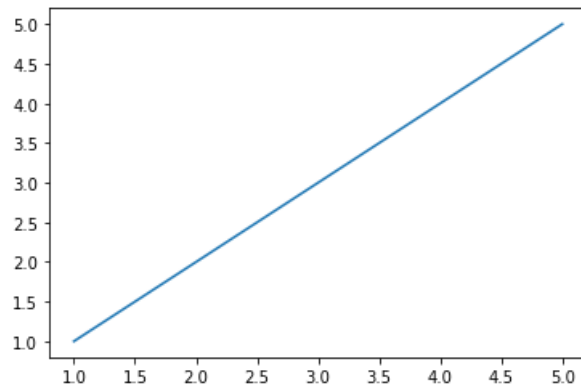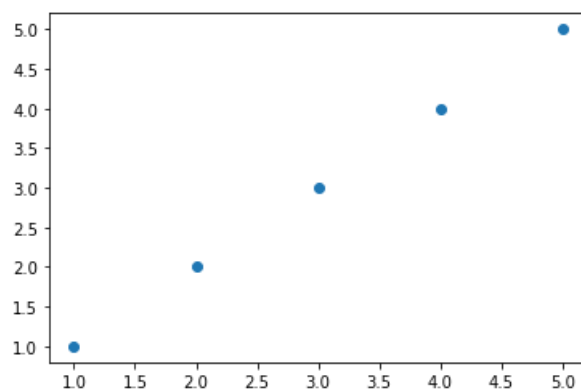```python
In [1]:   #importing libraries
          import matplotlib.pyplot as plt
          import numpy as np
```
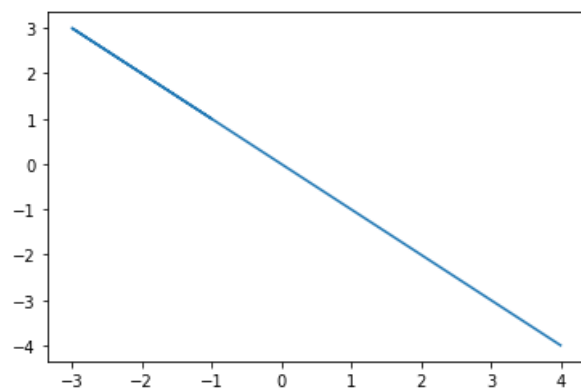
```python
In [2]:   #ploting a simple graph
          x=np.array([1,2,3,4,5])
          y=np.array([1,2,3,4,5])
          plt.plot(x,y)
          plt.show()
```
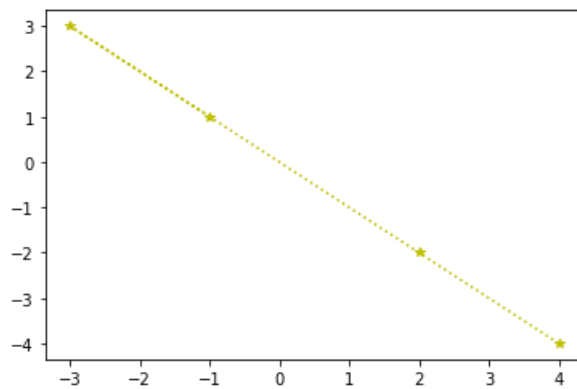


```python
In [3]:   #plot a dotted graph
          plt.plot(x,y,'o')
          plt.show()
```
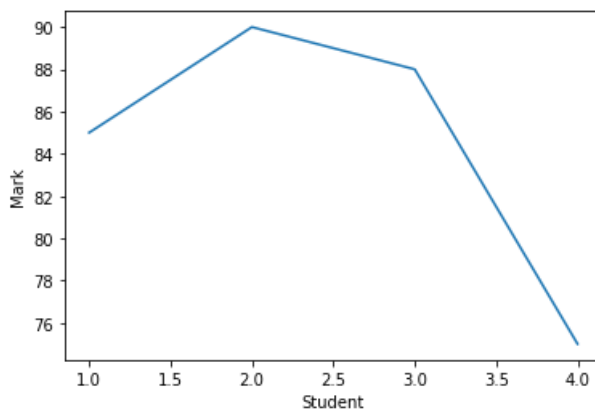


```python
In [4]:   #plot graph with negative values
          x=np.array([-1,-3,2,4])
          y=np.array([1,3,-2,-4])
          plt.plot(x,y)
          plt.show()
```

In [5]:
```python
#plot graph with negative values
x=np.array([-1,-3,2,4])
y=np.array([1,3,-2,-4])
plt.plot(x,y,'*:y')
plt.show()
```
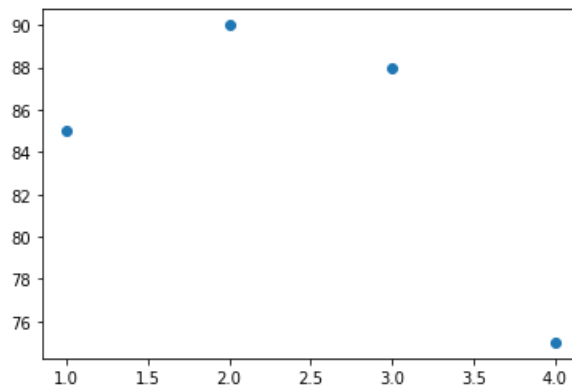

In [6]:
```python
#plot graph with label
x=np.array([1,2,3,4])
y=np.array([85,90,88,75])
plt.xlabel("Student")
plt.ylabel("Mark")
plt.plot(x,y)
plt.show()
```


In [7]:
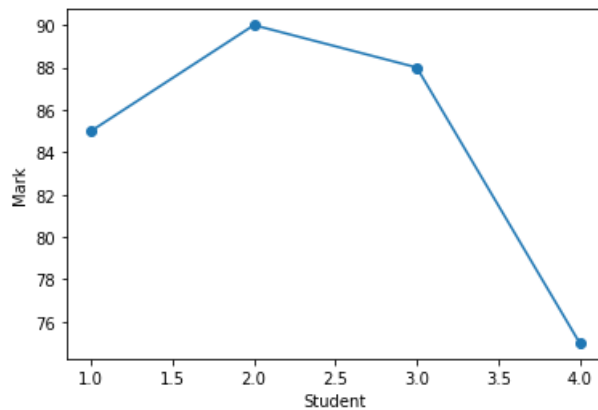```python
plt.scatter(x,y)
```
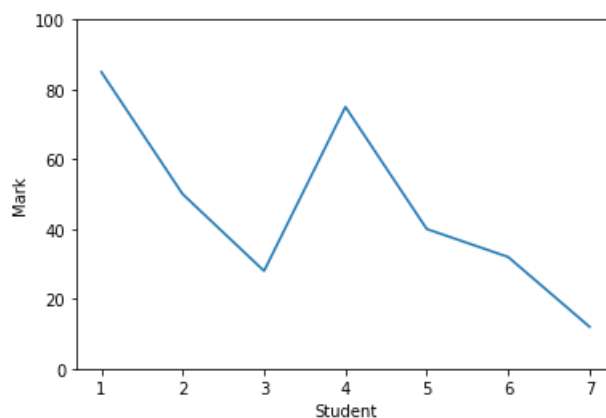
Out[7]: <matplotlib.collections.PathCollection at 0x26a72dc9eb0>

In [8]:
```python
#plot graph with marker
x=np.array([1,2,3,4])
y=np.array([85,90,88,75])
plt.xlabel("Student")
plt.ylabel("Mark")
plt.plot(x,y,marker='o')
plt.show()
```


In [9]:
```python
#plot graph with limit
x=np.array([1,2,3,4,5,6,7])
y=np.array([85,50,28,75,40,32,12])
plt.xlabel("Student")
plt.ylabel("Mark")
plt.ylim(0,100)
plt.plot(x,y)
plt.show()
```
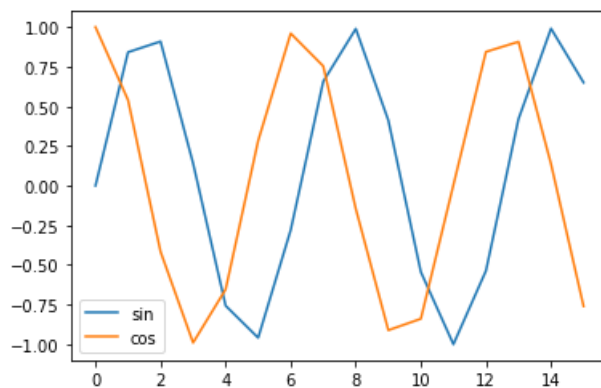
In [10]:
```python
#plot graph with legend
x=np.array([1,2,3,4,5,6,7])
y=np.array([85,50,28,75,40,32,12])
plt.xlabel("Student")
plt.ylabel("Mark")
plt.ylim(0,100)
plt.plot(x,y)
plt.legend("Single line")
plt.show()
```
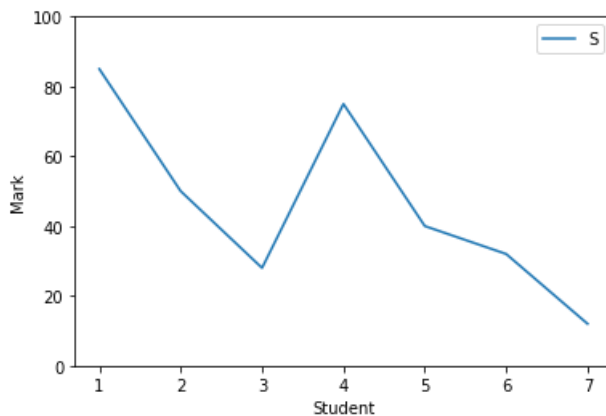

In [11]:
```python
#sin and cos value upto limit 7np
x=np.arange(0,5*np.pi,1)
s=np.sin(x)
c=np.cos(x)
plt.plot(x,s,label="sin")
plt.plot(x,c,label="cos")
plt.legend()
```
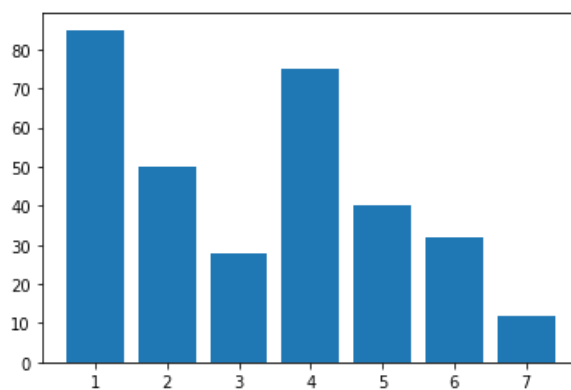
Out[11]: <matplotlib.legend.Legend at 0x26a72f58160>

In [12]:
```python
#histogram using random
x=np.random.random((4,2))
plt.hist(x)
```

Out[12]:
```
(array([[2., 0., 0., 0., 1., 0., 0., 1., 0., 0.],
        [0., 0., 1., 0., 0., 0., 1., 0., 0., 2.]]),
 array([0.10994876, 0.1895275 , 0.26910623, 0.34868497, 0.42826371,
        0.50784244, 0.58742118, 0.66699992, 0.74657865, 0.82615739,
        0.90573613]),
 <a list of 2 BarContainer objects>)
```
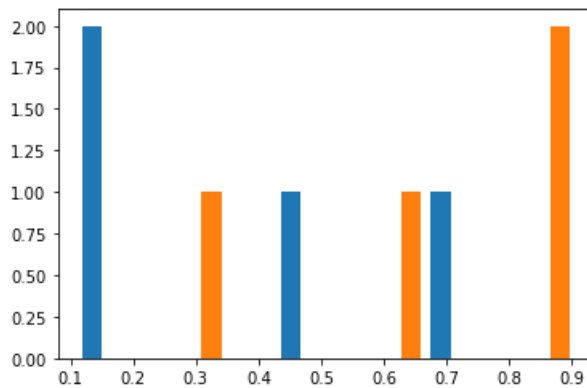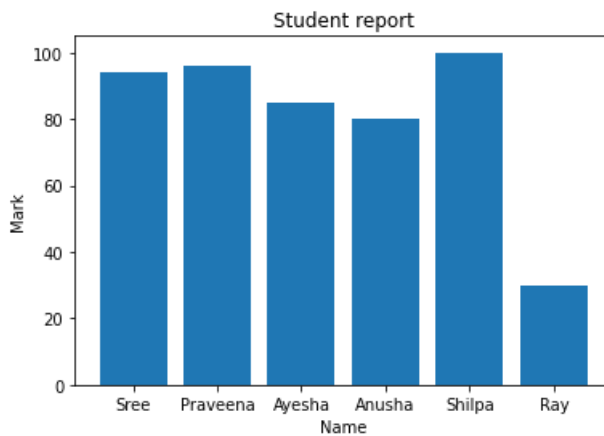

In [13]:
```python
#bar graph
x=np.array([1,2,3,4,5,6,7])
y=np.array([85,50,28,75,40,32,12])
plt.bar(x,y)
```

Out[13]: <BarContainer object of 7 artists>

In [14]:
```python
#dictionary to graph
data={'Sree': 94,'Praveena': 96,'Ayesha':85,'Anusha':80,'Shilpa':100,'Ray':30}
name=list(data.keys())
mark=list(data.values())
plt.bar(range(len(data)), mark, tick_label=name)
plt.title("Student report")
plt.xlabel("Name")
plt.ylabel("Mark")
plt.show()
```

In [15]:
```python
#subplot in row
x1=np.array([1,2,3,4,5])
y1=np.array([25,50,28,32,12])
plt.subplot(1,2,1)
plt.plot(x1,y1)
x2=np.array([5,4,3,2,1])
y2=np.array([12,34,56,43,21])
plt.subplot(1,2,2)
plt.plot(x2,y2)
```

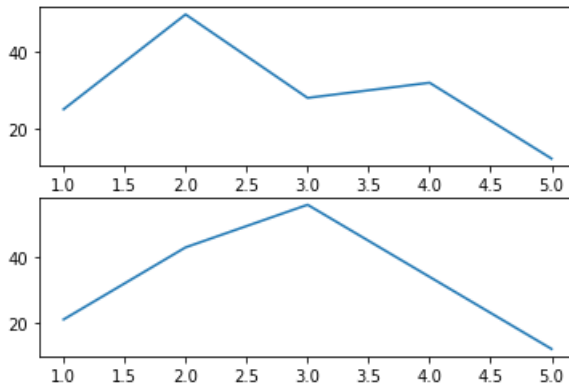Out[15]: [<matplotlib.lines.Line2D at 0x26a72d1fd90>]
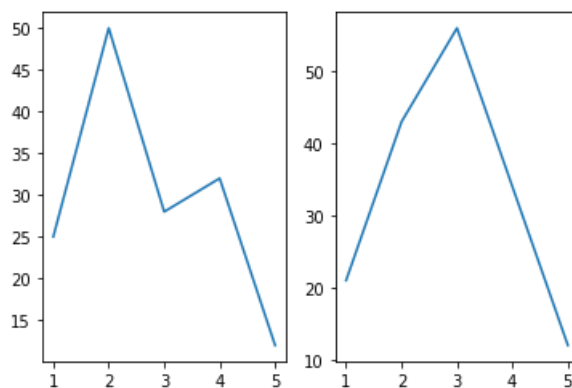
In [16]:
```python
#subplot in column
x1=np.array([1,2,3,4,5])
y1=np.array([25,50,28,32,12])
plt.subplot(2,1,1)
plt.plot(x1,y1)
x2=np.array([5,4,3,2,1])
y2=np.array([12,34,56,43,21])
plt.subplot(2,1,2)
plt.plot(x2,y2)
```

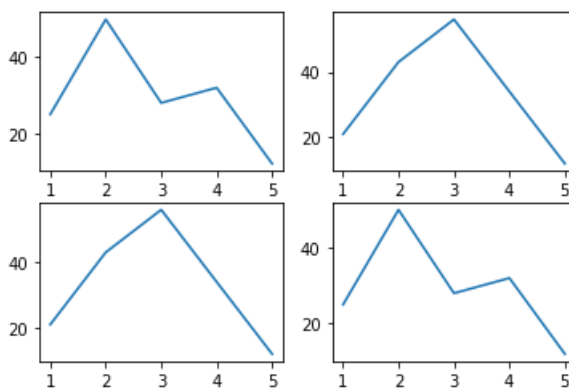Out[16]: [<matplotlib.lines.Line2D at 0x26a72b420a0>]

In [17]:
```python
#subplot 4
x1=np.array([1,2,3,4,5])
y1=np.array([25,50,28,32,12])
plt.subplot(2,2,1)
plt.plot(x1,y1)
x2=np.array([5,4,3,2,1])
y2=np.array([12,34,56,43,21])
plt.subplot(2,2,2)
plt.plot(x2,y2)
x3=np.array([5,4,3,2,1])
y3=np.array([12,34,56,43,21])
plt.subplot(2,2,3)
plt.plot(x3,y3)
x4=np.array([1,2,3,4,5])
y4=np.array([25,50,28,32,12])
plt.subplot(2,2,4)
plt.plot(x4,y4)
```

Out[17]: [<matplotlib.lines.Line2D at 0x26a7306c820>]

In [20]:
```python
import csv
with open('C:/Users/admin/Downloads/marks.csv','rt')as f:
    data = csv.reader(f)
    for row in data:
        print(row)
```

```
['Roll no', 'Name', 'Mark']
['1', 'Arun', '82']
['2', 'Antony', '84']
['3', 'Sam', '76']
['4', 'Smith ', '98']
['5', 'Zoya', '99']
```