Name : **Omkar Shinde**

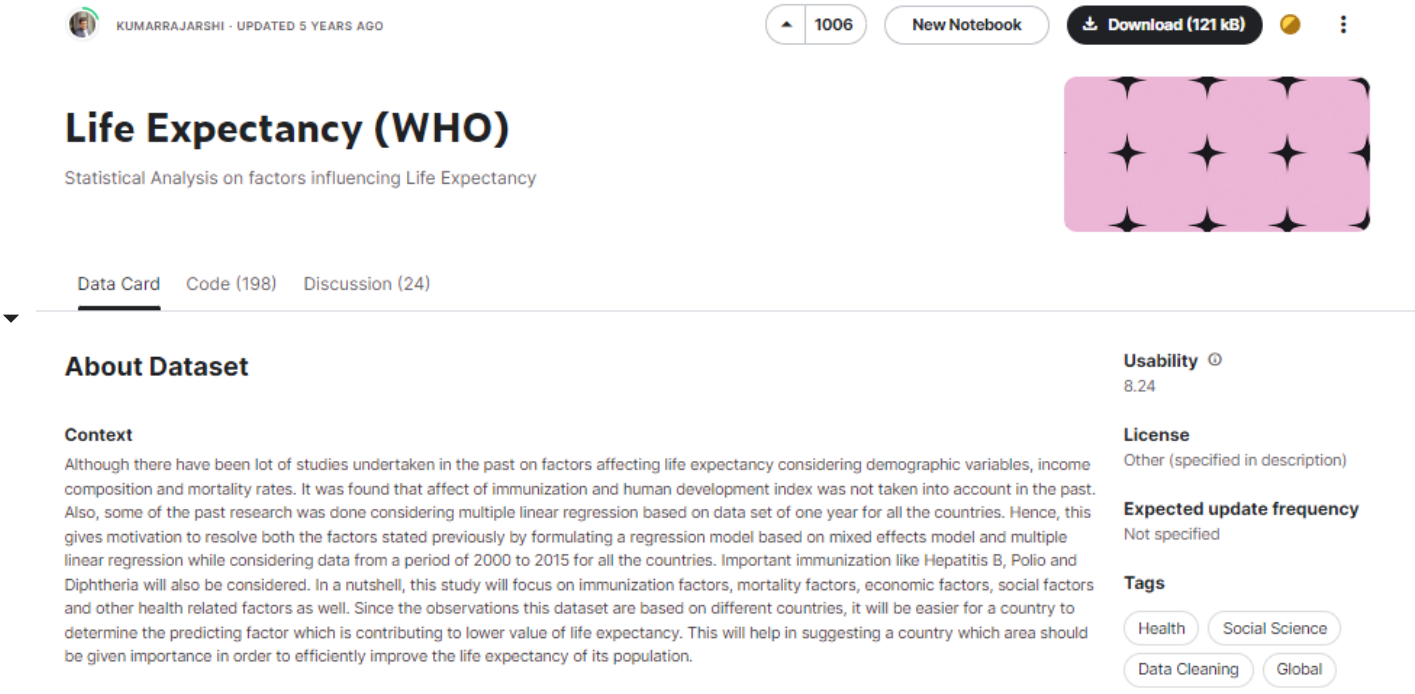
Div : **E**

Roll No : **582**

Assignment **"5"** : **Oprations on Matplotlib**

PRN : **202201040190**

DataSet :



Dataset Source : https://www.kaggle.com/datasets/kumarajarshi/life-expectancy-who

```
import matplotlib.pyplot as plt
import seaborn as sns
```

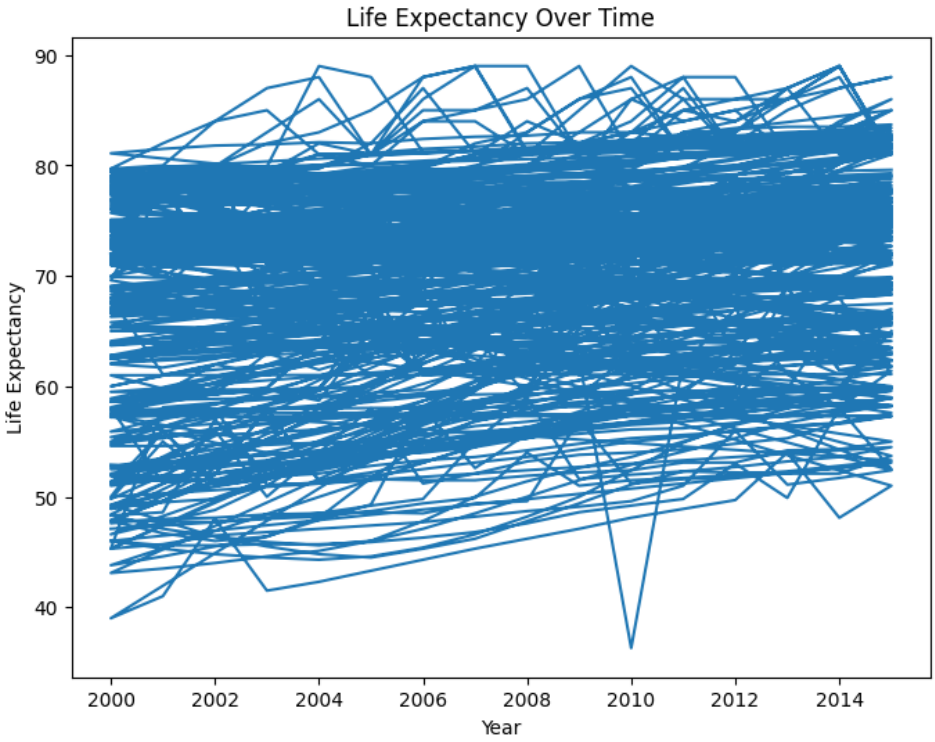
```
import pandas as pd
df = pd.read_csv("Life Expectancy Data.csv")
```

```
print(df.columns)
```

```
Index(['Country', 'Year', 'Status', 'Life expectancy', 'Adult Mortality',
       'infant deaths', 'Alcohol', 'percentage expenditure', 'Hepatitis B',
       'Measles ', ' BMI ', 'under-five deaths ', 'Polio', 'Total expenditure',
       'Diphtheria ', ' HIV/AIDS', 'GDP', 'Population',
       ' thinness  1-19 years', ' thinness 5-9 years',
       'Income composition of resources', 'Schooling'],
      dtype='object')
```

```
plt.figure(figsize=(8, 6))
plt.plot(df['Year'], df['Life expectancy'])
```

```
plt.title('Life Expectancy Over Time')
plt.xlabel('Year')
plt.ylabel('Life Expectancy')
plt.show()
```

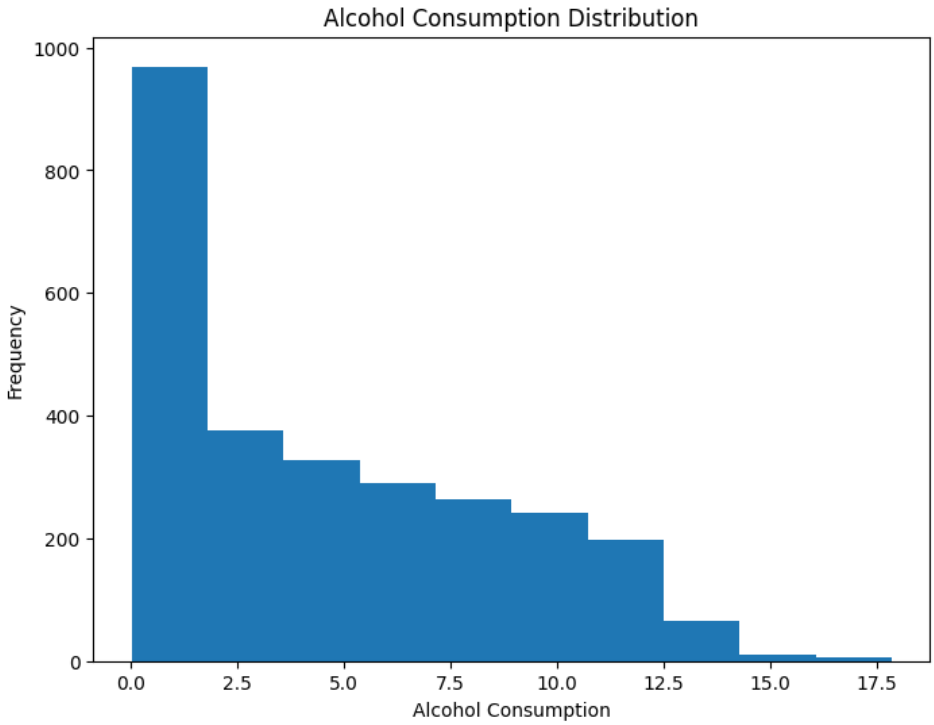



```
# Scatter Plot
plt.figure(figsize=(8, 6))
plt.scatter(df['GDP'], df['Life expectancy'])
plt.title('Life Expectancy vs. GDP')
plt.xlabel('GDP')
plt.ylabel('Life Expectancy')
plt.show()
```

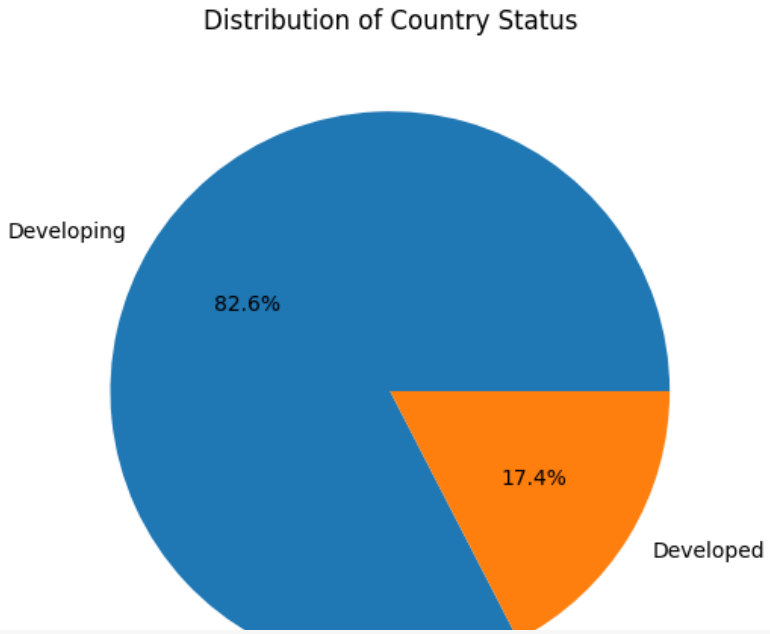
```
plt.figure(figsize=(8, 6))
plt.bar(df['Adult Mortality'])
plt.title('Adult Mortality by Country')
plt.xlabel('Country')
plt.ylabel('Adult Mortality')
plt.xticks(rotation=90)
plt.show()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-20-fb2bad83a13e> in <cell line: 2>()
      1 plt.figure(figsize=(8, 6))
----> 2 plt.bar(df['Adult Mortality'])
      3 plt.title('Adult Mortality by Country')
      4 plt.xlabel('Country')
      5 plt.ylabel('Adult Mortality')

TypeError: bar() missing 1 required positional argument: 'height'

SEARCH STACK OVERFLOW
<Figure size 800x600 with 0 Axes>
```

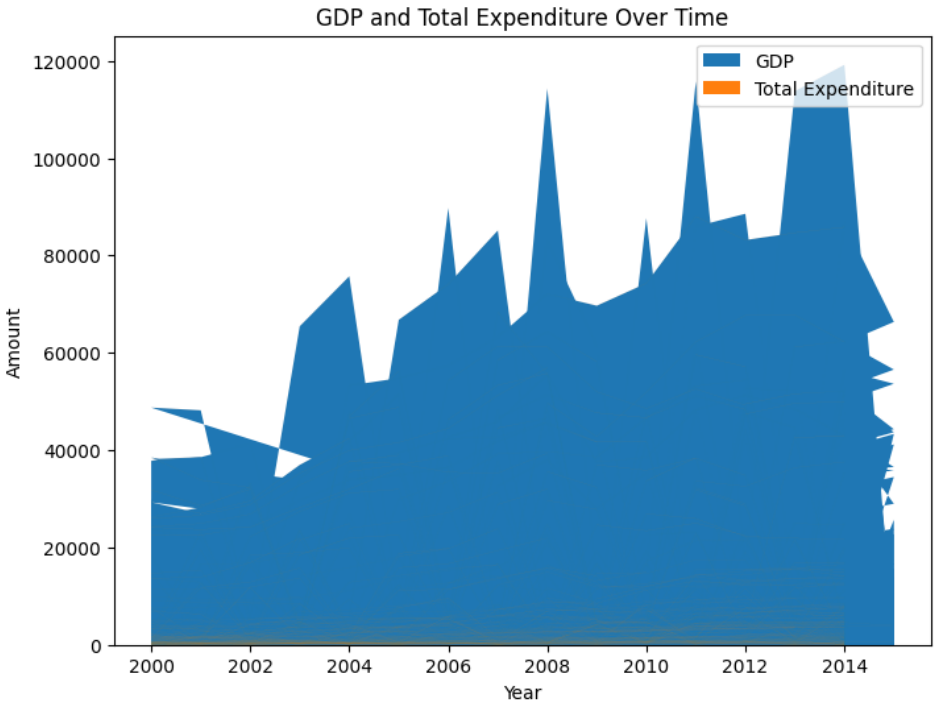
```
plt.figure(figsize=(8, 6))
plt.hist(df['Alcohol'], bins=10)
plt.title('Alcohol Consumption Distribution')
plt.xlabel('Alcohol Consumption')
plt.ylabel('Frequency')
plt.show()
```



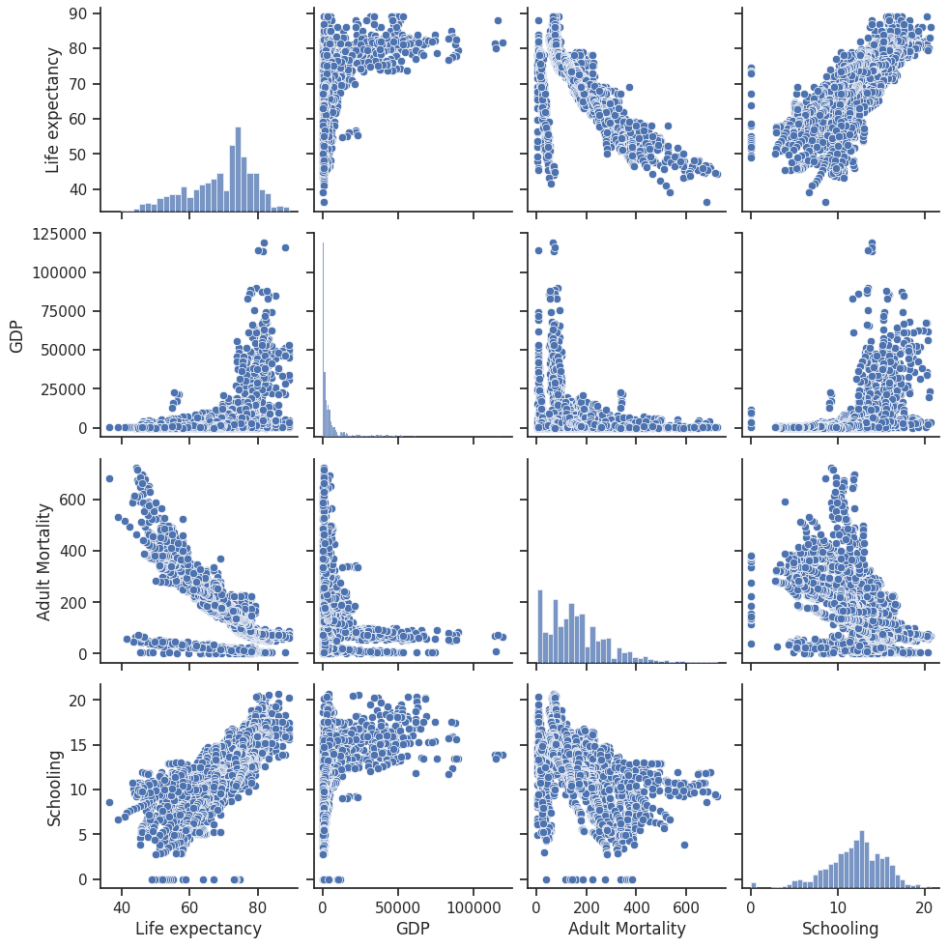

```
# Pie Chart
plt.figure(figsize=(8, 6))
plt.pie(df['Status'].value_counts(), labels=df['Status'].unique(), autopct='%1.1f%%')
plt.title('Distribution of Country Status')
plt.show()
```




```
# Area Plot
plt.figure(figsize=(8, 6))
plt.stackplot(df['Year'], df['GDP'], df['Total expenditure'], labels=['GDP', 'Total Expenditure'])
plt.title('GDP and Total Expenditure Over Time')
plt.xlabel('Year')
plt.ylabel('Amount')
plt.legend()
plt.show()
```



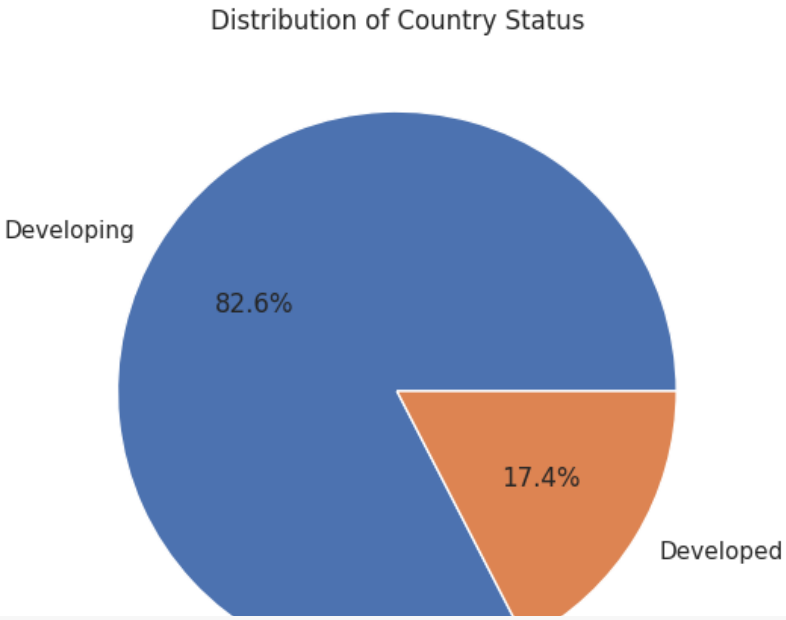

```
# Scatter Matrix
sns.set(style='ticks')
sns.pairplot(df[['Life expectancy', 'GDP', 'Adult Mortality', 'Schooling']])
plt.show()
```



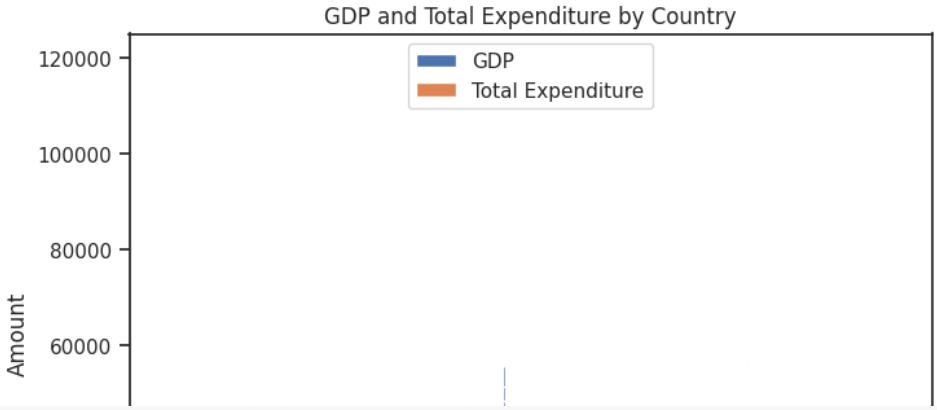

```
country_counts = df['Country'].value_counts()
print(country_counts)
```

```
Afghanistan              16
Peru                     16
Nicaragua                16
Niger                    16
Nigeria                  16
                         ..
Niue                      1
San Marino                1
Nauru                     1
Saint Kitts and Nevis     1
Dominica                  1
Name: Country, Length: 193, dtype: int64
```

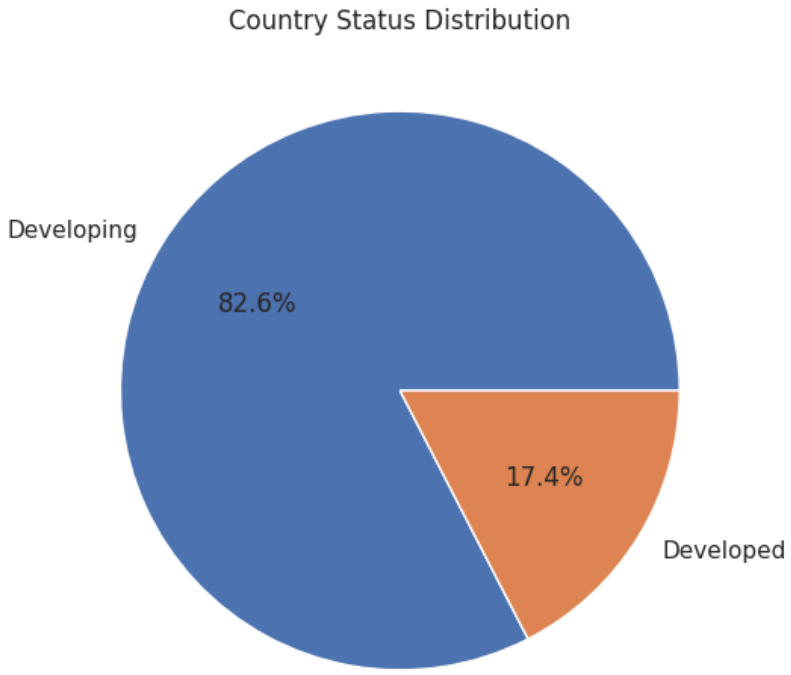
```
plt.figure(figsize=(8, 6))
plt.pie(df['Status'].value_counts(), labels=df['Status'].unique(), autopct='%1.1f%%')
plt.title('Distribution of Country Status')
plt.show()
```



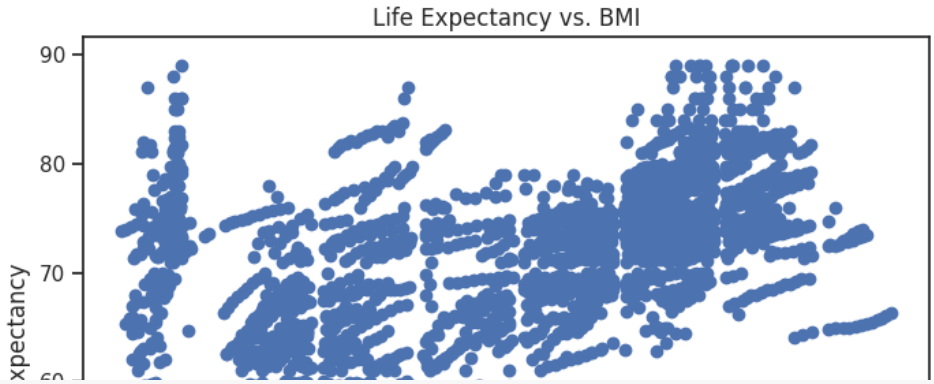

```
plt.figure(figsize=(8, 6))
x = df['Country']
y1 = df['GDP']
y2 = df['Total expenditure']
width = 0.35
plt.bar(x, y1, width, label='GDP')
plt.bar(x, y2, width, label='Total Expenditure', bottom=y1)
plt.title('GDP and Total Expenditure by Country')
plt.xlabel('Country')
plt.ylabel('Amount')
plt.xticks(rotation=90)
plt.legend()
plt.show()
```



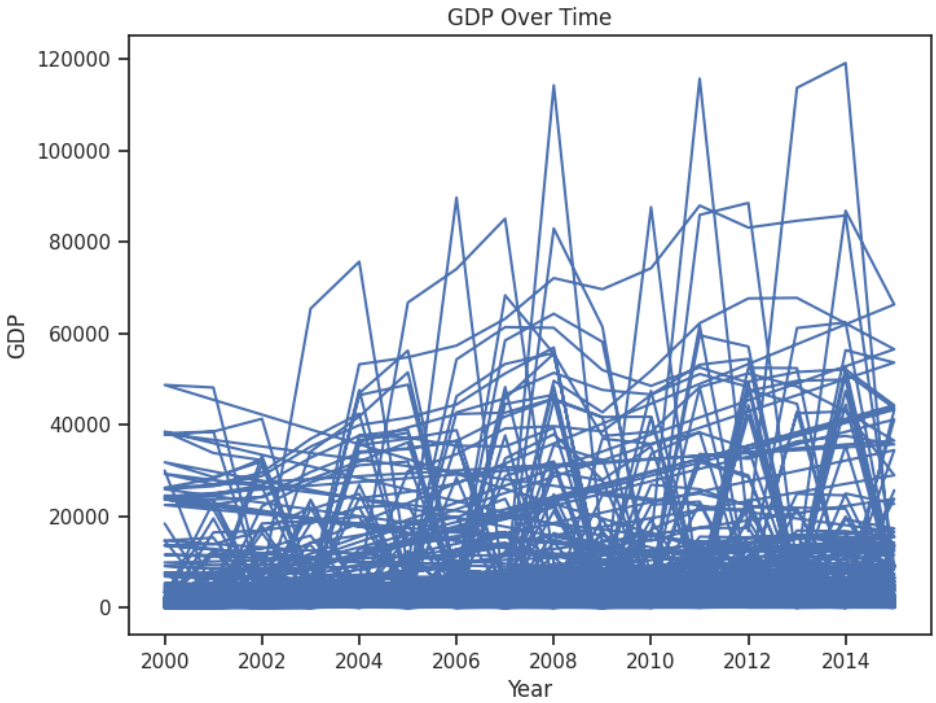

```
plt.figure(figsize=(8, 6))
plt.pie(df['Status'].value_counts(), labels=df['Status'].unique(), autopct='%1.1f%%')
plt.title('Country Status Distribution')
plt.show()
```



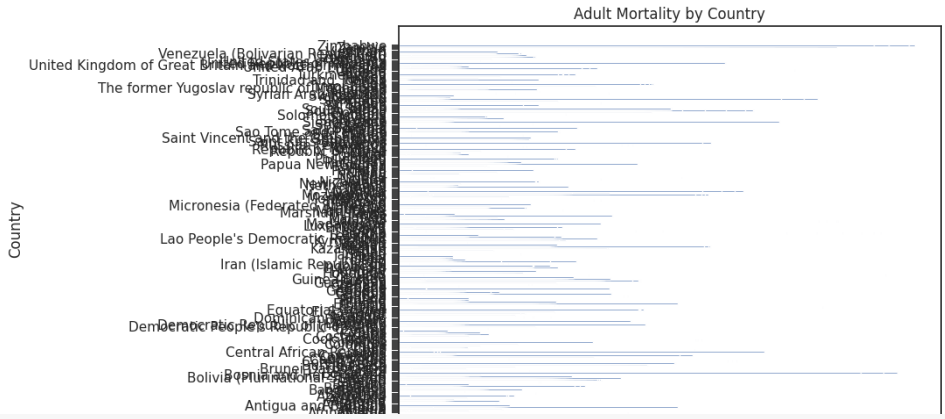

```
# Scatter Plot
plt.figure(figsize=(8, 6))
plt.scatter(df[' BMI '], df['Life expectancy'])
plt.title('Life Expectancy vs. BMI')
plt.xlabel('BMI')
plt.ylabel('Life Expectancy')
plt.show()
```




```
# Line Plot
plt.figure(figsize=(8, 6))
plt.plot(df['Year'], df['GDP'])
plt.title('GDP Over Time')
plt.xlabel('Year')
plt.ylabel('GDP')
plt.show()
```

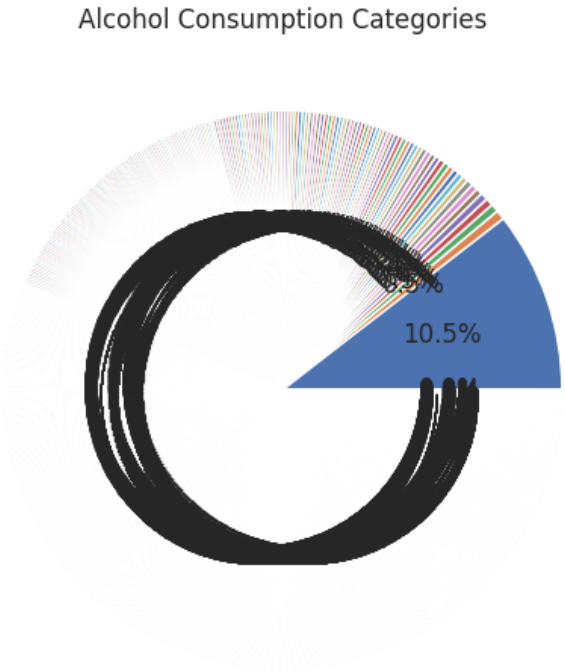



```
# Horizontal Bar Chart
plt.figure(figsize=(8, 6))
plt.barh(df['Country'], df['Adult Mortality'])
plt.title('Adult Mortality by Country')
plt.xlabel('Adult Mortality')
plt.ylabel('Country')
plt.show()
```




```
plt.figure(figsize=(8, 6))
plt.bar(df['Country'], df['GDP'], label='GDP')
plt.bar(df['Country'], df['Total expenditure'], bottom=df['GDP'], label='Total Expenditure')
plt.title('GDP and Total Expenditure by Country')
plt.xlabel('Country')
plt.ylabel('Values')
plt.xticks(rotation=90)
plt.legend()
plt.show()
```

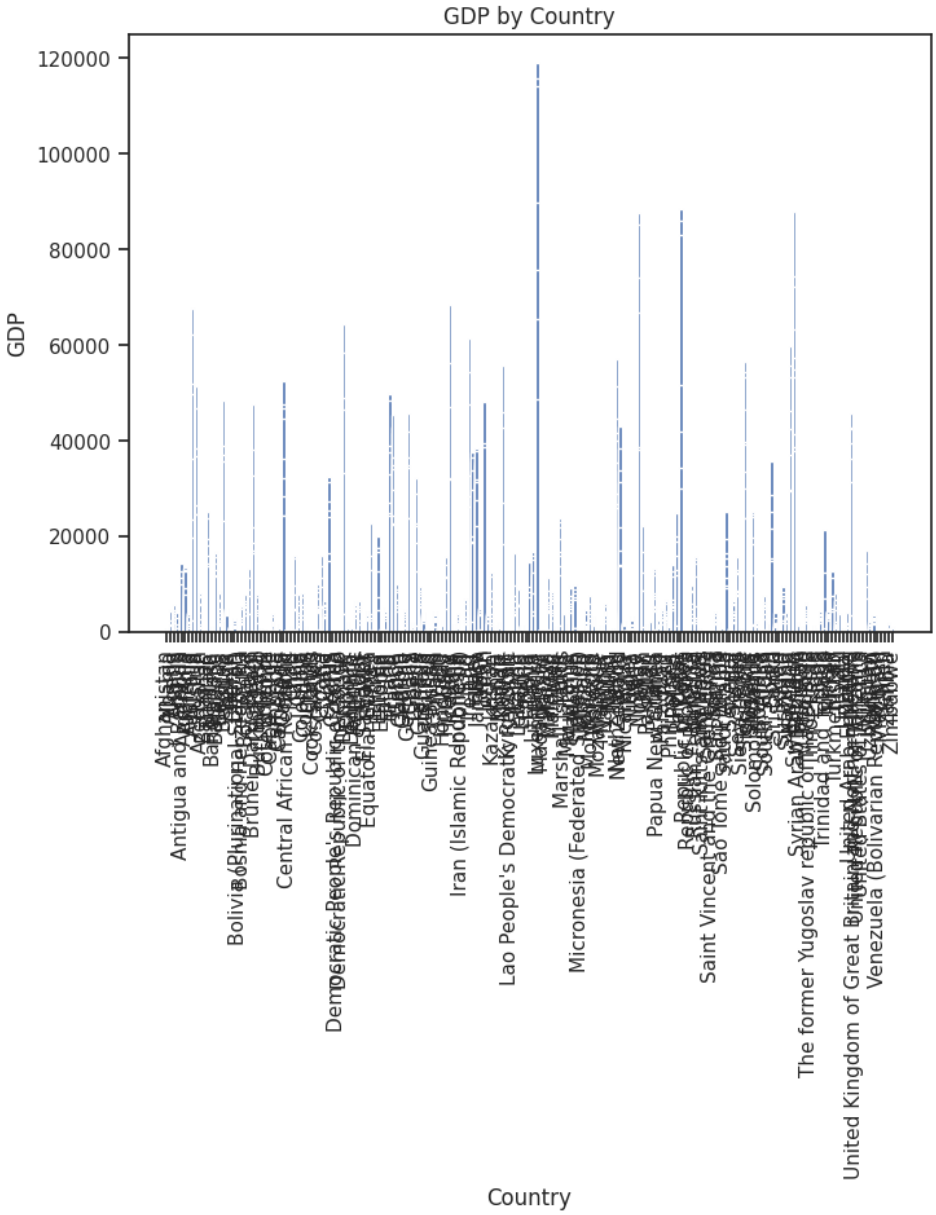

```
plt.figure(figsize=(8, 6))
plt.pie(df['Alcohol'].value_counts(), autopct='%1.1f%%')
plt.title('Alcohol Consumption Categories')
plt.show()
```




```
plt.figure(figsize=(8, 6))
plt.pie(df['Income composition of resources'], autopct='%1.1f%%')
plt.title('Income Composition of Resources')
plt.show()
```

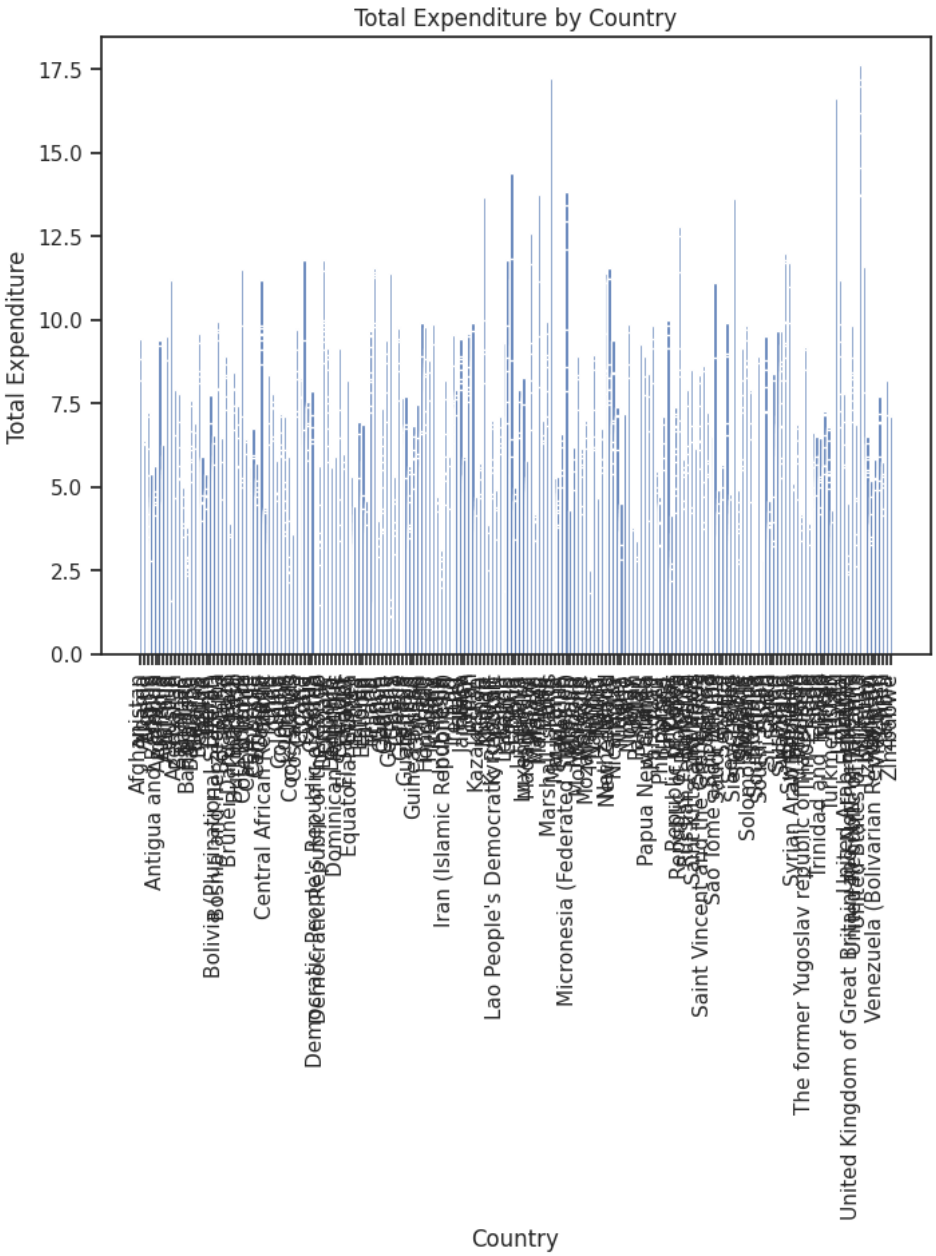
```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
<ipython-input-38-35150302c3bb> in <cell line: 2>()
      1 plt.figure(figsize=(8, 6))
----> 2 plt.pie(df['Income composition of resources'], autopct='%1.1f%%')
      3 plt.title('Income Composition of Resources')
      4 plt.show()
```

```
plt.figure(figsize=(8, 6))
plt.bar(df['Country'], df['GDP'])
plt.title('GDP by Country')
plt.xlabel('Country')
plt.ylabel('GDP')
plt.xticks(rotation=90)
plt.show()
```




```
plt.figure(figsize=(8, 6))
plt.bar(df['Country'], df['Total expenditure'])
plt.title('Total Expenditure by Country')
plt.xlabel('Country')
plt.ylabel('Total Expenditure')
plt.xticks(rotation=90)
```

```
plt.show()
```


Total Expenditure by Country
Total Expenditure
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Country

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