

## Name : Arul Kumar ARK

Roll No. : 225229103

### CSV File Format

```
In [ ]: M import pandas as pd
```

```
In [10]: M df = pd.read_csv('C:/Users/arulk/OneDrive/Desktop/student_marks.csv')
print("Dataset :")
print(df)
print()
print()
print("Size of the Dataset : ",df.size)
print()
print()
print("Shape of the Dataset : ",df.shape)
print()
print()
print("Data-types in the Dataset : ",df.dtypes)
print()
print()
print("Dimensions of the Dataset : ",df.ndim)
```

Dataset :

	Name	Maths	Physics	Chemistry	English	Biology	Economics	History	\
0	John	55	45	56.0	87	21	52	89	
1	Suresh	75	55	NaN	64	90	61	58	
2	Ramesh	25	54	89.0	76	95	87	56	
3	Jessica	78	55	86.0	63	54	89	75	
4	Jennifer	58	96	78.0	46	96	77	83	

Civics

	Civics
0	65
1	2
2	74
3	45
4	53

Size of the Dataset : 45

Shape of the Dataset : (5, 9)

```
Data-types in the Dataset : Name      object
Maths        int64
Physics      int64
Chemistry    float64
English      int64
Biology      int64
Economics   int64
History      int64
Civics       int64
dtype: object
```

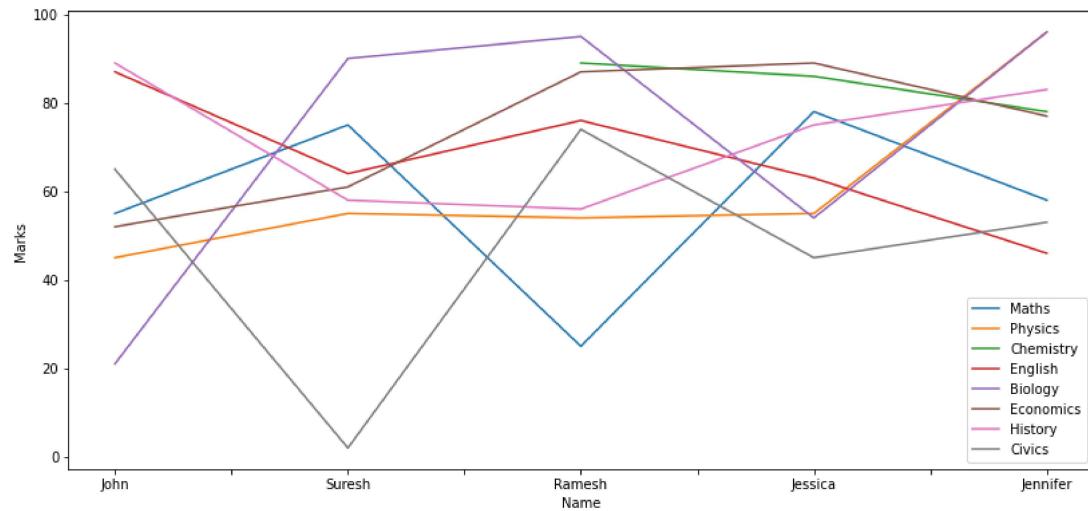
Dimensions of the Dataset : 2

```
In [ ]: M
```

## Line

```
In [1]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [11.50, 5.50]
plt.rcParams["figure.autolayout"] = True

df = pd.read_csv('C:/Users/arulk/OneDrive/Desktop/student_marks.csv')
df.set_index('Name').plot(ylabel='Marks')
plt.show()
```

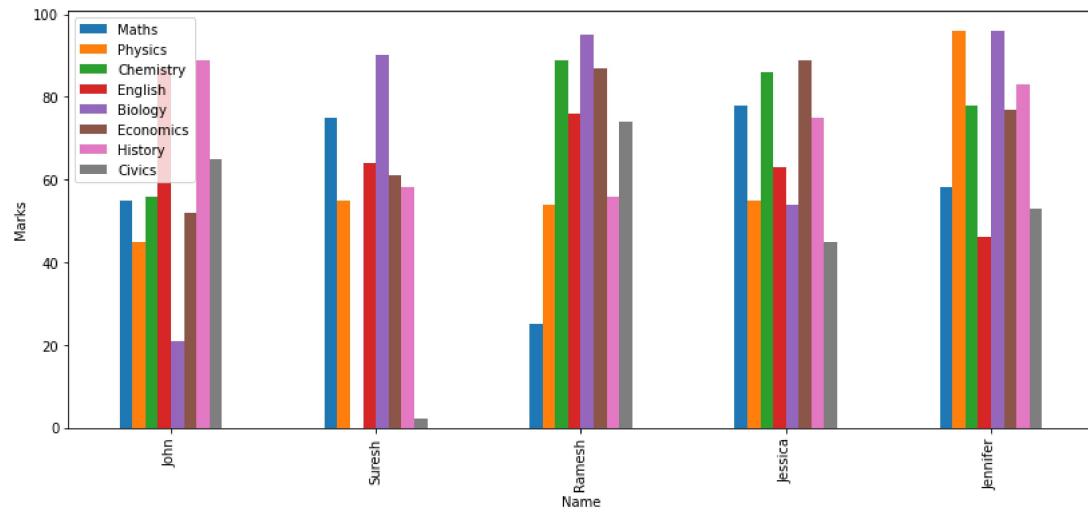


## Bar

```
In [2]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [11.50, 5.50]
plt.rcParams["figure.autolayout"] = True

df = pd.read_csv('C:/Users/arulk/OneDrive/Desktop/student_marks.csv',)

df.set_index('Name').plot(kind = 'bar',ylabel='Marks')
plt.show()
```

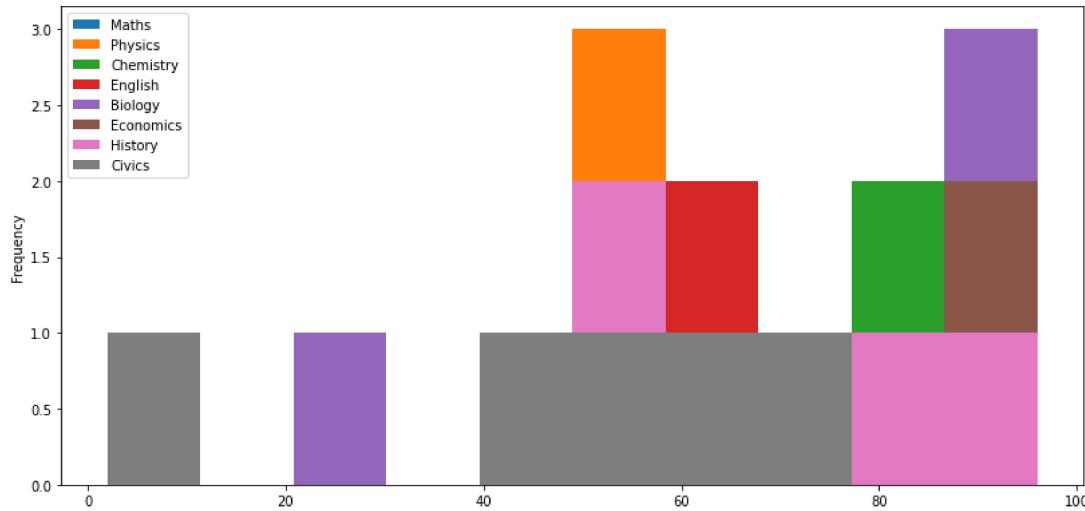


## Histogram

```
In [3]: ┌─ import pandas as pd
  import matplotlib.pyplot as plt
  plt.rcParams["figure.figsize"] = [11.50, 5.50]
  plt.rcParams["figure.autolayout"] = True

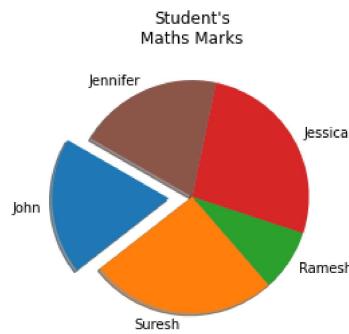
  df = pd.read_csv('C:/Users/arulk/OneDrive/Desktop/student_marks.csv',)

  df.plot(kind = 'hist')
  plt.show()
```



## Pie Chart

```
In [1]: ┌─ import matplotlib.pyplot as plt
  import pandas as pd
  df = pd.read_csv('C:/Users/arulk/OneDrive/Desktop/student_marks.csv')
  s_name = df['Name']
  subject = df["Maths"]
  colors = ["#1f77b4", "#ff7f0e", "#2ca02c", "#d62728", "#8c564b"]
  size = (0.2, 0, 0, 0, 0)
  plt.pie(subject, labels=s_name, explode=size, colors=colors, shadow=True, startangle=150)
  plt.title("Student's\n"+"Maths Marks")
  plt.show()
```

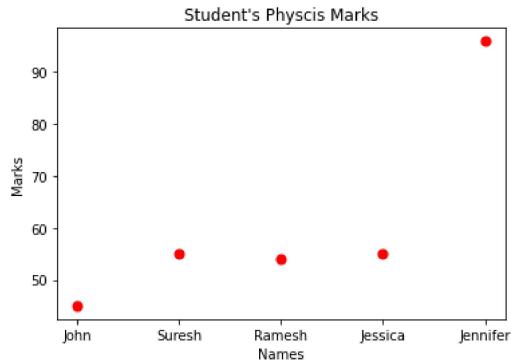


## Scatter Plot

```
In [2]: ⚡ import matplotlib.pyplot as plt
import csv
df = pd.read_csv('C:/Users/arulk/Desktop/Desktop/student_marks.csv')
plt.scatter(df['Name'], df['Physics'], color = 'r', s = 50)

plt.xlabel('Names')
plt.ylabel('Marks')
plt.title("Student's Physcis Marks")

plt.show()
```

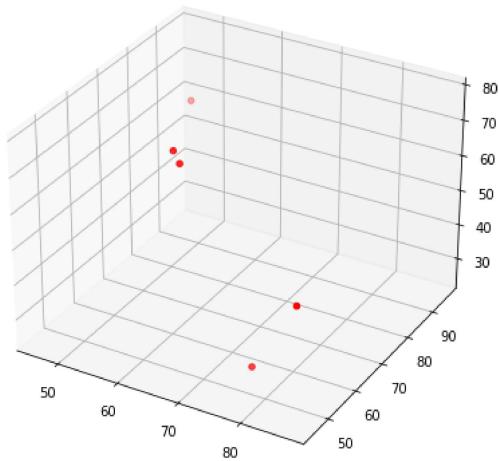


## 3D Scatter Plot

```
In [3]: ⚡ from mpl_toolkits import mplot3d
import numpy as np
import matplotlib.pyplot as plt

fig = plt.figure(figsize = (10, 7))
ax = plt.axes(projection ="3d")
x = df['English']
y = df['Physics']
z = df["Maths"]
ax.scatter3D(x, y, z, color = "red")
plt.title("3D Scatter plot of Student's Three Subject")
plt.show()
```

3D Scatter plot of Student's Three Subject



In [ ]:

## ODS File Format

In [1]: `pip install pandas_ods_reader`

```
Collecting pandas_ods_reader
  Downloading pandas_ods_reader-0.1.4-py3-none-any.whl (6.7 kB)
Requirement already satisfied: lxml<5.0.0,>=4.6.3 in c:\users\arulk\anaconda3\lib\site-packages (from pandas_ods_reader) (4.8.0)
Requirement already satisfied: pandas<2.0.0,>=1.0.0 in c:\users\arulk\anaconda3\lib\site-packages (from pandas_ods_reader) (1.4.2)
Collecting ezodf<0.4.0,>=0.3.2
  Downloading ezodf-0.3.2.tar.gz (125 kB)
Requirement already satisfied: numpy>=1.18.5 in c:\users\arulk\anaconda3\lib\site-packages (from pandas<2.0.0,>=1.0.0->pandas_ods_reader) (1.21.5)
Requirement already satisfied: python-dateutil>=2.8.1 in c:\users\arulk\anaconda3\lib\site-packages (from pandas<2.0.0,>=1.0.0->pandas_ods_reader) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in c:\users\arulk\anaconda3\lib\site-packages (from pandas<2.0.0,>=1.0.0->pandas_ods_reader) (2021.3)
Requirement already satisfied: six>=1.5 in c:\users\arulk\anaconda3\lib\site-packages (from python-dateutil>=2.8.1->pandas<2.0.0,>=1.0.0->pandas_ods_reader) (1.16.0)
Building wheels for collected packages: ezodf
  Building wheel for ezodf (setup.py): started
  Building wheel for ezodf (setup.py): finished with status 'done'
  Created wheel for ezodf: filename=ezodf-0.3.2-py2.py3-none-any.whl size=49004 sha256=c8dbd79a38f19195bd7c96b912fde116a91ddf212e1e260bd646126dd2850b40
  Stored in directory: c:\users\arulk\appdata\local\pip\cache\wheels\d0\0e\c2\1af349f0c9e110ed08133a3d579f402f3ec1c031eac80bc084
Successfully built ezodf
Installing collected packages: ezodf, pandas-ods-reader
Successfully installed ezodf-0.3.2 pandas-ods-reader-0.1.4
Note: you may need to restart the kernel to use updated packages.
```

In [7]: `from pandas_ods_reader import read_ods`

```
df = read_ods('Covid.ods')
print("Dataset :")
print()
print(df)
```

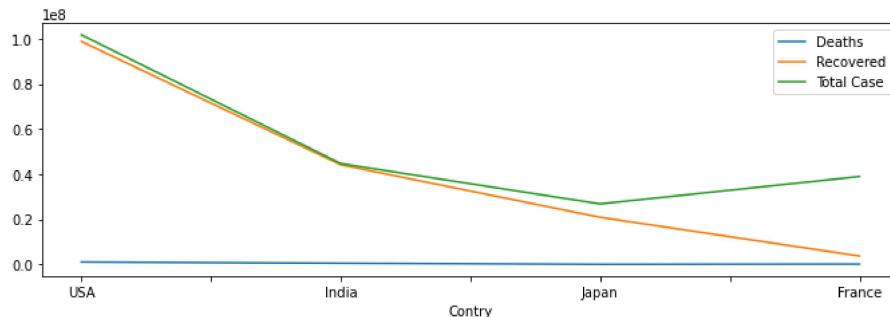
Dataset :

	Country	Deaths	Recovered	Total Case
0	USA	1112797.0	98769378.0	101714157.0
1	India	530663.0	44141255.0	44676691.0
2	Japan	52823.0	20888050.0	26821853.0
3	France	160228.0	3723065.0	38946574.0

## Line

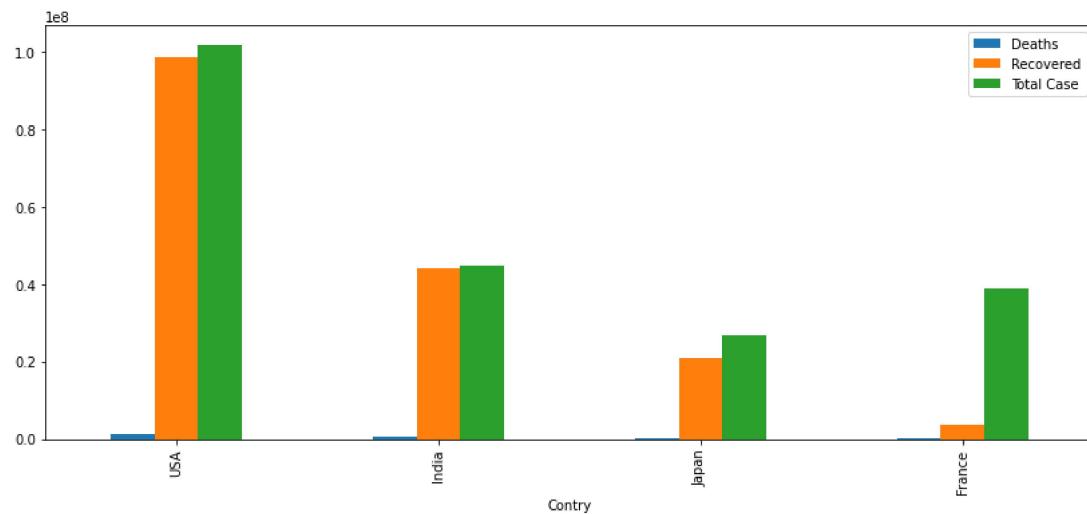
In [9]: `import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [9.50, 3.50]
plt.rcParams["figure.autolayout"] = True`

```
df = read_ods('Covid.ods')
df.set_index('Country').plot()
plt.show()
```



## Bar

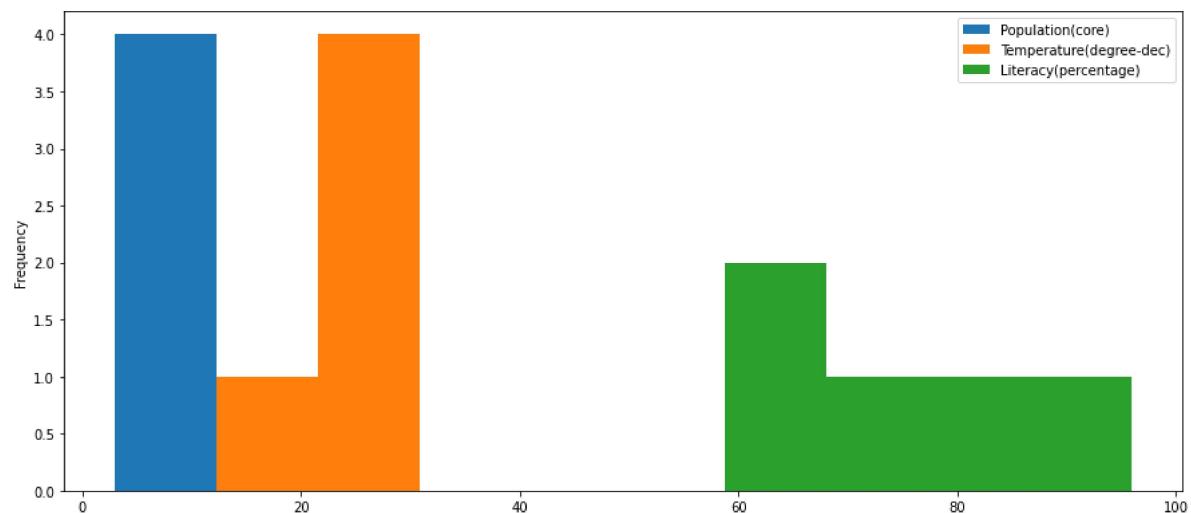
```
In [10]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [11.50, 5.50]
plt.rcParams["figure.autolayout"] = True
df = read_ods('Covid.ods')
df.set_index('Country').plot(kind = 'bar')
plt.show()
```



## Histogram

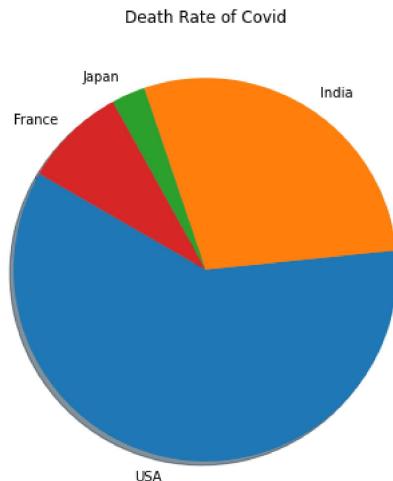
```
In [11]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [12.50, 5.50]
plt.rcParams["figure.autolayout"] = True

df = read_ods('Covid.ods')
df.plot(kind = 'hist')
plt.show()
```



## Pie Chart

```
In [18]: import matplotlib.pyplot as plt
import pandas as pd
df = read_ods('Covid.ods')
con = df['Country']
dead= df['Deaths']
colors = ["#1f77b4", "#ff7f0e", "#2ca02c", "#d62728", "#8c564b"]
plt.pie(dead, labels=con , colors=colors, shadow=True, startangle=150)
plt.title("Death Rate of Covid")
plt.show()
```

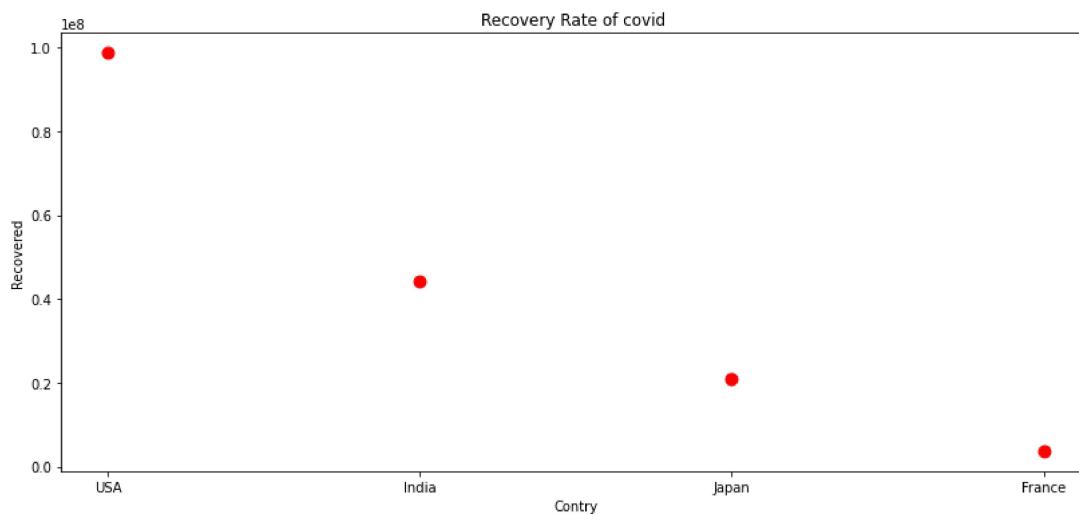


## Scatter Plot

```
In [19]: import matplotlib.pyplot as plt
import csv
df = read_ods('Covid.ods')
plt.scatter(df['Country'],df['Recovered'], color = 'r', s = 80)

plt.xlabel('Country')
plt.ylabel('Recovered')
plt.title("Recovery Rate of covid ")

plt.show()
```

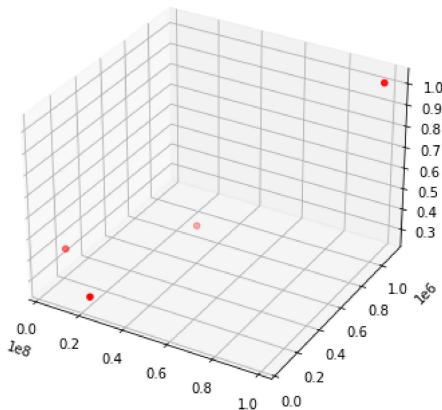


## 3D Scatter Plot

```
In [23]: ┌─▶ from mpl_toolkits import mplot3d
    import numpy as np
    import matplotlib.pyplot as plt

    fig = plt.figure(figsize = (9, 5))
    ax = plt.axes(projection ="3d")
    x = df["Recovered"]
    y = df['Deaths']
    z = df["Total Case"]
    ax.scatter3D(x, y, z, color = "red")
    plt.title("Covid")
    plt.show()
```

Covid



In [ ]:

## TSV File Format

```
In [2]: import pandas as pd
df = pd.read_csv('State.tsv')
print("Dataset :")
print()
print(df)
```

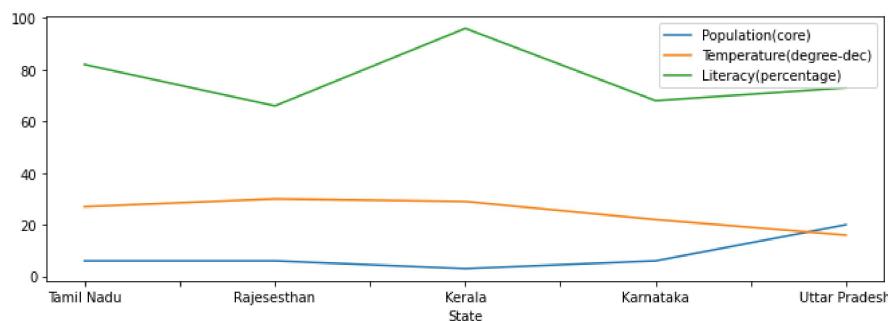
Dataset :

	State\tPopulation(core)\tTemperature(degree-dec)\tLiteracy(percentage)
0	Tamil Nadu\t6\t27\t82
1	Rajesesthan\t6\t30\t66
2	Kerala\t3\t29\t96
3	Karnataka\t6\t22\t68
4	Uttar Pradesh\t20\t16\t73

## Line

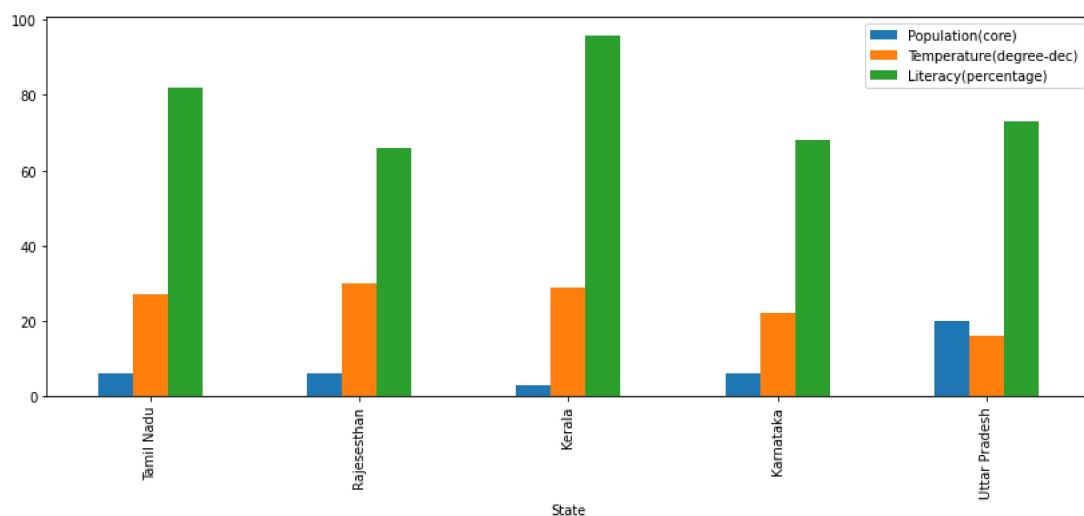
```
In [8]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [9.50, 3.50]
plt.rcParams["figure.autolayout"] = True

df = pd.read_csv('State.tsv',sep='\t')
df.set_index('State').plot()
plt.show()
```



## Bar

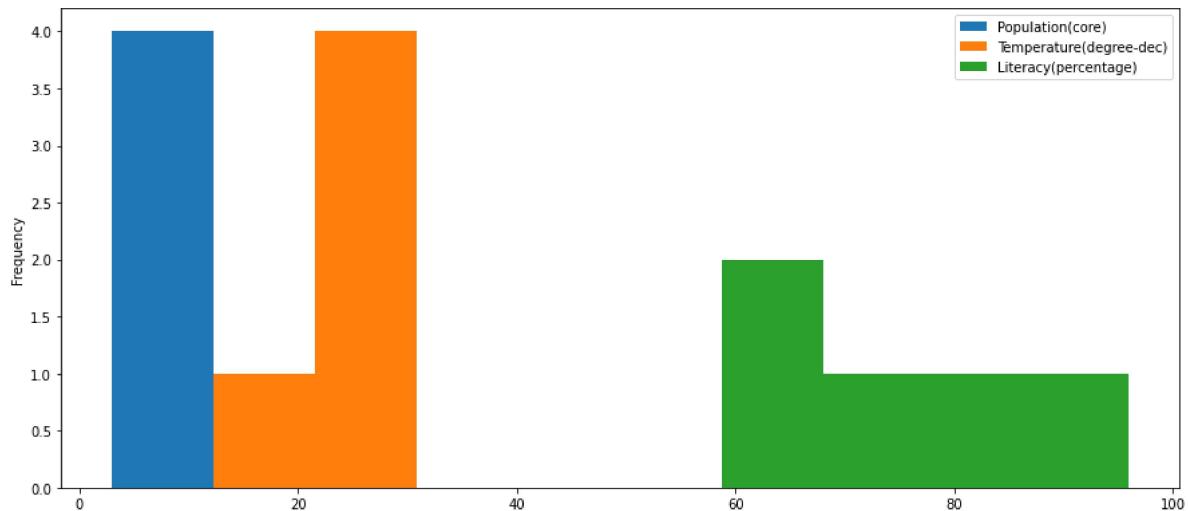
```
In [10]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [11.50, 5.50]
plt.rcParams["figure.autolayout"] = True
df = pd.read_csv('State.tsv',sep='\t')
df.set_index('State').plot(kind = 'bar')
plt.show()
```



## Histogram

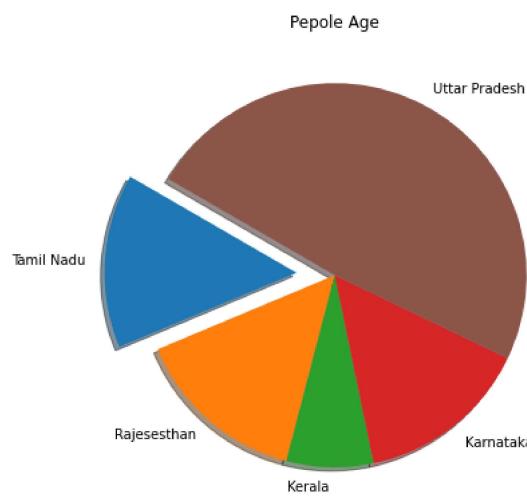
```
In [11]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [12.50, 5.50]
plt.rcParams["figure.autolayout"] = True

df = pd.read_csv('State.tsv',sep='\t')
df.plot(kind = 'hist')
plt.show()
```



## Pie Chart

```
In [12]: import matplotlib.pyplot as plt
import pandas as pd
df = pd.read_csv('State.tsv',sep='\t')
name = df['State']
ppl=df["Population(core)"]
colors = ["#1f77b4", "#ff7f0e", "#2ca02c", "#d62728", "#8c564b"]
size = (0.2, 0, 0, 0, 0)
plt.pie(ppl, labels=name, explode=size, colors=colors, shadow=True, startangle=150)
plt.title("Pepole Age")
plt.show()
```

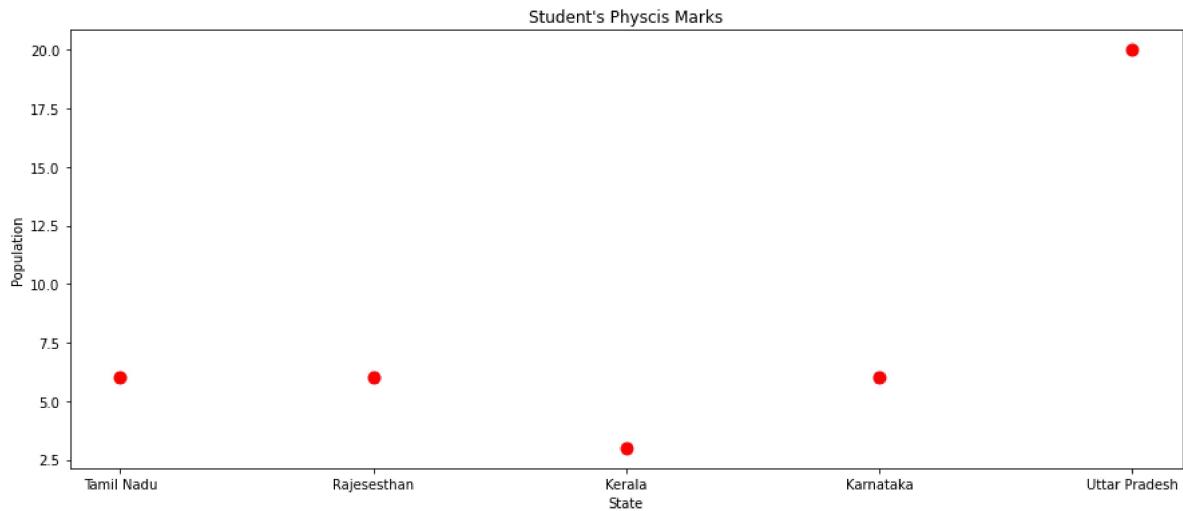


## Scatter Plot

```
In [14]: ⌘ import matplotlib.pyplot as plt
import csv
df = pd.read_csv('State.tsv',sep='\t')
plt.scatter(df['State'],df['Population(core)'], color = 'r', s = 80)

plt.xlabel('State')
plt.ylabel('Population')
plt.title("Student's Physcis Marks")

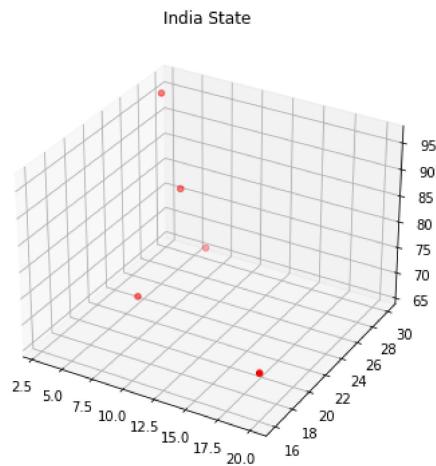
plt.show()
```



## 3D Scatter Plot

```
In [16]: ⌘ from mpl_toolkits import mplot3d
import numpy as np
import matplotlib.pyplot as plt

fig = plt.figure(figsize = (9, 5))
ax = plt.axes(projection ="3d")
x = df['Population(core)']
y = df['Temperature(degree-dec)']
z = df["Literacy(percentage)"]
ax.scatter3D(x, y, z, color = "red")
plt.title("India State")
plt.show()
```



In [ ]:

## XLS File Format

```
In [2]: import pandas as pd
```

```
In [19]: df = pd.read_excel('student_marks - student_marks.xls')
print("Dataset :")
print(df)
```

Dataset :

	Name	Maths	Physics	Chemistry	English	Biology	Economics	History	\
0	John	55	45	56	87	21	52	89	
1	Suresh	75	55	66	64	90	61	58	
2	Ramesh	25	54	89	76	95	87	56	
3	Jessica	78	55	86	63	54	89	75	
4	Jennifer	58	96	78	46	96	77	83	

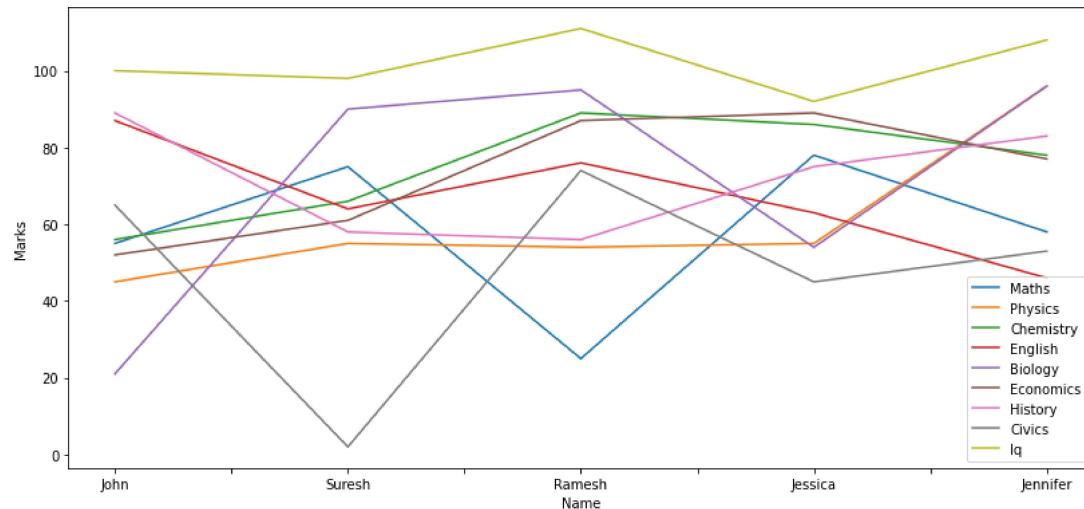
	Civics	Iq
0	65	100
1	2	98
2	74	111
3	45	92
4	53	108

```
In [ ]: 
```

## Line

```
In [20]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [11.50, 5.50]
plt.rcParams["figure.autolayout"] = True

df = pd.read_excel('student_marks - student_marks.xls')
df.set_index('Name').plot(ylabel='Marks')
plt.show()
```

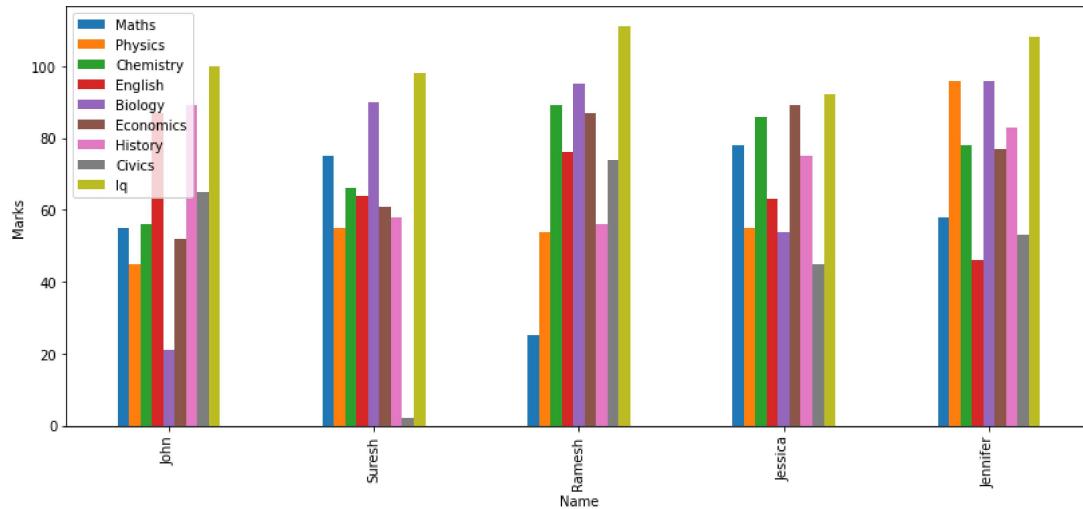


## Bar

```
In [21]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [11.50, 5.50]
plt.rcParams["figure.autolayout"] = True

df = pd.read_excel('student_marks - student_marks.xls')

df.set_index('Name').plot(kind = 'bar', ylabel='Marks')
plt.show()
```

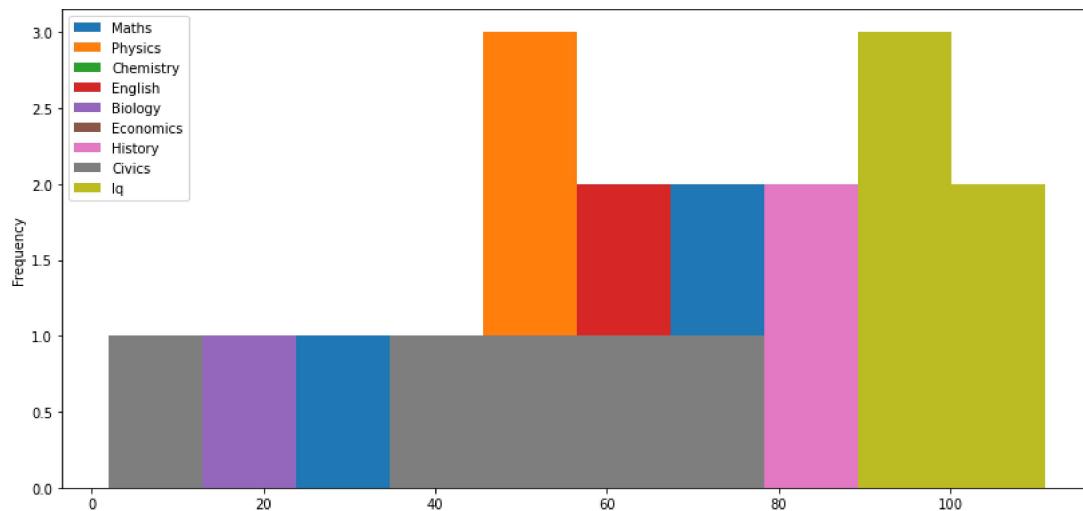


## Histogram

```
In [22]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [11.50, 5.50]
plt.rcParams["figure.autolayout"] = True

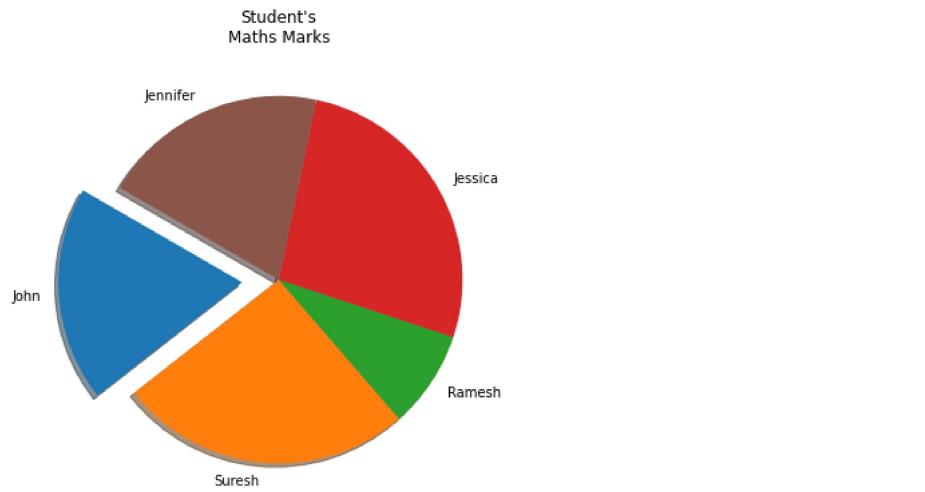
df = pd.read_excel('student_marks - student_marks.xls')

df.plot(kind = 'hist')
plt.show()
```



## Pie Chart

```
In [23]: import matplotlib.pyplot as plt
import pandas as pd
df = pd.read_excel('student_marks - student_marks.xls')
s_name = df['Name']
subject = df["Maths"]
colors = ["#1f77b4", "#ff7f0e", "#2ca02c", "#d62728", "#8c564b"]
size = (0.2, 0, 0, 0, 0)
plt.pie(subject, labels=s_name, explode=size, colors=colors, shadow=True, startangle=150)
plt.title("Student's\nMaths Marks")
plt.show()
```

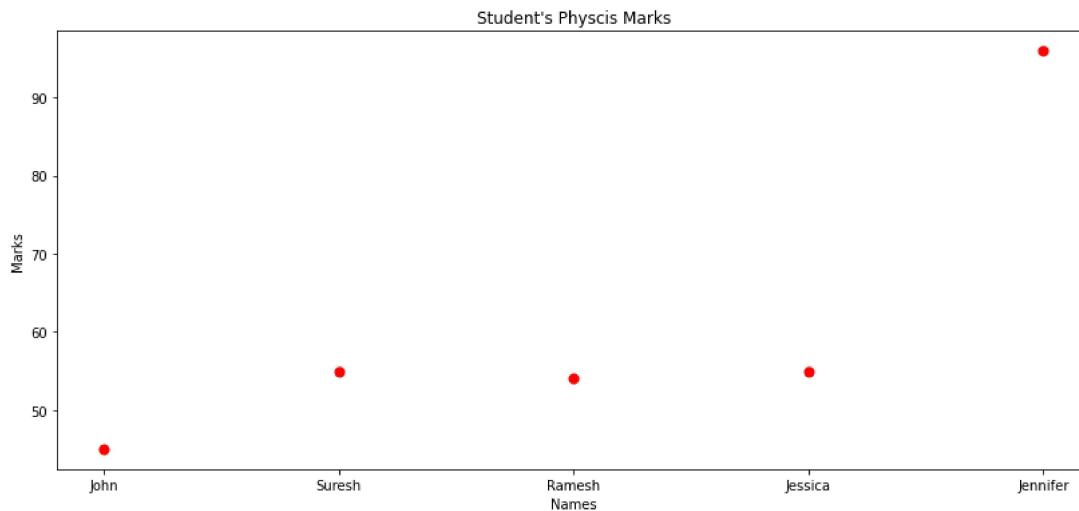


## Scatter Plot

```
In [24]: import matplotlib.pyplot as plt
import csv
df = pd.read_excel('student_marks - student_marks.xls')
plt.scatter(df['Name'], df['Physics'], color = 'r', s = 50)

plt.xlabel('Names')
plt.ylabel('Marks')
plt.title("Student's Physcis Marks")

plt.show()
```

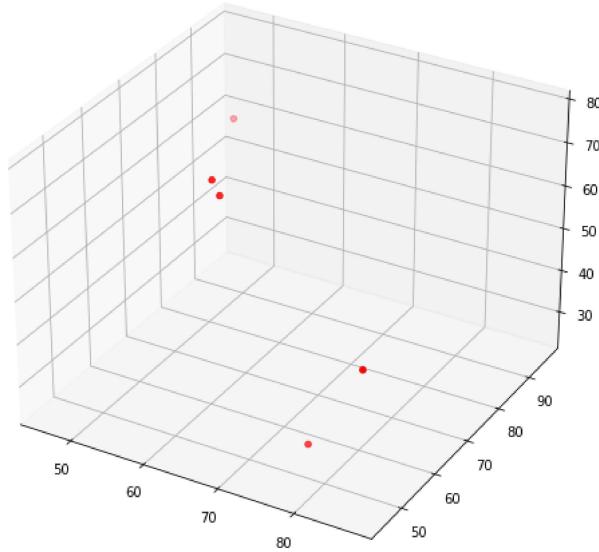


## 3D Scatter Plot

```
In [25]: ┌─▶ from mpl_toolkits import mplot3d
    import numpy as np
    import matplotlib.pyplot as plt

    fig = plt.figure(figsize = (10, 7))
    ax = plt.axes(projection ="3d")
    x = df['English']
    y = df['Physics']
    z = df["Maths"]
    ax.scatter3D(x, y, z, color = "red")
    plt.title("3D Scatter plot of Student's Three Subject")
    plt.show()
```

3D Scatter plot of Student's Three Subject



In [ ]:

## XLXS File Format

```
In [34]: import pandas as pd
df = pd.read_excel('Health.xlsx')
print("Dataset :")
print()
print(df)
```

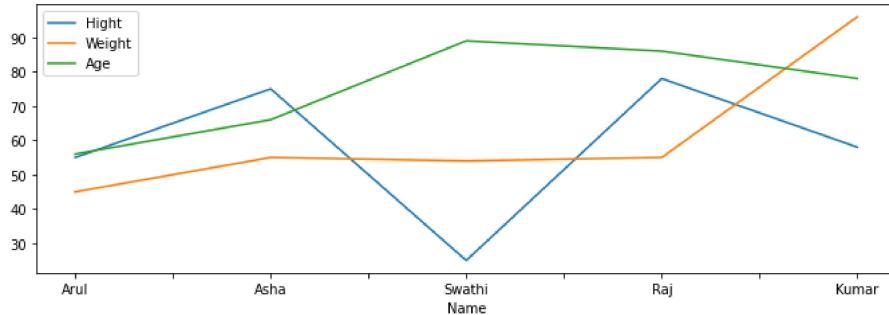
Dataset :

	Name	Hight	Weight	Age
0	Arul	55.0	45.0	56.0
1	Asha	75.0	55.0	66.0
2	Swathi	25.0	54.0	89.0
3	Raj	78.0	55.0	86.0
4	Kumar	58.0	96.0	78.0

## Line

```
In [15]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [9.50, 3.50]
plt.rcParams["figure.autolayout"] = True

df = pd.read_excel('Health.xlsx')
df.set_index('Name').plot()
plt.show()
```

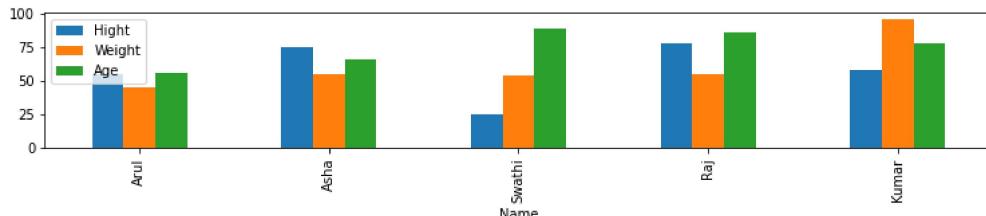


## Bar

```
In [19]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [10.50, 2.50]
plt.rcParams["figure.autolayout"] = True

df = pd.read_excel('Health.xlsx')

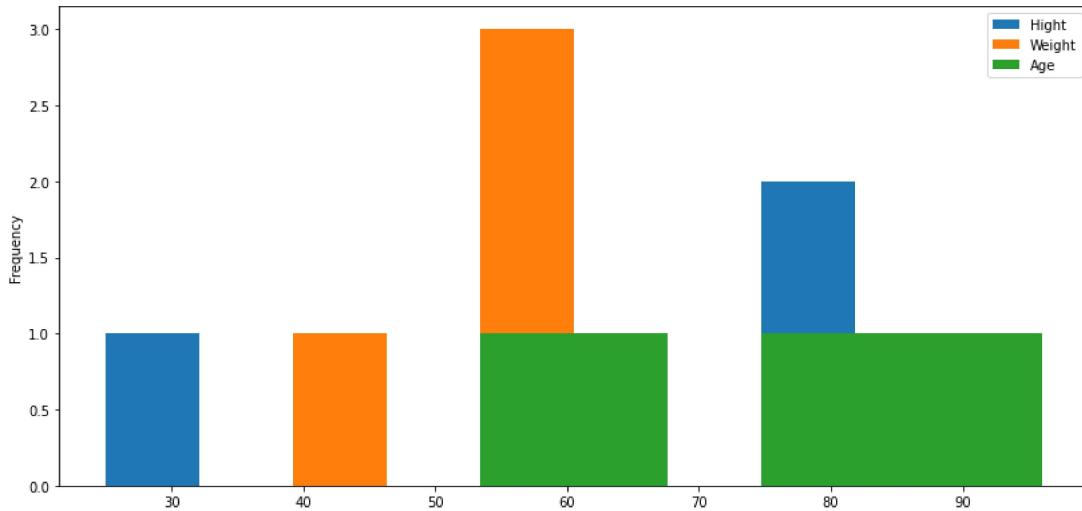
df.set_index('Name').plot(kind = 'bar')
plt.show()
```



## Histogram

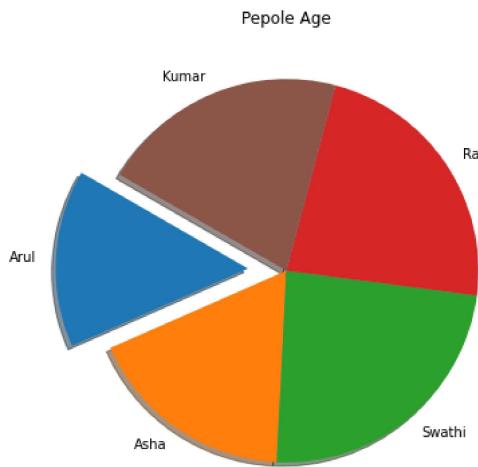
```
In [21]: import pandas as pd
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = [11.50, 5.50]
plt.rcParams["figure.autolayout"] = True

df = pd.read_excel('Health.xlsx')
df.plot(kind = 'hist')
plt.show()
```



## Pie Chart

```
In [24]: import matplotlib.pyplot as plt
import pandas as pd
df = pd.read_excel('Health.xlsx')
name = df['Name']
Age = df['Age']
colors = ["#1f77b4", "#ff7f0e", "#2ca02c", "#d62728", "#8c564b"]
size = (0.2, 0, 0, 0, 0)
plt.pie(Age, labels=name, explode=size, colors=colors, shadow=True, startangle=150)
plt.title("Pepole Age")
plt.show()
```

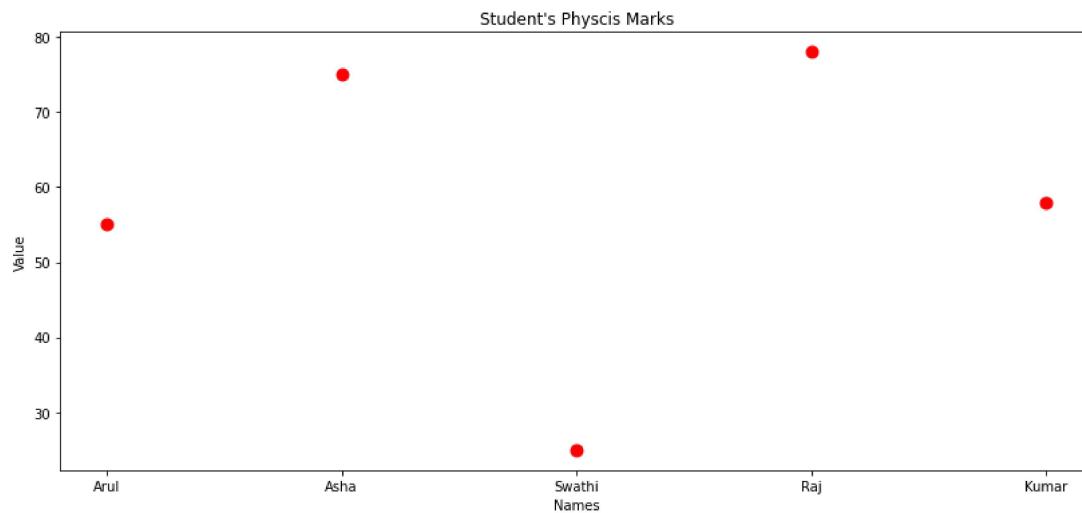


## Scatter Plot

```
In [32]: import matplotlib.pyplot as plt
import csv
df = pd.read_excel('Health.xlsx')
plt.scatter(df['Name'], df['Hight'], color = 'r', s = 80)

plt.xlabel('Names')
plt.ylabel('Value')
plt.title("Student's Physcis Marks")

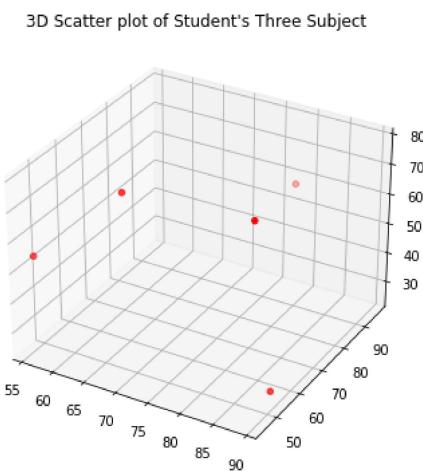
plt.show()
```



## 3D Scatter Plot

```
In [30]: from mpl_toolkits import mplot3d
import numpy as np
import matplotlib.pyplot as plt

fig = plt.figure(figsize = (9, 5))
ax = plt.axes(projection ="3d")
x = df['Age']
y = df['Weight']
z = df["Hight"]
ax.scatter3D(x, y, z, color = "red")
plt.title("3D Scatter plot of Student's Three Subject")
plt.show()
```



In [ ]:

```
In [4]: └─▶ from PIL import Image
```

```
In [13]: └─▶ png=Image.open('587777.png')
png.show()
```

```
In [12]: └─▶ jpg=Image.open('pankaj-patel-Fi-GJaLRGKc-unsplash.jpg')
jpg.show()
```

```
Out[12]:
```

```
tags.html.js
1 module.exports = (scope) => `<div class="tags">
2 ${scope.tags.map(tag => `
3 ${(() => { tag.classes = (tag.classes || []).push(tag.name.matches('js') ? "tag-blue" : "") })()
4 <a href="${tag.link}" class="${tag.classes.join(' ')}">${tag.name}</a>
5 `).join('')}
```

```
article.html.js
1 module.exports = (scope) => `<article>
2 <header>
3 <h1><a href="${scope.link}">${scope.title}</a></h1>
4 ${require('../tags.html.js')(scope)}
5 <div>
6   ${scope.body}
7 </div>
8 </article>`;
9
10
video.html.js
1 module.exports = (scope) => `<article>
2 <header>
3 <h1><a href="${scope.link}">${scope.title}</a></h1>
4 ${require('../tags.html.js')(scope)}
5 <div>
```

```
In [14]: └─▶ bmp=Image.open('813087.bmp')
bmp.show()
```

```
In [15]: └─▶ tiff=Image.open('587777.tiff')
tiff.show()
```

```
In [ ]:
```

## Video and Audio

In [2]:

```
import IPython
```

In [3]:

```
IPython.display.Audio("Pikachu - Notification Tone.mp3")
```

Out[3]:

0:00 / 0:01

In [4]:

```
from IPython.display import Video  
Video("Verata_mame.mp4")
```

Out[4]:

0:00 / 0:15



