In [44]:
```
import matplotlib.pyplot as plt
import numpy as np
```

In [8]:
```
n=10
sum=0
for i in range(1,n+1):
    sum=sum+i
    print(sum)
sumsq=0

```

```
1
3
6
10
15
21
28
36
45
55
```

In [9]:
```
for j in range(1,n+1):
    sumsq=sumsq+j*j
    print("sum of squares of ",n,"numbers is",sumsq)
```

```
sum of squares of  10 numbers is 1
sum of squares of  10 numbers is 5
sum of squares of  10 numbers is 14
sum of squares of  10 numbers is 30
sum of squares of  10 numbers is 55
sum of squares of  10 numbers is 91
sum of squares of  10 numbers is 140
sum of squares of  10 numbers is 204
sum of squares of  10 numbers is 285
sum of squares of  10 numbers is 385
```

In [14]:

```
n=20
sum=0
for i in range(1,n+1):
    if i%2==1:
        sum=sum+i
        print(sum)

```

```
1
4
9
16
25
36
49
64
81
100
```

In [16]:

```
a="statistics"
len(a)
```

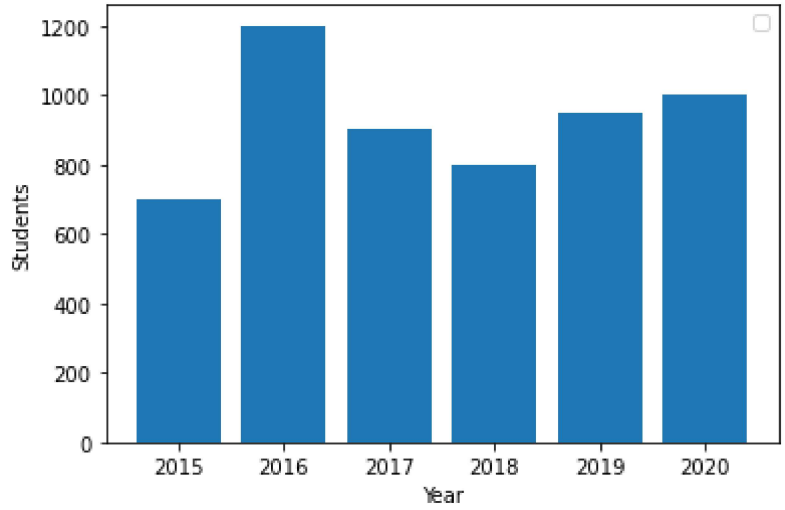
Out[16]:

```
10
```

In [30]:
```
Year=["2015","2016","2017","2018","2019","2020"]
NO_OF_STUDENTS=[700,1200,900,800,950,1000]
plt.bar(Year,NO_OF_STUDENTS)
plt.xlabel("Year")
plt.ylabel("Students")
plt.legend()
```

```
No handles with labels found to put in legend.
```

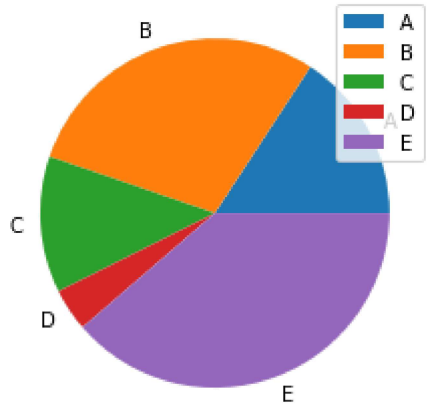
Out[30]:
```
<matplotlib.legend.Legend at 0x17ef0f88250>
```



In [34]:

```
section=["A","B","C","D","E"]
NO=[200,367,160,50,490]
plt.pie(NO,labels=section)
plt.legend()
```

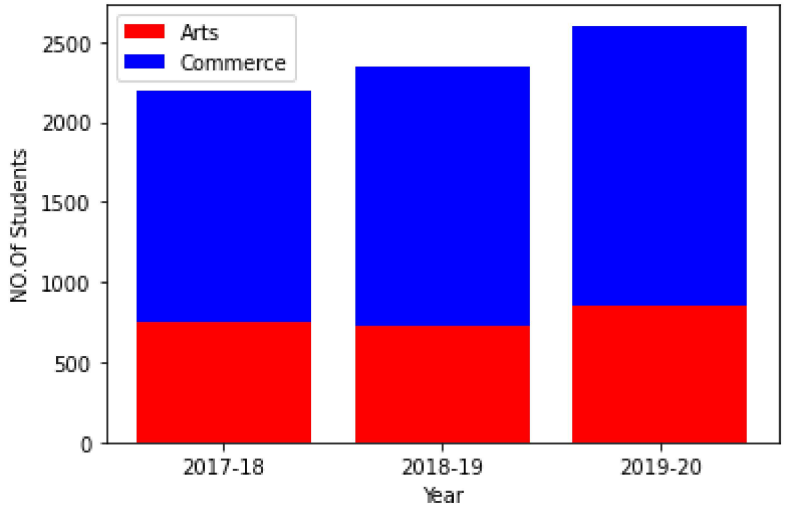
Out[34]: <matplotlib.legend.Legend at 0x17ef1056ca0>



In [42]:

```
Year=["2017-18","2018-19","2019-20"]
Arts=[750,725,850]
Commerce=[1450,1625,1750]
plt.bar(Year,Arts,color="r")
plt.bar(Year,Commerce,bottom=Arts,color="b")
plt.xlabel("Year")
plt.ylabel("NO.Of Students")
plt.legend(["Arts","Commerce"])
```

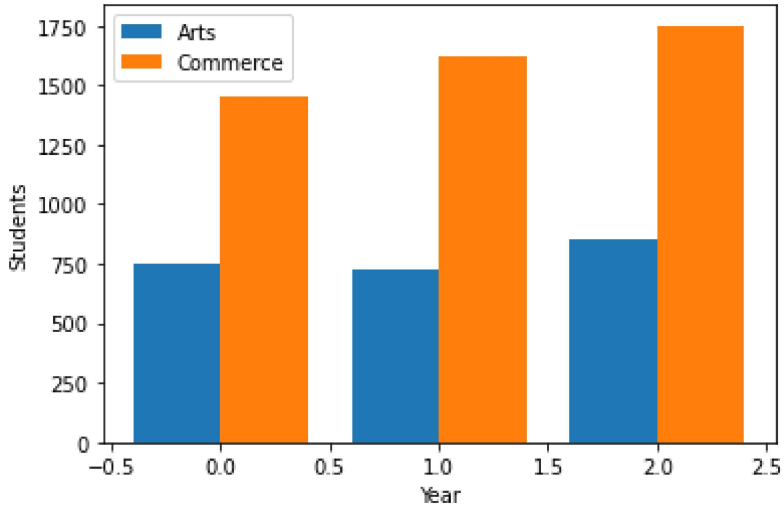
Out[42]: <matplotlib.legend.Legend at 0x17ef0d42340>



In [48]:

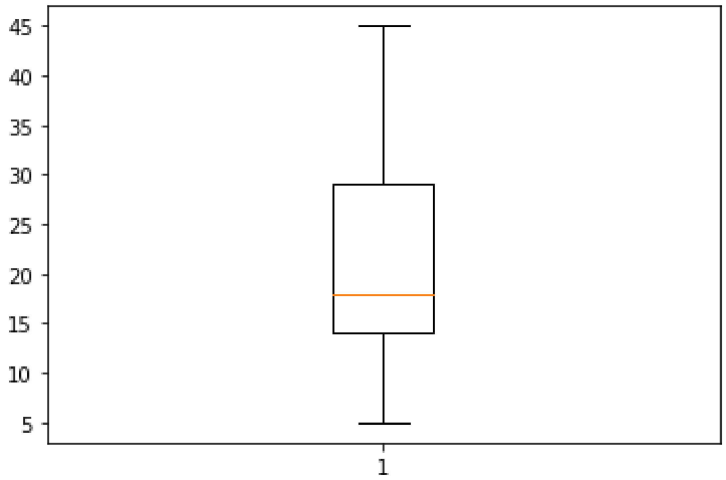
```
Year=["2017-18","2018-19","2019-20"]
Arts=[750,725,850]
Commerce=[1450,1625,1750]

x_axis=np.arange(len(Year))
plt.bar(x_axis-0.2,Arts,0.4,label="Arts")
plt.bar(x_axis+0.2,Commerce,0.4,label="Commerce")
plt.xlabel("Year")
plt.ylabel("Students")
plt.legend(['Arts','Commerce'])
```

Out[48]: <matplotlib.legend.Legend at 0x17ef22d9ee0>



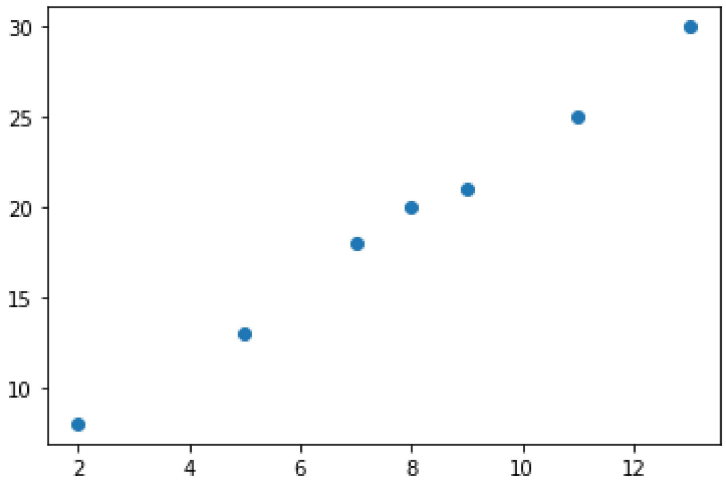
In [49]:
```
1 data=(15,17,29,37,5,12,45,16,29,32,18,22,24,7,13)
2 plt.boxplot(data)
```

Out[49]:
```
{'whiskers': [<matplotlib.lines.Line2D at 0x17ef235f9d0>,
  <matplotlib.lines.Line2D at 0x17ef235fcd0>],
 'caps': [<matplotlib.lines.Line2D at 0x17ef236d0a0>,
  <matplotlib.lines.Line2D at 0x17ef236d430>],
 'boxes': [<matplotlib.lines.Line2D at 0x17ef235f580>],
 'medians': [<matplotlib.lines.Line2D at 0x17ef236d7c0>],
 'fliers': [<matplotlib.lines.Line2D at 0x17ef236db50>],
 'means': []}
```



In [50]:
```
1 x=(2,5,7,8,9,11,13)
2 y=(8,13,18,20,21,25,30)
3 plt.scatter(x,y)
```

Out[50]: <matplotlib.collections.PathCollection at 0x17ef23c7e50>



In [ ]:
```
1
```