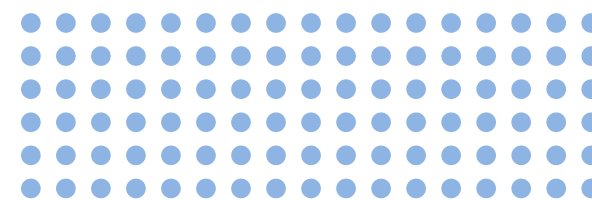# ELECTION DATA ANALYSIS

Insights from Constituency, Party, and State-Level Results
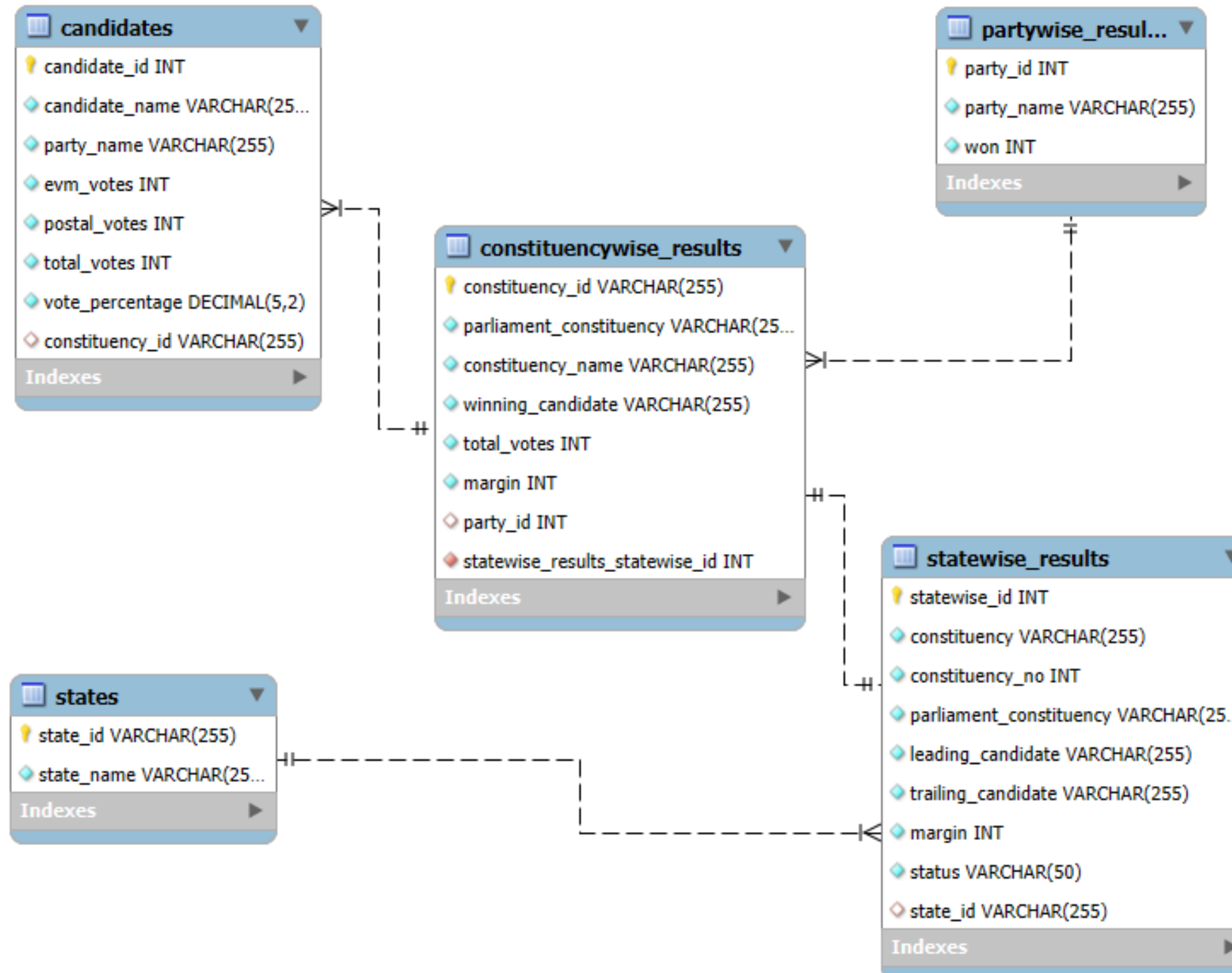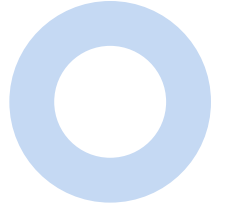
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Introduction

This project focuses on analyzing Indian parliamentary election data to uncover insights related to party performance, voter behavior, and constituency-level trends. By using structured SQL queries on a relational database, we explore key aspects such as winning margins, voter turnout, party-wise results, and candidate statistics. The goal is to support data-driven decision-making for political strategy, public awareness, and election transparency.

ER DIAGRAM

candidates
- 🔑 candidate_id INT
- 🔹 candidate_name VARCHAR(25...
- 🔹 party_name VARCHAR(255)
- 🔹 evm_votes INT
- 🔹 postal_votes INT
- 🔹 total_votes INT
- 🔹 vote_percentage DECIMAL(5,2)
- 🔹 constituency_id VARCHAR(255)

Indexes ▶

partywise_resul...
- 🔑 party_id INT
- 🔹 party_name VARCHAR(255)
- 🔹 won INT

Indexes ▶

constituencywise_results
- 🔑 constituency_id VARCHAR(255)
- 🔹 parliament_constituency VARCHAR(25...
- 🔹 constituency_name VARCHAR(255)
- 🔹 winning_candidate VARCHAR(255)
- 🔹 total_votes INT
- 🔹 margin INT
- 🔸 party_id INT
- 🔴 statewise_results_statewise_id INT

Indexes ▶

statewise_results
- 🔑 statewise_id INT
- 🔹 constituency VARCHAR(255)
- 🔹 constituency_no INT
- 🔹 parliament_constituency VARCHAR(25...
- 🔹 leading_candidate VARCHAR(255)
- 🔹 trailing_candidate VARCHAR(255)
- 🔹 margin INT
- 🔹 status VARCHAR(50)
- 🔸 state_id VARCHAR(255)

Indexes ▶

states
- 🔑 state_id VARCHAR(255)
- 🔹 state_name VARCHAR(25...

Indexes ▶

1.Find the party with the highest number of seats won.

```sql
select p.party_name, p.won
from election.partywise_results p
order by won desc
limit 1;
```

	party_name	won
▶	Bharatiya Janata Party - BJP	240

Result Grid | Filter Rows:

2. Identify the candidate with the highest and lowest winning margin.

```sql
with highest_margin as (
select c1.winning_candidate, c1.margin, c1.constituency_name
from election.constituencywise_results c1
order by c1.margin desc
limit 1
),
lowest_margin as (
select c1.winning_candidate, c1.margin, c1.constituency_name
from election.constituencywise_results c1
where c1.margin >0
order by c1.margin asc
limit 1
)


select 'highest margin' as margin_type, winning_candidate, margin, constituency_name from highest_margin
union all
select 'lowest margin' as margin_type, winning_candidate, margin, constituency_name from lowest_margin;
```
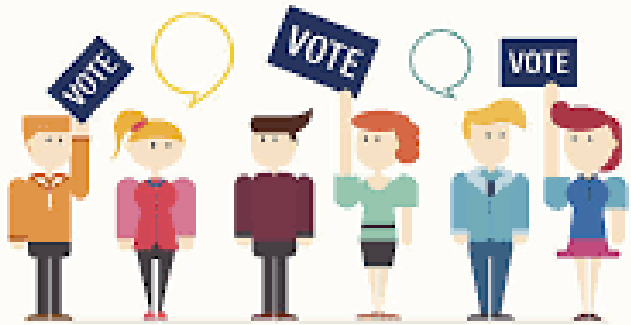
Result Grid		Filter Rows:		Export:	Wrap Cell Content:	
	margin_type	winning_candidate		margin	constituency_name	
▶	highest margin	SHANKAR LALWANI		1175092	INDORE	
	lowest margin	RAVINDRA DATTARAM WAIKAR		48	MUMBAINORTHWEST	

3. Calculate the total votes received by each party across all constituencies.

```sql
select p1.party_id, p1.party_name,
sum(c1.total_votes) as total_votes
from election.constituencywise_results c1
inner join election.partywise_results p1
on p1.party_id = c1.party_id
group by p1.party_id, p1.party_name
order by total_votes desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

party_id	party_name	total_votes
369	Bharatiya Janata Party - BJP	157039540
742	Indian National Congress - INC	54233901
140	All India Trinamool Congress - AITC	20185370
1680	Samajwadi Party - SP	18826855
1745	Telugu Desam - TDP	12232822
582	Dravida Munnetra Kazhagam - DMK	11754710
805	Janata Dal (United) - JD(U)	6335123
3620	Nationalist Congress Party Sharadc...	4971873
3369	Shiv Sena (Uddhav Balasaheb Tha...	4772796
3529	Shiv Sena - SHS	3815530
3165	Lok Janshakti Party(Ram Vilas) - L...	2810250
743	Independent - IND	2421977
1888	Yuvajana Sramika Rythu Congress...	2359220
547	Communist Party of India (Marxis...	2163219
1420	Rashtriya Janata Dal - RJD	1960230
772	Indian Union Muslim League - IUML	1716186
852	Jharkhand Mukti Morcha - JMM	1680905
804	Janata Dal (Secular) - JD(S)	1543362
860	Janasena Party - JnP	1454138
1847	Viduthalai Chiruthaigal Katchi - VCK	982117
1	Aam Aadmi Party - AAAP	981161
544	Communist Party of India - CPI	937783
545	Communist Party of India (Marxis...	909963
1458	Rashtriya Lok Dal - RLD	893460
834	Jammu & Kashmir National Confer...	878702
83	Asom Gana Parishad - AGP	860113

4. Find the constituency with the smallest winning margin.

```sql
select c1.winning_candidate, c1.constituency_name, c1.margin
from election.constituencywise_results c1
where c1.total_votes > 0
and margin >0
order by c1.margin asc
limit 1;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:

winning_candidate	constituency_name	margin
RAVINDRA DATTARAM WAIKAR	MUMBAINORTHWEST	48

5. Determine the state with the highest and lowest voter turnout.

```sql
with total_vote as (
select sr1.state_id, s1.state_name, sum(cr1.total_votes) as total_votes
from election.states s1
inner join election.statewise_results sr1
on sr1.state_id = s1.state_id
inner join election.constituencywise_results cr1
on sr1.constituency = cr1.constituency_name
group by sr1.state_id, s1.state_name
),
rank_state as (
select *,
rank() over(order by total_votes desc) as rank_desc,
rank() over(order by total_votes asc) as rank_asc
from total_vote
)

select 'Highest Voter Turnout' as turnout_type, state_name, total_votes
from rank_state
where rank_desc = 1
union all
select 'Lowest Voter Turnout' as turnout_type, state_name, total_votes
from rank_state
where rank_asc = 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	turnout_type	state_name	total_votes
▶	Highest Voter Turnout	Uttar Pradesh	79996636
	Lowest Voter Turnout	Lakshadweep	51452

VOTE

6. Calculate the percentage of votes secured by the winning candidate in each constituency.

```sql
with total_votes_per_constituency as (
select constituency_id, SUM(total_votes) AS total_votes_in_constituency
from election.Candidates
group by constituency_id
),
winning_candidates as (
select
    c.constituency_id,
    c.candidate_name,
    c.total_votes as votes_secured
    from election.Candidates c
    inner join election.constituencywise_results cr
    on c.constituency_id = cr.constituency_id
    where c.candidate_name = cr.winning_candidate
)

select
    wc.constituency_id,
    wc.candidate_name as winning_candidate,
    wc.votes_secured,
    tv.total_votes_in_constituency,
    round(wc.votes_secured * 100.0 / tv.total_votes_in_constituency, 2) as winning_percentage
from winning_candidates wc
join total_votes_per_constituency tv
on wc.constituency_id = tv.constituency_id;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

constituency_id	winning_candidate	votes_secured	total_votes_in_constituency	winning_percentage
S0119	AMBICA G LAKSHMINARAYANA V...	768245	1440428	53.33
S047	RAMPRIT MANDAL	533032	1093741	48.73
S1024	SHOBHA KARANDLAJE	986049	1752504	56.27
S1224	ANITA NAGARSINGH CHOUHAN	795863	1532643	51.93
S1324	DR SHRIKANT EKNATH SHINDE	589636	1045736	56.38
S1325	NARESH GANPAT MHASKE	734231	1309068	56.09
S1347	CHHATRAPATI SHAHU SHAHAJI	754522	1393326	54.15
S152	SALENG A SANGMA	383919	674056	56.96
S1815	BAIJAYANT PANDA	615705	1277108	48.21
S2010	BHAJAN LAL JATAV	530011	961077	55.15
S2212	THARANIVENTHAN M S	500099	1140261	43.86
S2222	SACHITHANANTHAM R	670149	1149621	58.29
S2422	DEVESH SHAKYA	475808	1010381	47.09
S249	KANWAR SINGH TANWAR	476506	1110690	42.90
S251	JAGADISH CHANDRA BARMA BAS...	788375	1623048	48.57
S2513	JAGANNATH SARKAR	5861	1540632	0.38
S2513	JAGANNATH SARKAR	782396	1540632	50.78
S2526	SAJDA AHMED	724622	1390794	52.10
S259	KHALILUR RAHAMAN	544427	1369633	39.75
S262	RADHESHYAM RATHIYA	808275	1452965	55.63
S274	KALI CHARAN SINGH	574556	1086374	52.89
S278	SANJAY SETH	664732	1447781	45.91
S2912	DR.MALLU RAVI	465072	1219223	38.14
S2914	CHAMALA KIRAN KUMAR REDDY	629143	1401396	44.89
S2915	KADIYAM KAVYA	581294	1267946	45.85
S298	G. KISHAN REDDY	473012	1047659	45.15

>>>>>>

7. Find the number of constituencies where the winning candidate received more than 50% of total votes.

```sql
with total_votes_per_constituency as (
select constituency_id, SUM(total_votes) AS total_votes_in_constituency
from election.Candidates
group by constituency_id
),
winning_candidates as (
select
    c.constituency_id,
    c.candidate_name,
    c.total_votes as votes_secured
    from election.Candidates c
    inner join election.constituencywise_results cr
    on c.constituency_id = cr.constituency_id
    where c.candidate_name = cr.winning_candidate
)


select count(*) as majority_constituencies
from winning_candidates wc
join total_votes_per_constituency tv
on wc.constituency_id = tv.constituency_id
where wc.votes_secured > 0.5 * tv.total_votes_in_constituency;
```

Result Grid	Filter Rows:
majority_constituencies
14

8. Identify the party that secured the most runner-up positions.

```sql
with rank_position as (
    select candidate_name, party_name, total_votes, constituency_id,
    rank () over (partition by constituency_id order by total_votes desc) as position_rank
    from election.candidates
)
 select party_name, count(*) as runner_up_count
from rank_position
where position_rank = 2
group by party_name
order by runner_up_count desc
limit 1;
```

party_name	runner_up_count
Indian National Congress	9

>>>>>

9. Find the number of independent candidates who won and their constituencies.

```sql
select count(*) as total_independent_candidates
from election.candidates c
inner join election.constituencywise_results cr
on cr.constituency_id = c.constituency_id
where c.party_name = 'Independent'
and c.candidate_name = cr.winning_candidate;
```

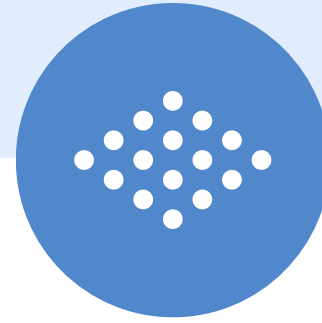| Result Grid | Filter Rows: |
|---|
| total_independent_candidates |
| 1 |

>>>>>

VOTE

10. Calculate the average margin of victory across all constituencies

```sql
select
round(avg(cr.margin), 2) as average_margin_of_victory
from election.constituencywise_results cr;
```

Result Grid	Filter Rows:	
	average_margin_of_victory	
▶	162051.10	

THANK YOU!

iNDIAN ELECTION