# Assignment-3 (SQL on elections schema)

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PFA the sql script preparing the database used in the assignment ( **elections.sql** ), the sql queries script ( **a3_queries.sql** ) and the schema diagram from assignment 1 ( **Group5_CS18B045_Assignment1.pdf** )

**-- 1. List the parties who won in each constituency. If tie, report all parties with max votes**

```
select maxv.ConstituencyId, p.Name from party as p,
(
        select c.ConstituencyId, c.PartyId, v.count from candidate as c,
        (select candidateId, count(*) as count from votes group by candidateId) as v
        where c.CandidateId = v.candidateId
) as v,
(
        select c.ConstituencyId, max(v.count) as maxcount from candidate as c,
        (select candidateId, count(*) as count from votes group by candidateId) as v
        where c.CandidateId = v.candidateId group by c.ConstituencyId
) as maxv
where  v.ConstituencyId = maxv.ConstituencyId and v.count = maxv.maxcount and v.PartyId = p.PartyId;
```

**-- 2. List the number of members in each Alliance. Parties not in an alliance are treated as an independent entity**

```
select entity, count(*) as memberCount from partymembers as pm,
(
        (select p.PartyId, p.Name as entity from party as p where p.AllianceId is null)
        union
        (select p.PartyId, a.Name as entity from party as p, alliance as a where p.AllianceId = a.AllianceId)
) as e
where pm.PartyId = e.PartyId group by entity;
```

**-- 3. List the cumulative count of votes cast in every hour of the day on all election days**

```
select cast(substring(Vote_timestamp, 12, 2) as unsigned) as hour, count(*) as totalVotes from votes
group by hour order by hour;
```

**-- 4. List of parties having more than 26 crore rupees in total asset value of party members**

```
select p.Name, sum(c.Assets) as TotalAssets from party as p, candidate as c
where p.PartyId = c.PartyId group by p.Name having TotalAssets > 260000000;
```

**-- 5. Order parties by higher probability of members becoming candidates**

```
select p.Name, c.count/pm.count as SelectionProb from party as p,
(select PartyId, count(*) as count from candidate group by PartyId) as c,
(select PartyId, count(*) as count from partymembers group by PartyId) as pm
where c.PartyId = p.PartyId and pm.PartyId = p.PartyId order by SelectionProb desc;
```

**-- 6. List of parties with no candidates with criminal offences**

```
select p.Name from party as p where not exists (
        select * from candidate as c where c.PartyId = p.PartyId and c.CriminalRecord != 'No
crime history'
);
```

**-- 7. List of voting centers that are monitored by female election officials and female election officials only**

```
select distinct votingcenter from electionofficials
where votingcenter not in (select votingcenter from electionofficials where Sex != 'Female');
```

**-- 8. List of election officials who have verified/ monitored both a voting center and a candidate in the same constituency**

```
select distinct e.OfficialId, e.Name, c.ConstituencyId
from electionofficials as e, votingcenter as vc, candidate as c, verification as ver
where e.votingcenter = vc.CenterId and vc.ConstituencyId = c.ConstituencyId
and c.CandidateId = ver.CandidateId and ver.OfficialId = e.OfficialId;
```

**-- 9. Time when verification of all candidates of a given constituency got over, for each constituency**

```
select c.ConstituencyId, max(v.verification_timestamp) as VerificationEndTime from candidate
as c, verification as v
where c.CandidateId = v.CandidateId group by c.ConstituencyId;
```

**-- 10. Identify the voting centers with no evms (i.e, without electronic voting)**

```
select CenterId from votingcenter where CenterId not in (select VotingCenterId from evm);
```