```
import pandas as pd
import matplotlib.pyplot as plt


df = pd.read_csv('/content/Expt-2-world-data-2023.csv')


df.head()
```

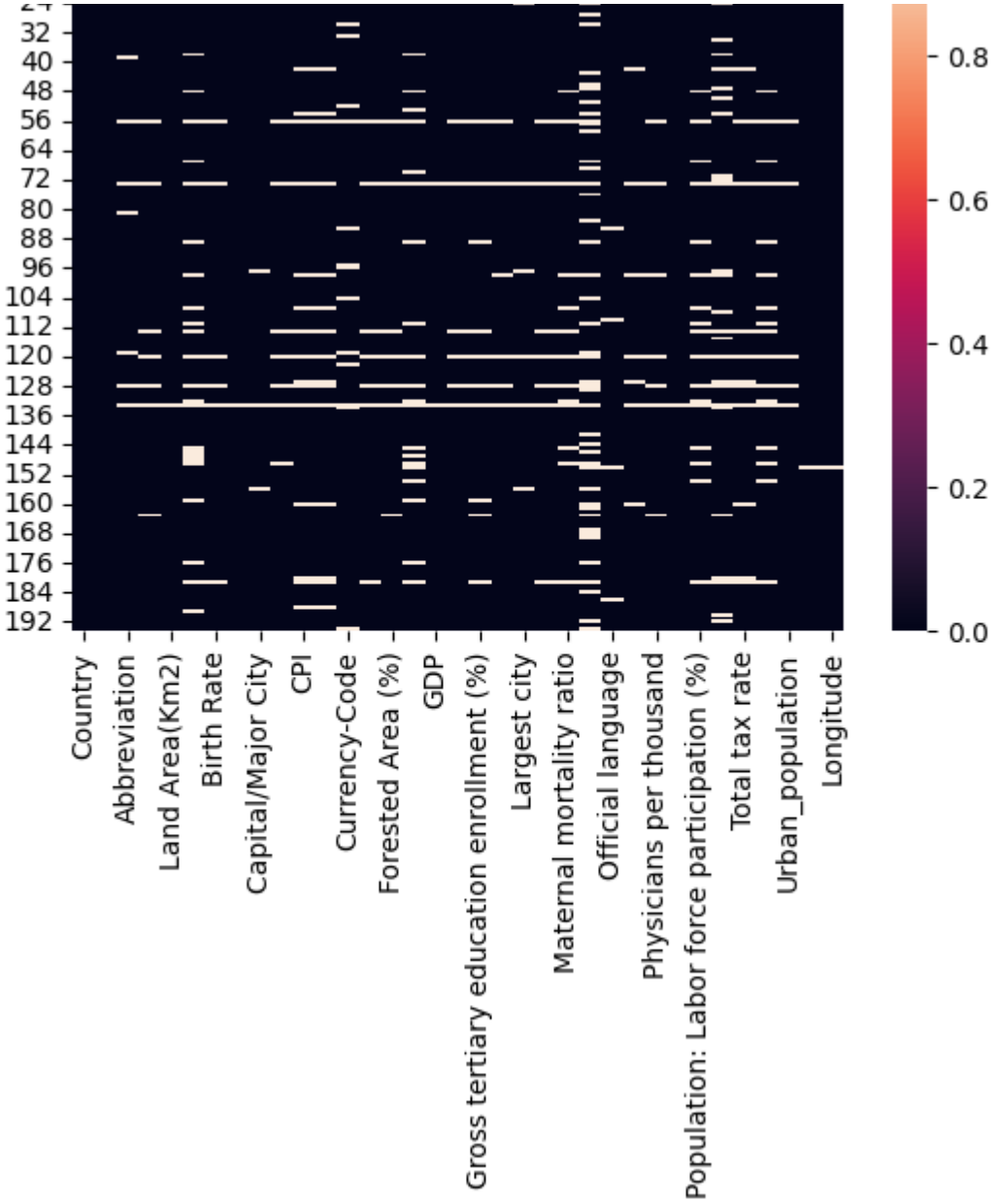
	Country	Density\n(P/Km2)	Abbreviation	Agricultural Land(%)	Land Area(Km2)	Armed Forces size	B
0	Afghanistan	60	AF	58.10%	652,230	323,000	
1	Albania	105	AL	43.10%	28,748	9,000	
2	Algeria	18	DZ	17.40%	2,381,741	317,000	
3	Andorra	164	AD	40.00%	468	NaN	
4	Angola	26	AO	47.50%	1,246,700	117,000	

5 rows × 35 columns

```
df.columns
```

```
Index(['Country', 'Density\n(P/Km2)', 'Abbreviation', 'Agricultural Land(
%)',
       'Land Area(Km2)', 'Armed Forces size', 'Birth Rate', 'Calling
Code',
       'Capital/Major City', 'Co2-Emissions', 'CPI', 'CPI Change (%)',
       'Currency-Code', 'Fertility Rate', 'Forested Area (%)',
       'Gasoline Price', 'GDP', 'Gross primary education enrollment (%)',
       'Gross tertiary education enrollment (%)', 'Infant mortality',
       'Largest city', 'Life expectancy', 'Maternal mortality ratio',
       'Minimum wage', 'Official language', 'Out of pocket health
expenditure',
       'Physicians per thousand', 'Population',
       'Population: Labor force participation (%)', 'Tax revenue (%)',
       'Total tax rate', 'Unemployment rate', 'Urban_population',
'Latitude',
       'Longitude'],
      dtype='object')
```

```
import seaborn as sns
sns.heatmap(df.isna())
plt.show()
```




```
df.dropna(inplace=True)
```

```
df['GDP'] = df['GDP'].apply(lambda x: str(x).replace('$', '').replace(',', '')
```

```
df['Agricultural Land( %)'] = df['Agricultural Land( %)'].str.replace('%', '').
```

```
df.Population = df.Population.apply(lambda x: int(x.replace(',', ''))).astype(i
```

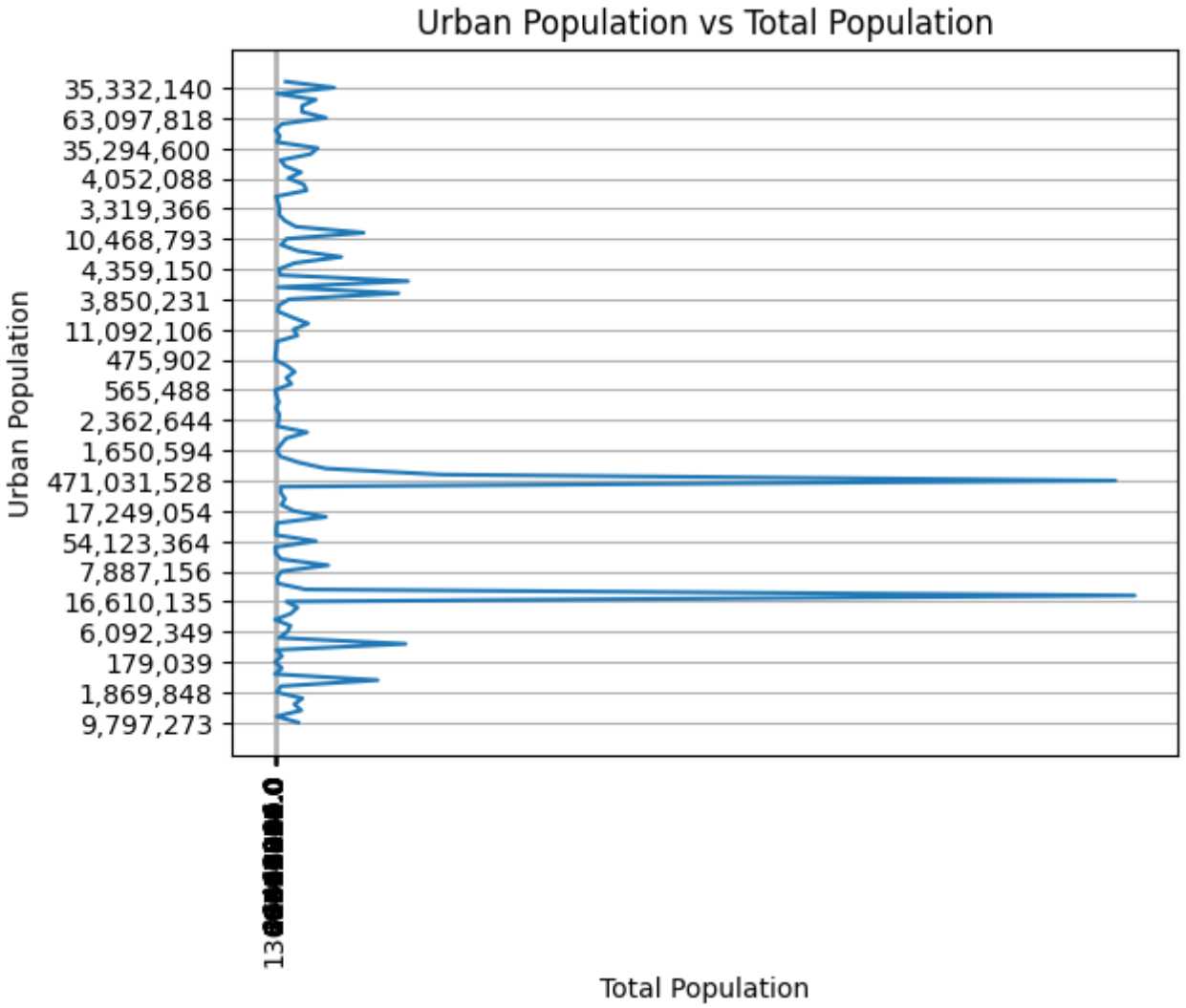
```
df['Gross primary education enrollment (%)'] = df['Gross primary education enro
df['Gross tertiary education enrollment (%)'] = df['Gross tertiary education en
```

```
df['Population: Labor force participation (%)'] = df['Population: Labor force p
```

Line chart

```
import numpy as np
x_ticks = np.arange(0, len(df['Population']), step=5)
plt.xticks(ticks=x_ticks, labels=df['Population'].iloc[x_ticks], rotation=90)
y_ticks = np.arange(0, len(df['Urban_population']), step=5)
plt.yticks(ticks=y_ticks, labels=df['Urban_population'].iloc[y_ticks])

plt.plot(df['Population'], df['Urban_population'])
plt.title('Urban Population vs Total Population')
plt.xlabel('Total Population')
plt.ylabel('Urban Population')
plt.grid(True)
plt.show()
```

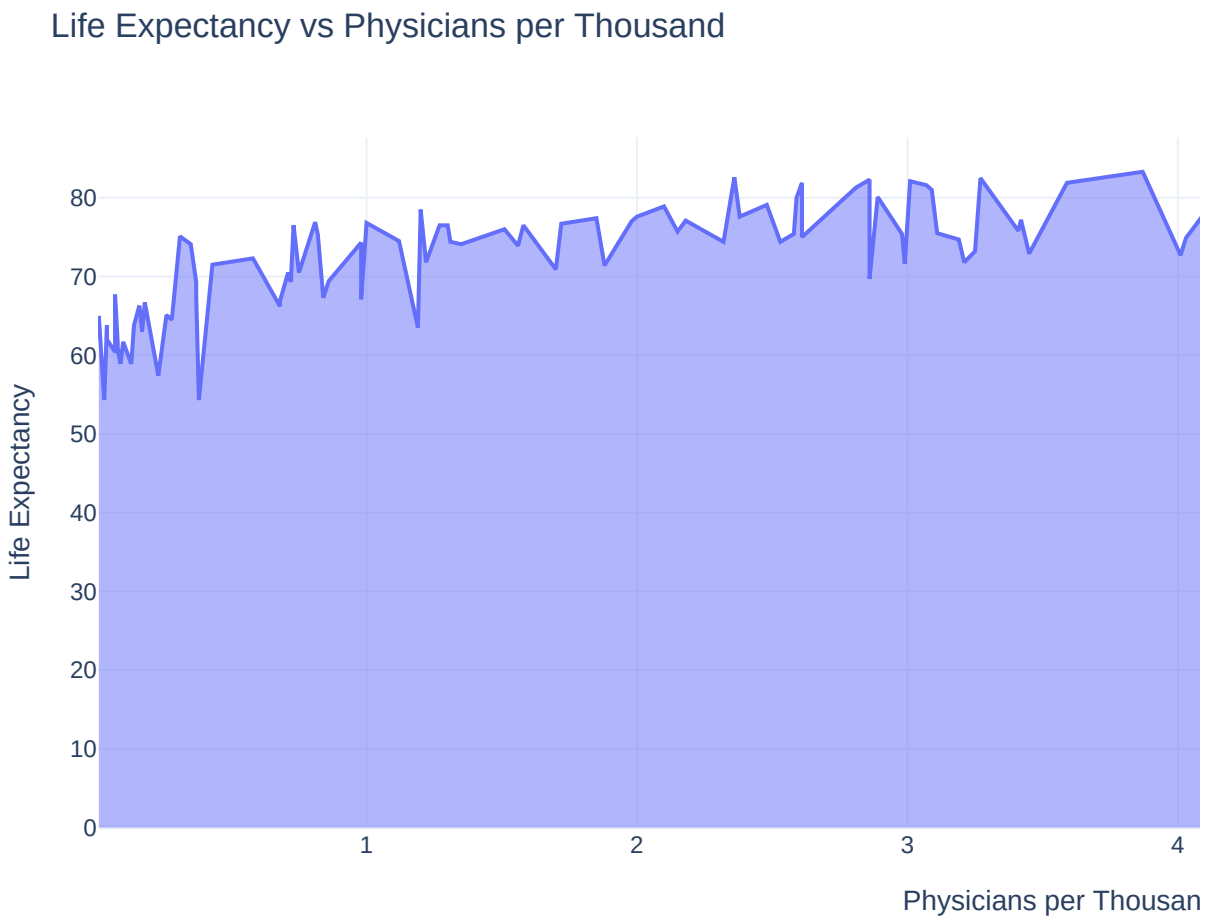


Area Chart

```
import plotly.express as px
fig = px.area(
    df,
    x='Physicians per thousand',
    y='Life expectancy',
    title='Life Expectancy vs Physicians per Thousand',
    labels={'Physicians per thousand': 'Physicians per Thousand', 'Life expecta
```

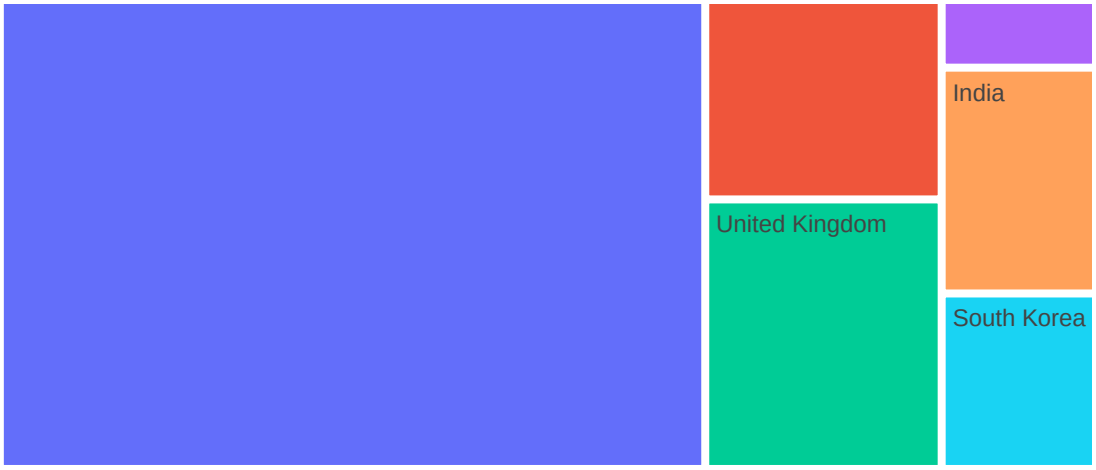
```
    labels={'Physicians per Thousand': 'Physicians per Thousand', 'Life expecta
    template='plotly_white'
)

fig.show()
```



TreeMap

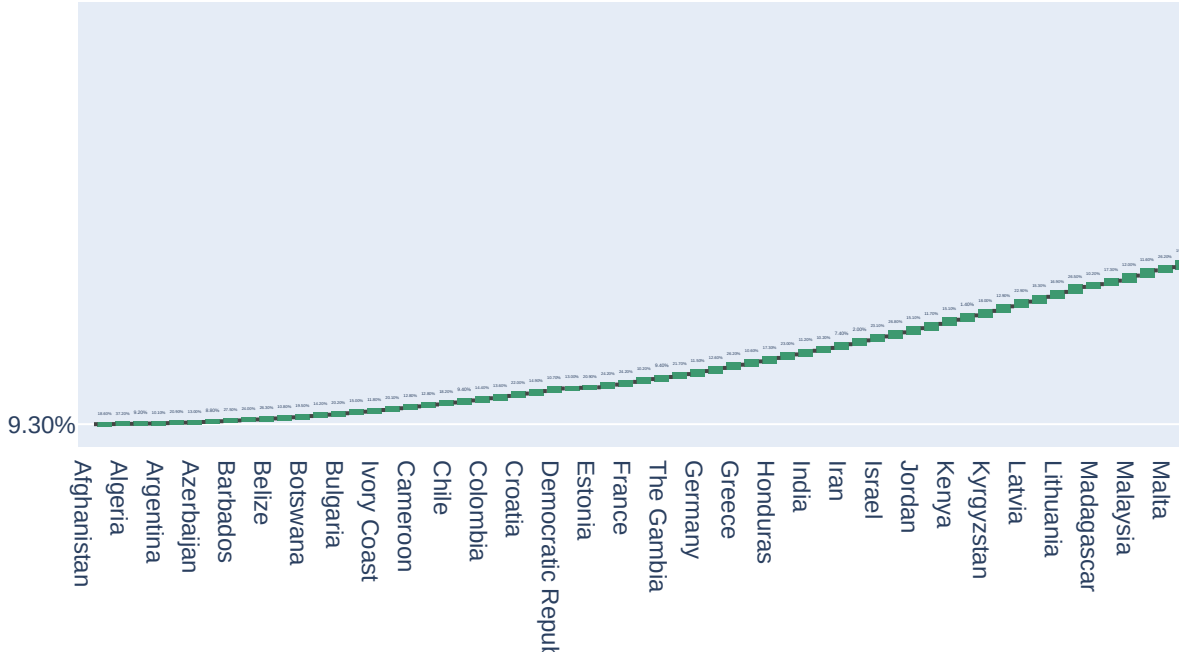
```
import plotly.express as px
fig = px.treemap(df, path=['Country'], values='GDP',
                 title='GDP by Country')
fig.show()
```



Waterfall chart

```
import plotly.graph_objects as go
fig = go.Figure(go.Waterfall(
    name="Tax Revenue",
    x=df['Country'],
    y=df['Tax revenue (%)'],
    text=df['Tax revenue (%)'],
))

fig.show()
```

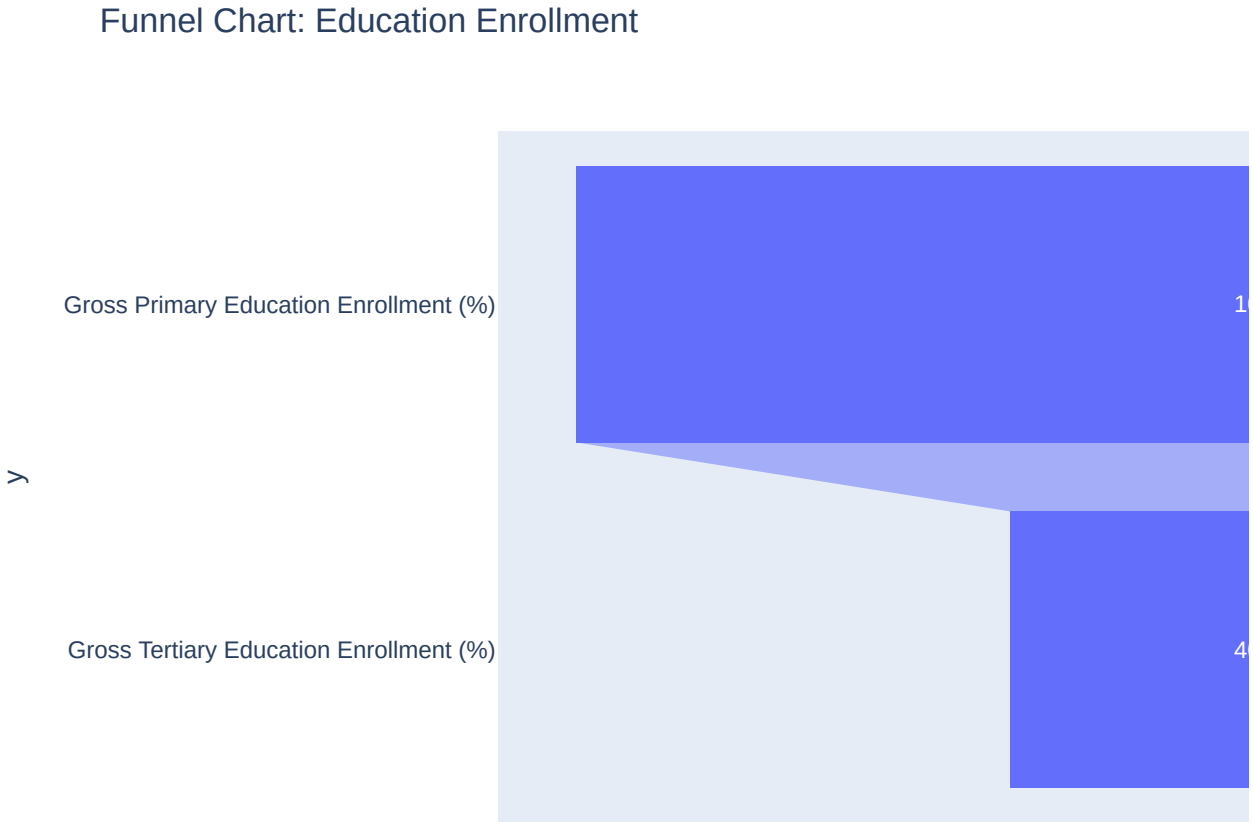


Funnel chart

```
import plotly.express as px

fig_education = px.funnel(
    df,
    x=[
        df['Gross primary education enrollment (%)'].mean(),
        df['Gross tertiary education enrollment (%)'].mean()
    ],
    y=[
        'Gross Primary Education Enrollment (%)',
        'Gross Tertiary Education Enrollment (%)'
    ],
    title='Funnel Chart: Education Enrollment'
)

fig_education.show()
```

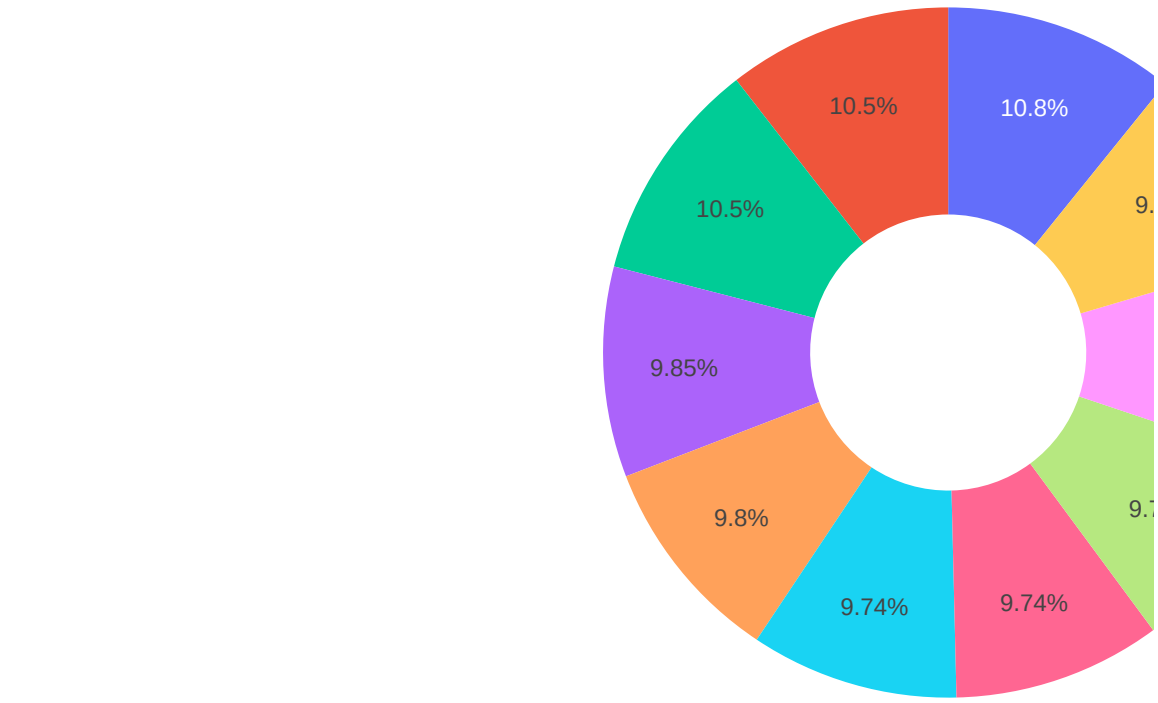


Donut chart

```
import plotly.graph_objects as go
top_n = df.nlargest(10, 'Population: Labor force participation (%)')

fig = go.Figure(go.Pie(
    labels=top_n['Country'],
    values=top_n['Population: Labor force participation (%)'],
    hole=0.4
))

fig.update_layout(title="Donut Chart: Top 10 Labor Force Participation by Count
fig.show()
```



Start coding or generate with AI.