Welcome to the analysis of the Netflix user database. In this analysis, we'll delve into a dataset comprising User ID, Subscription Type, Monthly Revenue, Join Date, Last Payment Date, Country, Age, Gender, Device, and Plan Duration. Through comprehensive examination, we aim to derive valuable insights into user behaviours, preferences, and trends within the Netflix ecosystem.

%%html

Importing

For this analysis, I'll be leveraging the power of Pandas for efficient data manipulation and exploration. Additionally, Matplotlib will be utilized to visualize the findings, enabling clear and insightful presentations of the Netflix user data.

In [1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import pandas as pd
import seaborn as sns
plt.style.use('ggplot')
import plotly.express as px
import os
```

Cleaning

In [2]:
```
data_set = pd.read_csv("Netflix Userbase.csv")
```

In [3]:
```
data_set
```

Out[3]:

	User ID	Subscription Type	Monthly Revenue	Join Date	Last Payment Date	Country	Age	Gender	Device	Plan Duration
0	1	Basic	10	15-01-22	10-06-23	United States	28	Male	Smartphone	1 Month
1	2	Premium	15	05-09-21	22-06-23	Canada	35	Female	Tablet	1 Month
2	3	Standard	12	28-02-23	27-06-23	United Kingdom	42	Male	Smart TV	1 Month
3	4	Standard	12	10-07-22	26-06-23	Australia	51	Female	Laptop	1 Month
4	5	Basic	10	01-05-23	28-06-23	Germany	33	Male	Smartphone	1 Month
...	...	...	...	...	...	...	...	...	...	...
2495	2496	Premium	14	25-07-22	12-07-23	Spain	28	Female	Smart TV	1 Month
2496	2497	Basic	15	04-08-22	14-07-23	Spain	33	Female	Smart TV	1 Month
2497	2498	Standard	12	09-08-22	15-07-23	United States	38	Male	Laptop	1 Month
2498	2499	Standard	13	12-08-22	12-07-23	Canada	48	Female	Tablet	1 Month
2499	2500	Basic	15	13-08-22	12-07-23	United States	35	Female	Smart TV	1 Month

2500 rows × 10 columns

In [4]:
```
data_set.info()
```

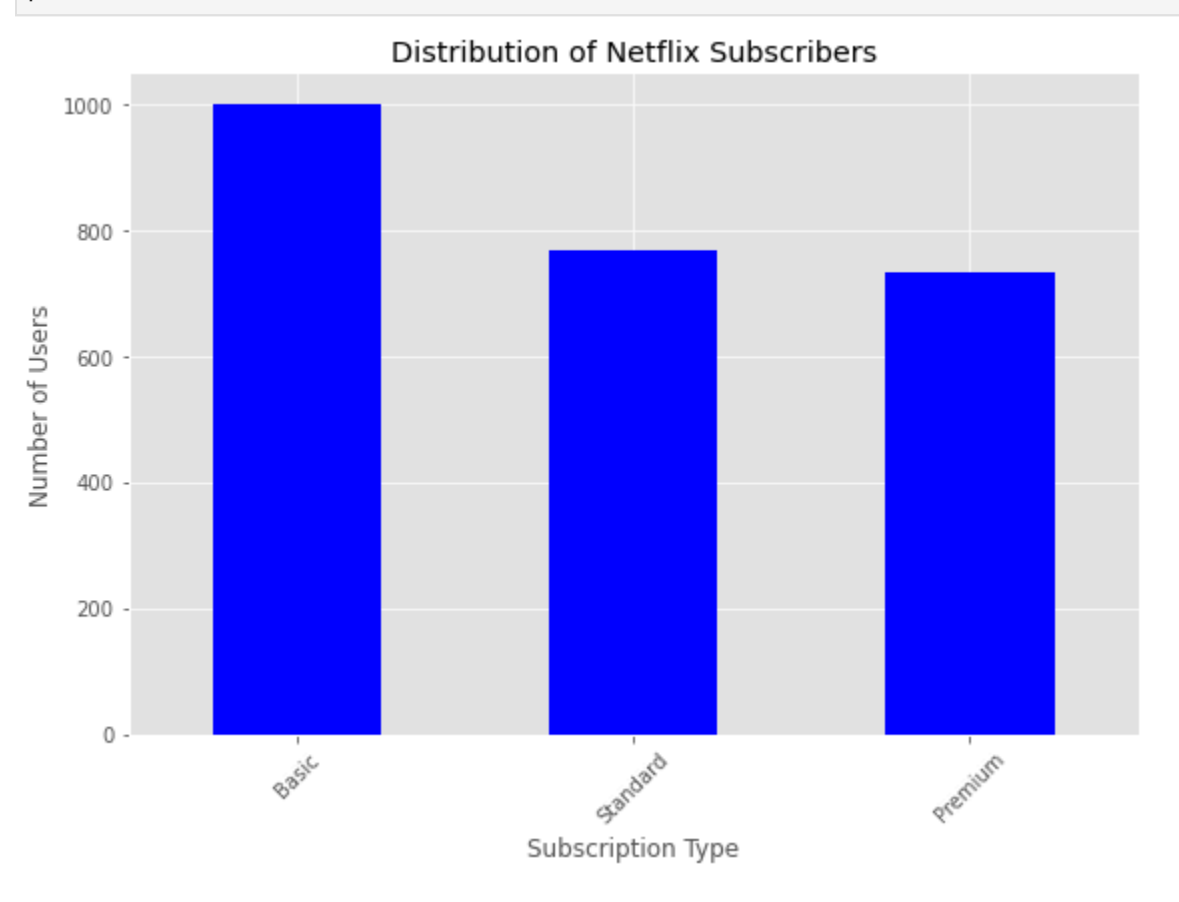
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2500 entries, 0 to 2499
Data columns (total 10 columns):
 #   Column             Non-Null Count  Dtype
---  ------             --------------  -----
 0   User ID            2500 non-null   int64
 1   Subscription Type  2500 non-null   object
 2   Monthly Revenue    2500 non-null   int64
 3   Join Date          2500 non-null   object
 4   Last Payment Date  2500 non-null   object
 5   Country            2500 non-null   object
 6   Age                2500 non-null   int64
 7   Gender             2500 non-null   object
 8   Device             2500 non-null   object
 9   Plan Duration      2500 non-null   object
dtypes: int64(3), object(7)
memory usage: 195.4+ KB
```

In [5]:
```
data_set.describe()
```

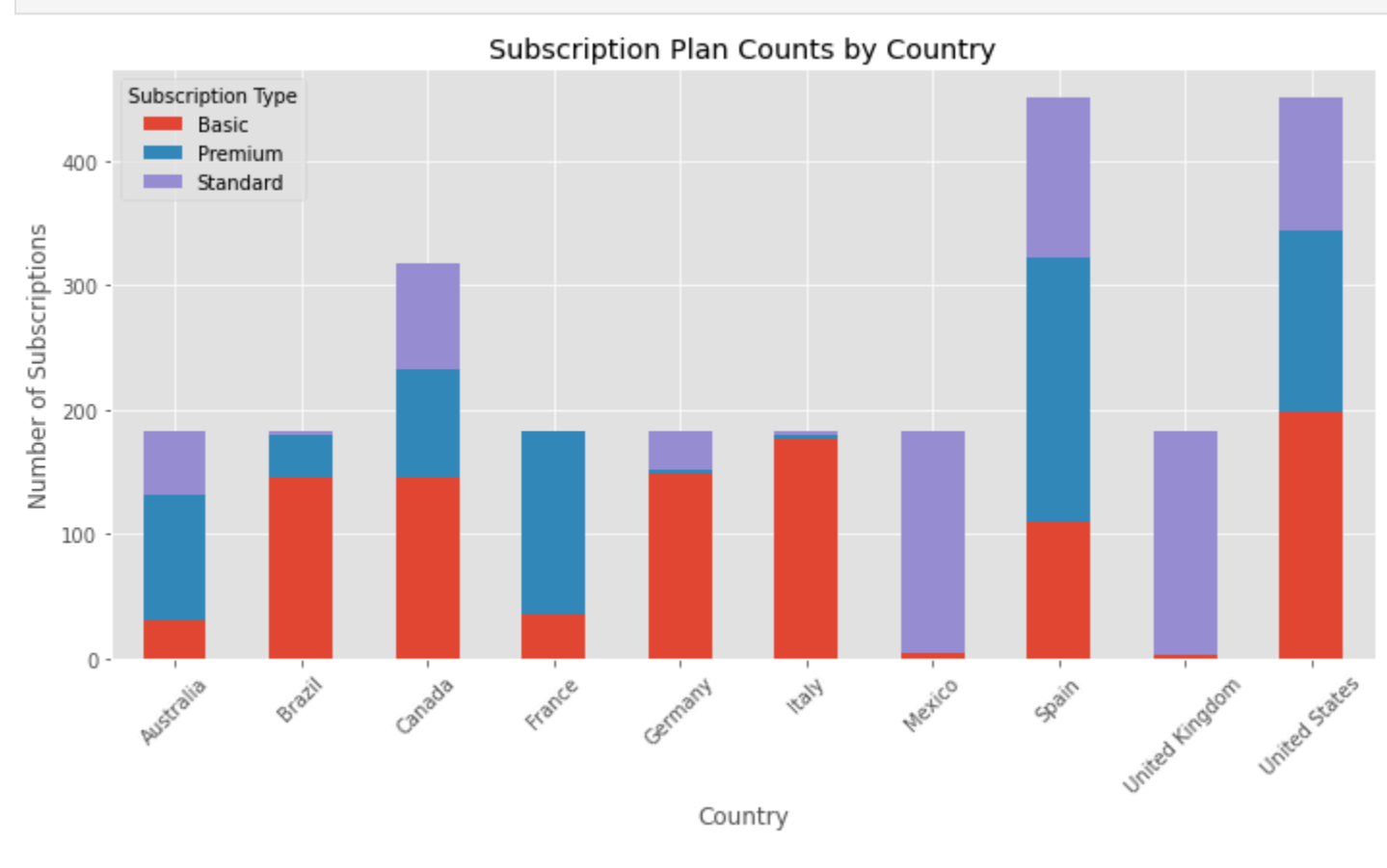
Out[5]:

	User ID	Monthly Revenue	Age
count	2500.00000	2500.000000	2500.000000
mean	1250.50000	12.508400	38.795600
std	721.83216	1.686851	7.171778
min	1.00000	10.000000	26.000000
25%	625.75000	11.000000	32.000000
50%	1250.50000	12.000000	39.000000
75%	1875.25000	14.000000	45.000000
max	2500.00000	15.000000	51.000000

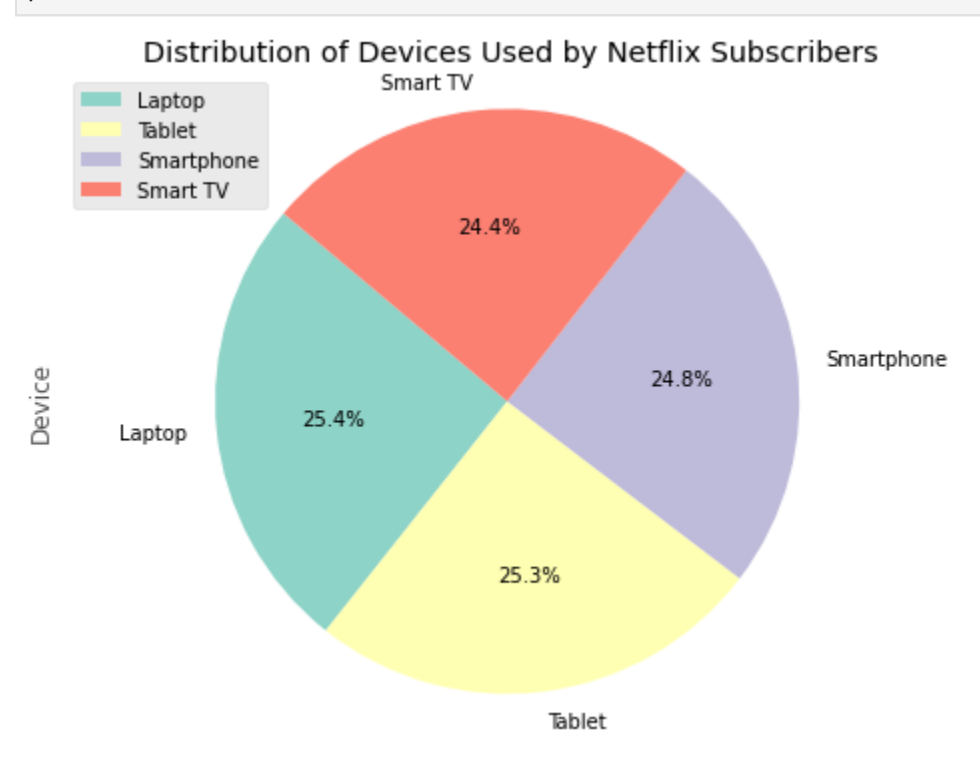
In [6]:
```
user_counts = data_set['Subscription Type'].value_counts()

plt.figure(figsize=(8, 6))
user_counts.plot(kind='bar', color='blue')
plt.title('Distribution of Netflix Subscribers')
plt.xlabel('Subscription Type')
plt.ylabel('Number of Users')
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```



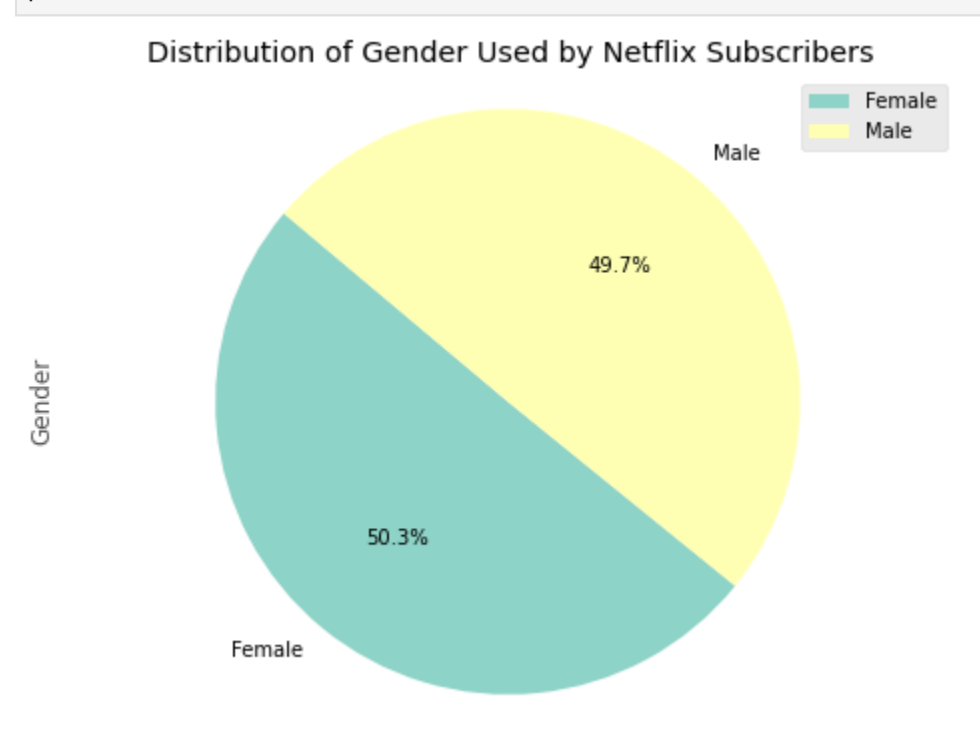
In [7]:
```
subscription_counts = data_set.groupby(['Country', 'Subscription Type'])['User ID'].count().unstack()

ax = subscription_counts.plot(kind='bar', stacked=True, figsize=(10, 6))
plt.title('Subscription Plan Counts by Country')
plt.xlabel('Country')
plt.ylabel('Number of Subscriptions')
plt.xticks(rotation=45)
plt.legend(title='Subscription Type')
plt.tight_layout()
plt.show()
```



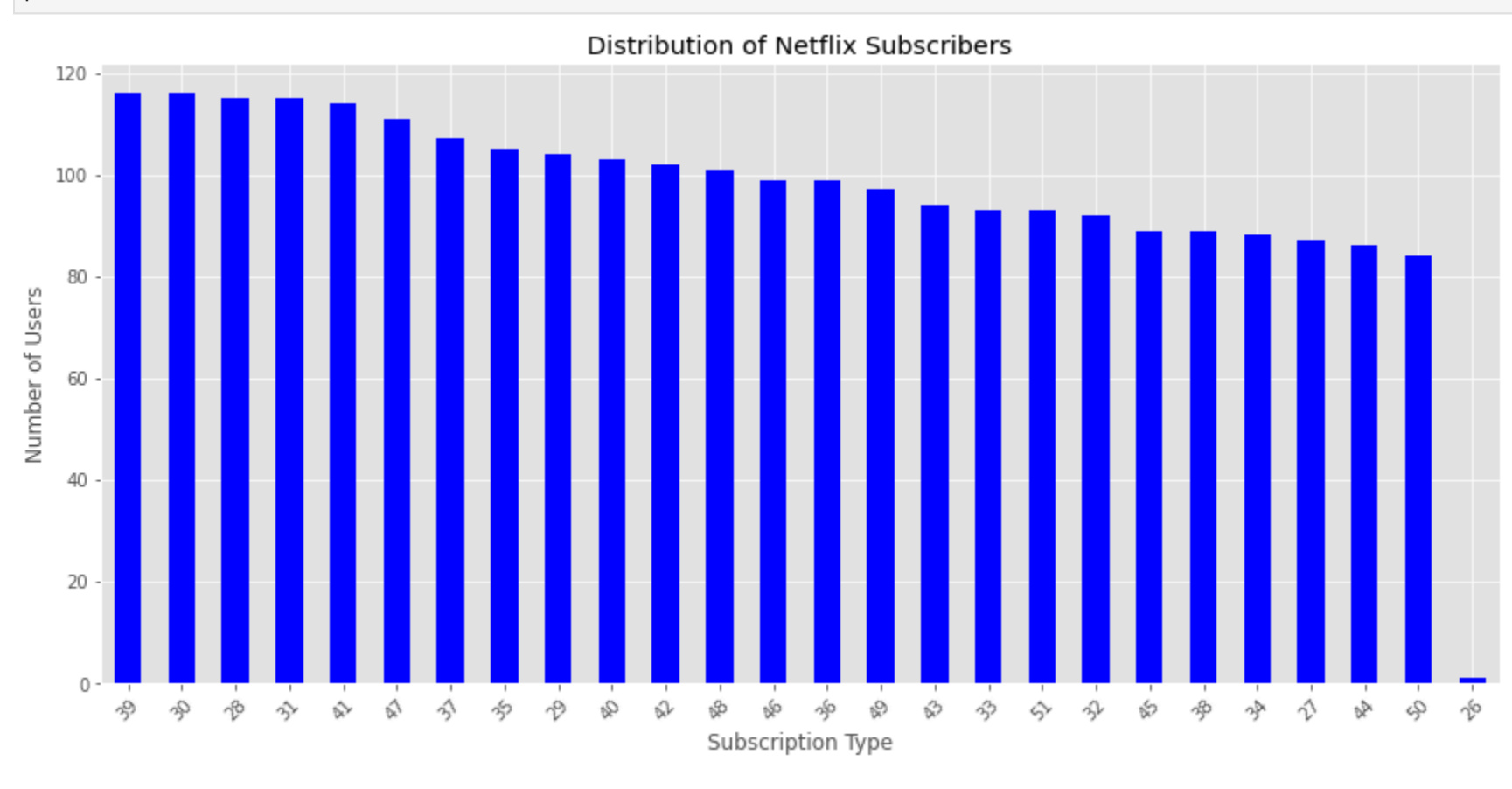
In [8]:
```
device_counts = data_set['Device'].value_counts()

plt.figure(figsize=(8, 6))
device_counts.plot(kind='pie', autopct='%1.1f%%', startangle=140, colors=plt.cm.Set3.colors)
plt.title('Distribution of Devices Used by Netflix Subscribers')
plt.axis('equal')
plt.legend(device_counts.index, loc='best')
plt.show()
```



In [9]:
```
gender_counts = data_set['Gender'].value_counts()
plt.figure(figsize=(8, 6))
gender_counts.plot(kind='pie', autopct='%1.1f%%', startangle=140, colors=plt.cm.Set3.colors)
plt.title('Distribution of Gender Used by Netflix Subscribers')
plt.axis('equal')
plt.legend(gender_counts.index, loc='best')
plt.show()
```



In [10]:
```
user_counts_age = data_set['Age'].value_counts()

plt.figure(figsize=(12, 6))
user_counts_age.plot(kind='bar', color='blue')
plt.title('Distribution of Netflix Subscribers')
plt.xlabel('Subscription Type')
plt.ylabel('Number of Users')
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```

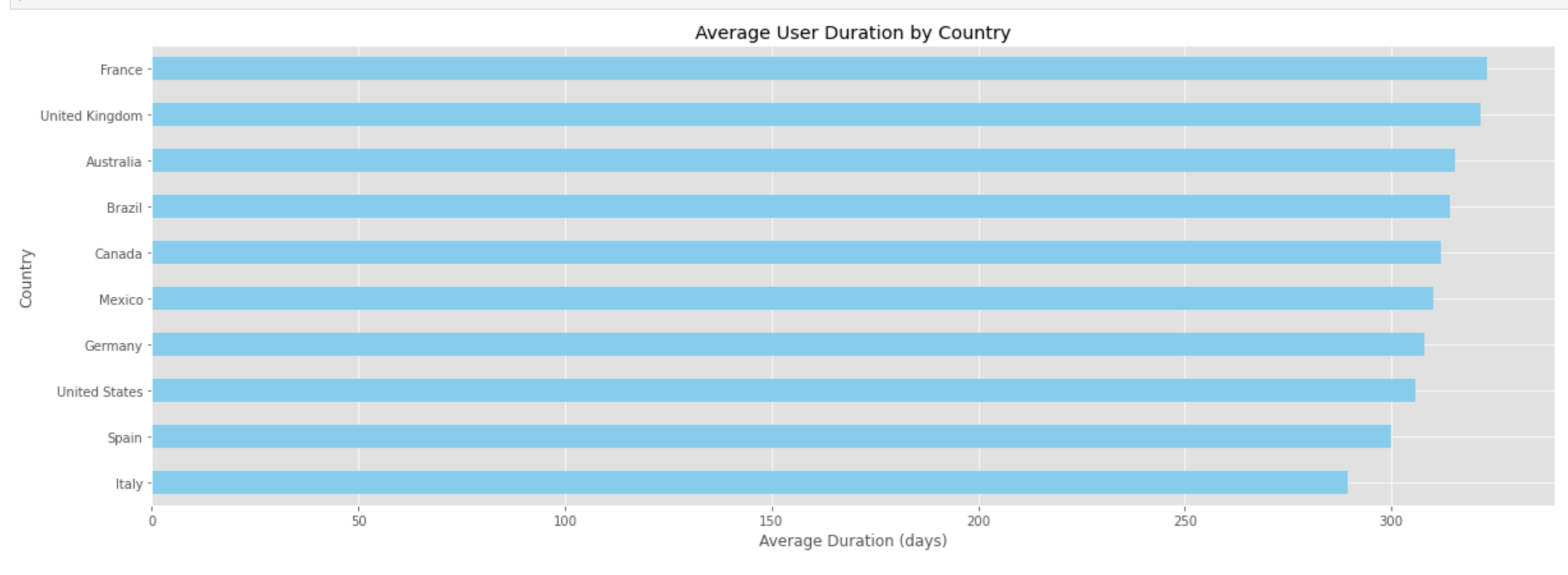


In [11]:
```
data_set['Join Date'] = pd.to_datetime(data_set['Join Date'], format='%d-%m-%y')
data_set['Last Payment Date'] = pd.to_datetime(data_set['Last Payment Date'], format='%d-%m-%y')
data_set['Duration (days)'] = (data_set['Last Payment Date'] - data_set['Join Date']).dt.days
data_set.head()
```

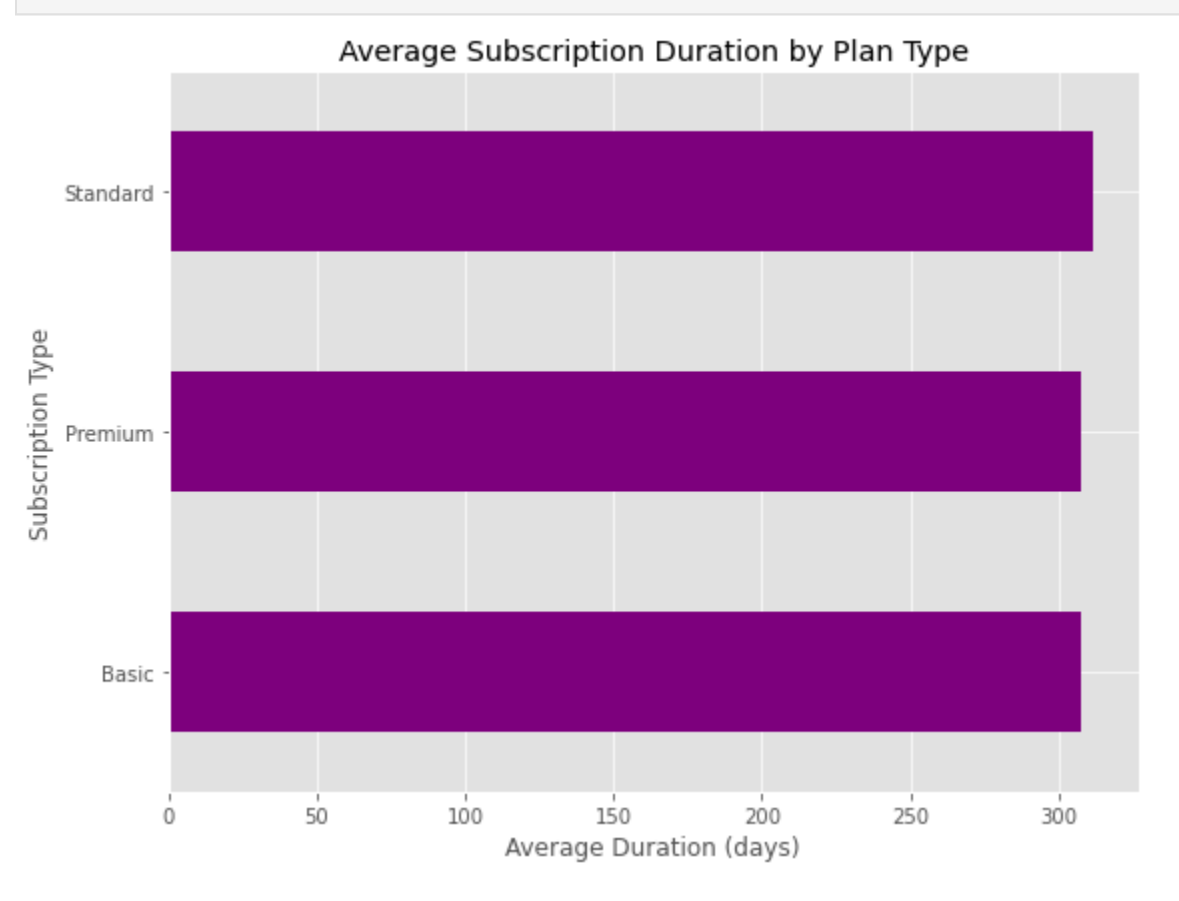
Out[11]:

	User ID	Subscription Type	Monthly Revenue	Join Date	Last Payment Date	Country	Age	Gender	Device	Plan Duration	Duration (days)
0	1	Basic	10	2022-01-15	2023-06-10	United States	28	Male	Smartphone	1 Month	511
1	2	Premium	15	2021-09-05	2023-06-22	Canada	35	Female	Tablet	1 Month	655
2	3	Standard	12	2023-02-28	2023-06-27	United Kingdom	42	Male	Smart TV	1 Month	119
3	4	Standard	12	2022-07-10	2023-06-26	Australia	51	Female	Laptop	1 Month	351
4	5	Basic	10	2023-05-01	2023-06-28	Germany	33	Male	Smartphone	1 Month	58

In [12]:
```
avg_duration_by_country = data_set.groupby('Country')['Duration (days)'].mean().sort_values()

plt.figure(figsize=(17, 6))
avg_duration_by_country.plot(kind='barh', color='skyblue')
plt.title('Average User Duration by Country')
plt.xlabel('Average Duration (days)')
plt.ylabel('Country')
plt.tight_layout()
plt.show()
```



In [13]:
```
avg_duration_by_plan = data_set.groupby('Subscription Type')['Duration (days)'].mean()

plt.figure(figsize=(8, 6))
avg_duration_by_plan.sort_values().plot(kind='barh', color='purple')
plt.title('Average Subscription Duration by Plan Type')
plt.xlabel('Average Duration (days)')
plt.ylabel('Subscription Type')
plt.tight_layout()
plt.show()
```



In [14]:
```
data_set['Duration (months)'] = data_set['Duration (days)'] / 30

data_set['Generated Revenue($)'] = data_set['Monthly Revenue'] * data_set['Duration (months)']

data_set.head()
```

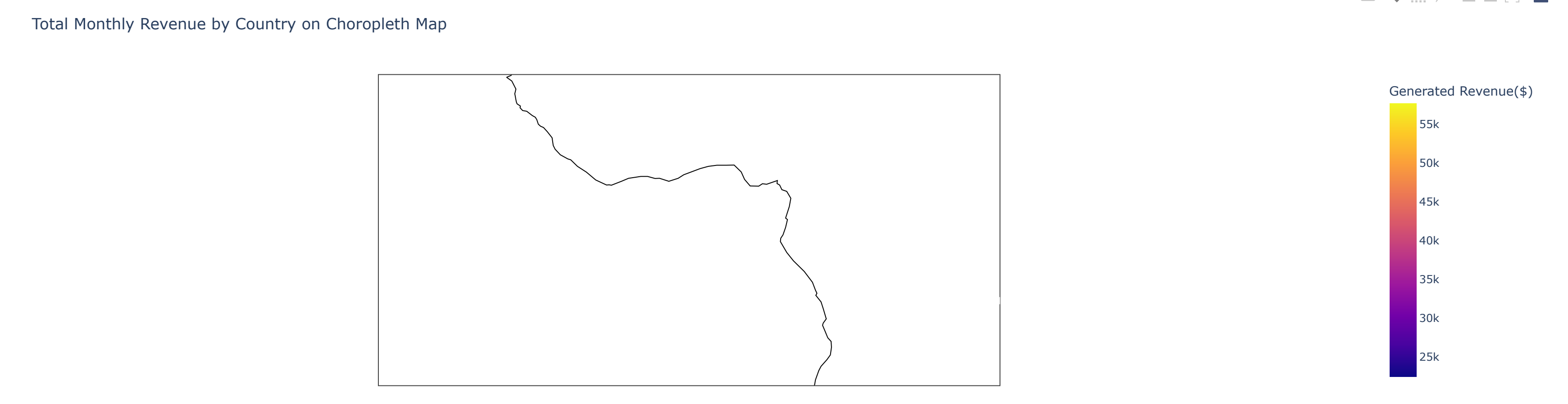
Out[14]:

	User ID	Subscription Type	Monthly Revenue	Join Date	Last Payment Date	Country	Age	Gender	Device	Plan Duration	Duration (days)	Duration (months)	Generated Revenue($)
0	1	Basic	10	2022-01-15	2023-06-10	United States	28	Male	Smartphone	1 Month	511	17.033333	170.333333
1	2	Premium	15	2021-09-05	2023-06-22	Canada	35	Female	Tablet	1 Month	655	21.833333	327.500000
2	3	Standard	12	2023-02-28	2023-06-27	United Kingdom	42	Male	Smart TV	1 Month	119	3.966667	47.600000
3	4	Standard	12	2022-07-10	2023-06-26	Australia	51	Female	Laptop	1 Month	351	11.700000	140.400000
4	5	Basic	10	2023-05-01	2023-06-28	Germany	33	Male	Smartphone	1 Month	58	1.933333	19.333333

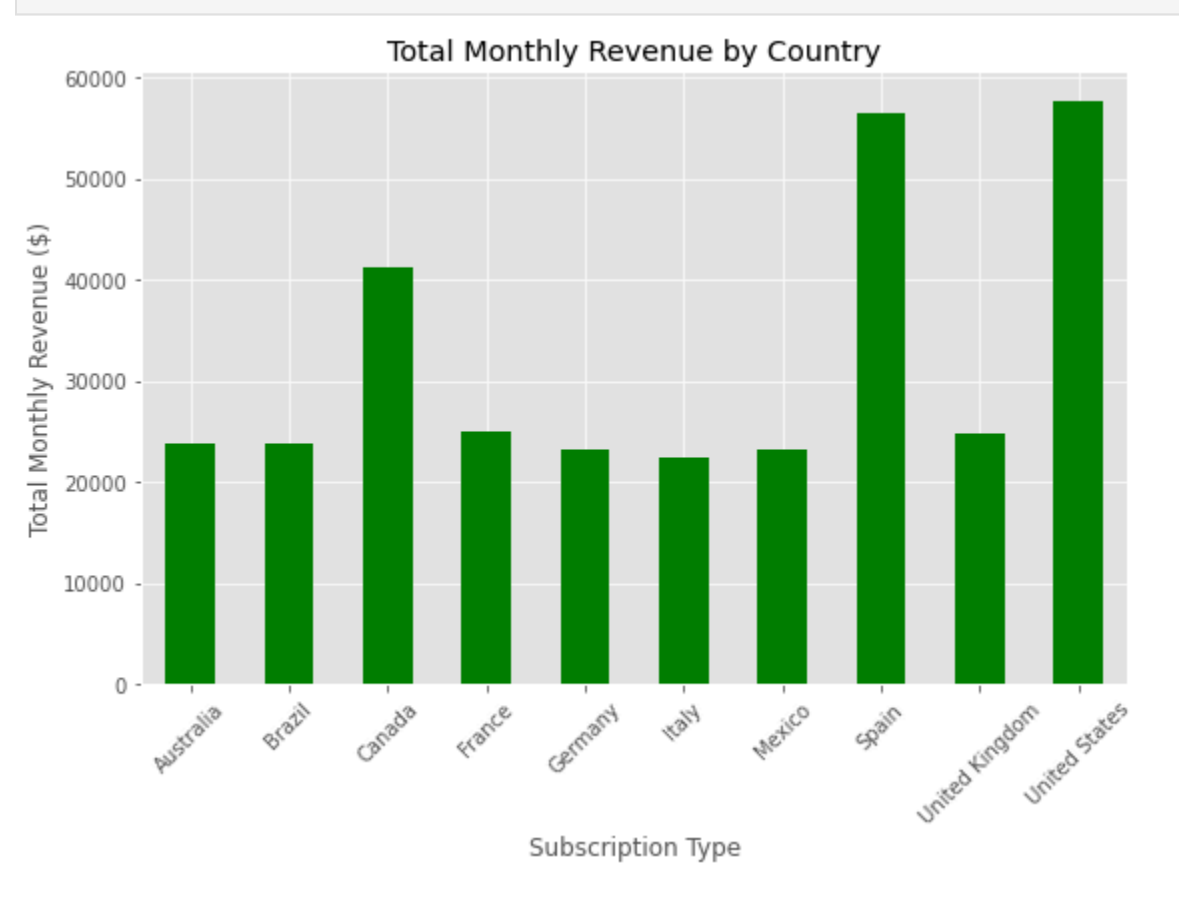
In [15]:
```
data_set['Generated Revenue($)'].sum()
```

Out[15]: 321674.6666666666

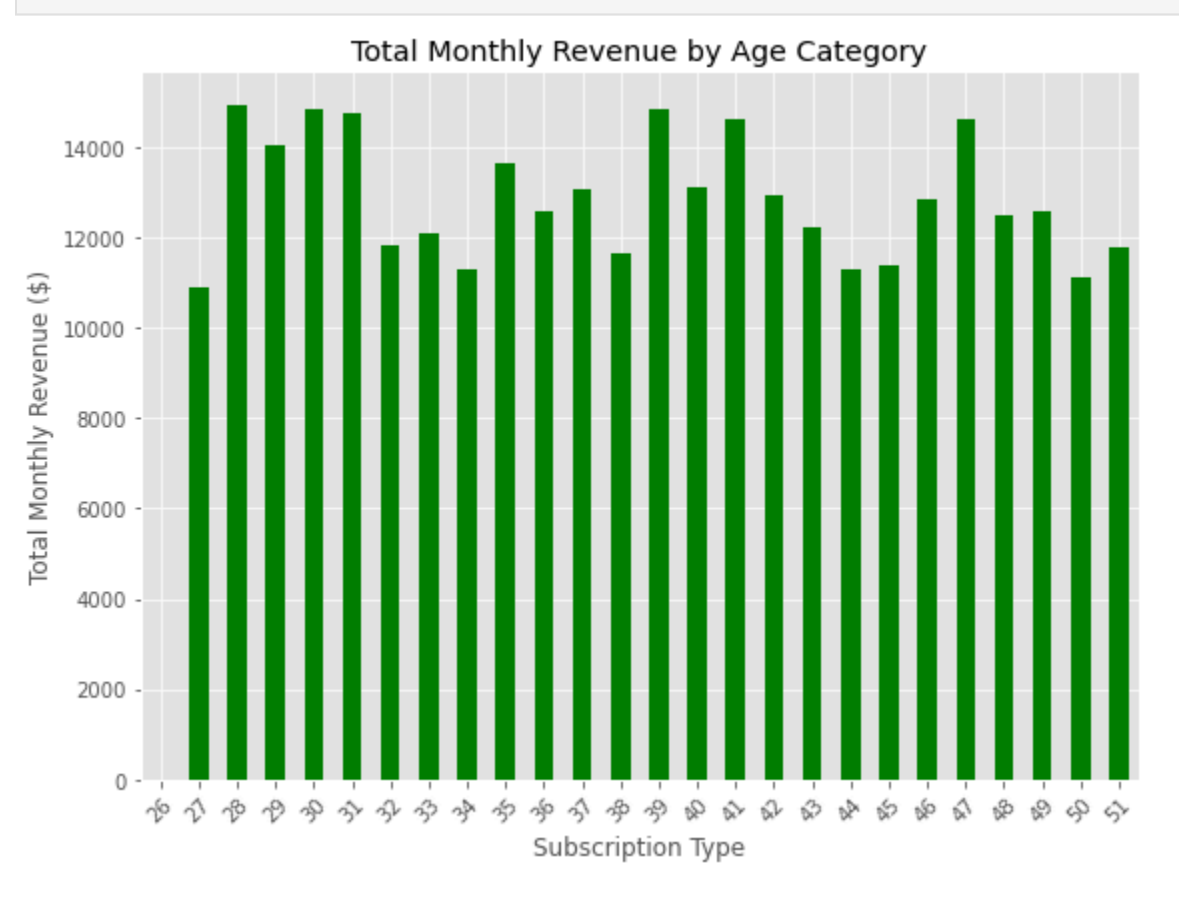
In [16]:
```
country_revenue = data_set.groupby('Country')['Generated Revenue($)'].sum().reset_index()


fig = px.choropleth(
    country_revenue,
    locations='Country',
    locationmode='country names',
    color='Generated Revenue($)',
    hover_name='Country',
    title='Total Monthly Revenue by Country on Choropleth Map',
    color_continuous_scale=px.colors.sequential.Plasma
)


fig.update_geos(showcoastlines=True, coastlinecolor="Black", showland=True, landcolor="white")
fig.update_layout(geo=dict(showcoastlines=True))
fig.update_geos(
    projection_scale=6,
    showcoastlines=True,
    coastlinecolor="Black",
    showland=True,
    landcolor="white"
)
fig.show()
```



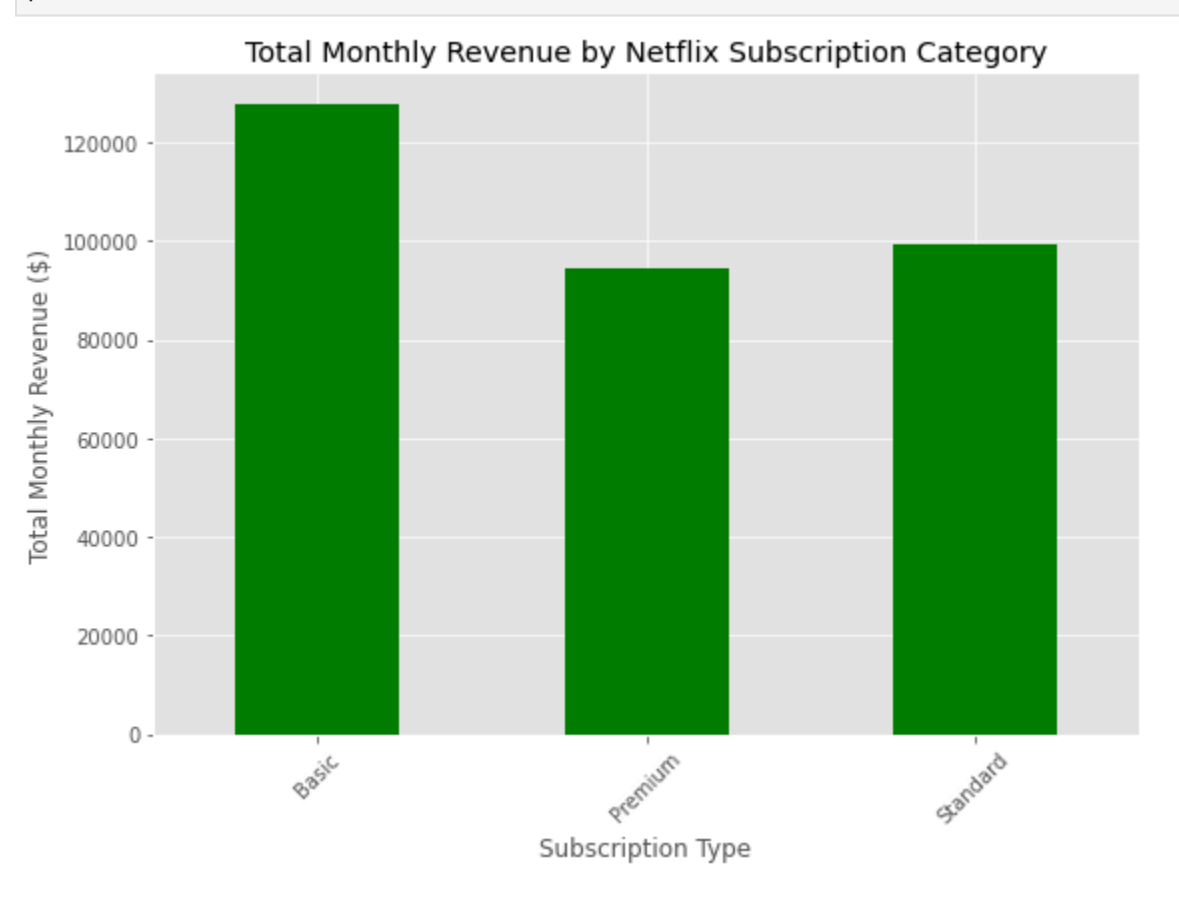
In [47]:
```
total_revenue_by_country = data_set.groupby('Country')['Generated Revenue($)'].sum()

plt.figure(figsize=(8, 6))
total_revenue_by_country.plot(kind='bar', color='green')
plt.title('Total Monthly Revenue by Country')
plt.xlabel('Subscription Type')
plt.ylabel('Total Monthly Revenue ($)')
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```



In [48]:
```
total_revenue_by_Age = data_set.groupby('Age')['Generated Revenue($)'].sum()

plt.figure(figsize=(8, 6))
total_revenue_by_Age.plot(kind='bar', color='green')
plt.title('Total Monthly Revenue by Age Category')
plt.xlabel('Subscription Type')
plt.ylabel('Total Monthly Revenue ($)')
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```



In [49]:
```
total_revenue_by_plan = data_set.groupby('Subscription Type')['Generated Revenue($)'].sum()

plt.figure(figsize=(8, 6))
total_revenue_by_plan.plot(kind='bar', color='green')
plt.title('Total Monthly Revenue by Netflix Subscription Category')
plt.xlabel('Subscription Type')
plt.ylabel('Total Monthly Revenue ($)')
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```



In [ ]:

In [ ]: