COVID-19 DATA ANALYSIS

THE PURPOSE OF THIS PROJECT IS TO ANALYZE COVID19 DATA TO GAIN MAJOR INSIGHTS INTO TRENDS, PATTERNS , AND FACTORS INFLUENCING THE TESTING AND VACCINATION DURING THE PANEDEMIC.

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INTRODUCTION

Our dataset comprises comprehensive information on the spread of the virus, including infection rates, mortality rates, vaccination coverage, and various demographic factors. The objective of our project is to extract meaningful insights that can inform effective strategies for managing and mitigating the impact of the pandemic.

In the next few minutes, we will navigate through the intricacies of this dataset, aiming to uncover hidden trends, disparities, and potential areas for intervention. The significance of this analysis cannot be overstated, as it not only aids in understanding the current state of affairs but also lays the groundwork for evidence-based decision-making in the ongoing battle against COVID-19.

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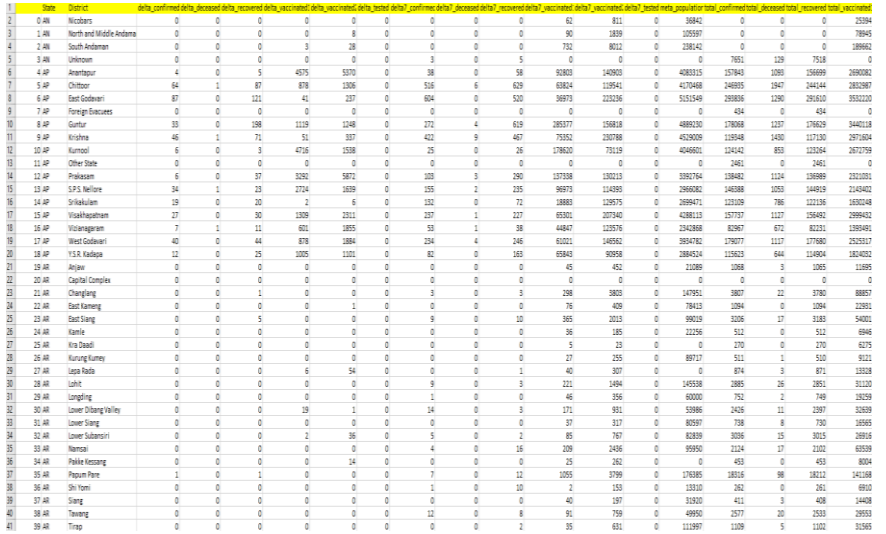
DATASET OVERVIEW

Our COVID-19 dataset encapsulates a wealth of information, encompassing global infection and mortality rates, vaccination coverage, regional demographics, and time-series data. Collected from authoritative sources, it spans various geographic regions and demographic categories. The dataset's richness allows for a nuanced exploration of the pandemic's multifaceted impacts, offering a panoramic view of the virus's trajectory. This diverse and comprehensive compilation equips us with the necessary tools to dissect patterns, identify outliers, and derive actionable insights crucial for effective public health responses and decision-making.



	State	District	delta_confirmed	delta_deceased	delta_recovered	delta_vaccinated1	delta_vaccinated2	delta_tested	delta7_confirmed	delta7_deceased	delta7_recovered	delta7_vaccinated	delta7_vaccinated1	delta7_vaccinated2	delta7_tested	meta_population	total_confirmed	total_deceased	total_recovered	total_vaccinated
2	0	AN	Nicobars	0	0	0	0	0	0	0	0	0	62	811	0	36842	0	0	0	25394
3	1	AN	North and Middle Andama	0	0	0	0	8	0	0	0	0	90	1839	0	105597	0	0	0	78945
4	2	AN	South Andaman	0	0	0	3	28	0	0	0	0	732	8012	0	238142	0	0	0	189662
5	3	AN	Unknown	0	0	0	0	0	0	3	0	5	0	0	0	0	7651	129	7518	0
6	4	AP	Anantapur	4	0	5	4575	5370	0	38	0	58	92803	142903	0	4083315	157843	1093	156699	2690082
7	5	AP	Chittoor	64	1	87	878	1306	0	516	6	629	63824	119541	0	4170468	246935	1947	244144	2832987
8	6	AP	East Godavari	87	0	121	41	237	0	604	0	520	36973	223236	0	5151549	293836	1290	291610	3532210
9	7	AP	Foreign Evacuees	0	0	0	0	0	0	0	0	0	0	0	0	0	434	0	434	0
10	8	AP	Guntur	33	0	198	1119	1248	0	272	4	619	285377	156818	0	4889230	178068	1237	176629	3440118
11	9	AP	Krishna	46	1	71	51	337	0	422	9	467	75352	230788	0	4529009	119348	1430	117130	2971804
12	10	AP	Kurnool	6	0	3	4716	1538	0	25	0	26	178620	73119	0	4046601	124142	850	123264	2672759
13	11	AP	Other State	0	0	0	0	0	0	0	0	0	0	0	0	0	2461	0	2461	0
14	12	AP	Prakasam	6	0	37	3261	5871	0	103	3	290	137338	130213	0	3392764	138482	1124	136989	2321091
15	13	AP	S.P.S. Nellore	34	1	23	2724	1639	0	155	2	235	96973	114393	0	2966082	146388	1053	144919	2143402
16	14	AP	Srikakulam	19	0	20	2	6	0	132	0	72	18883	129575	0	2699471	123109	786	122136	1630248
17	15	AP	Visakhapatnam	27	0	30	1309	2311	0	237	1	227	65301	207340	0	4288113	157737	1127	156492	2999432
18	16	AP	Vizianagaram	7	1	11	601	1855	0	53	1	38	44847	123576	0	2342868	82967	672	82231	1393491
19	17	AP	West Godavari	40	0	44	878	1884	0	234	4	246	61021	146562	0	3954782	179077	1117	177680	2525317
20	18	AP	Y.S.R. Kadapa	12	0	25	1005	1101	0	82	0	163	65843	90958	0	2884524	115623	644	114904	1824082
21	19	AR	Anjaw	0	0	0	0	0	0	0	0	0	45	452	0	21089	1068	3	1065	11695
22	20	AR	Capital Complex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	21	AR	Changlang	0	0	1	0	0	0	3	0	3	298	3803	0	147951	3807	22	3780	88857
24	22	AR	East Kameng	0	0	0	0	1	0	0	0	0	76	409	0	78413	1094	0	1094	22691
25	23	AR	East Siang	0	0	5	0	0	0	9	0	10	365	2013	0	99019	5206	17	5183	54001
26	24	AR	Kamle	0	0	0	0	0	0	0	0	0	36	185	0	22256	512	0	512	6946
27	25	AR	Kra Daadi	0	0	0	0	0	0	0	0	0	5	13	0	0	270	0	270	6275
28	26	AR	Kurung Kumey	0	0	0	0	0	0	0	0	0	27	255	0	89717	511	1	510	9121
29	27	AR	Lepa Rada	0	0	0	6	54	0	0	0	1	40	307	0	0	874	3	871	13328
30	28	AR	Lohit	0	0	0	0	0	0	9	0	3	221	1494	0	145538	2885	26	2851	31120
31	29	AR	Longding	0	0	0	0	0	0	1	0	0	46	356	0	60000	752	2	749	19259
32	30	AR	Lower Dibang Valley	0	0	0	19	1	0	14	0	3	171	931	0	53986	2426	11	2397	32639
33	31	AR	Lower Siang	0	0	0	0	0	0	0	0	0	37	317	0	80597	738	8	730	16565
34	32	AR	Lower Subansiri	0	0	0	2	36	0	5	0	2	85	767	0	82839	3036	15	3015	26916
35	33	AR	Namsai	0	0	0	0	0	0	4	0	16	209	2436	0	95950	2124	17	2102	63539
36	34	AR	Pakke Kessang	0	0	0	0	14	0	0	0	0	25	262	0	0	453	0	453	8004
37	35	AR	Papum Pare	1	0	1	0	0	0	7	0	12	1059	3799	0	176385	18316	98	18212	141168
38	36	AR	Shi Yomi	0	0	0	0	0	0	1	0	10	2	153	0	13310	262	0	261	6910
39	37	AR	Siang	0	0	0	0	0	0	0	0	0	40	197	0	31920	411	3	408	14408
40	38	AR	Tawang	0	0	0	0	0	0	12	0	8	91	759	0	49950	2577	20	2533	29553
41	39	AR	Tirap	0	0	0	0	0	0	0	0	2	35	691	0	111997	1109	5	1102	31565

The major Column includes –

- State Name
- District Name
- Confirmed Cases
- Tested Cases
- Vaccinated 1&2

METHEDOLOGY

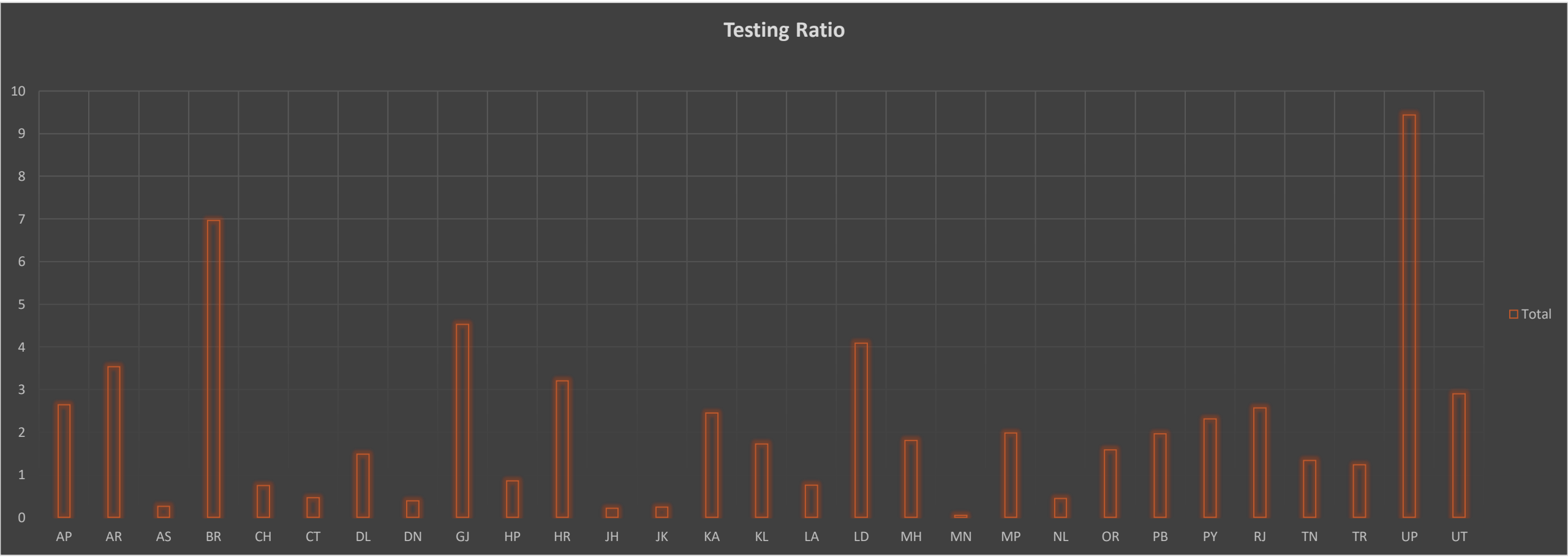
DATA COLLECTION & CLEANING → **EXTRACTION OF INSIGHTS & EDA** → **DATA VISUALISATION**

Python facilitates advanced statistical modeling, data manipulation, and visualization through libraries like Pandas, NumPy, and Matplotlib

SQL is leveraged for efficient data querying and aggregation, ensuring seamless integration of diverse datasets.

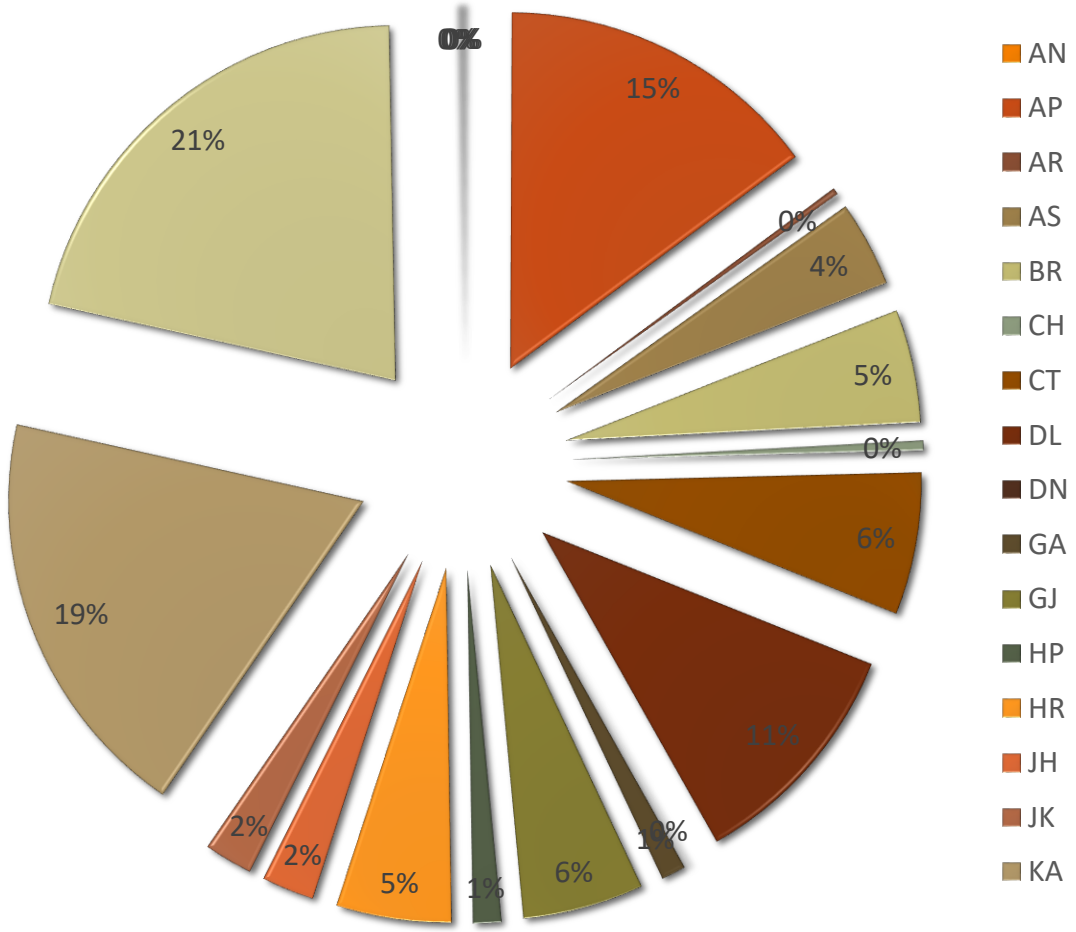
Excel serves as a versatile tool for exploratory data analysis, pivot tables, and graphical representation , to extract meaningful insights from the COVID-19 dataset with precision and agility.

INSIGHT - 1

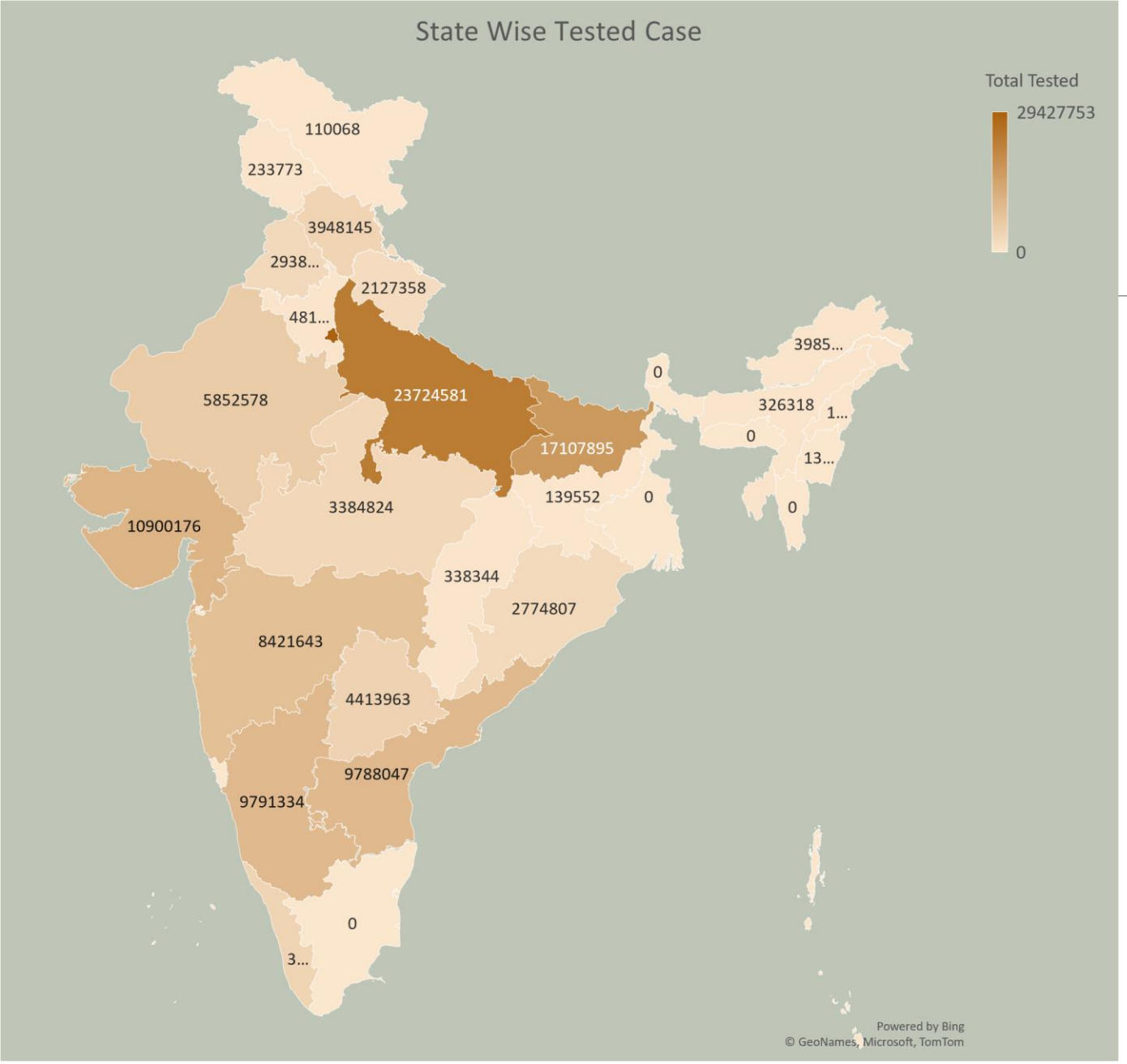


This insights refers to the **TESTING RATIO** between every state. And it concludes that UP has the highest ratio whereas Manipur has the lowest ratio.”**The testing ratio might refer to the ratio of the number of tests conducted to the population size or the number of positive cases**.”

INSIGHT - 2

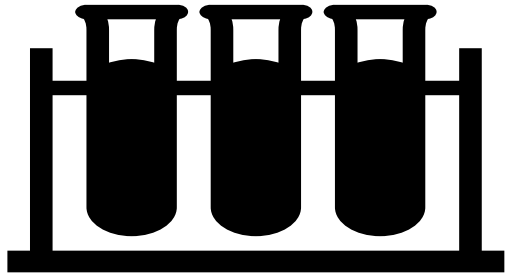


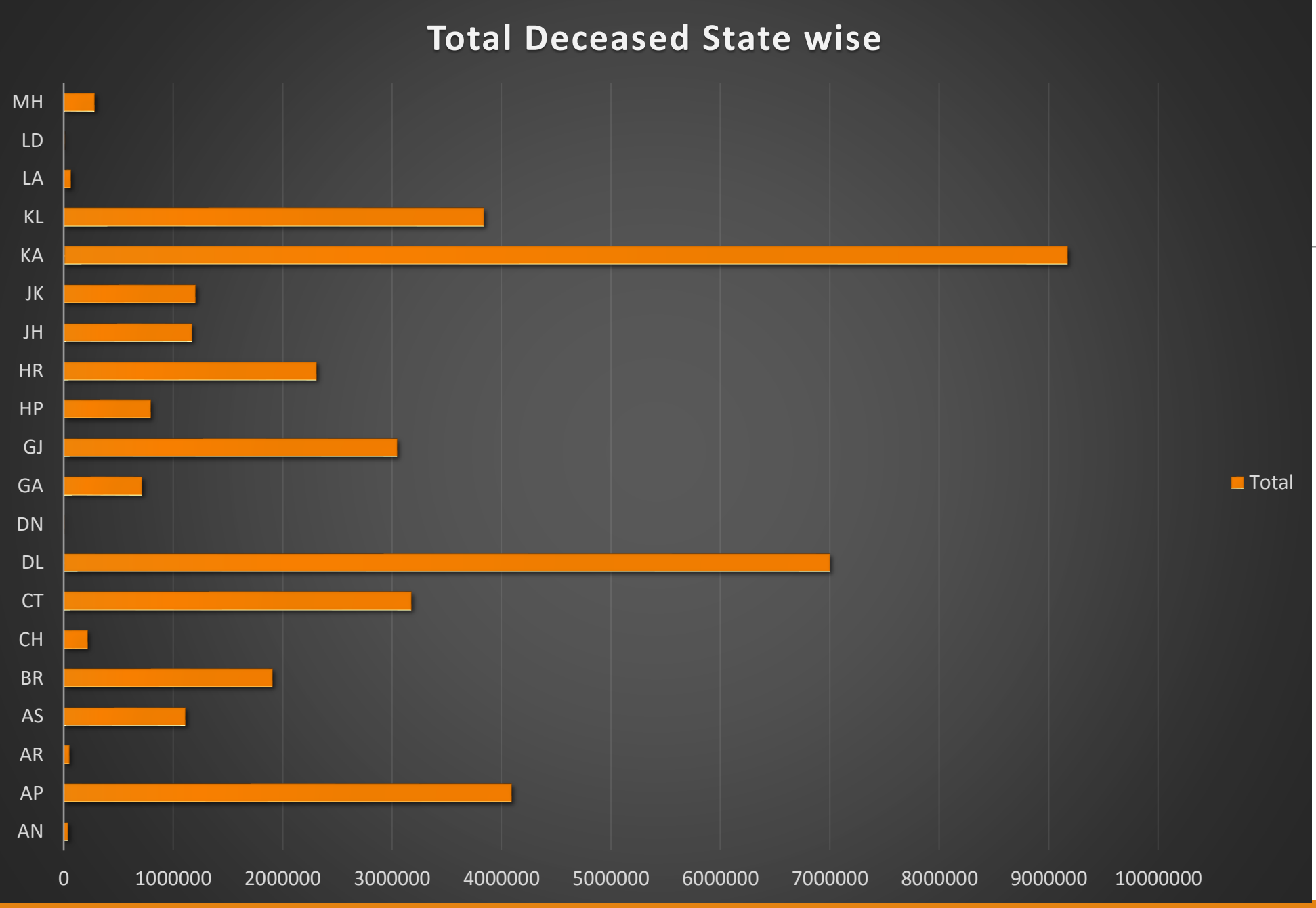
The **RECOVERY RATE** typically represents the proportion of individuals who have recovered from a disease compared to the total number of confirmed cases. In this Insight the highest recovery rate was in Bihar state.



INSIGHT - 3

This Insight refers to the **TESTED CASES** within the country in each state. The highest tested cases was in Up state . The tested cases data doesn't represents the confirmed cases but only the test performed by government



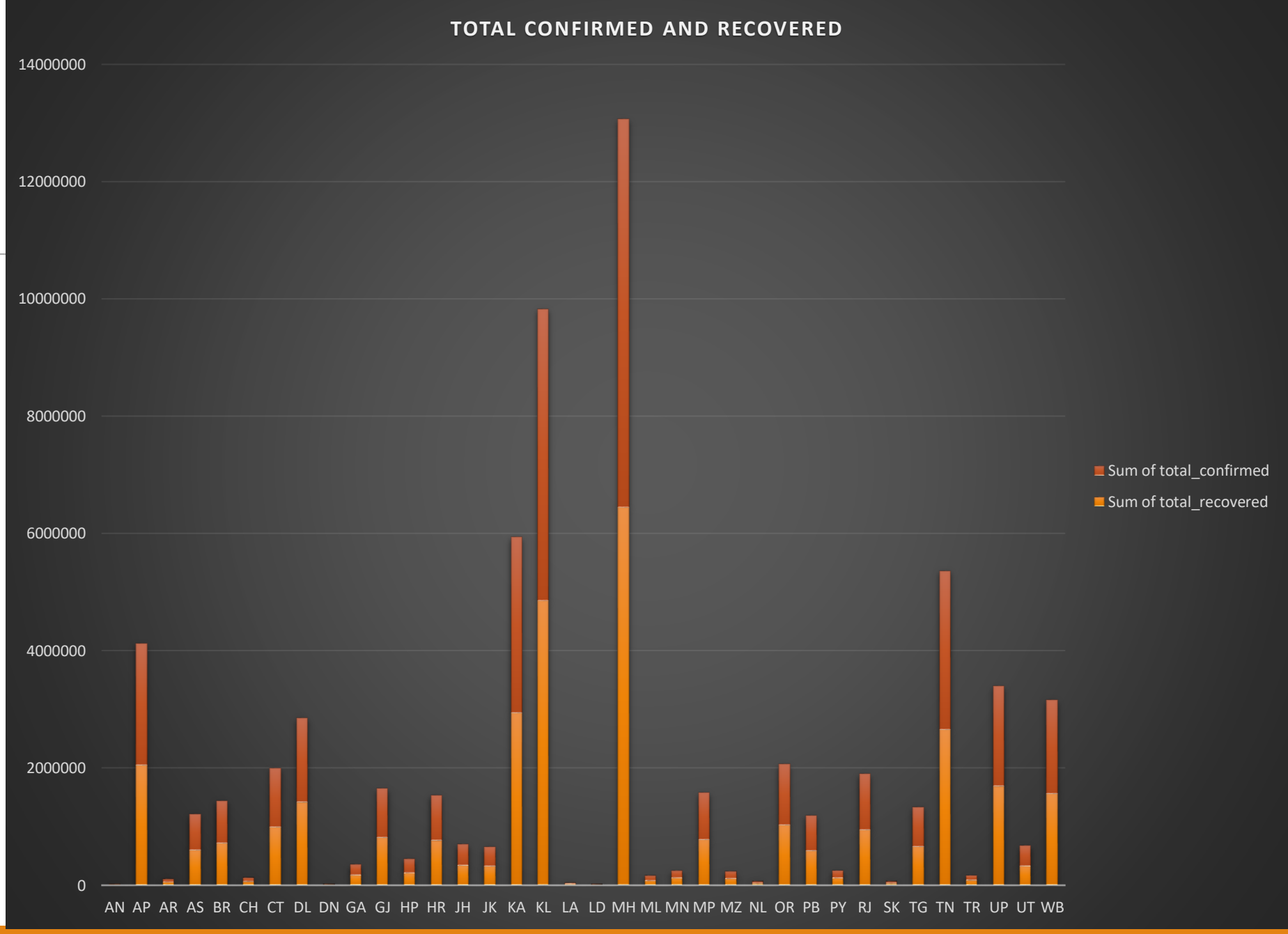


INSIGHT - 4

This insight concludes that how many deaths happened all over the country and got to know that Kerela has the highest and Lakshyadeep has the lowest in the country

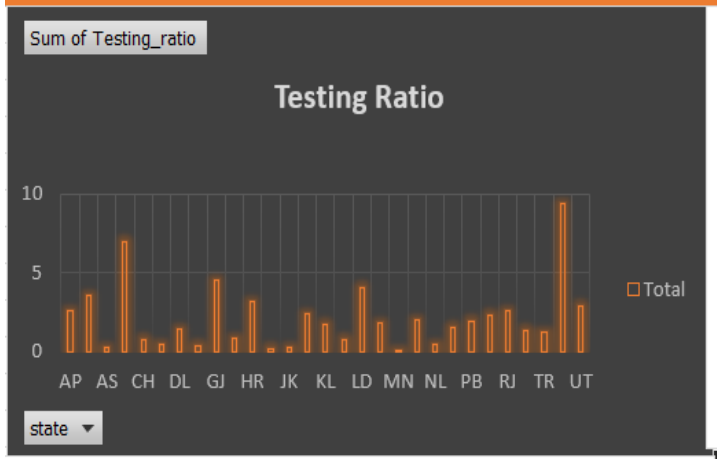
INSIGHT - 5

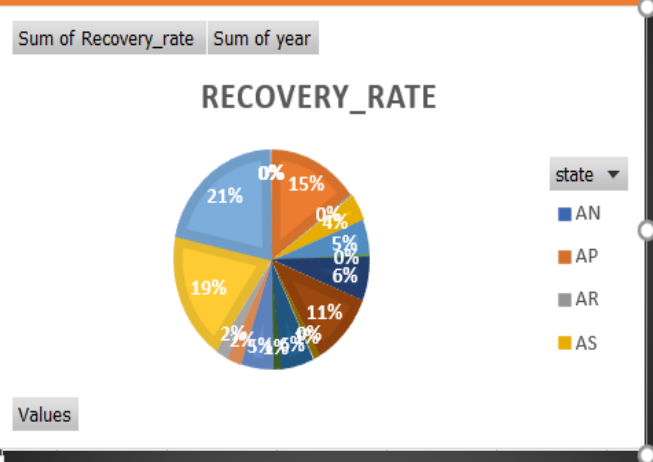
This insight concludes the confirmed and recovered amongst every state in India.In which highest confirmed cases were in Maharashtra and least were in Lakshyadeep and Laddakh

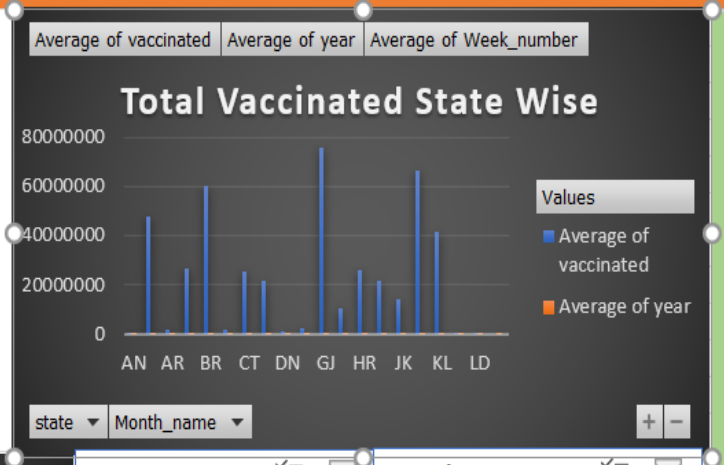


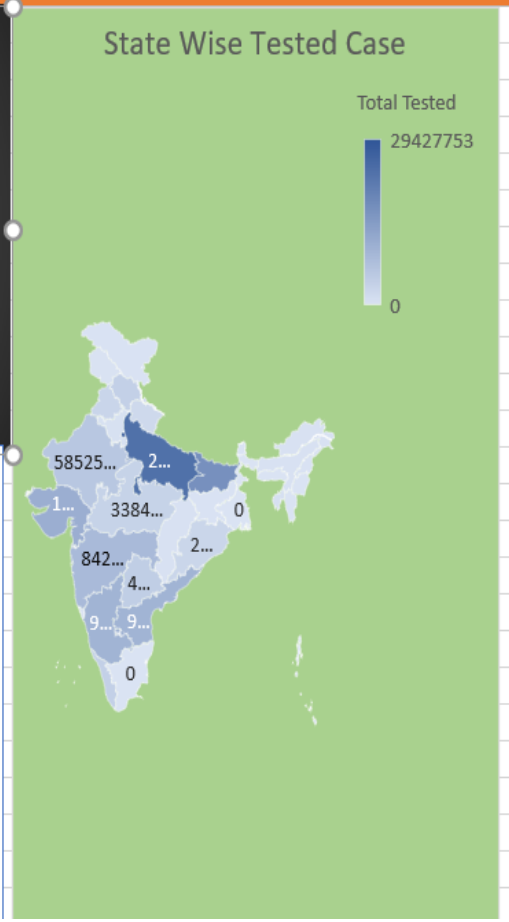
DASH BOARD

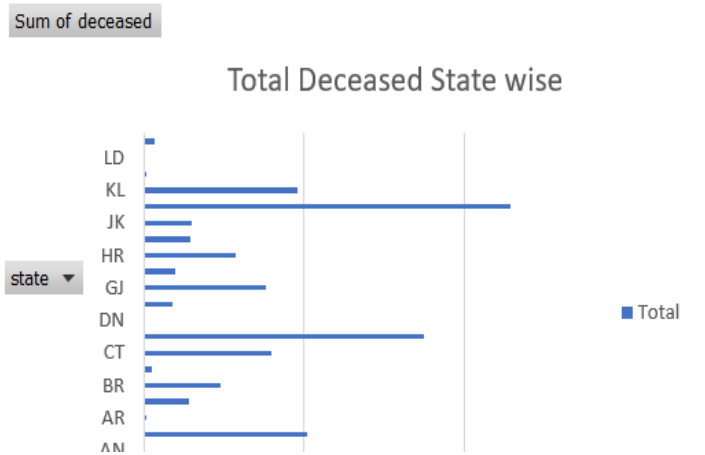
COVID 19 DATA ANALYSIS

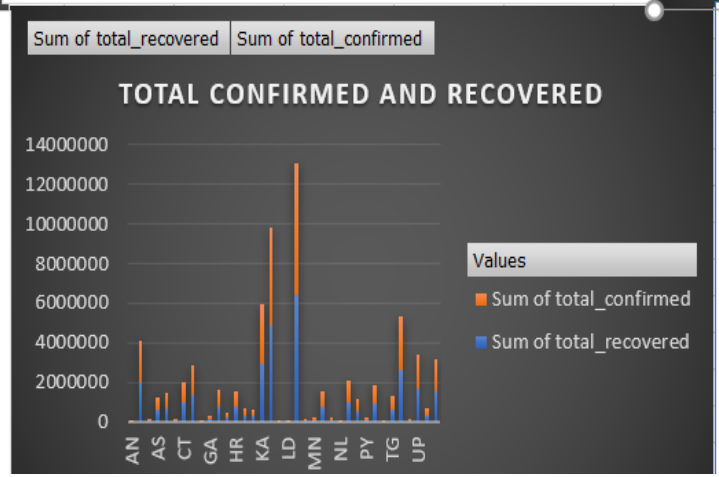


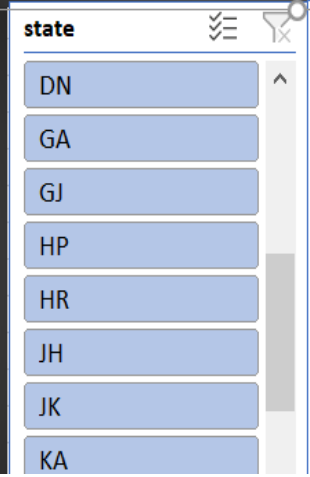


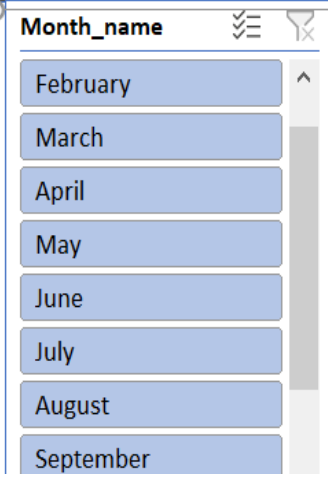












CONCLUSION

In conclusion, the analysis of COVID-19 data underscores the profound impact of the pandemic on global health. The data highlights the resilience of healthcare systems, the importance of timely interventions, and the collaborative efforts of nations. As we navigate the aftermath, informed decision-making based on this data is crucial for effective future preparedness. The lessons learned from this unprecedented event serve as a foundation for building more robust and agile healthcare systems to address potential challenges ahead.

As per our analysis -

- The Major impacts of deaths was in Karnataka.
- The Major cases confirmed were in Maharashtra.
- Manipur had the lowest & UP had the highest testing ratio.
- Highest recovery rate is in Bihar state.

FUTURE WORK

Future work in COVID-19 data analysis could focus on several key areas to enhance our understanding of the pandemic and inform effective responses:

- **Predictive Modeling:** Develop advanced predictive models to forecast disease spread, identify hotspots, and estimate healthcare resource needs.
- **Variant Analysis:** Explore the impact of emerging virus variants on transmission rates, severity, and vaccine efficacy, guiding vaccine development and public health strategies.
- **Long-Term Effects:** Investigate the long-term health effects of COVID-19 survivors, contributing to better post-recovery care and management.
- **Vaccination Impact:** Analyze the effectiveness of vaccination campaigns, including coverage rates, vaccine breakthrough cases, and the duration of immunity.