```
import pandas as pd
import plotly.express as px
import plotly.graph_objects as go
data = pd.read_csv(r"C:\Users\Darshan\Downloads\transformed_data.csv\
transformed_data.csv")
data2 = pd.read_csv(r"C:\Users\Darshan\Downloads\raw_data.csv\
raw_data.csv")
print(data)
```

```
      CODE      COUNTRY        DATE    HDI        TC        TD
STI  \
0      AFG  Afghanistan  2019-12-31  0.498  0.000000  0.000000
0.000000
1      AFG  Afghanistan  2020-01-01  0.498  0.000000  0.000000
0.000000
2      AFG  Afghanistan  2020-01-02  0.498  0.000000  0.000000
0.000000
3      AFG  Afghanistan  2020-01-03  0.498  0.000000  0.000000
0.000000
4      AFG  Afghanistan  2020-01-04  0.498  0.000000  0.000000
0.000000
...    ...          ...         ...    ...       ...       ...       .
..
50413  ZWE     Zimbabwe  2020-10-15  0.535  8.994048  5.442418
4.341855
50414  ZWE     Zimbabwe  2020-10-16  0.535  8.996528  5.442418
4.341855
50415  ZWE     Zimbabwe  2020-10-17  0.535  8.999496  5.442418
4.341855
50416  ZWE     Zimbabwe  2020-10-18  0.535  9.000853  5.442418
4.341855
50417  ZWE     Zimbabwe  2020-10-19  0.535  9.005405  5.442418
4.341855

              POP    GDPCAP
0       17.477233  7.497754
1       17.477233  7.497754
2       17.477233  7.497754
3       17.477233  7.497754
4       17.477233  7.497754
...           ...       ...
50413   16.514381  7.549491
50414   16.514381  7.549491
50415   16.514381  7.549491
50416   16.514381  7.549491
50417   16.514381  7.549491

[50418 rows x 9 columns]
```

```
print(data.head())
```

```
  CODE      COUNTRY        DATE    HDI   TC   TD  STI         POP
GDPCAP
0  AFG  Afghanistan  2019-12-31  0.498  0.0  0.0  0.0  17.477233
7.497754
1  AFG  Afghanistan  2020-01-01  0.498  0.0  0.0  0.0  17.477233
7.497754
2  AFG  Afghanistan  2020-01-02  0.498  0.0  0.0  0.0  17.477233
7.497754
3  AFG  Afghanistan  2020-01-03  0.498  0.0  0.0  0.0  17.477233
7.497754
4  AFG  Afghanistan  2020-01-04  0.498  0.0  0.0  0.0  17.477233
7.497754
```

```
print(data2.head())
```

```
  iso_code     location        date  total_cases  total_deaths  \
0      AFG  Afghanistan  2019-12-31          0.0           0.0
1      AFG  Afghanistan  2020-01-01          0.0           0.0
2      AFG  Afghanistan  2020-01-02          0.0           0.0
3      AFG  Afghanistan  2020-01-03          0.0           0.0
4      AFG  Afghanistan  2020-01-04          0.0           0.0

   stringency_index  population  gdp_per_capita
human_development_index  \
0               0.0    38928341        1803.987
0.498
1               0.0    38928341        1803.987
0.498
2               0.0    38928341        1803.987
0.498
3               0.0    38928341        1803.987
0.498
4               0.0    38928341        1803.987
0.498

  Unnamed: 9 Unnamed: 10 Unnamed: 11  Unnamed: 12  Unnamed: 13
0      #NUM!       #NUM!       #NUM!    17.477233  7.497754494
1      #NUM!       #NUM!       #NUM!    17.477233  7.497754494
2      #NUM!       #NUM!       #NUM!    17.477233  7.497754494
3      #NUM!       #NUM!       #NUM!    17.477233  7.497754494
4      #NUM!       #NUM!       #NUM!    17.477233  7.497754494
```

```
data["COUNTRY"].value_counts()
```

```
COUNTRY
Afghanistan        294
Indonesia          294
Macedonia          294
Luxembourg         294
Lithuania          294
```

```
                  ...
Tajikistan         172
Comoros            171
Lesotho            158
Hong Kong           51
Solomon Islands      4
Name: count, Length: 210, dtype: int64
```

```
data["COUNTRY"].value_counts().mode()
```

```
0    294
Name: count, dtype: int64
```

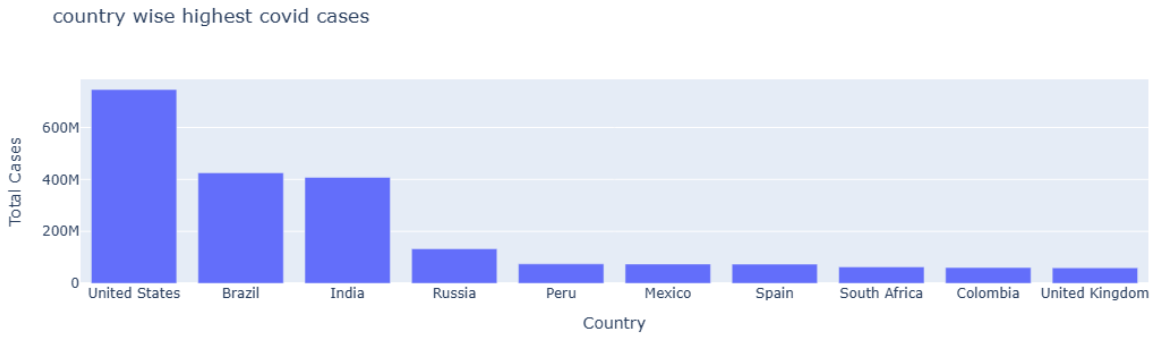
```
code = data["CODE"].unique().tolist()
country = data["COUNTRY"].unique().tolist()
hdi = []
tc = []
td = []
sti = []
population = data["POP"].unique().tolist()
gdp = []

for i in country :
    hdi.append((data.loc[data["COUNTRY"] == i,"HDI"]).sum()/294)
    tc.append((data2.loc[data2['location'] ==i,"total_cases"]).sum())
    td.append((data2.loc[data2["location"] ==
i,"total_deaths"]).sum())
    sti.append((data.loc[data["COUNTRY"] ==i,"STI"]).sum()/294)
    population.append((data2.loc[data2["location"] ==
i,"population"]).sum()/294)
aggregated_data =
pd.DataFrame(list(zip(code,country,hdi,tc,td,sti,population)),
                                columns = ["Country
Code","Country","HDI","Total Cases",
                                           "Total Deaths","Stringency
Index","Population"])
print(aggregated_data.head())
```

```
  Country Code      Country       HDI  Total Cases  Total Deaths  \
0          AFG  Afghanistan  0.498000    5126433.0      165875.0
1          ALB      Albania  0.600765    1071951.0       31056.0
2          DZA      Algeria  0.754000    4893999.0      206429.0
3          AND      Andorra  0.659551     223576.0        9850.0
4          AGO       Angola  0.418952     304005.0       11820.0

   Stringency Index  Population
0          3.049673   17.477233
1          3.005624   14.872537
2          3.195168   17.596309
```

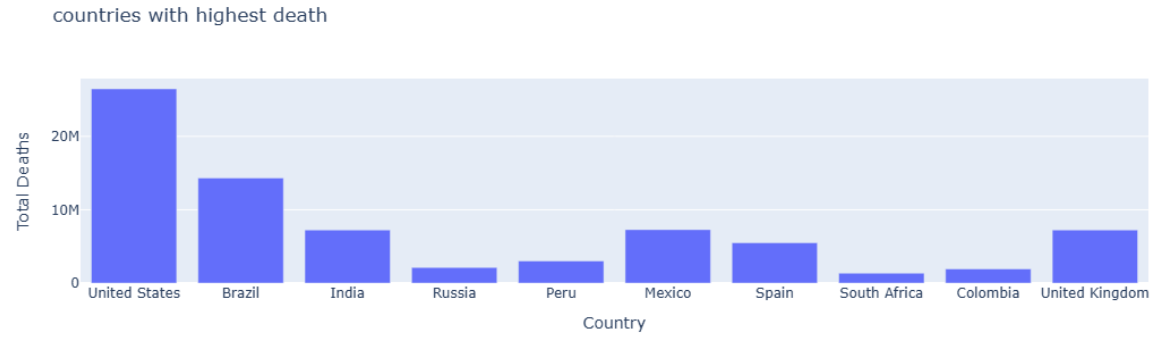
```
3          2.677654   11.254996
4          2.965560   17.307957

data = aggregated_data.sort_values(by=["Total Cases"],ascending =
False)
print(data.head())

    Country Code        Country      HDI  Total Cases  Total Deaths  \
200          USA  United States  0.92400  746014098.0    26477574.0
27           BRA         Brazil  0.75900  425704517.0    14340567.0
90           IND          India  0.64000  407771615.0     7247327.0
157          RUS         Russia  0.81600  132888951.0     2131571.0
150          PER           Peru  0.59949   74882695.0     3020038.0

     Stringency Index  Population
200          3.350949   19.617637
27           3.136028   19.174732
90           3.610552   21.045353
157          3.380088   18.798668
150          3.430126   17.311165

data = data.head(10)
print(data)

    Country Code         Country       HDI  Total Cases  Total Deaths
\
200          USA   United States  0.924000  746014098.0    26477574.0

27           BRA          Brazil  0.759000  425704517.0    14340567.0

90           IND           India  0.640000  407771615.0     7247327.0

157          RUS          Russia  0.816000  132888951.0     2131571.0

150          PER            Peru  0.599490   74882695.0     3020038.0

125          MEX          Mexico  0.774000   74347548.0     7295850.0

178          ESP           Spain  0.887969   73717676.0     5510624.0

175          ZAF    South Africa  0.608653   63027659.0     1357682.0

42           COL        Colombia  0.581847   60543682.0     1936134.0

199          GBR  United Kingdom  0.922000   59475032.0     7249573.0


     Stringency Index  Population
200          3.350949   19.617637
27           3.136028   19.174732
90           3.610552   21.045353
```

```
157          3.380088   18.798668
150          3.430126   17.311165
125          3.019289   18.674802
178          3.393922   17.660427
175          3.364333   17.898266
42           3.357923   17.745037
199          3.353883   18.033340
```

```
figure = px.bar(data ,y ='Total Cases', x = "Country",title = "country wise highest covid cases")
figure.show()
```

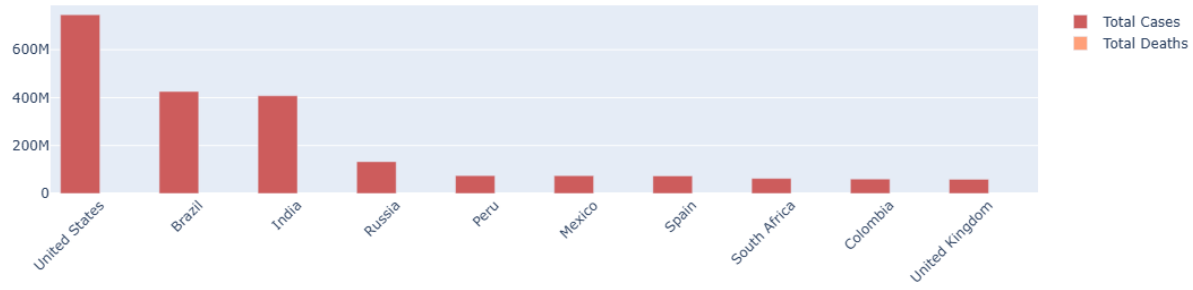



```
figure = px.bar (data , y = "Total Deaths", x = "Country",title = "countries with highest death",)
figure.show()
```

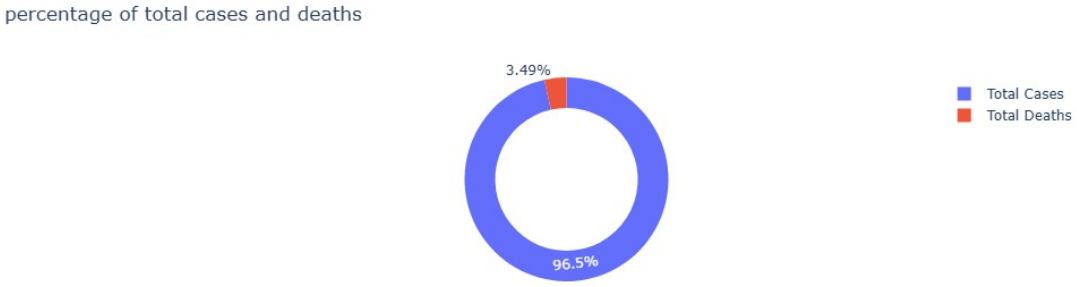



```
fig = go.Figure()
fig.add_trace(go.Bar(
   x=data["Country"],
   y=data["Total Cases"],
   name = 'Total Cases',
   marker_color = 'indianred'
))
```

```
fig.add_trace(go.Bar(
    x = data["Country"],
    y = ["Total Death Cases"],
    name = 'Total Deaths',
    marker_color = 'lightsalmon'))
fig.update_layout(barmode = 'group', xaxis_tickangle = -45)
fig.show()
```

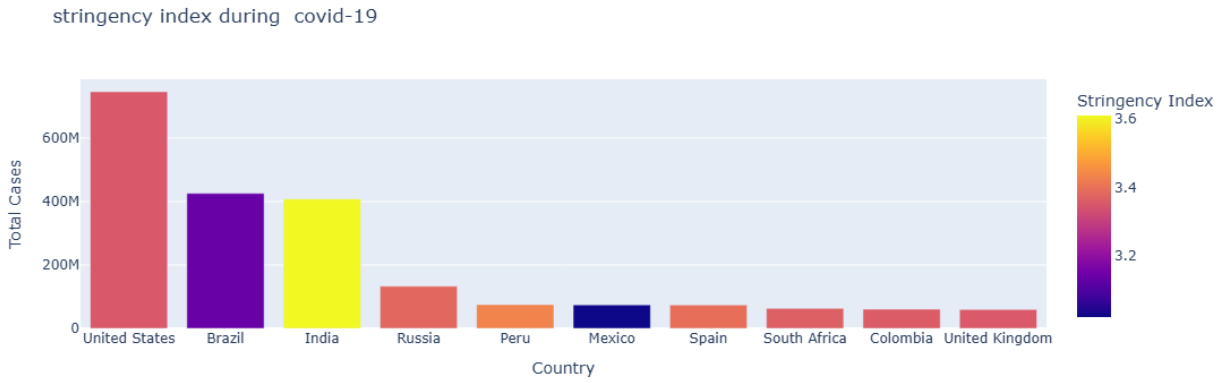



```
cases = data["Total Cases"].sum()
deceased = data["Total Deaths"].sum()
labels = ["Total Cases","Total Deaths"]
values = [cases,deceased]
fig = px.pie(data,values=values,names=labels,title = 'percentage of
total cases and deaths',hole =0.7)
fig.show()
```




```
death_rate = (data["Total Deaths"].sum()/data["Total
Cases"].sum())*100
print("death_rate =",death_rate)

death_rate = 3.6144212045653767
```

```
fig = px.bar(data,x='Country',y='Total Cases',
             hover_data=['Population','Total Deaths'],
             color = 'Stringency Index', height =400,
             title = "stringency index during  covid-19")
fig.show()
```

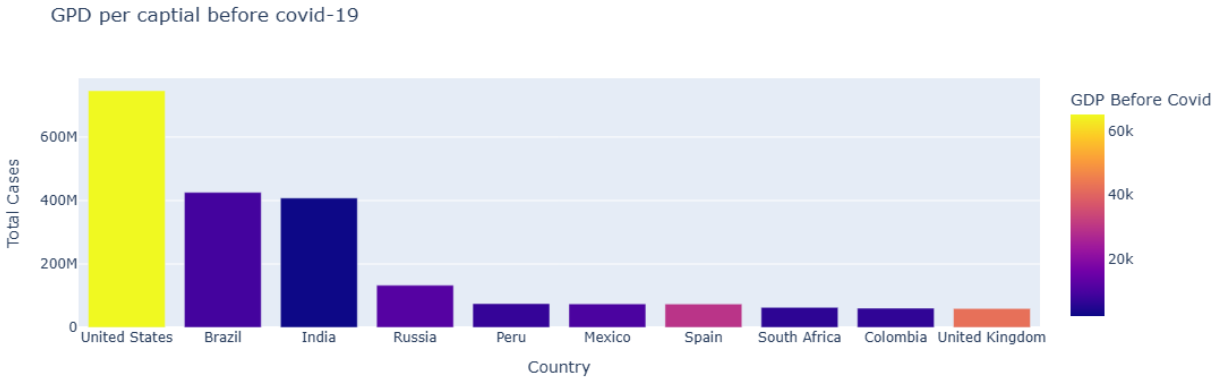



```
data["GDP Before Covid"] =
[65279.53,8897.49,2100.75,11497.65,7027.61,9946.03,29564.74,6001.40,64
24.94,42354.41]
data["GDP During Covid"] =
[63543.58,6796.84,1900.71,10126.72,6126.87,8346.70,27057.16,5090.72,33
2.77,40284.64]
print(data)
```

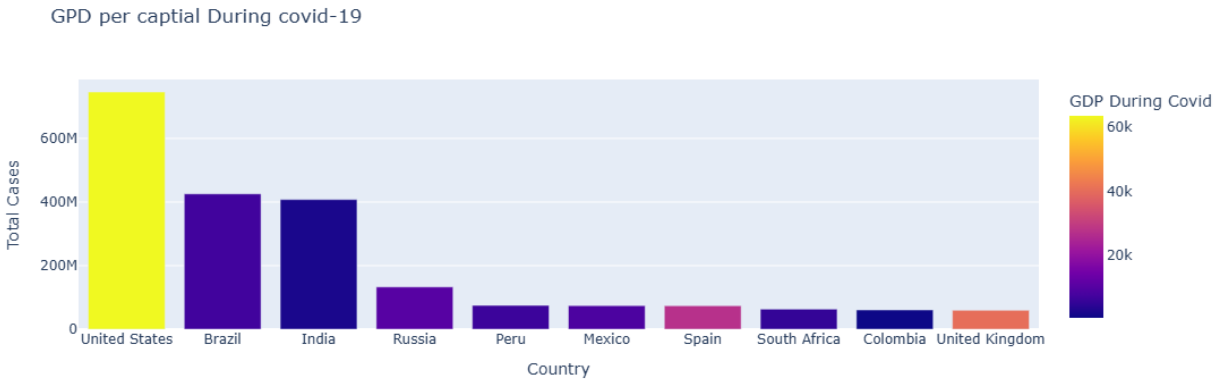
	Country Code	Country	HDI	Total Cases	Total Deaths
200	USA	United States	0.924000	746014098.0	26477574.0
27	BRA	Brazil	0.759000	425704517.0	14340567.0
90	IND	India	0.640000	407771615.0	7247327.0
157	RUS	Russia	0.816000	132888951.0	2131571.0
150	PER	Peru	0.599490	74882695.0	3020038.0
125	MEX	Mexico	0.774000	74347548.0	7295850.0
178	ESP	Spain	0.887969	73717676.0	5510624.0
175	ZAF	South Africa	0.608653	63027659.0	1357682.0
42	COL	Colombia	0.581847	60543682.0	1936134.0
199	GBR	United Kingdom	0.922000	59475032.0	7249573.0

	Stringency Index	Population	GDP Before Covid	GDP During Covid
200	3.350949	19.617637	65279.53	63543.58
27	3.136028	19.174732	8897.49	6796.84
90	3.610552	21.045353	2100.75	1900.71
157	3.380088	18.798668	11497.65	10126.72
150	3.430126	17.311165	7027.61	6126.87
125	3.019289	18.674802	9946.03	8346.70
178	3.393922	17.660427	29564.74	27057.16
175	3.364333	17.898266	6001.40	5090.72
42	3.357923	17.745037	6424.94	332.77
199	3.353883	18.033340	42354.41	40284.64

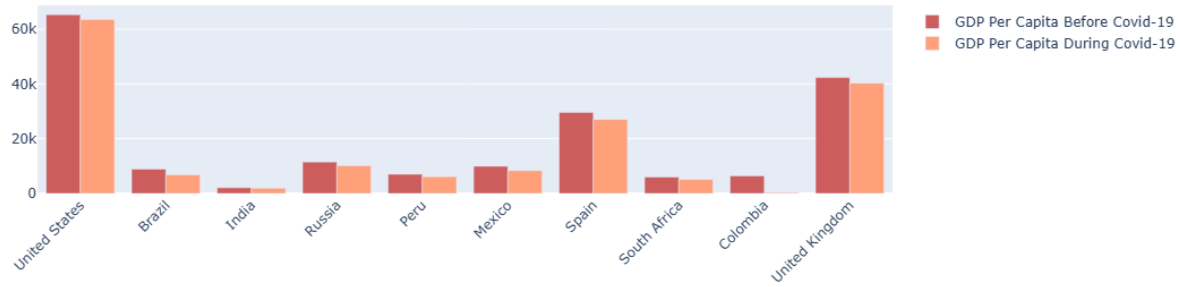
```
fig = px.bar(data,x = 'Country',y = 'Total Cases',
             hover_data = ['Population','Total Deaths'],
             color = 'GDP Before Covid', height =400,
             title = "GPD per captial before covid-19")
fig.show()
```



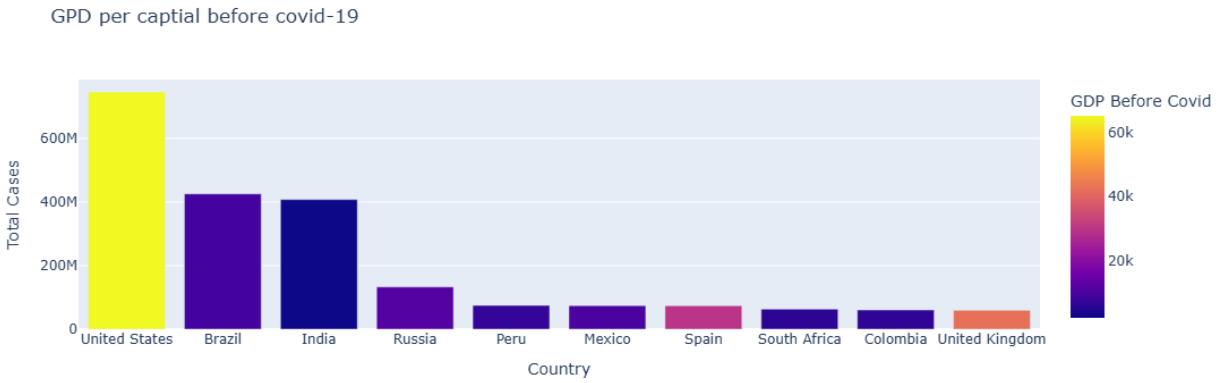

```
fig = px.bar(data,x = 'Country',y = 'Total Cases',
             hover_data = ['Population','Total Deaths'],
             color = 'GDP During Covid', height =400,
             title = "GPD per captial During covid-19")
fig.show()
```




```
fig = go.Figure()
fig.add_trace(go.Bar(
    x=data["Country"],
    y=data["GDP Before Covid"],
    name='GDP Per Capita Before Covid-19',
    marker_color='indianred'
))
fig.add_trace(go.Bar(
    x=data["Country"],
    y=data["GDP During Covid"],
    name='GDP Per Capita During Covid-19',
    marker_color='lightsalmon'
))
fig.update_layout(barmode='group', xaxis_tickangle=-45)
fig.show()
```




```
fig = px.bar(data,x = 'Country',y = 'Total Cases',
             hover_data = ['Population','Total Deaths'],
             color = 'GDP Before Covid', height =400,
             title = "GPD per captial before covid-19")
fig.show()
```


GPD per captial before covid-19
Total Cases
600M
400M
200M
0
United States
Brazil
India
Russia
Peru
Mexico
Spain
South Africa
Colombia
United Kingdom
Country
GDP Before Covid
60k
40k
20k