COVID-19 Analysis, Visualization, Comparison and Predictions

Introduction to COVID-19:-

Coronavirus is a family of viruses that can cause illness, which can vary from common cold and cough to sometimes more severe disease. Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV) were such severe cases the world already has faced.
SARS-CoV-2 (n-coronavirus) is the new virus of the coronavirus family, which was first discovered in 2019, which has not been identified in humans before. It is a contiguous virus which started from Wuhan in December 2019. Which was later declared as Pandemic by WHO due to high rate spreads throughout the world. Currently (on the date 10 June 2020), this leads to a total of 411K+ Deaths across the globe, including 180K+ deaths alone in Europe.

Pandemic is spreading all over the world; it becomes more important to understand about this spread. My Research/study is to analyze the cumulative data of confirmed, deaths, and recovered cases over time. In this research/study, the main focus is to analyze the spread trend of this virus all over the world.

SOURCES:

- **WHO**
- **CDC**
- **Microsoft COVID-19 Tracker**
- **COVID-19 Tracker by Johns Hopkins University**
- **COVID-19-India-Tracker**

Dataset

https://github.com/CSSEGISandData/COVID-19

2019 Novel Coronavirus COVID-19 (2019-nCoV) Data Repository by Johns Hopkins CSSE

This dataset is updated on daily basis by Johns Hopkins CSSE

Imports and Datasets

- **Pandas - for dataset handeling**
- **Numpy - Support for Pandas and calculations**
- **Matplotlib - for visualization (Platting graphas)**
- **pycountry_convert - Library for getting continent (name) to from their country names**
- **folium - Library for Map**
- **keras - Prediction Models**
- **plotly - for interative plots**

Output
Code

2019 Novel Coronavirus COVID-19 (2019-nCoV) Data Repository by Johns Hopkins CSSE (LINK)

Dataset consists of time-series data from 22 JAN 2020 to Till date (Updated on daily Basis).

Three Time-series dataset (Depricated):

- **time_series_19-covid-Confirmed.csv (Link Raw File)**
- **time_series_19-covid-Deaths.csv (Link Raw File)**
- **time_series_19-covid-Recovered.csv (Link Raw File)**

New Time-series dataset:

- **time_series_covid19_confirmed_global.csv (Link Raw File)**
- **time_series_covid19_deaths_global (Link Raw File)**

New Dataset (Updated more frequently by web crawler of JHU):

- **cases_country.csv (Link Raw File)**