Seaborn

```
import seaborn as sns



# Load the Tips dataset

tips = sns.load_dataset("tips")



# Create a histogram of the total bill amounts

sns.histplot(data=tips, x="total_bill")


import seaborn as sns



# Load the exercise dataset

exercise = sns.load_dataset("exercise")



# check the head

exercise.head()


import seaborn as sns

tips = sns.load_dataset("tips")

sns.scatterplot(x="total_bill", y="tip", data=tips)
```

```
import seaborn as sns

import matplotlib.pyplot as plt




tips = sns.load_dataset("tips")




# customize the scatter plot

sns.scatterplot(x="total_bill", y="tip", hue="sex", size="size",
sizes=(50, 200), data=tips)




# add labels and title

plt.xlabel("Total Bill")

plt.ylabel("Tip")

plt.title("Relationship between Total Bill and Tip")




# display the plot

plt.show()

import seaborn as sns

fmri = sns.load_dataset("fmri")

sns.lineplot(x="timepoint", y="signal", data=fmri)

import seaborn as sns
```

```python
import matplotlib.pyplot as plt



fmri = sns.load_dataset("fmri")



# customize the line plot

sns.lineplot(x="timepoint", y="signal", hue="event", style="region", markers=True, dashes=False, data=fmri)



# add labels and title

plt.xlabel("Timepoint")

plt.ylabel("Signal Intensity")

plt.title("Changes in Signal Intensity over Time")



# display the plot

plt.show()

import seaborn as sns

titanic = sns.load_dataset("titanic")

sns.barplot(x="class", y="fare", data=titanic)

import seaborn as sns

import matplotlib.pyplot as plt
```

```
titanic = sns.load_dataset("titanic")



# customize the bar plot

sns.barplot(x="class", y="fare", hue="sex", ci=None, palette="muted",
data=titanic)



# add labels and title

plt.xlabel("Class")

plt.ylabel("Fare")

plt.title("Average Fare by Class and Gender on the Titanic")



# display the plot

plt.show()

import seaborn as sns

iris = sns.load_dataset("iris")

sns.histplot(x="petal_length", data=iris)

import seaborn as sns

import matplotlib.pyplot as plt
```

```
iris = sns.load_dataset("iris")



# customize the histogram

sns.histplot(data=iris, x="petal_length", bins=20, kde=True,
color="green")



# add labels and title

plt.xlabel("Petal Length (cm)")

plt.ylabel("Frequency")

plt.title("Distribution of Petal Lengths in Iris Flowers")



# display the plot

plt.show()

import seaborn as sns

tips = sns.load_dataset("tips")

sns.kdeplot(data=tips, x="total_bill")

import seaborn as sns

import matplotlib.pyplot as plt



# Load the "tips" dataset from Seaborn
```

```python
tips = sns.load_dataset("tips")



# Create a density plot of the "total_bill" column from the "tips" dataset

# We use the "hue" parameter to differentiate between "lunch" and "dinner" meal times

# We use the "fill" parameter to fill the area under the curve

# We adjust the "alpha" and "linewidth" parameters to make the plot more visually appealing

sns.kdeplot(data=tips, x="total_bill", hue="time", fill=True, alpha=0.6, linewidth=1.5)



# Add a title and labels to the plot using Matplotlib

plt.title("Density Plot of Total Bill by Meal Time")

plt.xlabel("Total Bill ($)")

plt.ylabel("Density")



# Show the plot

plt.show()

import seaborn as sns

tips = sns.load_dataset("tips")

sns.boxplot(x="day", y="total_bill", data=tips)
```

```
import seaborn as sns

import matplotlib.pyplot as plt



# load the tips dataset from Seaborn

tips = sns.load_dataset("tips")



# create a box plot of total bill by day and meal time, using the "hue" parameter to differentiate between lunch and dinner

# customize the color scheme using the "palette" parameter

# adjust the linewidth and fliersize parameters to make the plot more visually appealing

sns.boxplot(x="day", y="total_bill", hue="time", data=tips, palette="Set3", linewidth=1.5, fliersize=4)



# add a title, xlabel, and ylabel to the plot using Matplotlib functions

plt.title("Box Plot of Total Bill by Day and Meal Time")

plt.xlabel("Day of the Week")

plt.ylabel("Total Bill ($)")



# display the plot
```

```python
plt.show()

import seaborn as sns



# load the iris dataset from Seaborn

iris = sns.load_dataset("iris")



# create a violin plot of petal length by species

sns.violinplot(x="species", y="petal_length", data=iris)



# display the plot

plt.show()

import seaborn as sns

import matplotlib.pyplot as plt



# Load the dataset

tips = sns.load_dataset('tips')
numerical_cols = tips.select_dtypes(include=['number'])  # Filter numerical columns



# Create a heatmap of the correlation between variables
```

```
corr = numeric_tips.corr()



sns.heatmap(corr)




# Show the plot

plt.show()
```

MAtplotlib

```
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
import pandas as pd


np.random.seed(0)
data = np.random.randn(100)
categories = ['A', 'B', 'C', 'D']
category_counts = [10, 15, 7, 12]


plt.figure(figsize=(10, 6))
plt.subplot(2, 2, 1)
plt.plot(data, marker='o', color='b', linestyle='-')
plt.title('Line Plot')
plt.xlabel('Index')
plt.ylabel('Value')
plt.grid(True)


plt.subplot(2, 2, 2)
plt.scatter(np.arange(100), data, color='r', marker='x')
plt.title('Scatter Plot')
plt.xlabel('Index')
plt.ylabel('Value')
plt.grid(True)

# 3. Bar Plot
plt.subplot(2, 2, 3)
sns.barplot(x=categories, y=category_counts, palette='viridis')
plt.title('Bar Plot')
plt.ylabel('Counts')

# 4. Histogram
plt.subplot(2, 2, 4)
plt.hist(data, bins=15, color='g', alpha=0.7)
plt.title('Histogram')
plt.xlabel('Value')
plt.ylabel('Frequency')

plt.tight_layout()
plt.show()

# 5. Pie Chart
plt.figure(figsize=(8, 6))
plt.pie(category_counts, labels=categories, autopct='%1.1f%%',
startangle=90, colors=sns.color_palette('pastel'))
plt.title('Pie Chart')
plt.axis('equal')  # Equal aspect ratio ensures that pie chart is circular
plt.show()

# 6. Count Plot (Using Seaborn)
# Creating a DataFrame for count plot
df = pd.DataFrame({'Category': np.random.choice(categories, size=100)})
plt.figure(figsize=(8, 6))
sns.countplot(x='Category', data=df, palette='husl')
plt.title('Count Plot')
plt.xlabel('Category')
plt.ylabel('Counts')
plt.show()
```

https://colab.research.google.com/drive/1py-Hj3IcEHwj9kiVyrTClPgOShQj4SmG