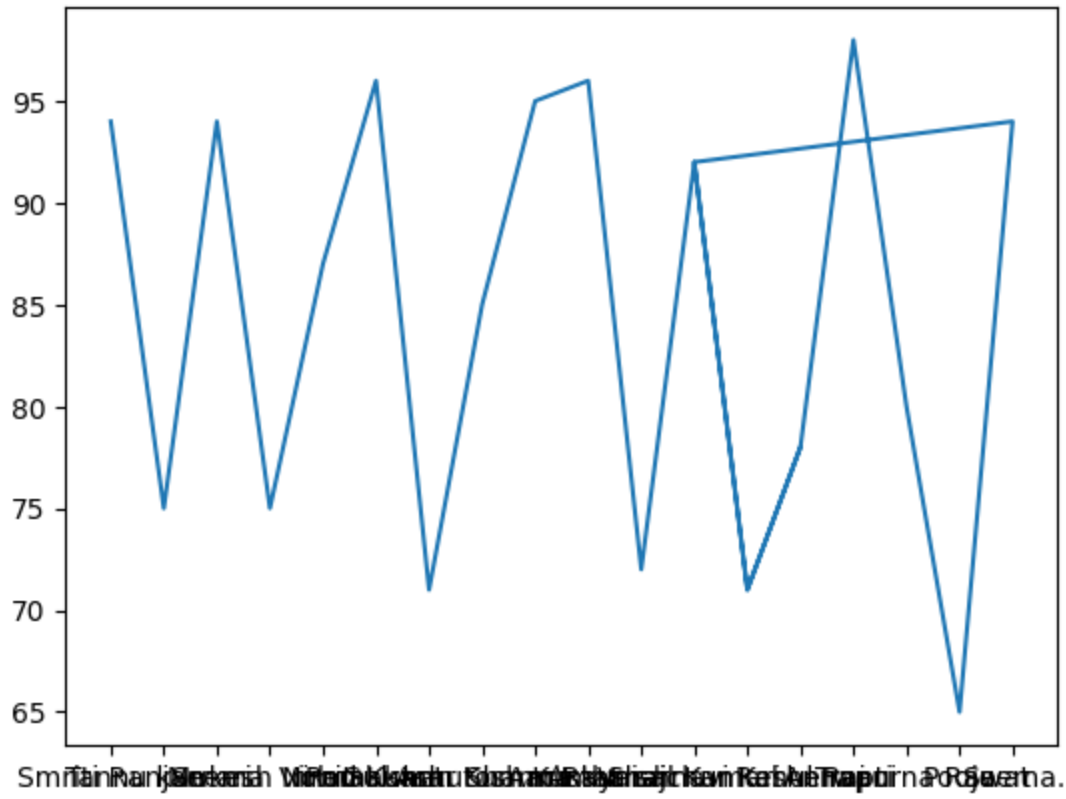
In [1]:
```
#BAR CHART

import pandas as pd
import matplotlib.pyplot as plt
df= pd.read_csv('marks1.csv')
df
```

Out[1]:

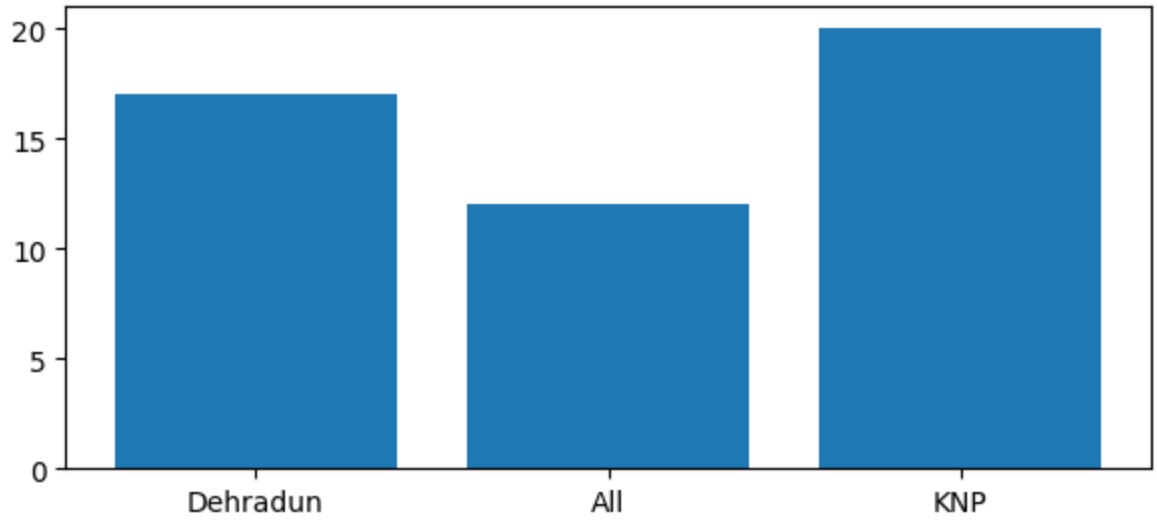
	Name	English	Hindi	Maths	Science	Social Science
0	Smriti Ranjan	85	83	93	91	94
1	Tannu kumari	90	75	78	73	75
2	Seema	93	98	78	89	94
3	Mukesh Nirmal	92	71	72	96	75
4	rohit	75	78	87	90	87
5	Ramakant	84	76	75	76	96
6	Vinod Kumar Sharma	75	96	74	81	71
7	Gulshan Kumar Ray	73	74	84	76	85
8	Ashutosh Kumar raj	89	70	80	97	95
9	Amit kumar	80	71	73	87	96
10	Astha sachan	77	71	77	95	72
11	Shail Kumari	95	97	80	92	92
12	Vaishnavi Kesherwani	82	90	88	91	71
13	Rahul Rai	75	77	76	80	78
14	Trapti	91	95	74	94	98
15	Annapurna Rawat	70	75	79	96	80
16	Pooja	75	85	89	56	65
17	Seema.	93	75	78	89	94
18	Shail Kumari	95	97	80	92	92
19	Vaishnavi Kesherwani	82	80	88	91	71
20	Rahul Rai	75	77	76	80	78

In [2]:
```
plt.plot(df['Name'],df['Social Science'])
plt.show()
```

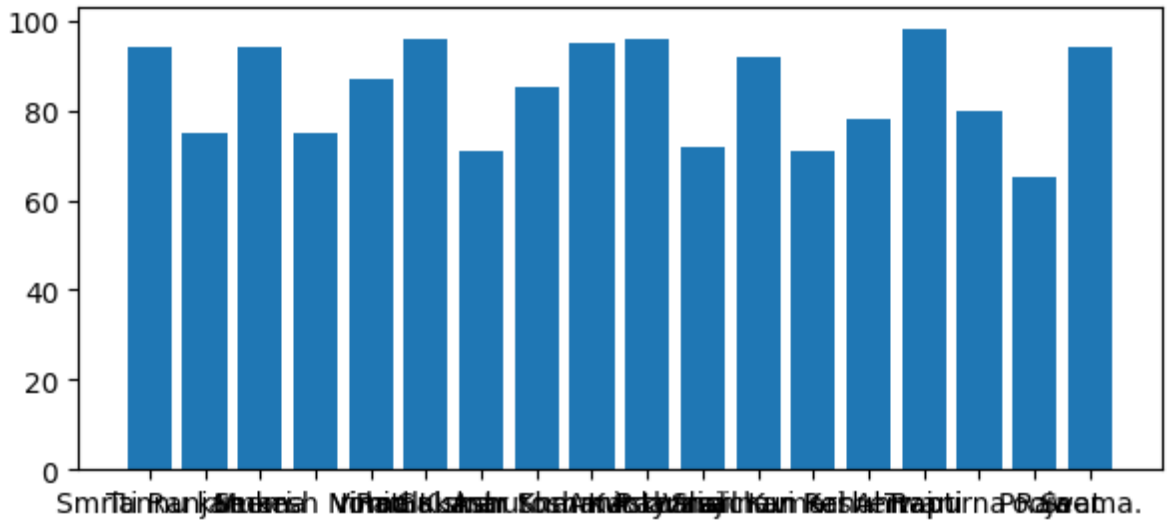


In [3]:
```
import numpy as np
plt.figure(figsize=(7,3))

x =np.array(['Dehradun','All','KNP'])
y =np.array([17,12,20])
plt.bar(x,y)
plt.show()
```

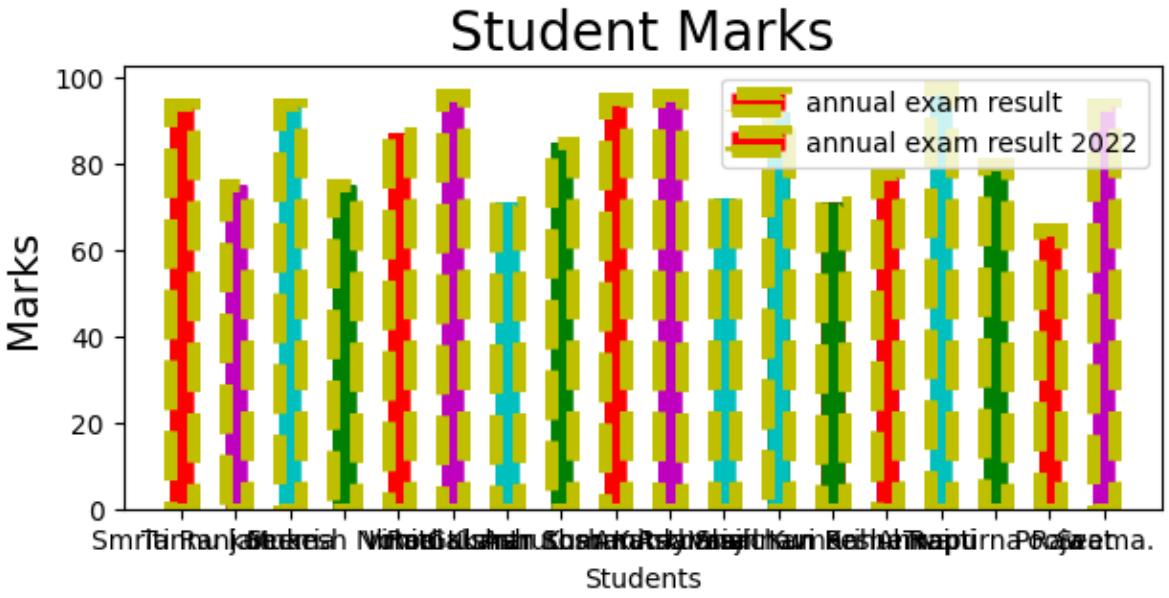


In [4]:
```
plt.figure(figsize=(7,3))
plt.bar(df['Name'],df['Social Science'])
plt.show()
```

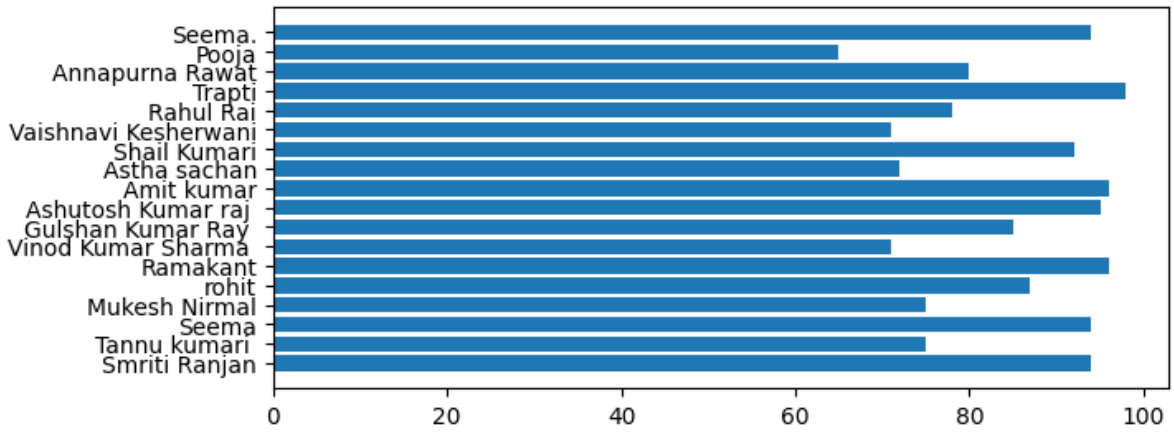


In [5]:
```
#cmykrgbw -cyan, magenta,yellow,black,red,green,blue,white
plt.figure(figsize=(7,3))
color =['r','m','c','g']
plt.title("Student Marks", fontsize=20)
plt.xlabel('Students')
plt.ylabel('Marks', fontsize=15)
plt.bar(df['Name'],df['Social Science'],color=color, width=0.4, align='center'
plt.bar (df['Name'],df['Social Science'], color=color, width=0.4, align='cente
plt.bar (df['Name'],df['Social Science'], color=color, width=0.4, align='cente


plt.legend()
plt.show()
```

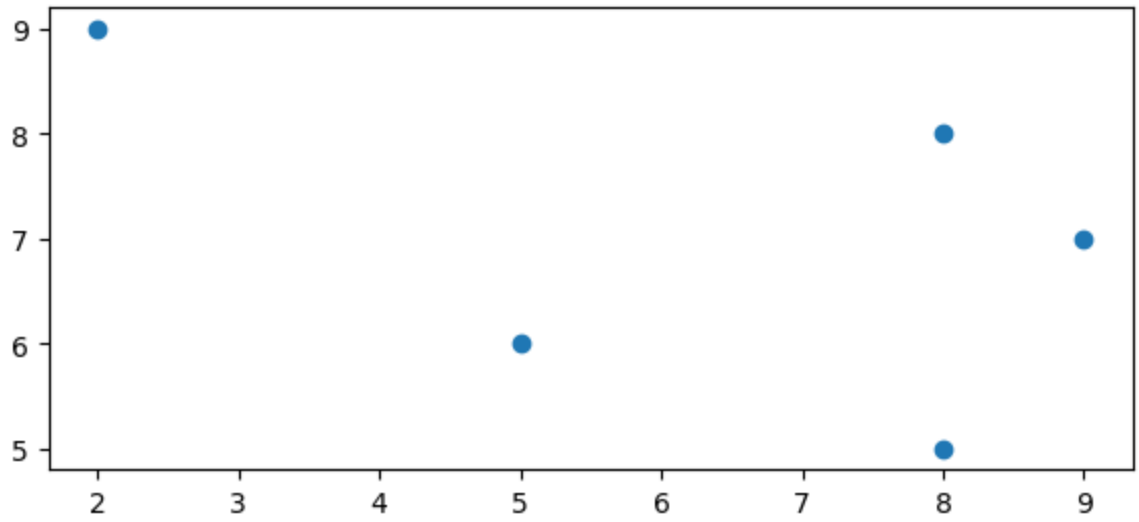


In [6]:
```
plt.figure(figsize=(7,3))
plt.barh(df['Name'], df['Social Science'])
plt.show()
```

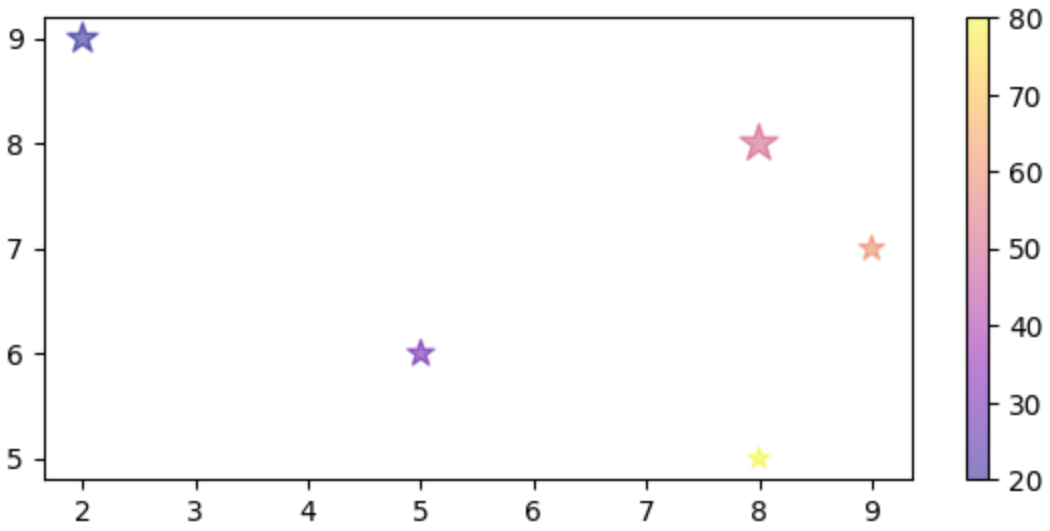


In [ ]:
```
#Scatter Plot
```

In [7]:
```
x = [2,5,8,9,8]
y = [9,6,8,7,5]
plt.figure(figsize=(7,3))
plt.scatter(x,y)
plt.show()
```



In [8]:
```
x = [2,5,8,9,8]
y = [9,6,8,7,5]
#a =['r','g','b','m','g'color=a,]
s =[130,100,201,90,60]
color=[20,30,50,60,80]
plt.figure(figsize=(7,3))
plt.scatter(x,y, sizes =s, c=color,  alpha=0.5, marker='*' , cmap='plasma')
plt.colorbar()
plt.show()
```



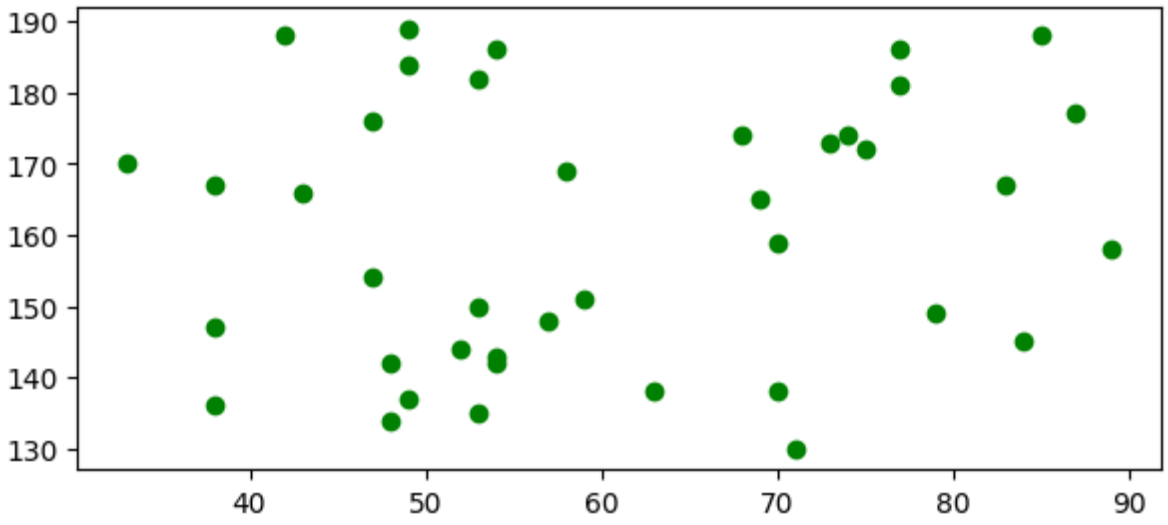
In [9]:
```
x =np.random.randint(30,90,40)
x
```

Out[9]:
```
array([43, 54, 44, 87, 64, 65, 76, 40, 81, 51, 69, 31, 50, 46, 77, 75, 56,
       79, 70, 41, 54, 69, 37, 43, 48, 88, 73, 64, 39, 61, 50, 72, 38, 38,
       44, 34, 78, 69, 56, 82])
```

In [10]:
```
y =np.random.randint(130,190,40)
y
```

Out[10]:
```
array([161, 134, 179, 134, 166, 185, 163, 181, 163, 179, 187, 156, 185,
       184, 189, 156, 139, 184, 163, 152, 137, 131, 140, 147, 188, 151,
       138, 171, 174, 182, 187, 131, 188, 156, 179, 183, 136, 144, 173,
       163])
```

In [11]:
```
x =[33, 79, 38, 89, 59, 42, 68, 49, 57, 58, 53, 53, 71, 48, 54, 77, 74,
       54, 38, 70, 38, 87, 53, 52, 43, 49, 49, 70, 48, 84, 47, 73, 69, 83,
       85, 77, 75, 47, 63, 54]
y =[170, 149, 136, 158, 151, 188, 174, 184, 148, 169, 182, 150, 130,
       134, 142, 181, 174, 186, 147, 159, 167, 177, 135, 144, 166, 137,
       189, 138, 142, 145, 154, 173, 165, 167, 188, 186, 172, 176, 138,
       143]
plt.figure(figsize=(7,3))
plt.scatter(x,y, color='g')
plt.show()
```



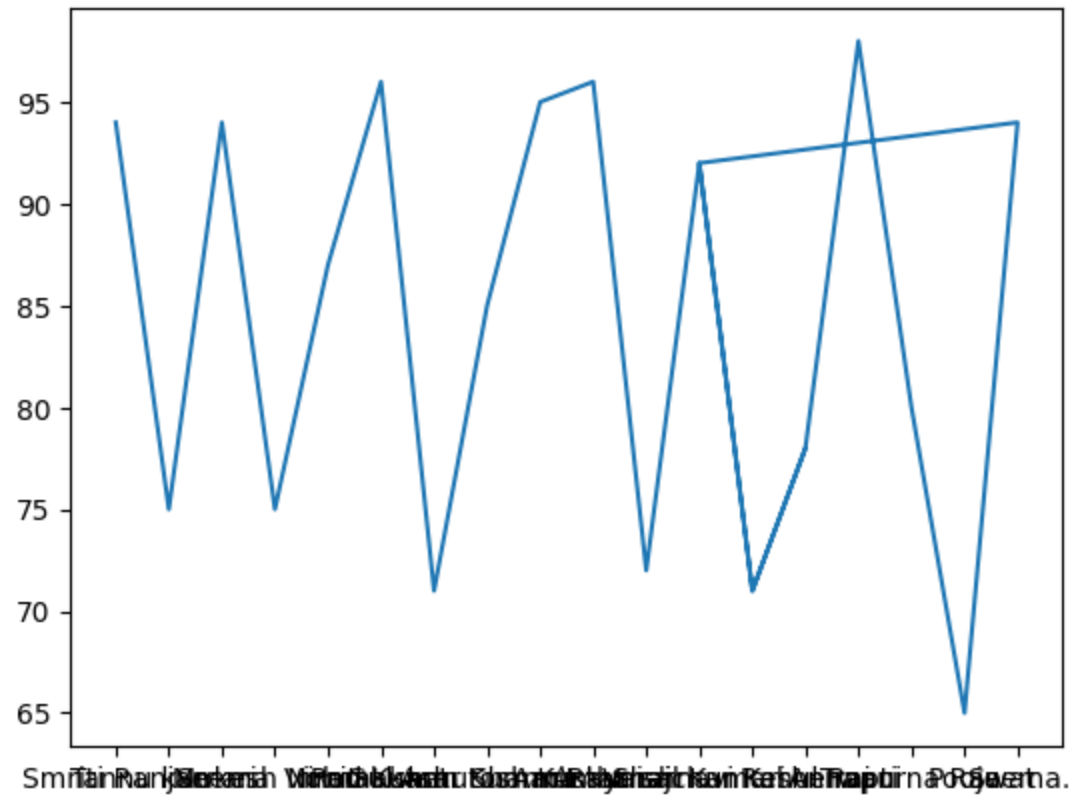
In [12]:
```
from PIL import Image
```

```
plt.savefig('Scat.jpeg')
```

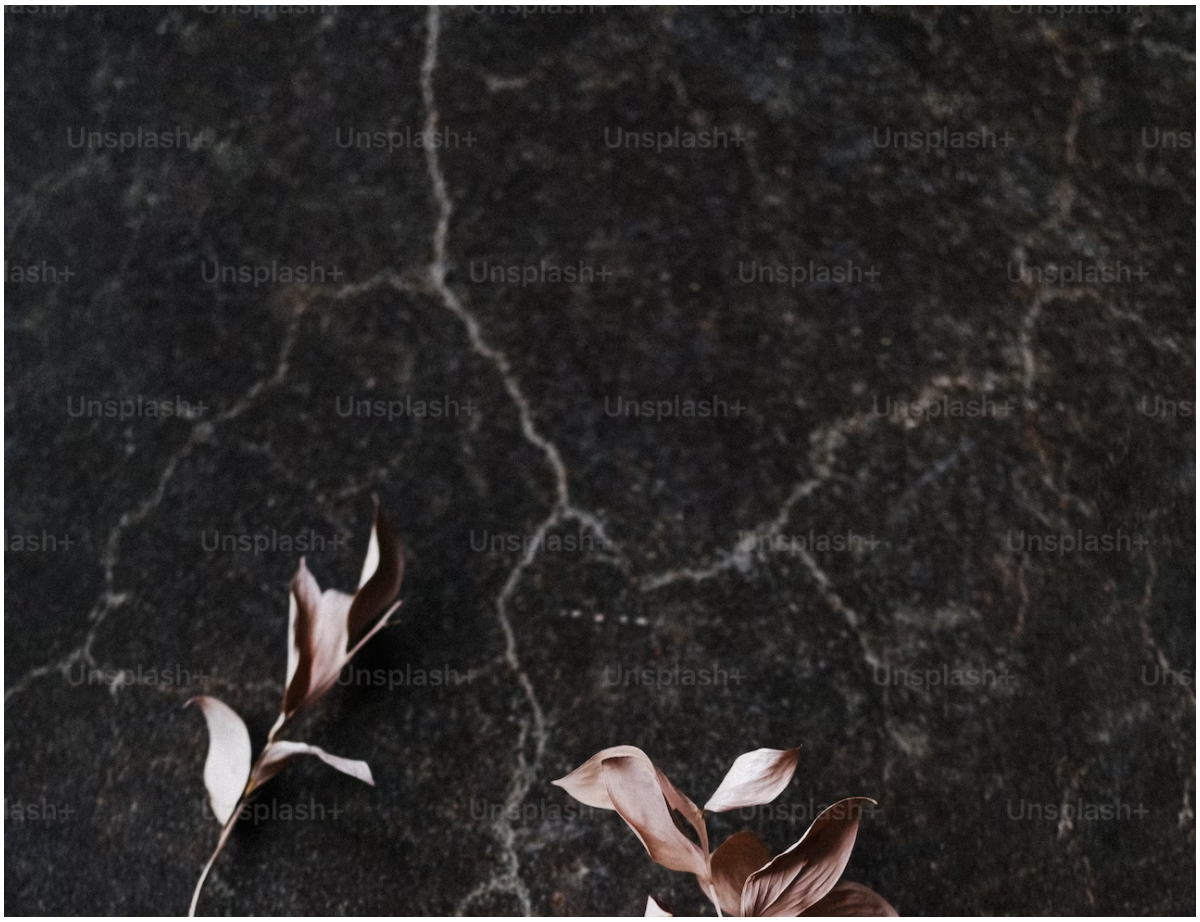
In [14]:
```
# histograms
# pie Chart
```

In [15]:
```
plt.plot(df['Name'], df['Social Science'])
```

Out[15]:
```
[<matplotlib.lines.Line2D at 0x1a40213a550>]
```



#Iris dataSet

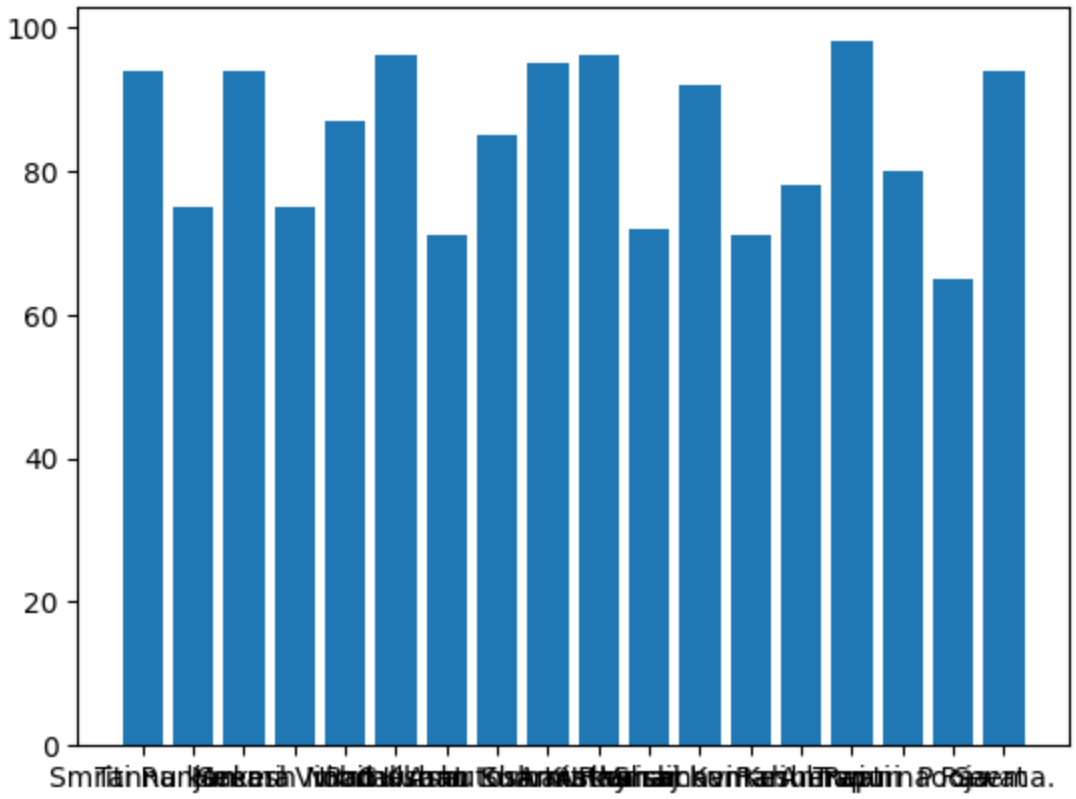

Unsplash+

In [16]:
```
df= pd.read_csv('marks1.csv')
df
```

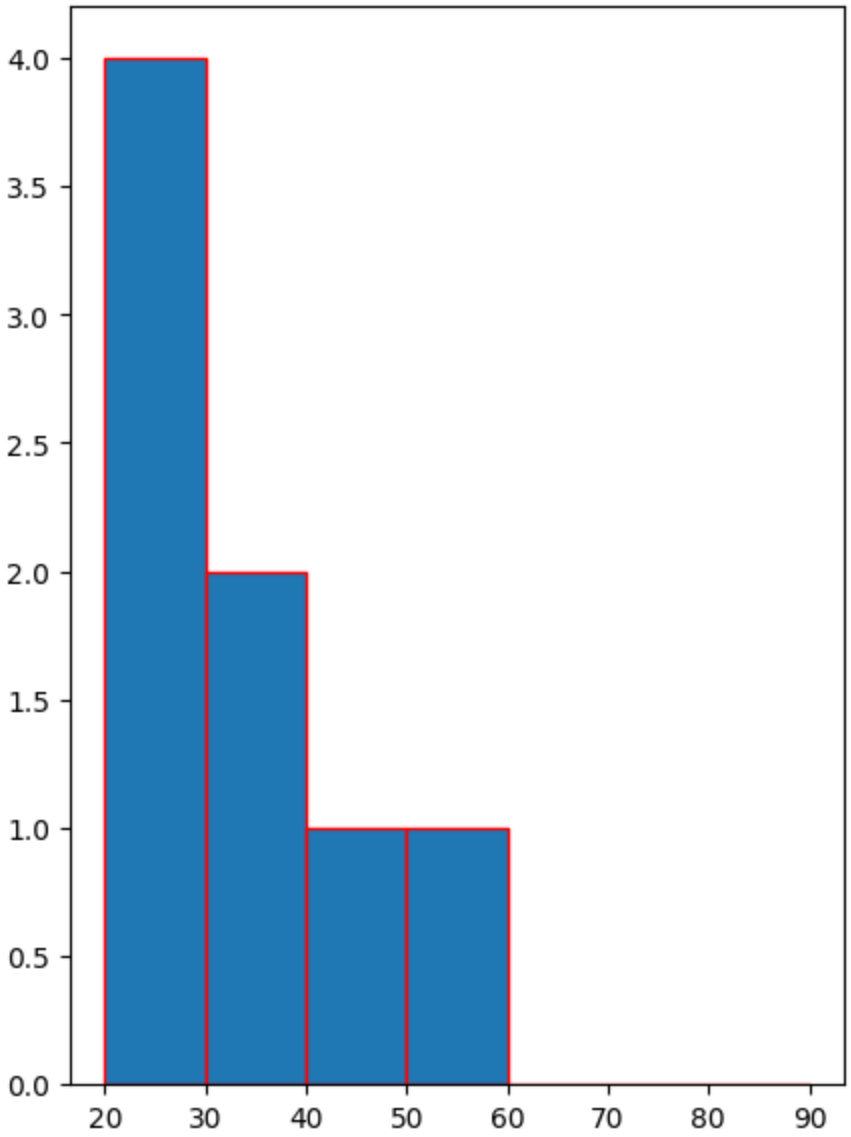
Out[16]:

	Name	English	Hindi	Maths	Science	Social Science
0	Smriti Ranjan	85	83	93	91	94
1	Tannu kumari	90	75	78	73	75
2	Seema	93	98	78	89	94
3	Mukesh Nirmal	92	71	72	96	75
4	rohit	75	78	87	90	87
5	Ramakant	84	76	75	76	96
6	Vinod Kumar Sharma	75	96	74	81	71
7	Gulshan Kumar Ray	73	74	84	76	85
8	Ashutosh Kumar raj	89	70	80	97	95
9	Amit kumar	80	71	73	87	96
10	Astha sachan	77	71	77	95	72
11	Shail Kumari	95	97	80	92	92
12	Vaishnavi Kesherwani	82	90	88	91	71
13	Rahul Rai	75	77	76	80	78
14	Trapti	91	95	74	94	98
15	Annapurna Rawat	70	75	79	96	80
16	Pooja	75	85	89	56	65
17	Seema.	93	75	78	89	94
18	Shail Kumari	95	97	80	92	92
19	Vaishnavi Kesherwani	82	80	88	91	71
20	Rahul Rai	75	77	76	80	78

In [17]:
```
plt.bar(df['Name'], df['Social Science'])
plt.savefig('plot.png')
```



In [18]:
```
# Histogram
x =[22,23,23,27,38,34,49,57]
b =[20,30,40,50,60,70,80,90]
plt.figure(figsize=(5,7))
plt.hist(x, bins =b, edgecolor='r')
plt.show()
```



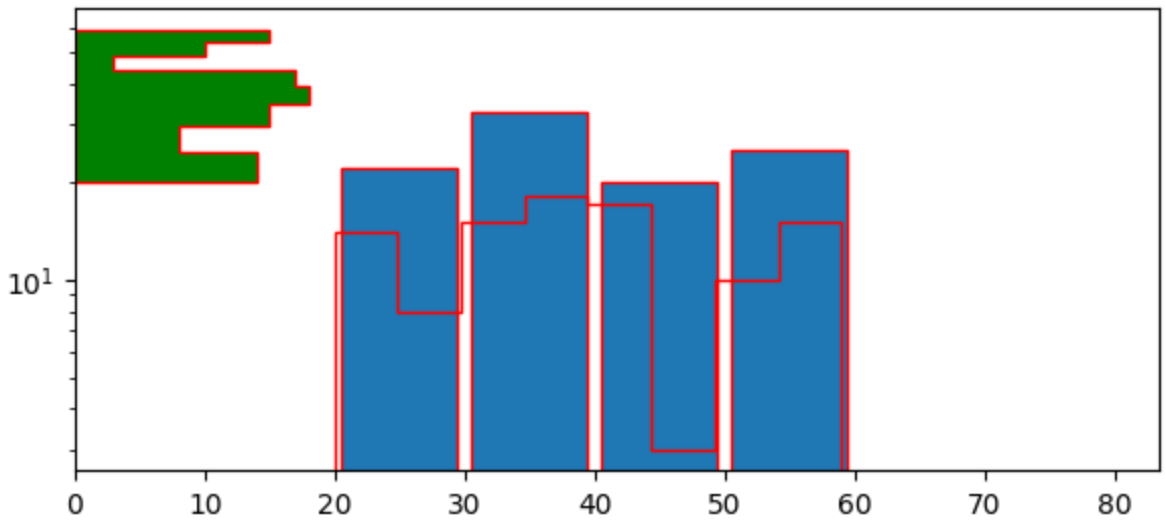
In [19]:
```
value1 =np.random.randint(20,60,100)
value1
```

Out[19]:
```
array([28, 24, 35, 40, 29, 33, 30, 43, 35, 45, 47, 58, 33, 46, 42, 21, 32,
       50, 48, 47, 53, 52, 45, 58, 56, 56, 33, 50, 42, 41, 37, 27, 40, 32,
       53, 23, 55, 23, 31, 36, 24, 59, 25, 51, 52, 50, 27, 25, 48, 37, 28,
       34, 35, 49, 23, 27, 50, 27, 35, 28, 59, 37, 35, 45, 42, 57, 24, 41,
       39, 52, 50, 53, 46, 55, 55, 58, 51, 39, 30, 37, 46, 59, 24, 21, 59,
       43, 56, 34, 49, 49, 44, 30, 57, 50, 20, 36, 38, 34, 43, 54])
```

In [20]:
```
value2= [20, 50, 41, 44, 55, 36, 31, 41, 32, 44, 24, 34, 43, 21, 38, 25, 36,
       38, 34, 33, 35, 58, 37, 50, 20, 42, 46, 28, 56, 56, 28, 37, 21, 21,
       54, 55, 27, 30, 55, 52, 37, 57, 59, 40, 53, 35, 53, 40, 44, 44, 32,
       24, 44, 59, 42, 57, 20, 43, 56, 34, 36, 30, 33, 48, 40, 39, 34, 24,
       38, 26, 33, 52, 37, 55, 56, 38, 48, 59, 28, 22, 50, 37, 32, 24, 36,
       28, 41, 34, 35, 27, 21, 50, 57, 32, 23, 39, 41, 22, 53, 40]
```

In [21]:
```
value2= [20, 50, 41, 44, 55, 36, 31, 41, 32, 44, 24, 34, 43, 21, 38, 25, 36,
       38, 34, 33, 35, 58, 37, 50, 20, 42, 46, 28, 56, 56, 28, 37, 21, 21,
       54, 55, 27, 30, 55, 52, 37, 57, 59, 40, 53, 35, 53, 40, 44, 44, 32,
       24, 44, 59, 42, 57, 20, 43, 56, 34, 36, 30, 33, 48, 40, 39, 34, 24,
       38, 26, 33, 52, 37, 55, 56, 38, 48, 59, 28, 22, 50, 37, 32, 24, 36,
       28, 41, 34, 35, 27, 21, 50, 57, 32, 23, 39, 41, 22, 53, 40]
plt.figure(figsize=(7,3))
b =[20,30,40,50,60,70,80]
plt.hist(value2,bins='auto',color='g', edgecolor='r', align='mid', histtype='st
plt.hist(value2,bins='auto',color='g', edgecolor='r', align='mid', histtype='st
plt.hist(value2,bins=b, edgecolor='r', histtype="bar", rwidth=0.9, log=True, la


plt.show()
```



In [22]:
```
x =[45,85,62,85]
y = ['UK','HR','PNJ','JIND']
#c =['g','b','g','r']
ex = [0.1,0.1,0.1,0.2]
plt.pie(x, labels=y, explode=ex, autopct= "%0.1f%%", shadow=True, labeldistance
plt.legend(loc =8)
# plt.show()
plt.savefig('pie.png', bbox_inches='tight')
```