**Covid\_19\_Data\_Analysis Source Code**

**# Importing Library Files**

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import seaborn as sns

import plotly.express as px

from plotly.subplots import make\_subplots

from datetime import datetime

**# Reading Dataset**

covid\_df=pd.read\_csv("C:/Users/naren/Desktop/covid data/covid\_19\_india.csv")

**# Dataset**

covid\_df.head(100).style.background\_gradient(cmap = "cubehelix")

**# Statistical Data from Dataset**

covid\_df.describe().style.background\_gradient(cmap = "cubehelix")

**# Cleaning Dataset**

covid\_df.drop(["Sno","Time","ConfirmedIndianNational","ConfirmedForeignNational"], inplace = True,axis = 1)

covid\_df.head(100).style.background\_gradient(cmap = "cubehelix")

**#Active Cases**

covid\_df['Active\_cases'] = covid\_df['Confirmed'] - (covid\_df['Cured'] + covid\_df['Deaths'])

covid\_df.head(100).style.background\_gradient(cmap = "cubehelix")

**# Recovery and Mortality Rate**

statewise=pd.pivot\_table(covid\_df,values=["Confirmed","Deaths","Cured"],index = "State/UnionTerritory",aggfunc = max)

statewise["Recovery Rate"] = statewise["Cured"]\*100/statewise["Confirmed"]

statewise["Mortality Rate"] = statewise["Deaths"]\*100/statewise["Confirmed"]

statewise = statewise.sort\_values(by = "Confirmed", ascending = False)

statewise = statewise.sort\_values(by = "Confirmed", ascending = False)

statewise.style.background\_gradient(cmap = "cubehelix")

**# Top 10 States with Active Cases**

top\_10\_active\_states=covid\_df.groupby(by='State/UnionTerritory').max()[['Active\_cases','Date']].sort\_values(by=['Active\_cases'],ascending=False).reset\_index()

top\_10\_active\_states.head(10).style.background\_gradient(cmap = "cubehelix")

**# Barplot for Top 10 States with Active Cases**

fig = plt.figure(figsize=(16,9))

plt.title("Top 10 states with most active cases in India",size = 25)

ax = sns.barplot(data =top\_10\_active\_states.iloc[:10], y= "Active\_cases",x = "State/UnionTerritory")

plt.xlabel("States")

plt.ylabel("Total Active Cases")

plt.show()

**# Piechart for Top 5 States of Active Cases**

import matplotlib.pyplot as plt

%matplotlib inline

states=['Maharashtra','Karnataka','Kerala','Tamil Nadu','Uttar Pradesh']

active\_cases=['701614','605515','445692','313048','310783']

colors=['c','b','r','y','g']

explode=[.08,.08,.08,.08,.08]

plt.pie(active\_cases,labels=states,colors=colors,explode=explode,autopct='%2.1f%%')

plt.show()

**# Boxplot for Top 10 States of Active Cases**

sns.boxplot(top\_10\_active\_states.head(10)['Active\_cases'],top\_10\_active\_states.head(10)['State/UnionTerritory']);

**# Top 10 States with Highest Deaths**

top\_10\_deaths=covid\_df.groupby(by = 'State/UnionTerritory').max()[['Deaths','Date']].sort\_values(by=['Deaths'],ascending = False).reset\_index()

top\_10\_deaths.head(10).style.background\_gradient(cmap = "cubehelix")

**# Barplot for Top 10 States with Highest Deaths**

fig = plt.figure(figsize=(18,5))

plt.title("Top 10 states with most Deaths",size=25)

ax=sns.barplot(data=top\_10\_deaths.iloc[:10],y="Deaths",x="State/UnionTerritory",linewidth=2)

plt.xlabel("States")

plt.ylabel("Total Death Cases")

plt.show()

**# Piechart for Top 5 States with Highest Deaths**

import matplotlib.pyplot as plt

%matplotlib inline

states=['Karnataka','Tamil Nadu','Delhi','Uttar Pradesh','Maharashtra']

active\_cases=['36848','34367','25068','22775','134201']

colors=['c','b','r','y','g']

explode=[.08,.08,.08,.08,.08]

plt.pie(active\_cases,labels=states,colors=colors,explode=explode,autopct='%2.1f%%')

plt.show()

**# Boxplot for Top 10 States with most Deaths**

sns.boxplot(top\_10\_deaths.head(10)['Deaths'],top\_10\_deaths.head(10)['State/UnionTerritory']);