Covid-19 Dashboard Analysis

2. INTRODUCTION

- The coronavirus disease (COVID-19) pandemic, which originated in the city of Wuhan, China, has quickly spread to various countries, with many cases having been reported worldwide. Till May 8th, 2020, in India, 56,342 positive cases were reported.
- Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases.
- Coronaviruses are enveloped RNA viruses, ranging from 60 nm to 140 nm in diameter with a crown-like appearance, found in mammals particularly in humans and birds. Coronaviruses are known to have mutated and recombined behavior causing respiratory, enteric, hepatic, and neurologic diseases. Coronavirus has a total of seven strains which include HKU1, NL63, 229E and OC43, SARS-CoV, MERS-CoV and SARS-CoV-19 (COVID-19 being the latest), out of which first four had a mild impact on infested human with mild respiratory disease , whereas the other three caused a fatal impact on humankind.

3. DATASET DESCRIPTION

We have taken dataset from Kaggle named covid*19*clean_complete.csv in which Day to day country wise no. of cases is given from 2020-01-22 to 2020-07-27.This dataset contains total 10 attributes which are as follow-

1-Province/State	6- Confirmed
2-Country/Region	7- Deaths
3-Latitude	8- Recovered
4-Longitude	9- Active
5-Date	10- WHO Region

The screenshot of dataset before preprocessing is attached below-

```
df1=pd.read_csv('covid_19_clean_complete.csv')
df1
```

	Province/State	Country/Region	Lat	Long	Date	Confirmed	Deaths	Recovered	Active	WHO Region
0	NaN	Afghanistan	33.939110	67.709953	2020-01-22	0	0	0	0	Eastern Mediterranean
1	NaN	Albania	41.153300	20.168300	2020-01-22	0	0	0	0	Europe
2	NaN	Algeria	28.033900	1.659600	2020-01-22	0	0	0	0	Africa
3	NaN	Andorra	42.506300	1.521800	2020-01-22	0	0	0	0	Europe
4	NaN	Angola	-11.202700	17.873900	2020-01-22	0	0	0	0	Africa
...	...	...	...	...	...	...	...	...	...	...
49063	NaN	Sao Tome and Principe	0.186400	6.613100	2020-07-27	865	14	734	117	Africa
49064	NaN	Yemen	15.552727	48.516388	2020-07-27	1691	483	833	375	Eastern Mediterranean
49065	NaN	Comoros	-11.645500	43.333300	2020-07-27	354	7	328	19	Africa
49066	NaN	Tajikistan	38.861000	71.276100	2020-07-27	7235	60	6028	1147	Europe
49067	NaN	Lesotho	-29.610000	28.233600	2020-07-27	505	12	128	365	Africa

49068 rows × 10 columns

We needed to preprocess our dataset as some attribute are not required for making dashboard so our cleaned dataset are as follows, Data preprocessing has been done in Python jupyter Notebook-

	Country/Region	Lat	Long	Date	Confirmed	Deaths	Recovered	Active	WHO Region
0	Afghanistan	33.939110	67.709953	2020-01-22	0	0	0	0	Eastern Mediterranean
1	Albania	41.153300	20.168300	2020-01-22	0	0	0	0	Europe
2	Algeria	28.033900	1.659600	2020-01-22	0	0	0	0	Africa
3	Andorra	42.506300	1.521800	2020-01-22	0	0	0	0	Europe
4	Angola	-11.202700	17.873900	2020-01-22	0	0	0	0	Africa
...	...	...	...	...	...	...	...	...	...
49063	Sao Tome and Principe	0.186400	6.613100	2020-07-27	865	14	734	117	Africa
49064	Yemen	15.552727	48.516388	2020-07-27	1691	483	833	375	Eastern Mediterranean
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49066	Tajikistan	38.861000	71.276100	2020-07-27	7235	60	6028	1147	Europe
49067	Lesotho	-29.610000	28.233600	2020-07-27	505	12	128	365	Africa

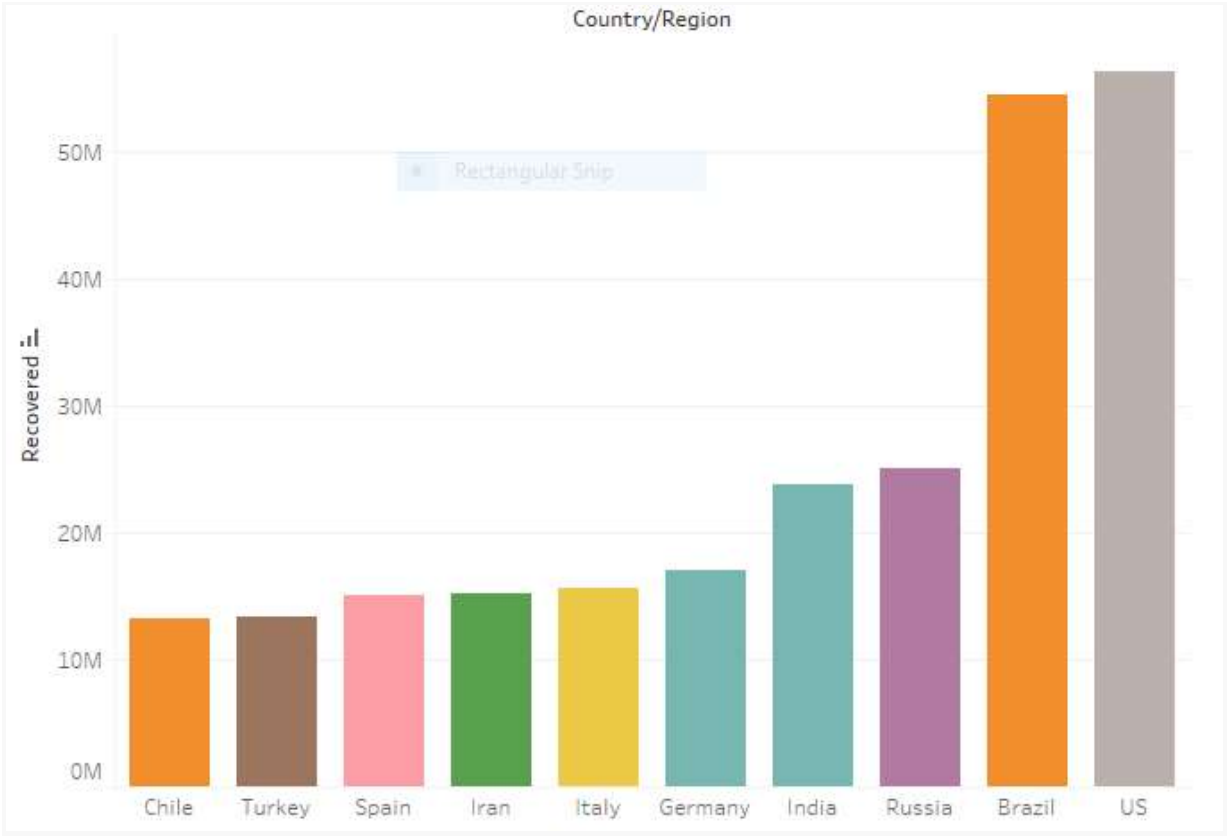
49068 rows × 9 columns

4.TABLEAU

4.1 DETAILED EXPLANATION OF ALL THE SHEETS

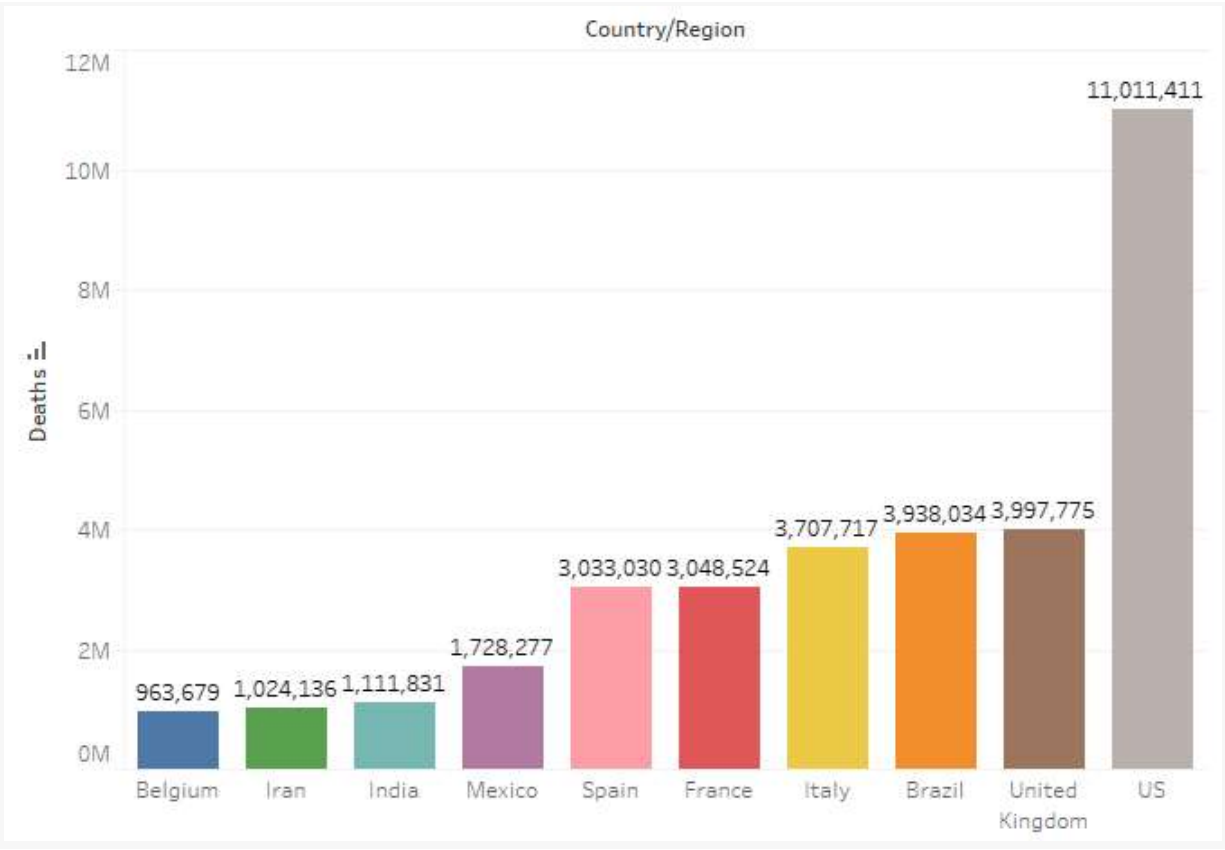
4.1.1 TOP 10 COUNTRIES IN RECOVERED CASES

The following graph shows the top 10 contributors of recovered cases worldwide. US has the highest number of recovered cases which is intuitively correct as they had the most number of cases worldwide. India is on 4th position in number of recovered cases



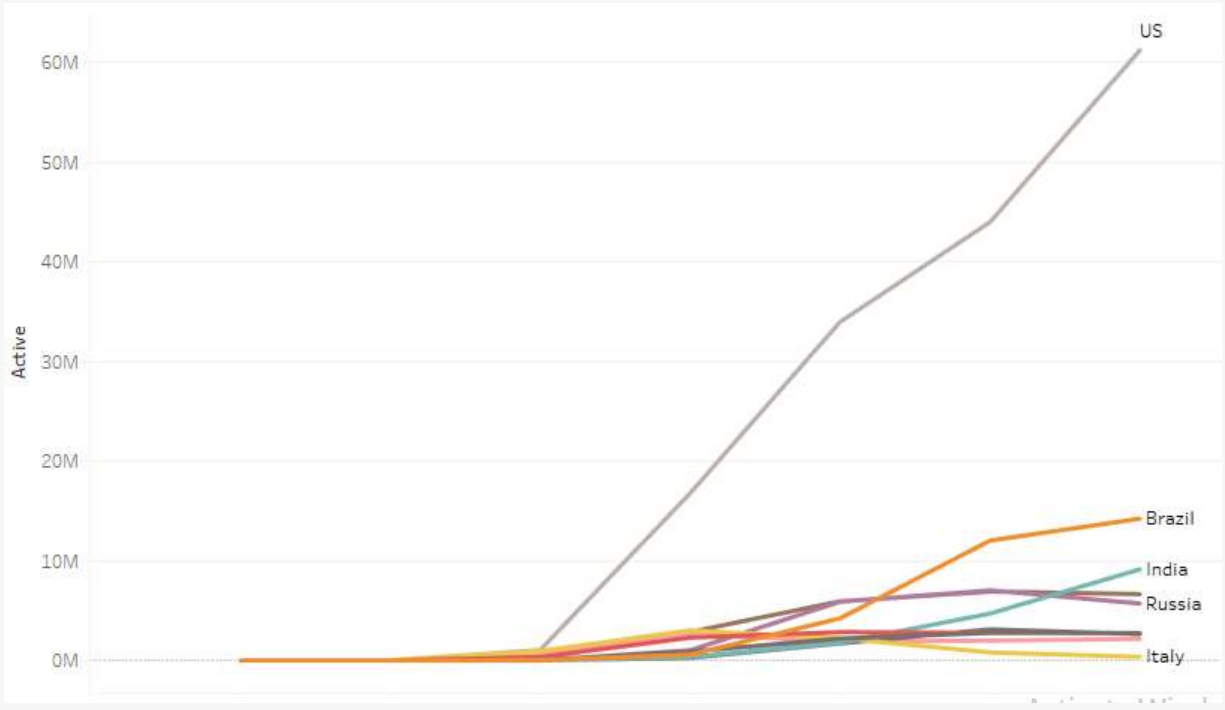
4.1.2 TOP 10 COUNTRIES IN DEATH CASES

The following graph shows the top 10 contributors of death cases worldwide. The US has the highest number of Death cases which is intuitively correct as they had the most number of confirmed cases worldwide. India is in 8th position in number of death cases.



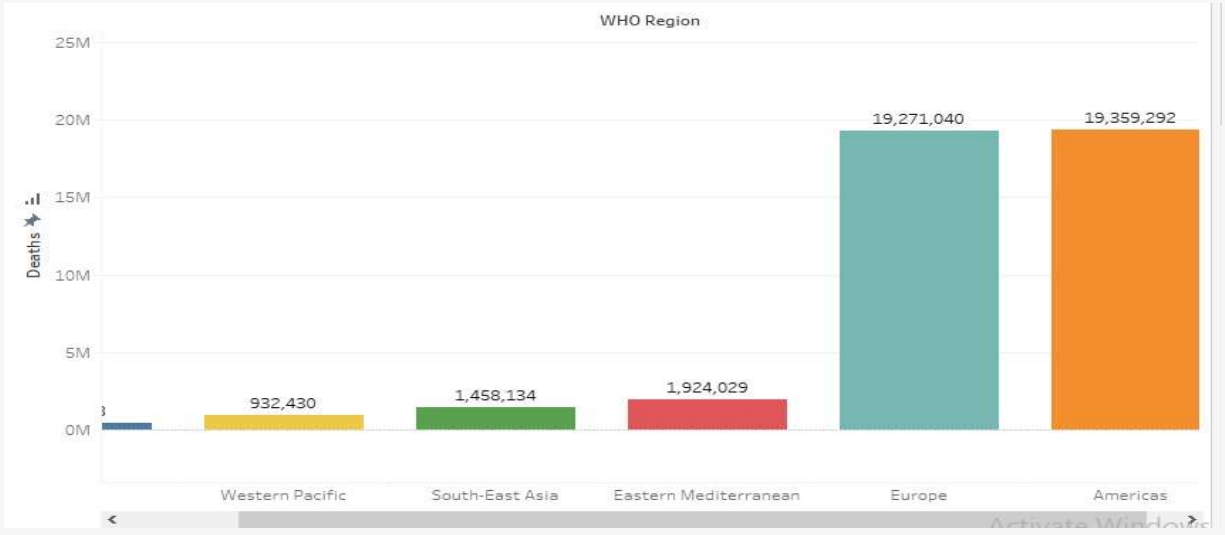
4.1.3 COUNTRIES ACTIVE CASES ANALYSIS

The following graph shows the top 10 contributors of active cases worldwide. The US has the highest number of Death cases which is intuitively correct as they had the most number of confirmed cases worldwide. India is on 3rd position in number of active cases.



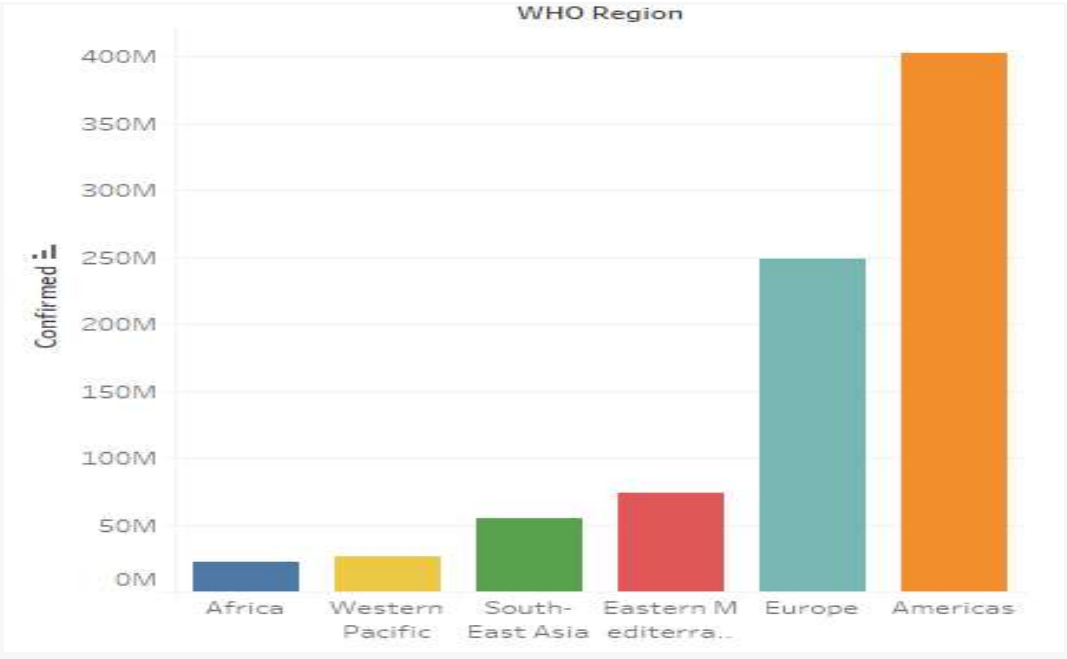
4.1.4 DEATHS IN WHO REGION

The following graph tells us the number of death cases in each WHO region. From the following graph it shows that the number of covid death cases is more in Americas region(19,359,292) then Europe region (19,271,040) and so on.



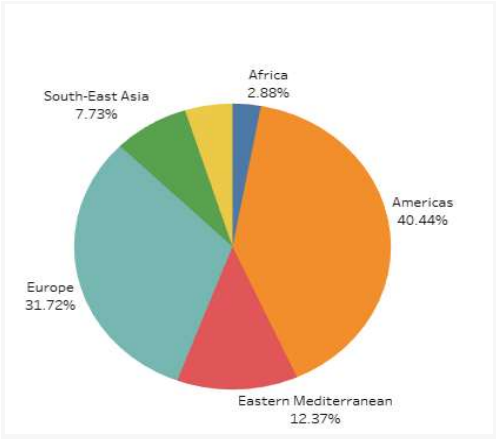
4.1.5 WHO REGION CONFIRMED CASES

The following graph tells us the number of confirmed cases in each WHO region. From the following graph it shows that the number of covid confirmed cases is more in Americas region than Europe region and so on.



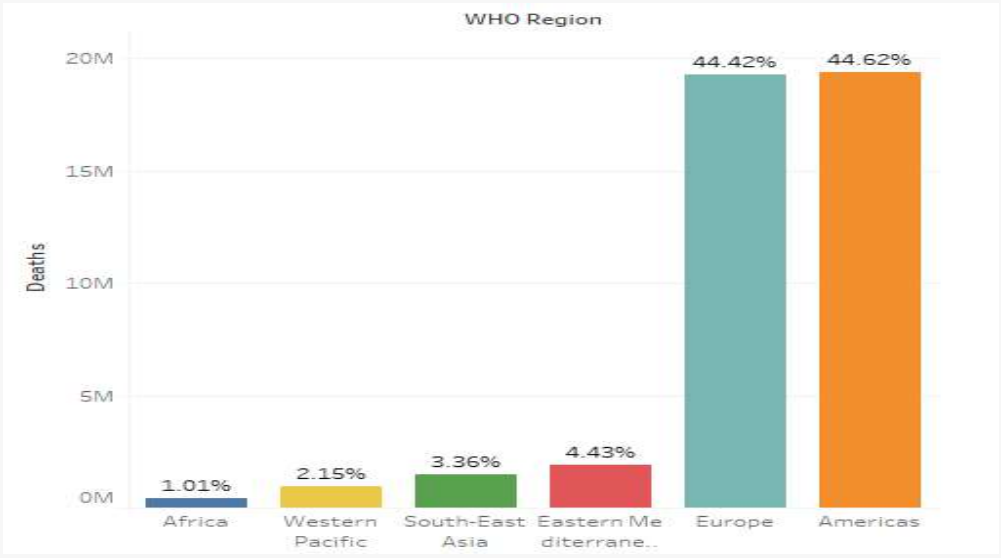
4.1.6 RECOVERIES IN WHO REGION

The following graph shows the recovered percentage of WHO region.As we see Americas region recovered percentage is 40.44% , Eastern Mediterranean region recovered cases is 12.37% and so on.



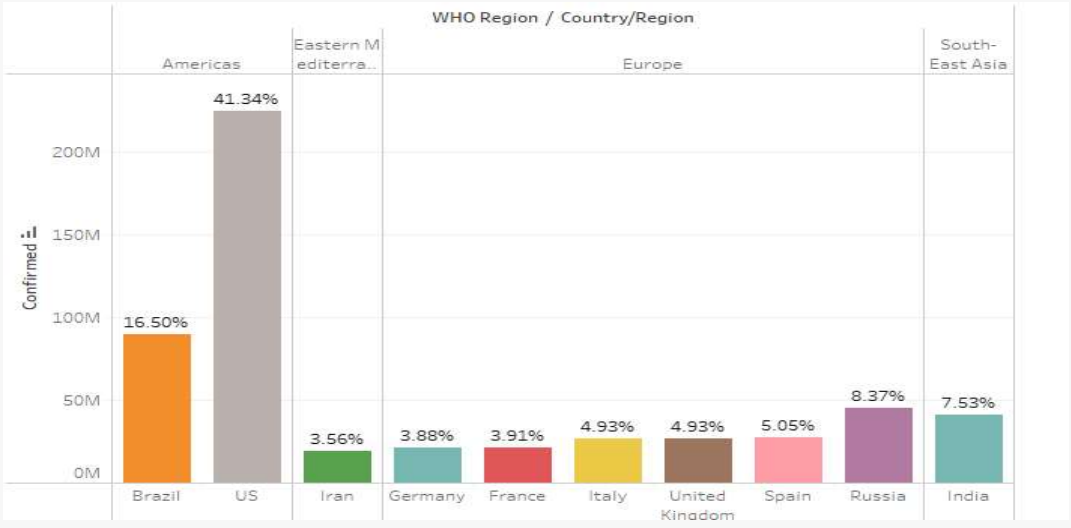
4.1.7 DEATH PERCENTAGE IN WHO REGION

The following bar graph shows the death percentage of WHO region.As we seen Americas region death percentage is 44.62% , Europe region death percentage is 44.42%, Eastern Mediterranean region death cases is 4.43% and so on.



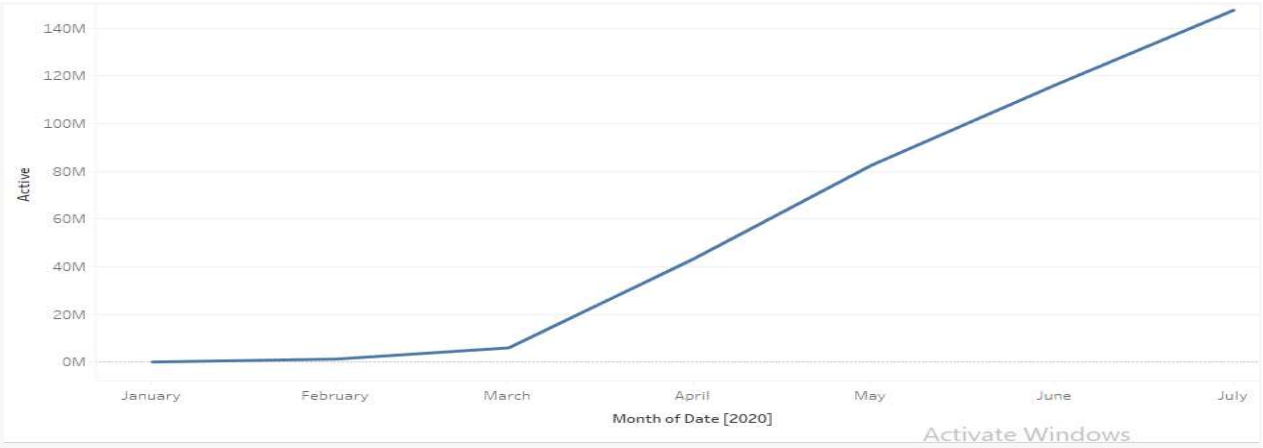
4.1.8 WHO REGION , COUNTRIES VS CONFIRMED CASES

The following bar graph shows top countries of WHO region where covid confirmed cases are most.



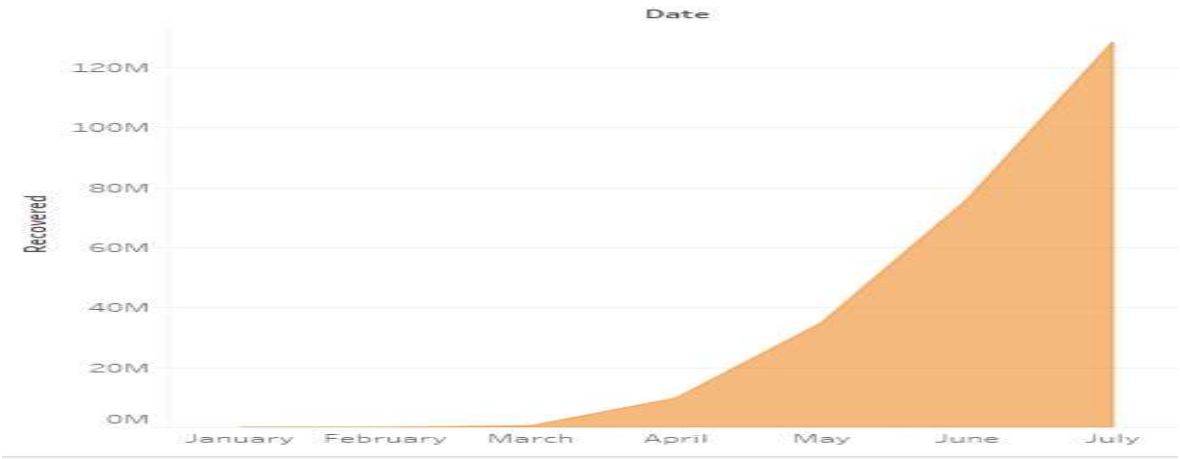
4.1.9 MONTH VS ACTIVE CASES

The following line graph shows the number of active cases in each month. Graph shows that the number of active cases is increasing as the month keeps increasing. We can see the trend in the number of active cases worldwide.



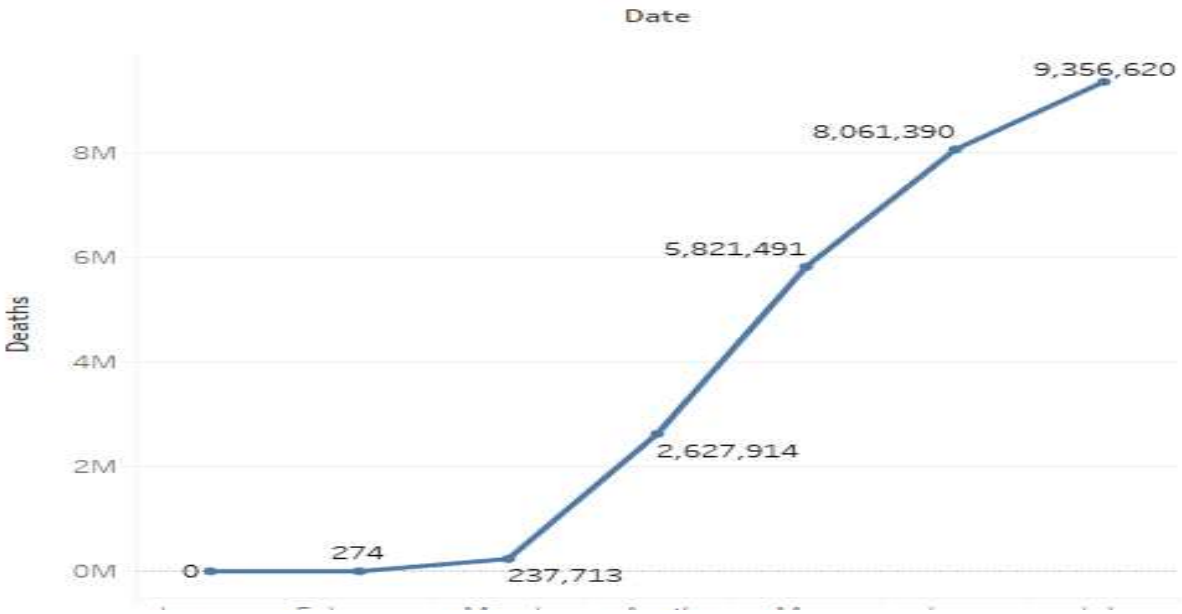
4.1.10 RECOVERIES VS MONTH

The following line graph shows the number of recovery cases in each month. Graph shows that the number of recovery cases is increasing as the month keeps increasing. We can see the trend in the number of recovery cases worldwide.



4.1.11 DEATHS VS MONTH

The following line graph shows the number of Death cases in each month. Graph shows that the number of death cases is increasing as the month keeps increasing. We can see the trend in the number of death cases worldwide.

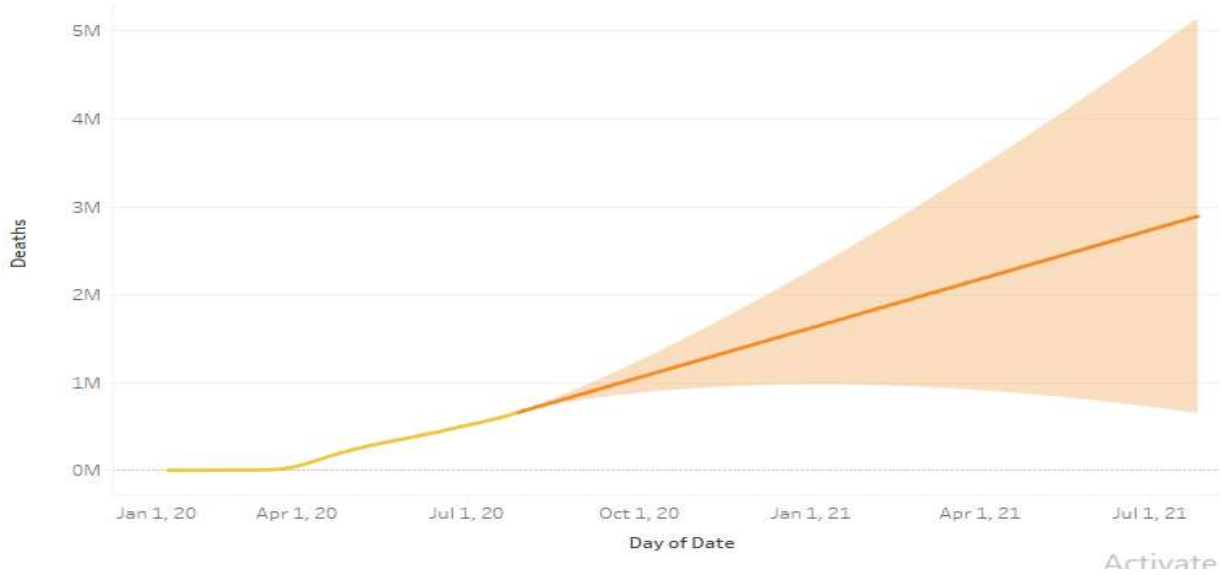


4.1.12 TOP 3 MONTH ACCORDING TO DEATH RATE

The following bubble chart shows that the months May,June and July are the months in which most deaths have occurred.

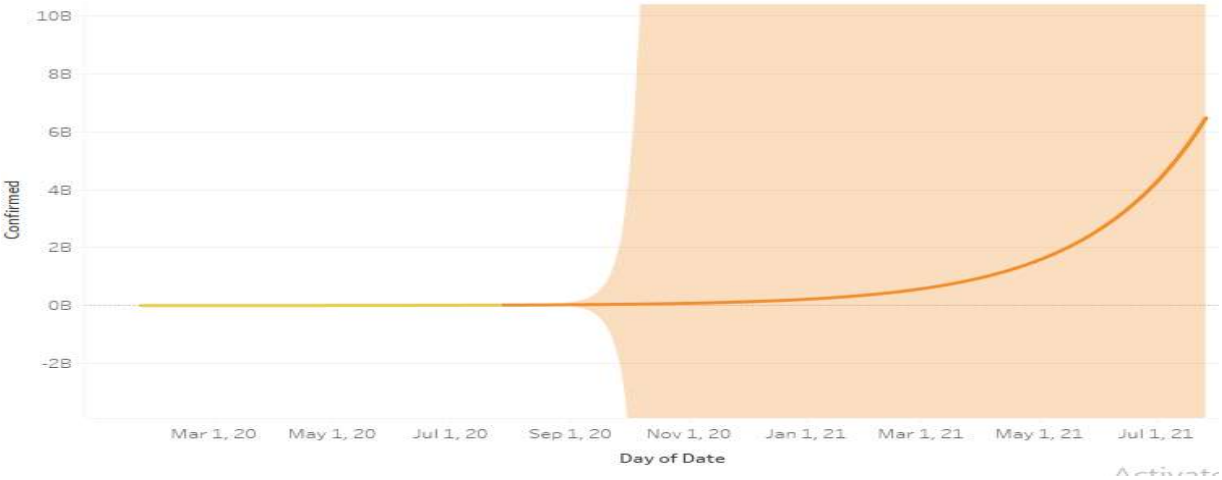
4.1.13 DEATH CASE FORECASTING

This graph is predicting the number of deaths cases for the next one year the estimated value of death at 1 July 2020 is approx 0.5 million and at 1 July 2021 is approx 2.7 million. Shaded region is the region of estimated values.



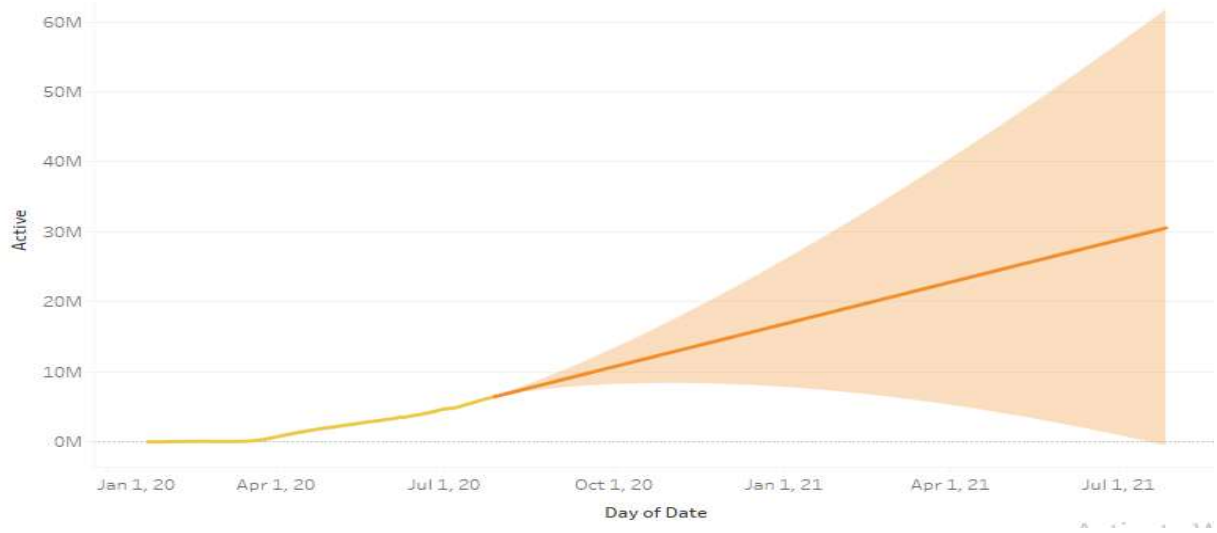
4.1.14 CONFIRMED CASE FORECASTING

This graph is predicting the number of confirmed cases for the next one year the estimated value of confirmed cases at 1 July 2020 is approx 0 billion and at 1 July 2021 is approx 6.2 billion.



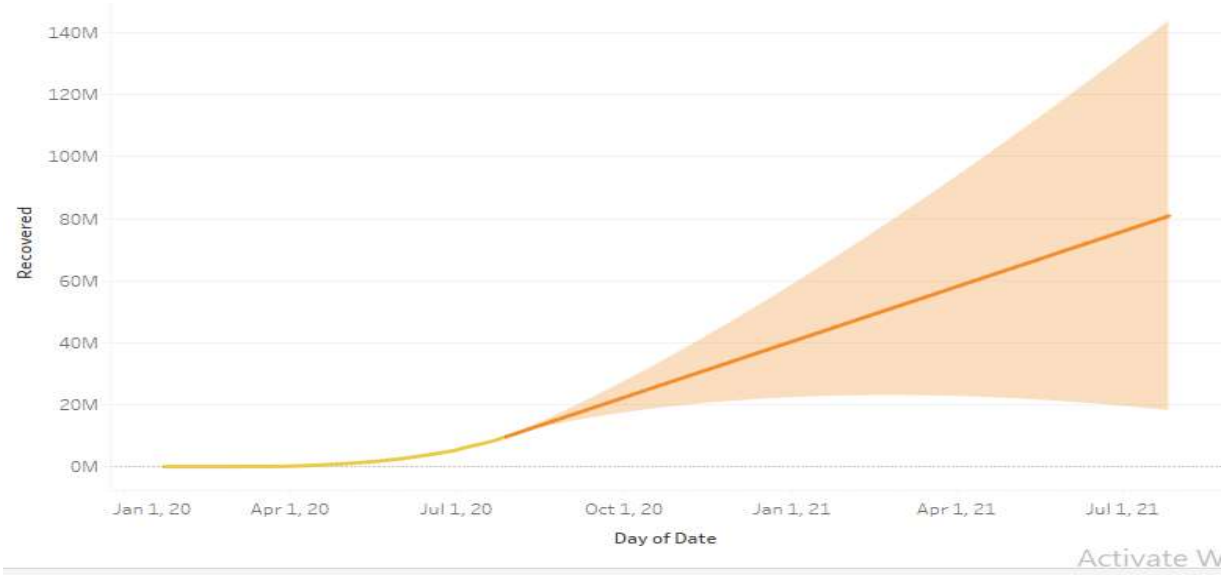
4.1.15 ACTIVE CASE FORECASTING

This graph is predicting the number of active cases for the next one year the estimated value of active cases at 1 July 2020 is approx 0.5 million and at 1 July 2021 is approx 30 million.



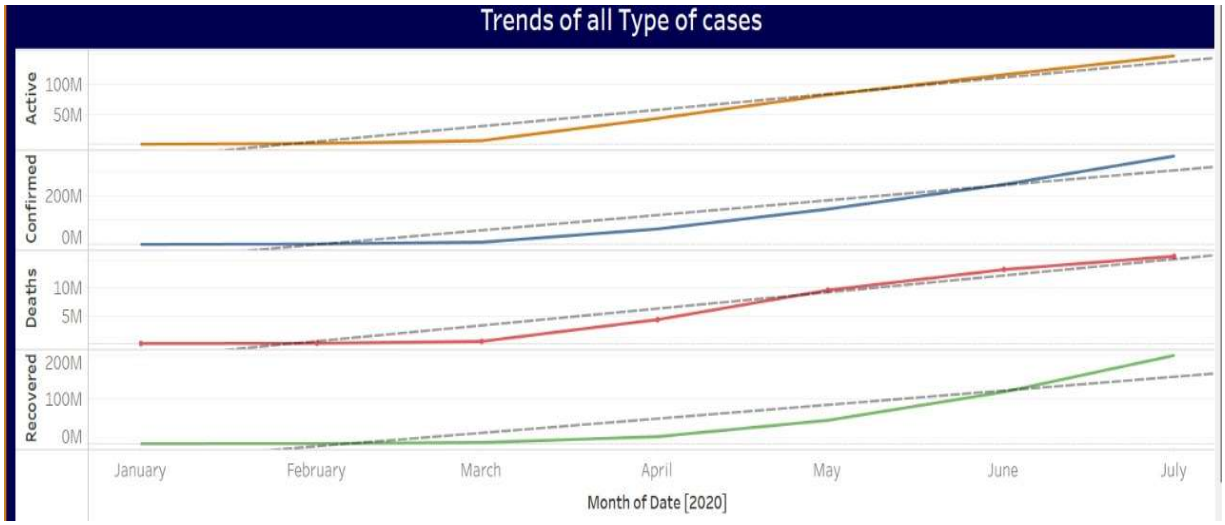
4.1.16 RECOVERED CASE FORECASTING

This graph is predicting the number of recovered cases for the next one year the estimated value of recovered cases at 1 July 2020 is approx 0.2 million and at 1 July 2021 is approx 80 million.



4.1.17 TRENDS OF ALL KIND OF CASES

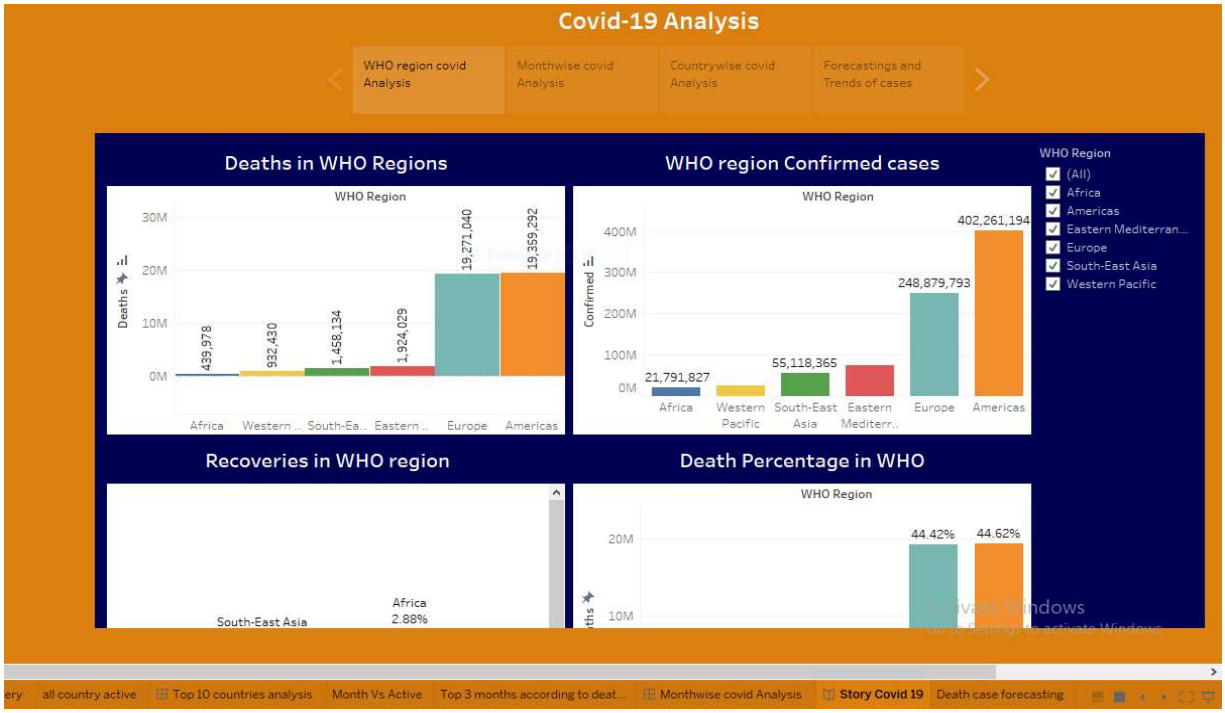
The following graph shows the trends of recovered,deaths,confirmed and active cases as shown it is increasing. We have applied linear fitting here, although in tableau polynomial fitting ,exponential fitting and so on is also available but for user simplicity we have used linear fitting here.



4.2 MAIN DASHBOARD EXPLANATION

4.2.1 DASHBOARD 1

Our first dashboard is WHO Region wise analysis in which we see that graphs for death in WHO region,confirmed cases in WHO region,recovered cases in WHO region,death percentage in WHO region, and WHO region,countries vs confirmed cases are given and where interactive filtering are also given which means if we select some WHO region then according to that WHO region our graph values are changes.



4.2.2 DASHBOARD 2

Our second dashboard is month wise covid analysis in which we see that graphs for death vs month,month vs active,recovered vs month, and top 3 month according to death rate are given and where interactive filtering are also given which means if we select some country then according to that country our graph values are changes.

4.2.3 DASHBOARD 3

Our third dashboard is country wise covid analysis in which we see that graphs for top 10 countries in recovery, top 10 countries in death rate, and countries active cases analysis are given and where interactive filtering is also given which means if we select some country then according to that country our graph values change.

4.2.4 DASHBOARD 4

Our fourth dashboard is for Forecasting and Trend of cases in which we see that graphs for death case forecasting,active case forecasting,confirmed case forecasting and active case forecasting are given .This dashboard is showing the predicted number of cases for next one year.