

## Assignment 2: SQL – complicated queries

1. **Find the distinct model that employee 'Tom' specializes in. Show such model Nos.**

```
Select distinct m.modelNo
From TechnicalSupport t, Specializes s, Model m
Where (t.empld, m.modelNo)=(s.empld, s.modelNo)
AND t.name = 'Tom';
```

2. **Assume that a digital display at a specific site with site code 111 has issues, find all the technical supports who can repair this digital display. Show the employee ids and names of such technical supports.**

```
Select t.empld, t.name
From Site site, DigitalDisplay d, Locates l, TechnicalSupport t, Model m,
Specializes spec
Where(t.empld, m.modelNo, m.modelNo, l.serialNo, l.siteCode)=(spec.empld,
spec.modelNo, d.modelNo, d.serialNo, site.siteCode)
AND site.siteCode = 111;
```

3. **Find the information of all the technical supports who can repair at least one digitaldisplay with a "Random" scheduler system. You should return the empld and the name for such technical supports.**

```
Select distinct t.name
From Site site, DigitalDisplay d, Locates l, TechnicalSupport t, Model m,
Specializes spec
Where(t.empld, m.modelNo, m.modelNo)=(spec.empld, sp
ec.modelNo, d.modelNo)
AND d.schedulerSystem = "Random";
```

4. **Find all the employees including administrators, salesmen, and technical supports. Show the id, name, and gender information of all the employees.**

```
Select * from Administrator
Union
Select * from Salesman
Union
Select * from TechnicalSupport;
```

- 5. Find the videos that are shown at site 111, but not site 112. Show the code and length of such videos.**

```
Select v.videoCode, v.videoLength
From Video v, Broadcasts b, Site s
Where(v.videoCode,s.siteCode)=(b.videoCode, b.siteCode)
AND s.siteCode = 111
AND b.videoCode not in
    (select videoCode from Broadcasts where siteCode = 112);
```

- 6. Find the administrators who manage at least 10 sites. Show such administrators' employee id.**

```
with empCount as (
    select empld, count(empld) as num
    from Administers
    group by empld)
select a.empld
from Administers a, empCount e
where e.empld = a.empld
and e.num >= 10
group by a.empld;
```

- 7. Find the maximum video length for the videos broadcasted at site 111. Show the maximum video length.**

```
select max(v.videoLength)
from Broadcasts b, Video v
where b.videoCode = v.videoCode
and b.siteCode = 111;
```

- 8. Find the maximum video length for the videos broadcasted at site 112. Show the information of such videos (video code, video length).**

```
with maxLength as (
    select max(v.videoLength) as vMax
    from Broadcasts b, Video v
    where b.videoCode = v.videoCode
    and b.siteCode = 112)
select v.videoCode, v.videoLength
from Video v, Broadcasts b, maxLength m
where v.videoCode = b.videoCode
AND b.siteCode = 112
AND v.videoLength = m.vMax;
```

- 9. Find the administrators who manage less than 10 sites. Show such administrators' information (id, name, gender)**

```
with empCount as (  
    select empld, count(empld) as num  
    from Administers  
    group by empld)  
select admin.empld, admin.name, admin.gender  
from Administers a, empCount e, Administrator admin  
where e.empld = a.empld  
and a.empld = admin.empld  
and e.num < 10  
group by a.empld;
```