

## Instructions:

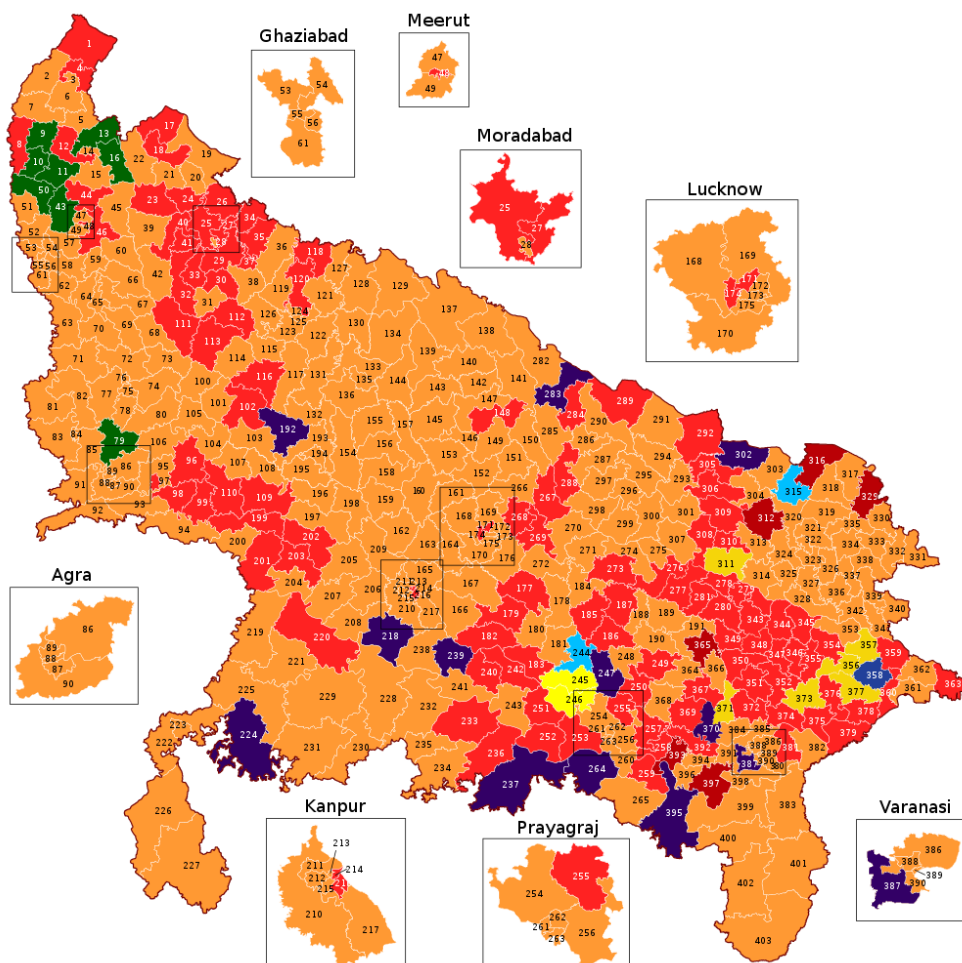
1. You are free to choose to implement the solutions in either python or excel / google-spreadsheets.
2. Submit your solutions as an excel workbook file or as an lpython notebook. Name your file as Q4\_solution.

## Data:

1. UP\_2022.csv : this file contains the results of the election to the UP assembly held in the year of 2022.
2. UP\_AC\_District: this file contains the assembly constituency to district mapping. It will have ac\_no to district mapping.
3. For those solving in excel, paste the two data in single workbook.

## Understanding Elections

- Every state in India has a government body called the Assembly or the Vidhan Sabha. Elections are held every five years.
- A state is divided into geographical areas called constituencies. Uttar Pradesh has a total of 403 such constituencies. Map below for reference showing the constituencies and the winning party in color



- Orange marks those constituencies that were won by the BJP party and its alliance parties
- In every constituency there will be a number of candidates that contest the election. Most candidates are from a political party. Some also contest independently (i.e without any affiliation to a political party)
- An example below shows a snapshot of the data (UP\_2022.csv) showing the election results in ac\_no 1. Ac\_no stands for assembly constituency number. It ranges from 1 till 403.

	A	B	C	D	E	F
1	ac_no	Candidate	Party	Total Votes	% of Votes	Rank
2	1	Umar Ali Khan	Samajwadi Party	134513	47.81	1
3	1	Naresh Saini	Bharatiya Janata Party	96633	34.34	2
4	1	Rais Malik	Bahujan Samaj Party	45075	16.02	3
5	1	Poonam Kamboj	Indian National Congress	1632	0.58	4
6	1	Sushil Kumar	Aam Aadmi Party	1162	0.41	5
7	1	NOTA	None of the Above	1117	0.4	6
8	1	Dharampal Singh	Independent	560	0.2	7
9	1	Ali Khan	Independent	409	0.15	8
10	1	Mo. IKram	Independent	272	0.1	9

- Whichever candidate gets the most number of votes in that constituency is the winner from that constituency. So in the above data, Umar Ali Khan from the Samajwadi Party was the winner from ac\_no 1.
- There will be a total of 403 winning candidates.

## **QUESTIONS**

1. How many constituencies did the Bharatiya Janata Party (BJP) win?
2. Similarly calculate the number of constituencies won by each party.
3. In how many constituencies did the Bharatiya Janata Party and the Samajwadi Party occupy the first two ranks (i.e either BJP comes first and SP second or vice versa)
4. In how many constituencies did the Bahujan Samaj Party come second.
5. Find the number of constituencies in every district. (you will find the data in the district file)
6. What were the top 3 districts for the Bharatiya Janata Party (evaluate on the basis of the % of seats won by the BJP in that district)
7. In how many constituencies, the difference in Total Votes between the Bharatiya Janata Party and the Samajwadi Party was less than 5000.
8. For the consituencies in part 7, in how many constituencies did the BJP lose (did not come first)
9. For every assembly constituency, find the number of parties that got more than 10,000 total votes.

10. Calculate the district level vote % for each party. To calculate the vote % in a district. Add the total votes from all constituencies in that district for a party and divide it by the total votes in that district.