Take-Home (Day 4)

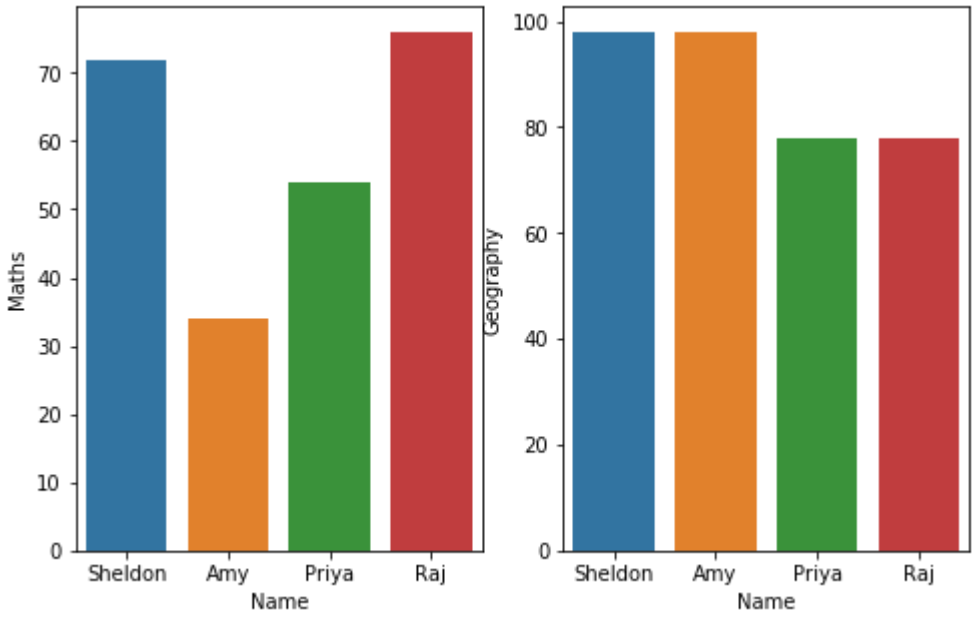
In [1]:
```
import pandas as pd
import numpy as np

import matplotlib.pyplot as plt
import seaborn as sns

import plotly.express as px
```

Let's begin with some hands-on practice exercises

1. Plot a bar chart and vertical bar chart for the following data.

Name	Sheldon	Amy	Priya	Raj
Maths	72	34	54	76
Geography	98	98	78	87

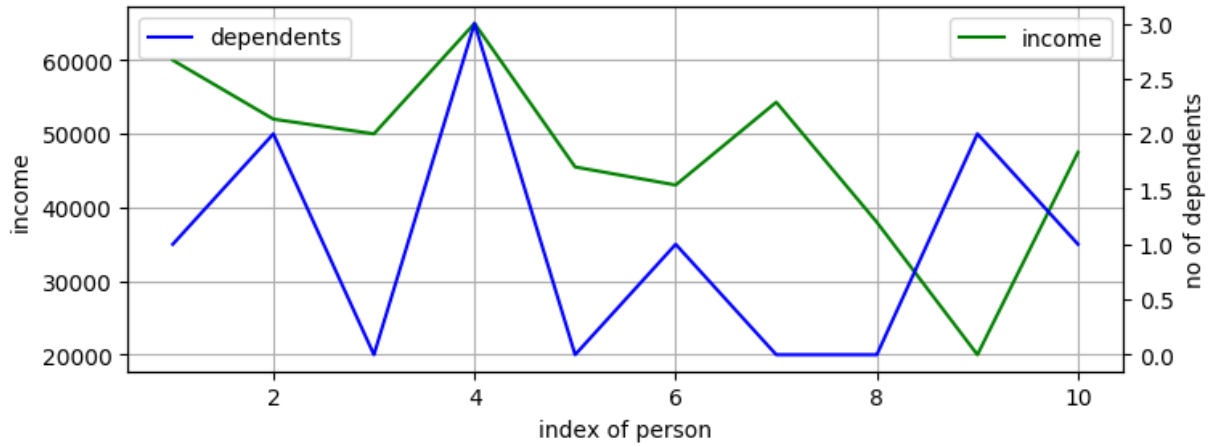
In [4]:
```
# type your code here
df1 = pd.DataFrame({'Name':['Sheldon','Amy','Priya','Raj'],
                    'Maths':[72,34,54,76],
                    'Geography':[98,98,78,78]})
fig, axes= plt.subplots(1,2, figsize=(8,5))
sns.barplot(df1['Name'], df1['Maths'], ax=axes[0])
sns.barplot(df1['Name'], df1['Geography'], ax=axes[1])
plt.show()
```



2. Following is data on 10 people, information on the number of dependents on each of them and their income is given. Draw a dual-axis plot.

Person	No. of Dependents	Income
1	1	60000
2	2	52000
3	0	50000
4	3	65000
5	0	45500
6	1	43050
7	0	54300
8	0	38000
9	2	20000
10	1	47500

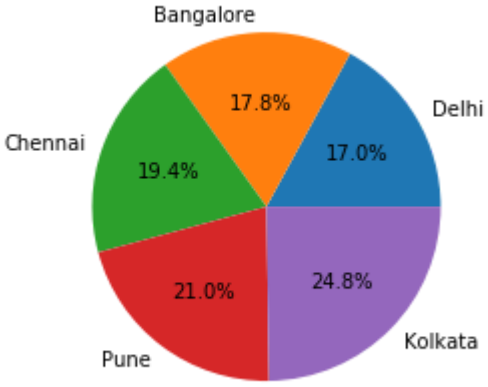
In [5]:
```
# type your code here
p= [i for i in range(1,11)]
no= [1,2,0,3,0,1,0,0,2,1]
i=[60000,52000, 50000, 65000, 45500, 43050, 54300,38000, 20000, 47500]
df2= pd.DataFrame(list(zip(p,no,i)), columns=['Person', 'no of dependents', 'inco
fig, axes= plt.subplots(1,1, figsize=(8,3), dpi=100)
axes.plot(df2['Person'], df2['income'], color= 'g')
axes.set_ylabel('income')
axes.set_xlabel('index of person')
axes.grid('dark')
axes.legend(['income'], loc=1)

ax1= axes.twinx()
ax1.set_ylabel('no of dependents')
ax1.plot(df2['Person'], df2['no of dependents'], color= 'b')
ax1.legend(['dependents'], loc=2)
plt.show()
```



3. Use the following data to plot a pie chart and annotate the percentage sales.

Location	Sale
Delhi	42500
Bangalore	44500
Chennai	48300
Pune	52400
Kolkata	61800

In [6]:
```
# type your code here
df3 = pd.DataFrame({'Location':['Delhi','Bangalore','Chennai','Pune','Kolkata'],
                    'Sales':[42500,44500,48300,52400,61800]})
plt.pie(x= 'Sales',data= df3,labels='Location',autopct="%.1f%%")
plt.show()
```

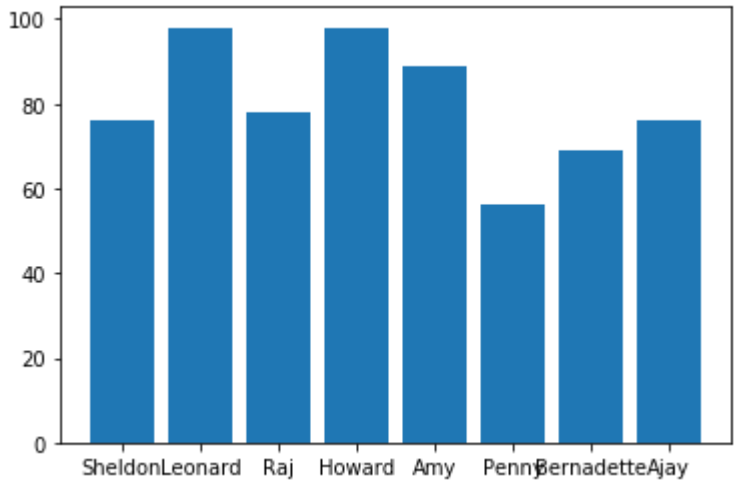


4. Write a program to plot a bar plot of seven students representing their marks in Mathematics using plotly.

```
marks = [76,98,78,98,89,56,69,76]
students = ['Sheldon','Leonard','Raj','Howard','Amy','Penny','Bernad
ette']
```

In [7]:
```
# type your code here
df4 = pd.DataFrame({ 'marks' : [76,98,78,98,89,56,69,76],
                     'students' : ['Sheldon','Leonard','Raj','Howard','Amy','Penny'
fig = plt.figure()
plt.bar(x='students',data=df4,height='marks')
```

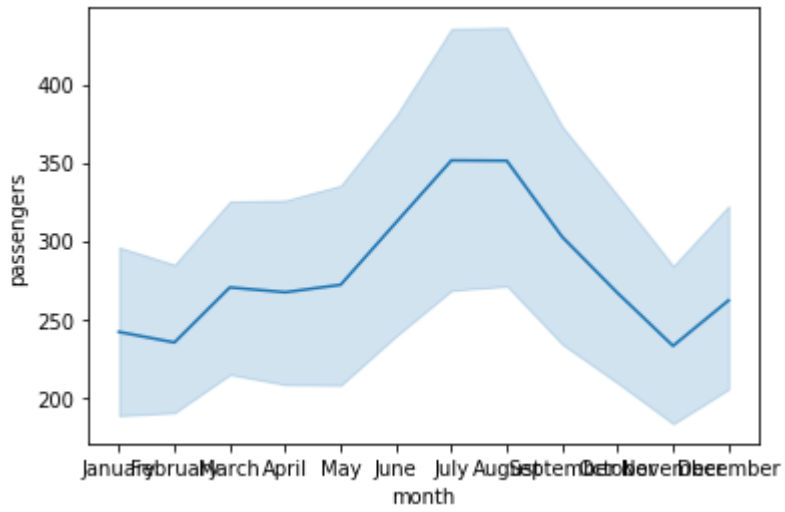
Out[7]:
```
<BarContainer object of 8 artists>
```



5. Import the flights data set and plot a line plot for the variable 'passengers'.

In [8]:
```
# type your code here
df5 = sns.load_dataset('flights')
sns.lineplot(y = 'passengers',x='month',data=df5)
```

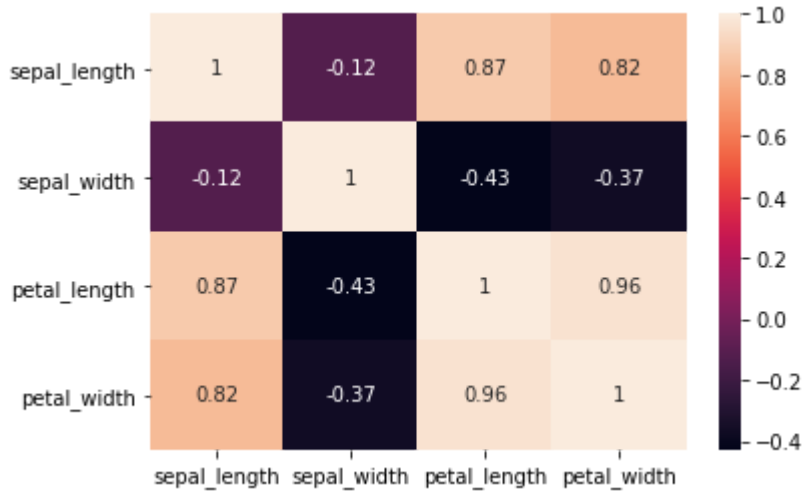
Out[8]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x1cdcd421288>
```



6. Import the iris data set and plot a heatmap of the correlation between its numeric variables.

In [9]:
```
# type your code here
df6 =sns.load_dataset('Iris')
x =  df6.corr()
sns.heatmap(x,annot=True)
```

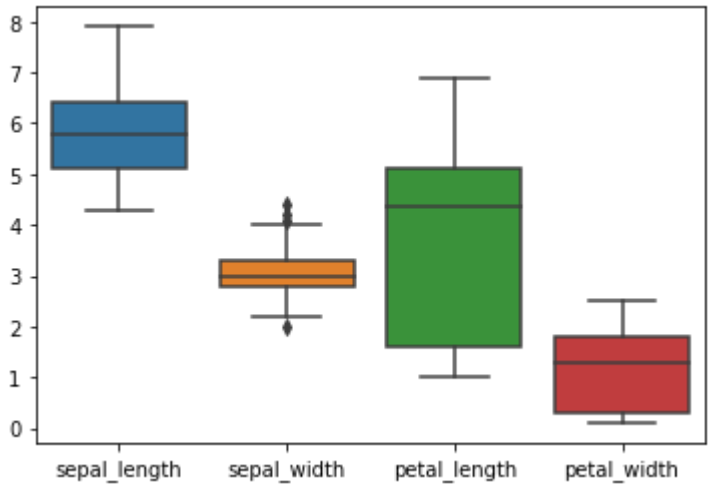
Out[9]: <matplotlib.axes._subplots.AxesSubplot at 0x1cdcd1f8c08>



7. Using the iris data set, plot boxplot of its numeric features.

In [10]:
```
# type your code here
sns.boxplot(data=df6)
```

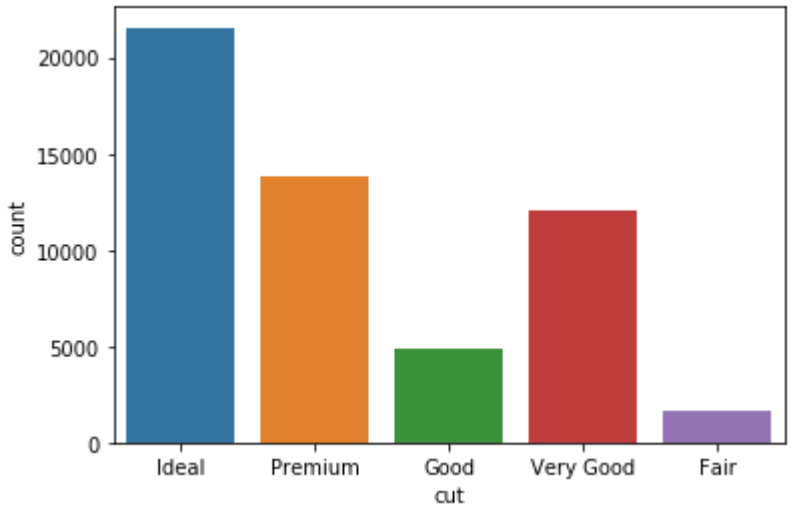
Out[10]: <matplotlib.axes._subplots.AxesSubplot at 0x1cdcd6d2148>



8. Import the built-in 'diamonds' data set from seaborn. For the variable 'cut', plot a count plot.

In [11]:
```
# type your code here
df8 = sns.load_dataset('diamonds')
sns.countplot(data=df8,x='cut')
```

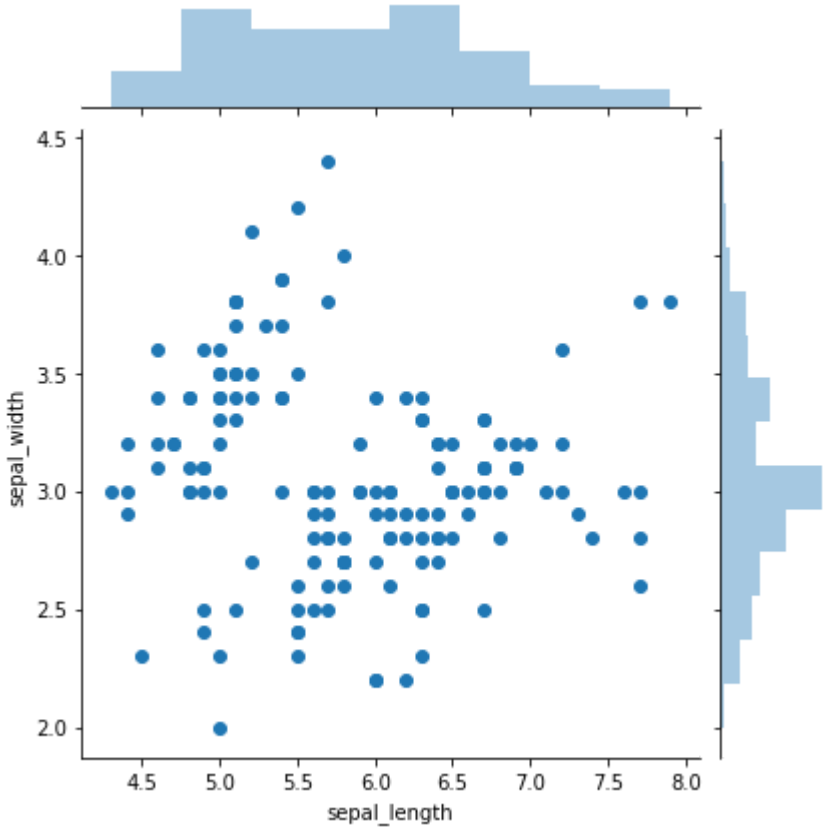
Out[11]: <matplotlib.axes._subplots.AxesSubplot at 0x1cdcd1c60c8>



9. Use the iris data set, to plot a joint plot of sepal length against sepal width.

In [12]:
```
# type your code here
sns.jointplot(data=df6,x='sepal_length',y= 'sepal_width')
```

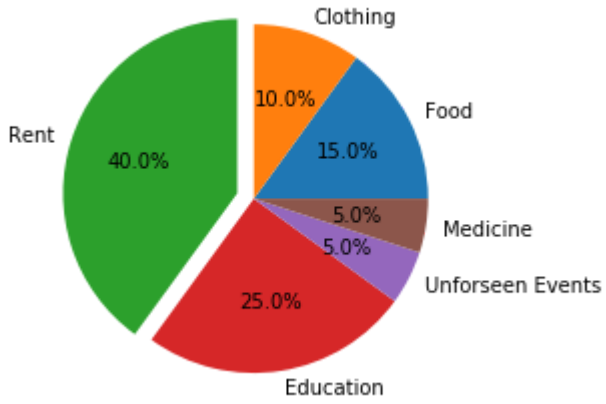
Out[12]:
```
<seaborn.axisgrid.JointGrid at 0x1cdcd259048>
```



10. Jake's monthly expenditure is given below. Draw a pie chart and explode the wedge with highest cost

Item	Expenditure
Food	15
Clothing	10
Rent	40
Education	25
Unforseen Events	5
Medicine	5

In [13]:
```
# type your code here
df10 = pd.DataFrame({'Item':['Food','Clothing','Rent','Education','Unforseen Ever
                     'Expenditure':[15,10,40,25,5,5]})

plt.pie(data= df10,x='Expenditure',autopct='%1.1f%%',labels='Item', explode=(0,0,
plt.show()
```



In [ ]: