

Apple\_Data\_Analysis : Nirnoy Ghosh

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

Importing the data set

```
apple = pd.read_excel(r"C:\Users\ASUS\OneDrive\Desktop\Nirnoy\Placement\WITS\Project\Google_Data\apple_products_sales.xlsx")
apple.head()
```

	Date	Product	Country	Quantity	Total Sales (\$)
0	2023-01-01	iPhone	India	58	63800
1	2023-01-01	iPad	India	39	19500
2	2023-01-01	Mac mini	India	34	68000
3	2023-01-01	iPhone	USA	51	56100
4	2023-01-01	iPad	USA	59	29500

Checking the null values and shape

```
apple.isna().sum()
```

```
Date      0
Product    0
Country    0
Quantity   0
Total Sales ($)  0
dtype: int64
```

```
apple.shape
```

```
(540, 5)
```

Showing the unique values

```
apple["Product"].unique()
```

```
array(['iPhone', 'iPad', 'Mac mini'], dtype=object)
```

Counting how many products for different products

```
apple["Product"].value_counts()
```

```
Mac mini    188
iPad        188
iPhone      188
Name: Product, dtype: int64
```

Country wise value count

```
apple["Country"].value_counts()
```

```
USA    270
India   270
Name: Country, dtype: int64
```

Total production of the products.

Total iPhone Quantity of two countries

```
r=[]
for i in range(0,len(apple["Product"])):
    if apple["Product"][i]== "iPhone":
        r.append(apple["Quantity"][i])
r1=sum(r)
r1
```

```
18188
```

Total iPad Quantity of two countries

```
r=[]
for i in range(0,len(apple["Product"])):
    if apple["Product"][i]== "iPad":
        r.append(apple["Quantity"][i])
r2=sum(r)
r2
```

```
18837
```

Total Mac Mini Quantity of two countries

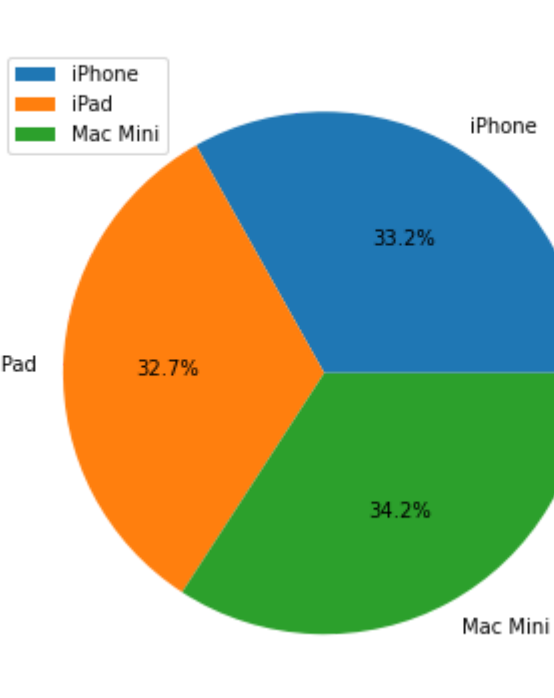
```
r=[]
for i in range(0,len(apple["Product"])):
    if apple["Product"][i]== "Mac mini":
        r.append(apple["Quantity"][i])
r3=sum(r)
r3
```

```
18494
```

Pie plot for total production of iPhone, iPad and Mac Mini

```
plt.figure(figsize=(12,6))
y = np.array([r1,r2,r3])
mylabels = ["iPhone", "iPad", "Mac Mini"]
plt.pie(y, labels = mylabels, autopct='%1.1f%%')
plt.legend(loc='upper left')
plt.title('total production of iPhone, iPad and Mac Mini\n',fontsize=21)
plt.show()
```

total production of iPhone, iPad and Mac Mini



Country wise production.

India

```
r=[]
for i in range(0,len(apple["Country"])):
    if apple["Country"][i]== "India":
        r.append(apple["Quantity"][i])
c1=sum(r)
c1
```

```
15899
```

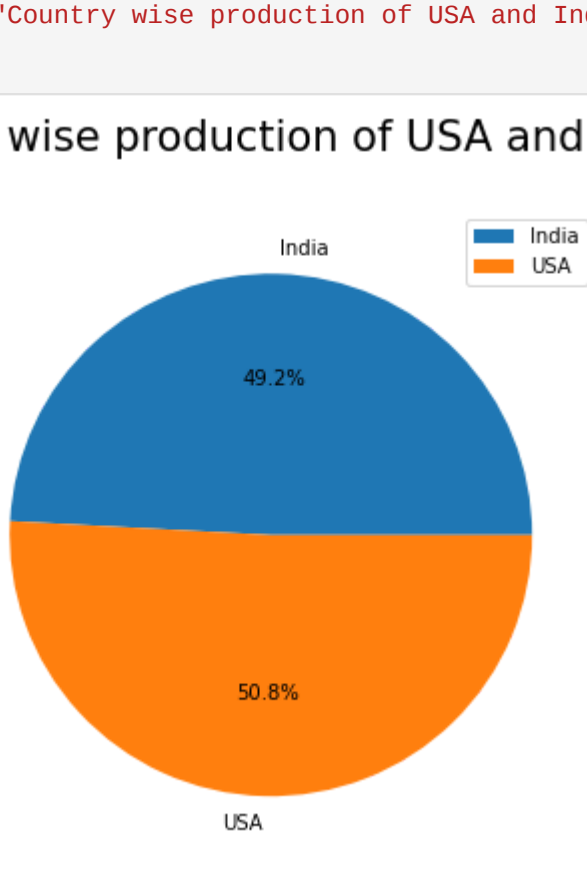
USA

```
r=[]
for i in range(0,len(apple["Country"])):
    if apple["Country"][i]== "USA":
        r.append(apple["Quantity"][i])
c2=sum(r)
c2
```

```
15628
```

```
plt.figure(figsize=(12,6))
y = np.array([c1,c2])
mylabels = ["India", "USA"]
plt.pie(y, labels = mylabels, autopct='%1.1f%%')
plt.legend(loc='upper right')
plt.title('Country wise production of USA and India \n',fontsize=21)
plt.show()
```

Country wise production of USA and India



Country wise product production

India

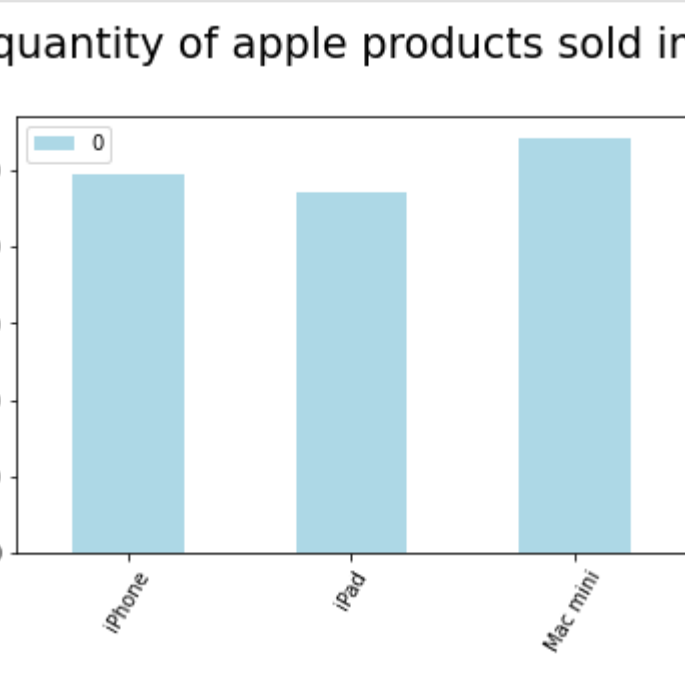
```
r=[]
for i in range(0,len(apple["Country"])):
    if apple["Country"][i]== "India":
        r.append([apple["Product"][i],apple["Quantity"][i],apple["Total Sales ($)"][i]])
r=pd.DataFrame(r).rename(columns = {'Product':1,'Quantity':2,'Total Sales':3})
r
```

	Product	Quantity	Total Sales
0	iPhone	58	63800
1	iPad	39	19500
2	Mac mini	34	68000
3	iPhone	91	100100
4	iPad	61	30500
...	...	...	...
265	iPad	61	30500
266	Mac mini	38	76000
267	iPhone	67	73700
268	iPad	53	26500
269	Mac mini	39	78000

270 rows × 3 columns

```
iph=(sum(r[r["Product"]=="iPhone"]["Quantity"]))
ipd=(sum(r[r["Product"]=="iPad"]["Quantity"]))
mm=(sum(r[r["Product"]=="Mac mini"]["Quantity"]))
p=pd.DataFrame([iph,ipd,mm]).plot.bar(color='lightblue');
x_labels = ["iPhone","iPad","Mac mini"]
p.set_xticklabels(x_labels,rotation=60);
plt.title('Total quantity of apple products sold in India \n',fontsize=21)
plt.show()
```

Total quantity of apple products sold in India



India's Total Apple products

```
pd.DataFrame([iph,ipd,mm],["iPhone","iPad","Mac mini"])
```

0
iPhone 4943
iPad 4718
Mac mini 5437

USA

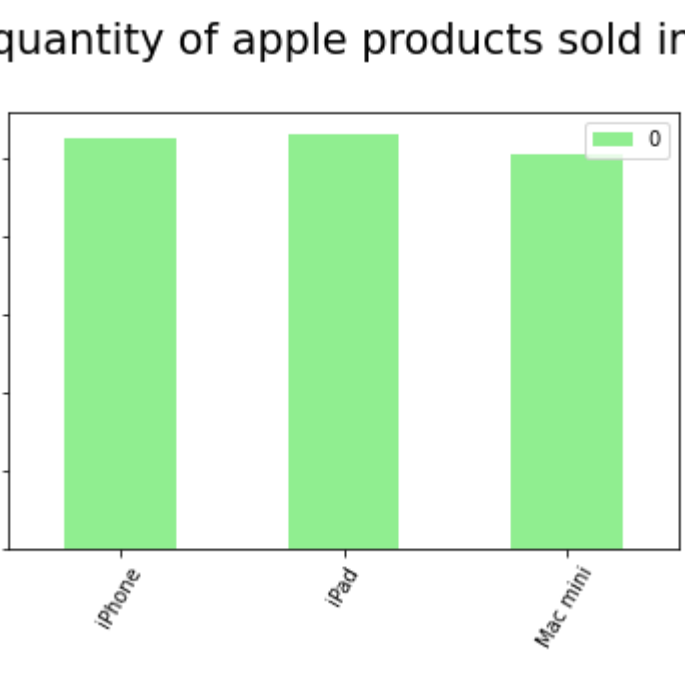
```
r=[]
for i in range(0,len(apple["Country"])):
    if apple["Country"][i]== "USA":
        r.append([apple["Product"][i],apple["Quantity"][i],apple["Total Sales ($)"][i]])
r=pd.DataFrame(r).rename(columns = {'Product':1,'Quantity':2,'Total Sales':3})
r
```

	Product	Quantity	Total Sales
0	iPhone	51	56100
1	iPad	59	29500
2	Mac mini	16	32000
3	iPhone	30	33000
4	iPad	43	21500
...	...	...	...
265	iPad	80	40000
266	Mac mini	36	72000
267	iPhone	16	17600
268	iPad	15	7500
269	Mac mini	12	24000

270 rows × 3 columns

```
iph=(sum(r[r["Product"]=="iPhone"]["Quantity"]))
ipd=(sum(r[r["Product"]=="iPad"]["Quantity"]))
mm=(sum(r[r["Product"]=="Mac mini"]["Quantity"]))
p=pd.DataFrame([iph,ipd,mm]).plot.bar(color='lightgreen');
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plt.show()
```

Total quantity of apple products sold in USA



USA's Total Apple products

```
pd.DataFrame([iph,ipd,mm],["iPhone","iPad","Mac mini"])
```

0
iPhone 5245
iPad 5318
Mac mini 5257

Country wise total sale

India

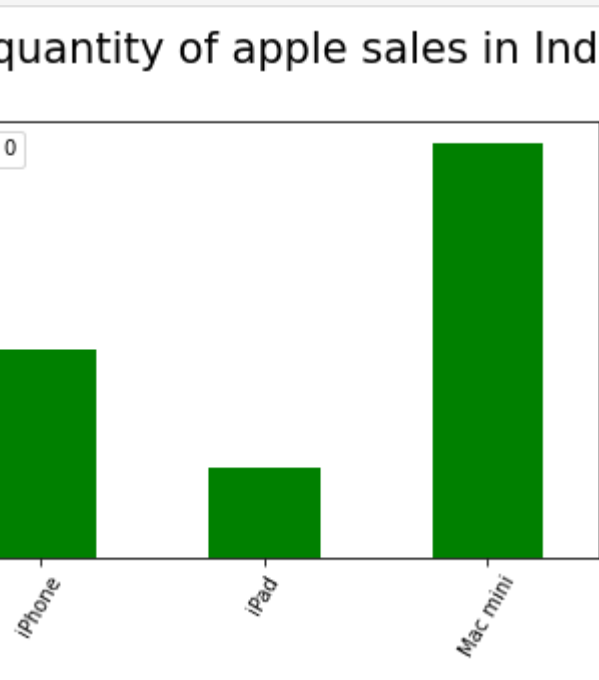
```
r=[]
for i in range(0,len(apple["Country"])):
    if apple["Country"][i]== "India":
        r1.append([apple["Product"][i],apple["Total Sales ($)"][i],apple["Total Sales ($)"][i]])
r=pd.DataFrame(r).rename(columns = {'Product':1,'Quantity':1,'Total Sales':2})
r
```

	Product	Quantity	Total Sales
0	iPhone	63800	63800
1	iPad	19500	19500
2	Mac mini	68000	68000
3	iPhone	100100	100100
4	iPad	30500	30500
...	...	...	...
265	iPad	30500	30500
266	Mac mini	76000	76000
267	iPhone	73700	73700
268	iPad	26500	26500
269	Mac mini	78000	78000

270 rows × 3 columns

```
iph=(sum(r1[r1["Product"]=="iPhone"]["Total Sales"]))
ipd=(sum(r1[r1["Product"]=="iPad"]["Total Sales"]))
mm=(sum(r1[r1["Product"]=="Mac mini"]["Total Sales"]))
p=pd.DataFrame([iph,ipd,mm]).plot.bar(color='green');
x_labels = ["iPhone","iPad","Mac mini"]
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plt.title('Total quantity of apple sales in India \n',fontsize=21)
plt.show()
```

Total quantity of apple sales in India



India.s total sale

```
pd.DataFrame([iph,ipd,mm])
```

0
5437300
2359500
10874000

USA

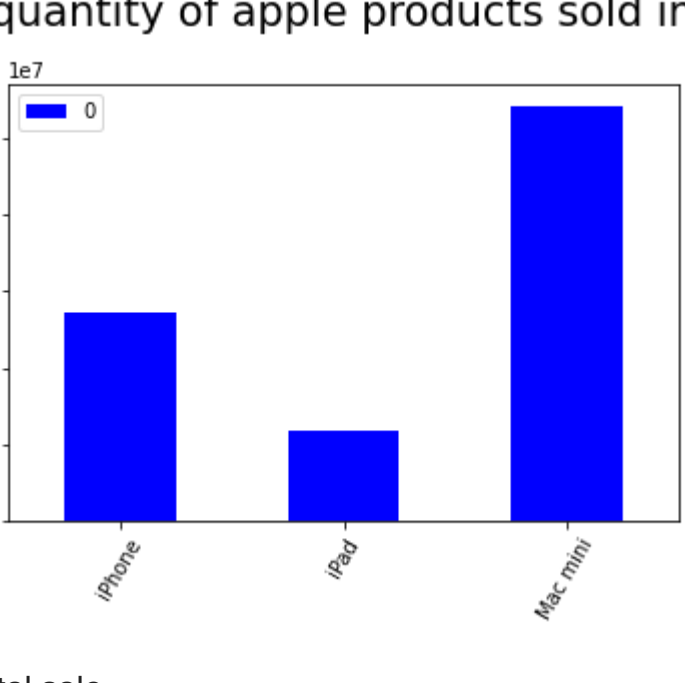
```
r=[]
for i in range(0,len(apple["Country"])):
    if apple["Country"][i]== "USA":
        r1.append([apple["Product"][i],apple["Total Sales ($)"][i],apple["Total Sales ($)"][i]])
r1=pd.DataFrame(r).rename(columns = {'Product':1,'Quantity':1,'Total Sales':2})
r1
```

	Product	Quantity	Total Sales
0	iPhone	63800	63800
1	iPad	19500	19500
2	Mac mini	68000	68000
3	iPhone	100100	100100
4	iPad	30500	30500
...	...	...	...
265	iPad	30500	30500
266	Mac mini	76000	76000
267	iPhone	73700	73700
268	iPad	26500	26500
269	Mac mini	78000	78000

270 rows × 3 columns

```
iph=(sum(r1[r1["Product"]=="iPhone"]["Total Sales"]))
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mm=(sum(r1[r1["Product"]=="Mac mini"]["Total Sales"]))
p=pd.DataFrame([iph,ipd,mm]).plot.bar(color='blue');
x_labels = ["iPhone","iPad","Mac mini"]
p.set_xticklabels(x_labels,rotation=60);
plt.title('Total quantity of apple products sold in USA \n',fontsize=21)
plt.show()
```

Total quantity of apple products sold in USA



USA.s total sale

```
pd.DataFrame([iph,ipd,mm])
```

0
5437300
2359500
10874000