mt1.musician_id
group by mt.musician_id, p.name)
select t.name from partners t
where t.partners_cnt in (select max(partners_cnt) from partners t1);
```

```
-- Ex 10
with tracks_per_genre as
(select t.GENRE, count(*) cnt
from music_world.track t
group by t.GENRE)
select t.genre from tracks_per_genre t
where t.cnt = (select max(t1.cnt) from tracks_per_genre t1);

-- Ex 11 Y1,Y2 should replade the dates
-- select t.name, max(t.track_cnt)
with tracks_per_technitian as
(select p.id, p.name, count(t.id) track_cnt
    from music_world.track t,
    music_world.persona p
    where t.recording_technitian_id = p.id
    and   t.recording_date between DATE("2018-01-01") and DATE("2018-01-01")
    group by p.id, p.name)
select t.name from tracks_per_technitian t
where t.track_cnt = (select max(t1.track_cnt) from tracks_per_technitian t1);

-- Ex 12
SELECT music_world.album.name FROM music_world.album
WHERE end_date = ( SELECT MIN(end_date) FROM music_world.album );

-- Ex 13
select t.name
from (select atr.TRACK_ID, count(atr.album_id) cnt
    from music_world.album_tracks atr
    group by atr.TRACK_ID
    having cnt >=2) t1,
    music_world.track t
where t1.track_id = t.id;
```

שמות מגישים: 1. תומר בר 2. אריאל חדאד
ת"ז: 1. 305171159 2. 316464098

-- Ex 14

```
with technician_songs_per_album as
(select p.id technician_id, p.name technician_name, a.id album_id, count(t.id) track_cnt
  from music_world.track t,
  music_world.persona p,
  music_world.album a,
  music_world.album_tracks s
 where t.recording_technician_id = p.id
 and   a.id = s.album_id
 and   t.id = s.track_id
 group by p.id, p.name, a.id)
select distinct t.technician_name
from music_world.album a, technician_songs_per_album t
where a.id = t.album_id
And   a.num_of_songs = t.track_cnt;
```

-- Ex 15

```
with genre_per_musician as
(select p.id, p.name, count(distinct t.genre) genre_cnt
 from music_world.track t,
  music_world.persona p,
  music_world.role r,
  music_world.persona_roles pr,
  music_world.musician_tracks mt
 where mt.musician_id = p.id
 and   mt.track_id = t.id
 and   pr.persona_id = p.id
 and   pr.role_id = r.id
 and   r.name in ('Singer', 'Player')
 group by p.id, p.name)
select t.name from genre_per_musician t
where t.genre_cnt in (select max(genre_cnt) from genre_per_musician t1);
```