COVID-19 MONITOR

IE6600 : Computation and Visualization for Analytics

Group 006

THE TEAM

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CONTENTS

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WHAT IS COVID-19?

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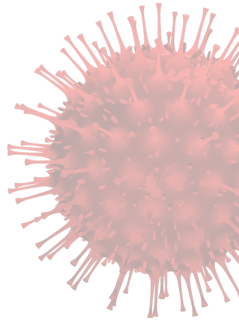
According to the **World Health Organization (WHO)**, COVID-19 is a respiratory disease caused by a newly discovered type of coronavirus.

This new strain of virus, also known as SARS-CoV-2 can be transmitted from person to person via respiratory droplets.

First reported to the WHO by China in December 2019.

The WHO has declared the virus as a global pandemic.



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WHY THIS TOPIC?

WHY THIS TOPIC?

- COVID-19 is impacting the global economy and society.
- Millions of people in the world are suffering from COVID-19.
- Thousands of people have lost their lives.
- Around 1 in every 6 people with COVID-19 get seriously ill.
- More than 185 countries have confirmed cases of COVID-19.

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STATISTICS

1,345,048

Confirmed Cases*

74,565

Deaths*

276,515

Recovered*

993,968

Active*

* Updated on **04/06/2020**

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ACTION PLAN

ACTION PLAN

Research for updated data

Fetch the daily data

Data pre-processing

Visualize the data

Create the COVID-19 Monitor

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DATA SET

DATA SOURCE & BACKGROUND

Data source:

- John Hopkins Github Data Repository (Daily Update)
- Google Latitude Longitude Data Set

The data files from the source location have been transformed to get country-wise data for each day.

Our dataset is updated daily based on the daily data update in the source files.

Data Range: 22nd January, 2020 - till date

Our dataset has the number of **Confirmed** cases, **Deaths** taken place, **Recovered** and **Active** cases for **each day** for every affected **country** along with the country's **Latitude** and **Longitude** values.

DATA STRUCTURE

Covid19.csv

Country	Confirmed	Deaths	Recovered	Active	Date	Lat	Long
Afghanistan	367	11	18	338	2020-04-06	33.93911	67.709953
Albania	377	21	116	240	2020-04-06	41.153332	20.168331
Algeria	1423	173	90	1160	2020-04-06	28.033886	1.659626
Andorra	525	21	31	473	2020-04-06	42.546245	1.601554
Angola	16	2	2	12	2020-04-06	-11.202692	17.873887
Antigua and Barbuda	15	0	0	15	2020-04-06	17.060816	-61.796428
Argentina	1554	48	325	1181	2020-04-06	-38.416097	-63.616672
Armenia	833	8	62	763	2020-04-06	40.069099	45.038189
Australia	5797	40	1080	4677	2020-04-06	-25.274398	133.775136
Austria	12297	220	3463	8614	2020-04-06	47.516231	14.550072
Azerbaijan	641	7	44	590	2020-04-06	40.143105	47.576927
Bahamas	29	5	4	20	2020-04-06	25.03428	-77.39628
Bahrain	756	4	458	294	2020-04-06	25.930414	50.637772
Bangladesh	123	12	33	78	2020-04-06	23.684994	90.356331

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LIBRARIES

LIBRARIES

dplyr	networkD3	cdparcoord	MASS
treemap	shinythemes	httr	remotes
shiny	gganimate	tools	gifski
d3treeR	ggplot2	caTools	DT
GGally	tidyverse	httr	leaflet
reshape2	rsconnect		

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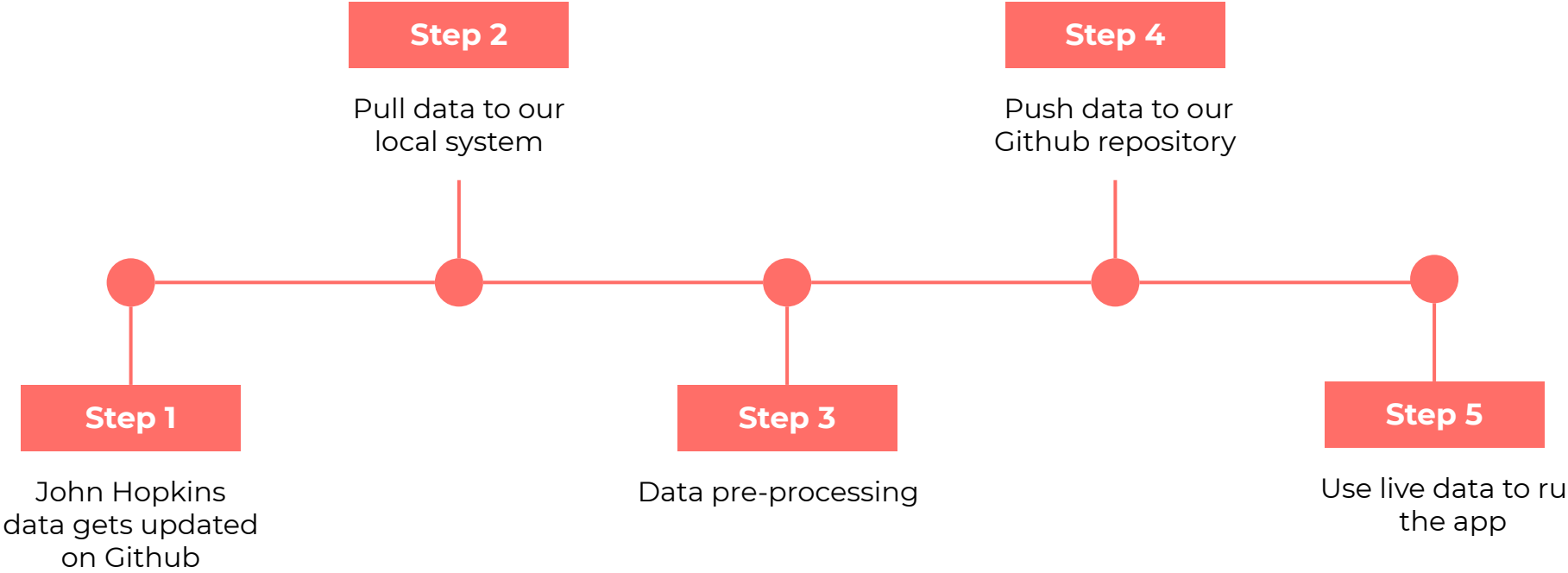
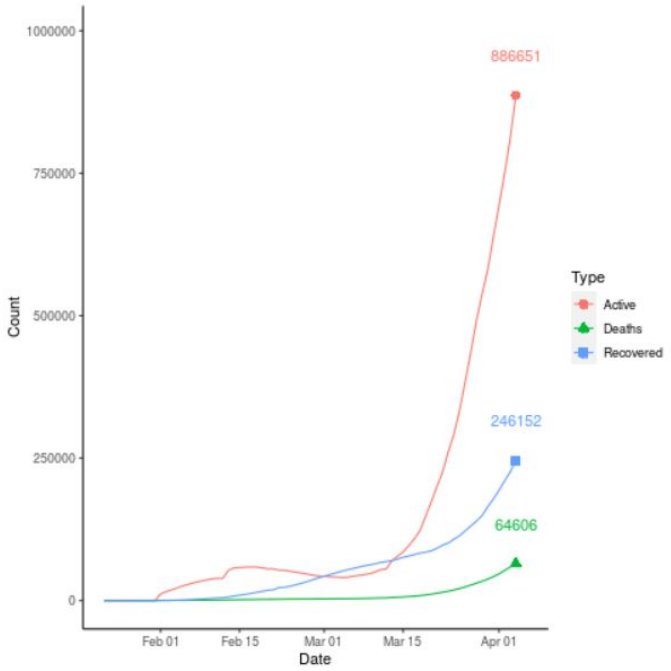
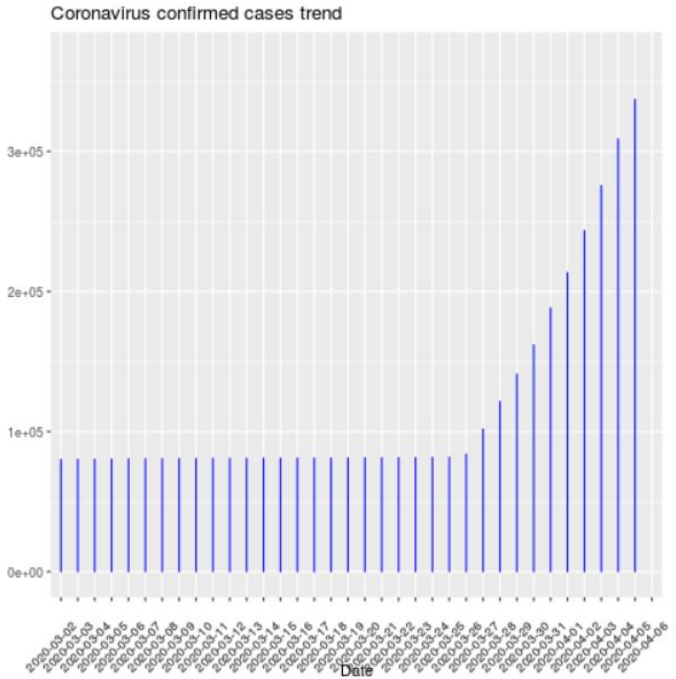
HIGHLIGHTS

LIVE APP


Step 1
John Hopkins data gets updated on Github
Step 2
Pull data to our local system
Step 3
Data pre-processing
Step 4
Push data to our Github repository
Step 5
Use live data to run the app

ANIMATED PLOT





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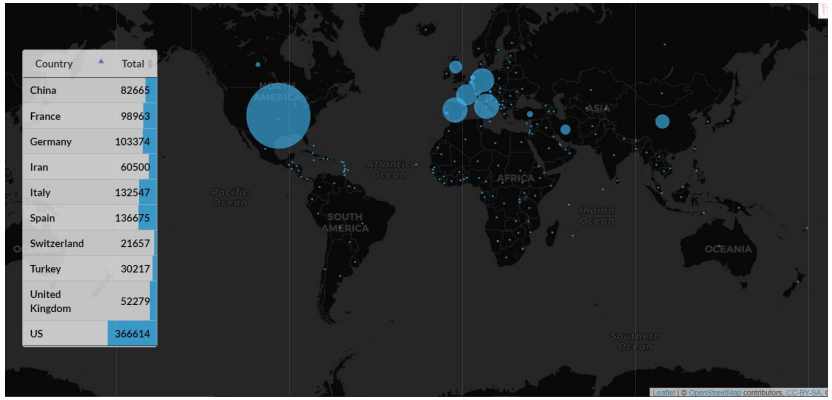
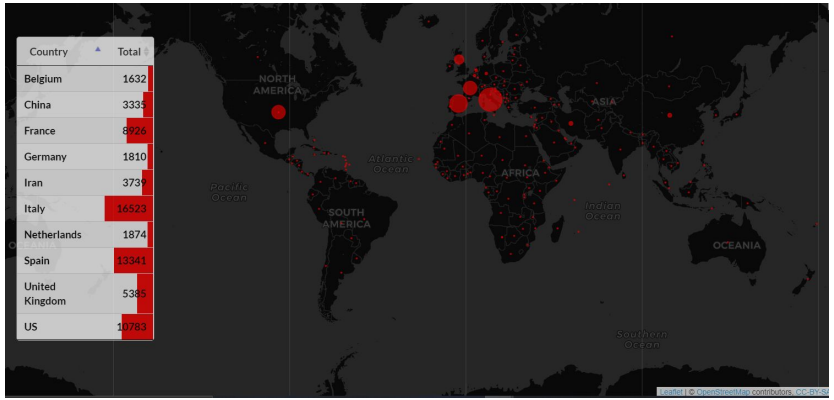
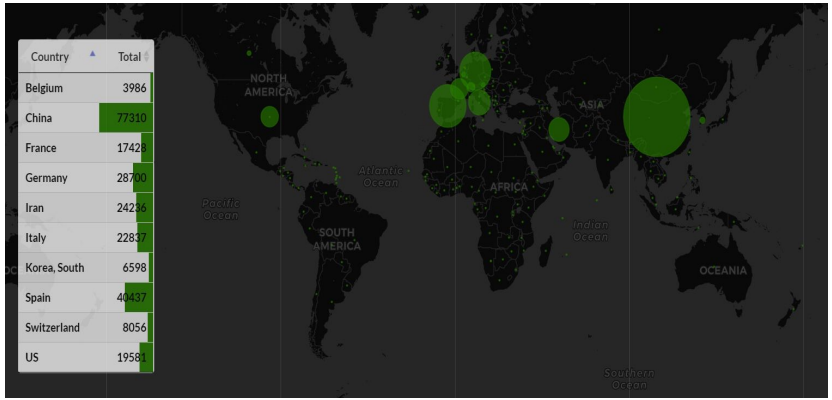
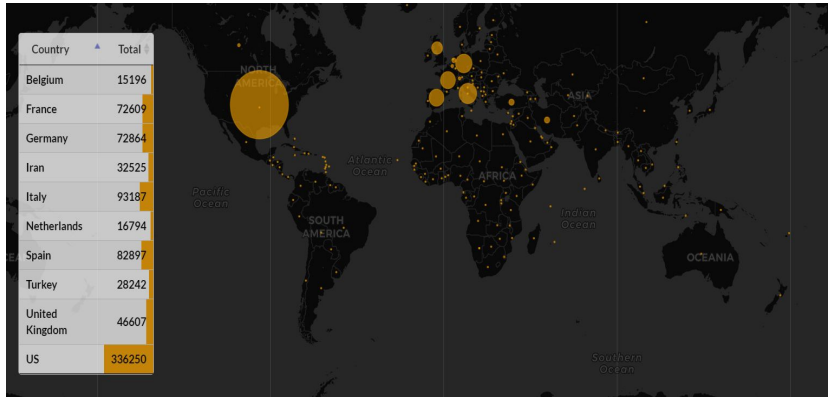
VISUALIZATIONS & ML

VISUALIZATIONS

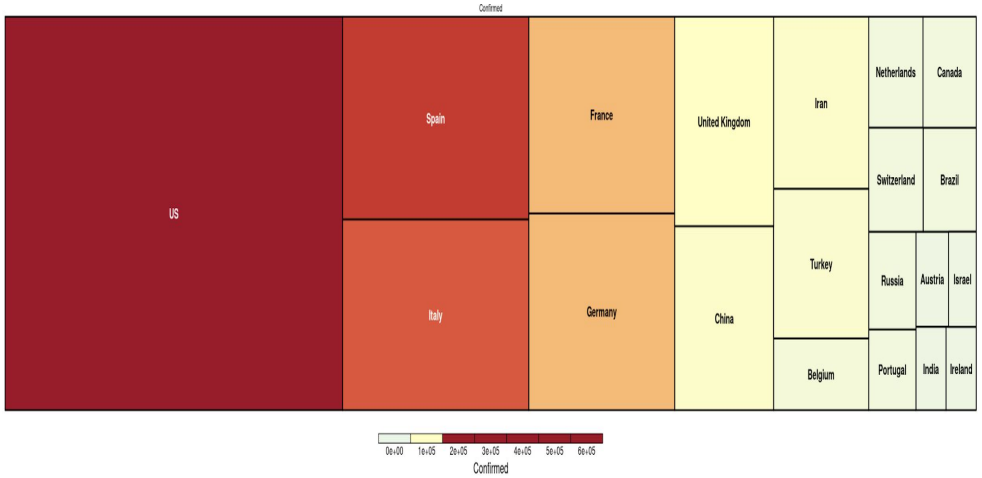




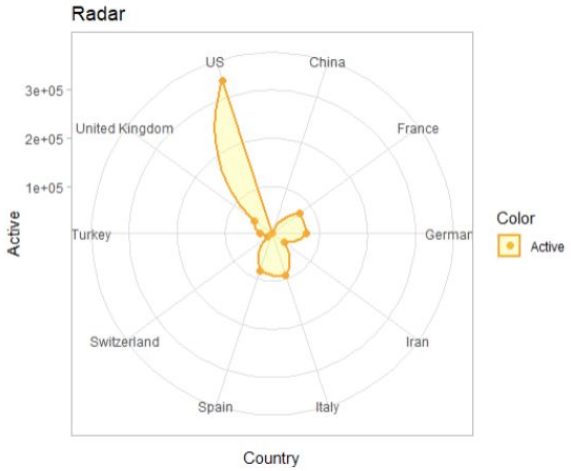




VISUALIZATIONS

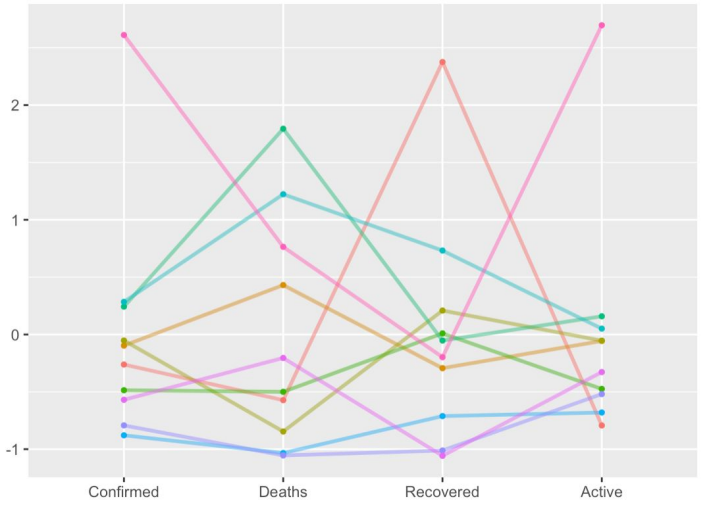


TreeMap

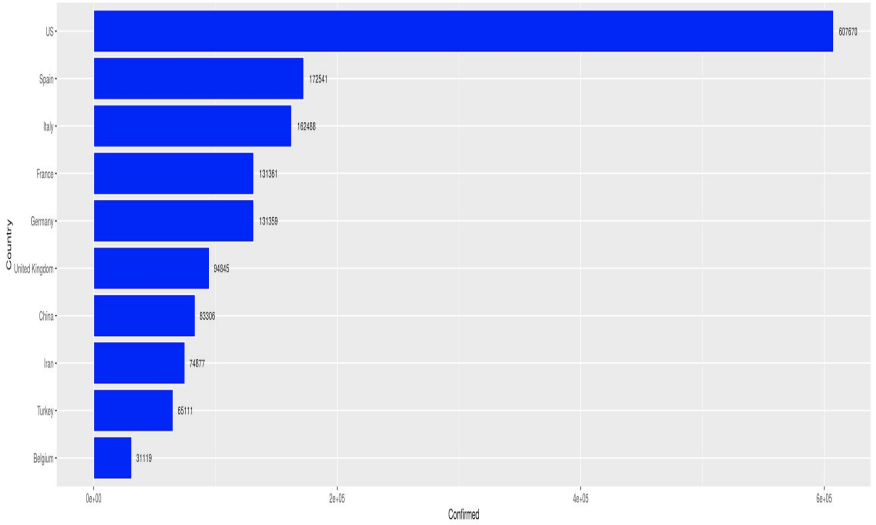


Radar Chart

VISUALIZATIONS



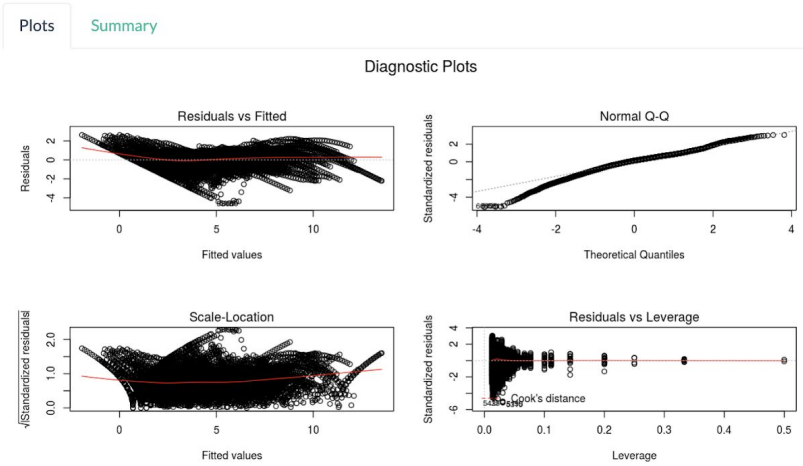
Parallel-Axis Plot

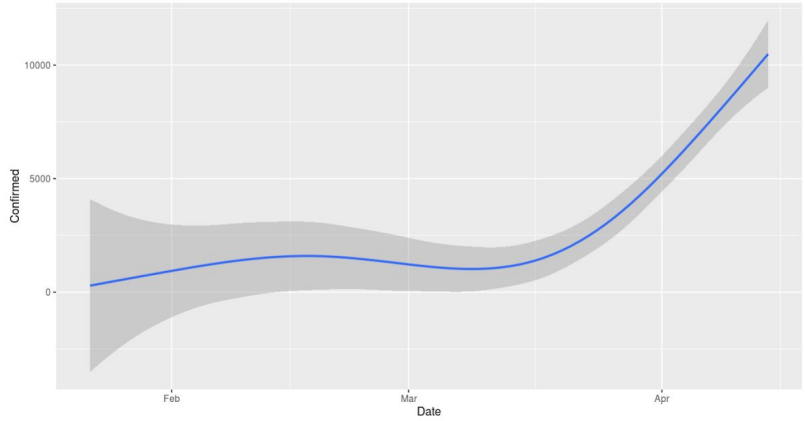


Bar Graph

MACHINE LEARNING IMPLEMENTATION

- Implemented machine learning in our dataset.
- Used Regression Analysis to model Covid-19 cases.





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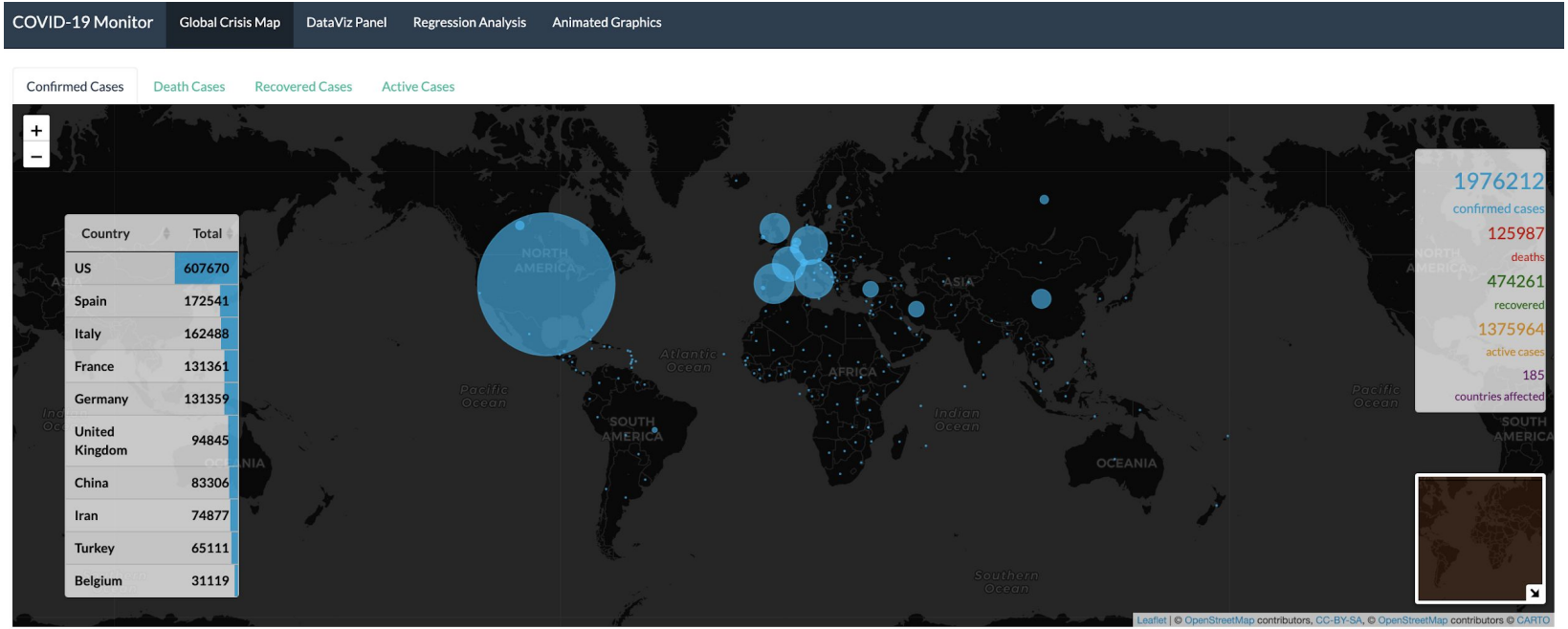
APP DEMO

R SHINY APP



LINK: https://phanisaikamal.shinyapps.io/project/

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CONCLUSION

CONCLUSION

- US is having the highest number of confirmed cases.
- Italy is having the highest number of Deaths.
- Spain is having the highest number of recovered cases.
- Africa is the least affected continent among all.

* Updated on **04/06/2020**

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NEXT STEPS

NEXT STEPS

- Analysing the state-wise data
- Analysing the fatality rate based on gender or age
- Analysing the category of people at risk
- Flattening the curve
- Also, if we could predict this global pandemic would stop!!

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REFERENCES

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Tools: Rstudio, Google Slides

THANK YOU!

Happy Quarantine

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Do you have any questions?