In [1]:
```
#Experiment:06
```

In [1]:
```
#Aim: To perform Data Visualization using Matplotlib
```

In [2]:
```
#Name:Sakshi Rambhau Wankhade
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#Sec:A
#Subject:ET-1
#Date:08-09-2025
```

In [3]:
```
#import  library
import numpy as np
from matplotlib import pyplot as plt
```

In [4]:
```
x=np.arange(1,11)
```

In [5]:
```
x
```

Out[5]:
```
array([ 1,  2,  3,  4,  5,  6,  7,  8,  9, 10])
```

In [6]:
```
print(x)
```

```
[ 1  2  3  4  5  6  7  8  9 10]
```

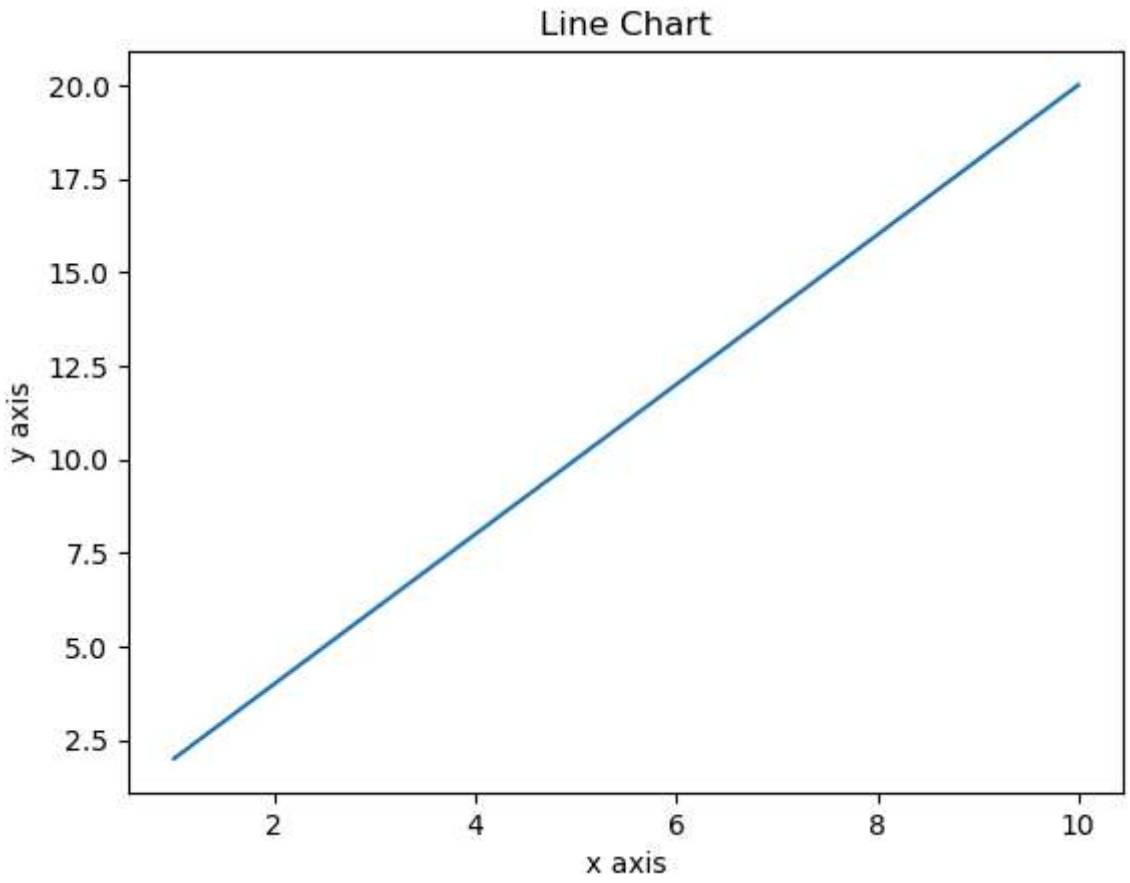
In [7]:
```
y=2*x
```

In [8]:
```
y
```

Out[8]:
```
array([ 2,  4,  6,  8, 10, 12, 14, 16, 18, 20])
```

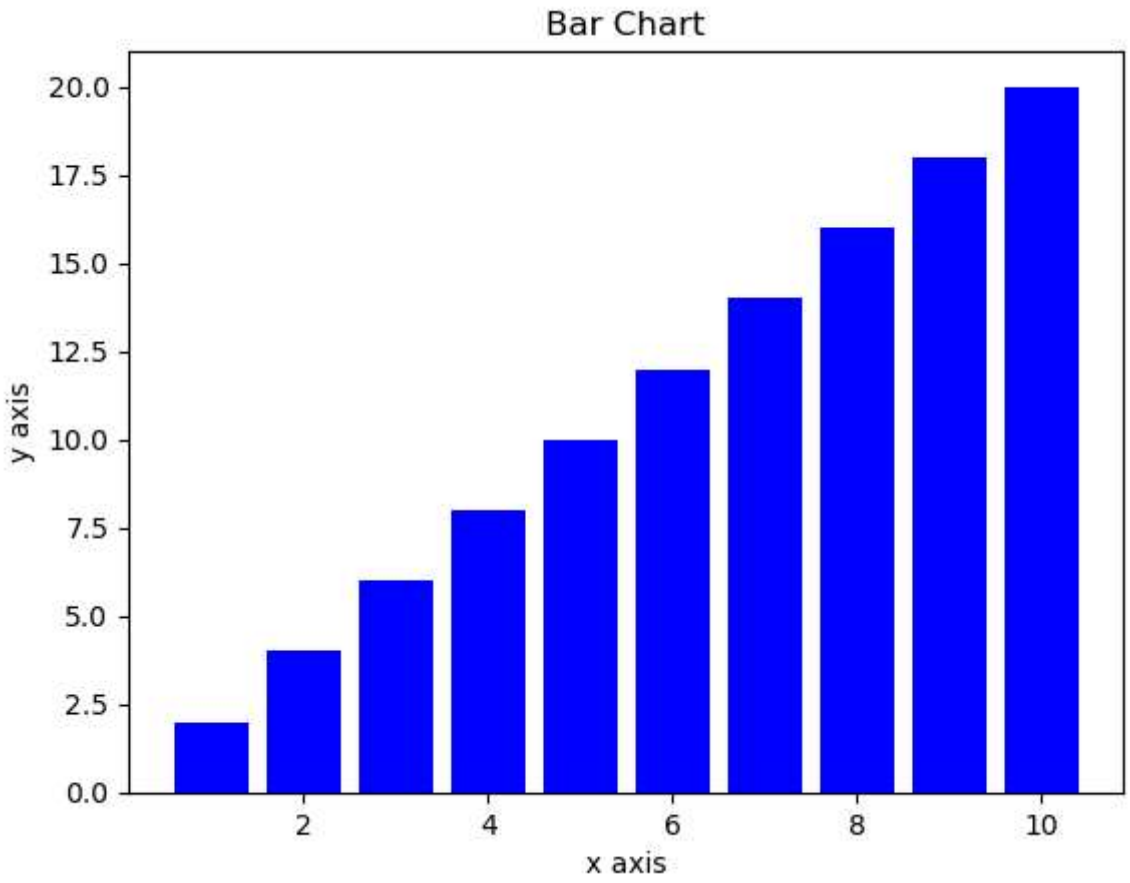
Line Chart

In [9]:
```
plt.plot(x,y)
plt.title("Line Chart")
plt.xlabel("x axis")
plt.ylabel("y axis")
plt.show()
```



Bar Chart

In [10]:
```
plt.bar(x,y)
plt.title("Bar Chart")
plt.xlabel("x axis")
plt.ylabel("y axis")
plt.bar(x,y, color="blue")
plt.show()
```



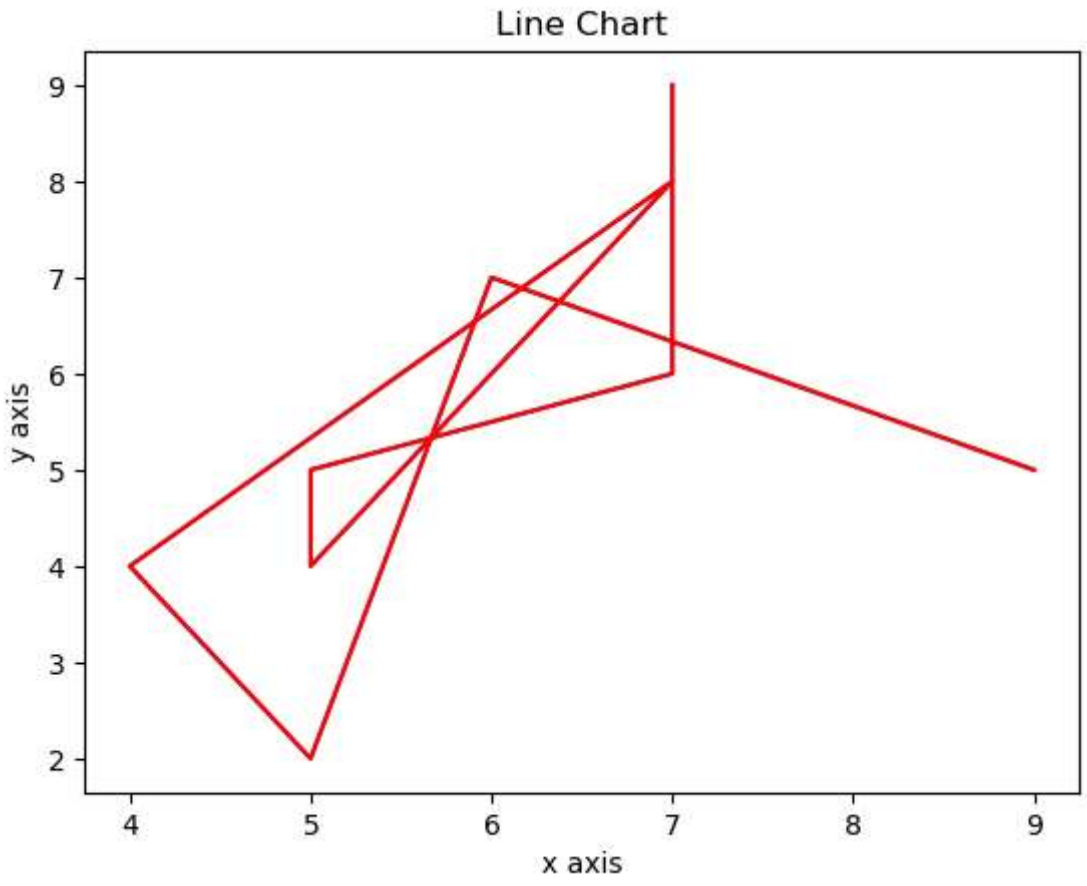
In [11]:
```
x=np.random.randint(1,10,9)
x
```

Out[11]:
```
array([7, 7, 5, 5, 7, 4, 5, 6, 9], dtype=int32)
```

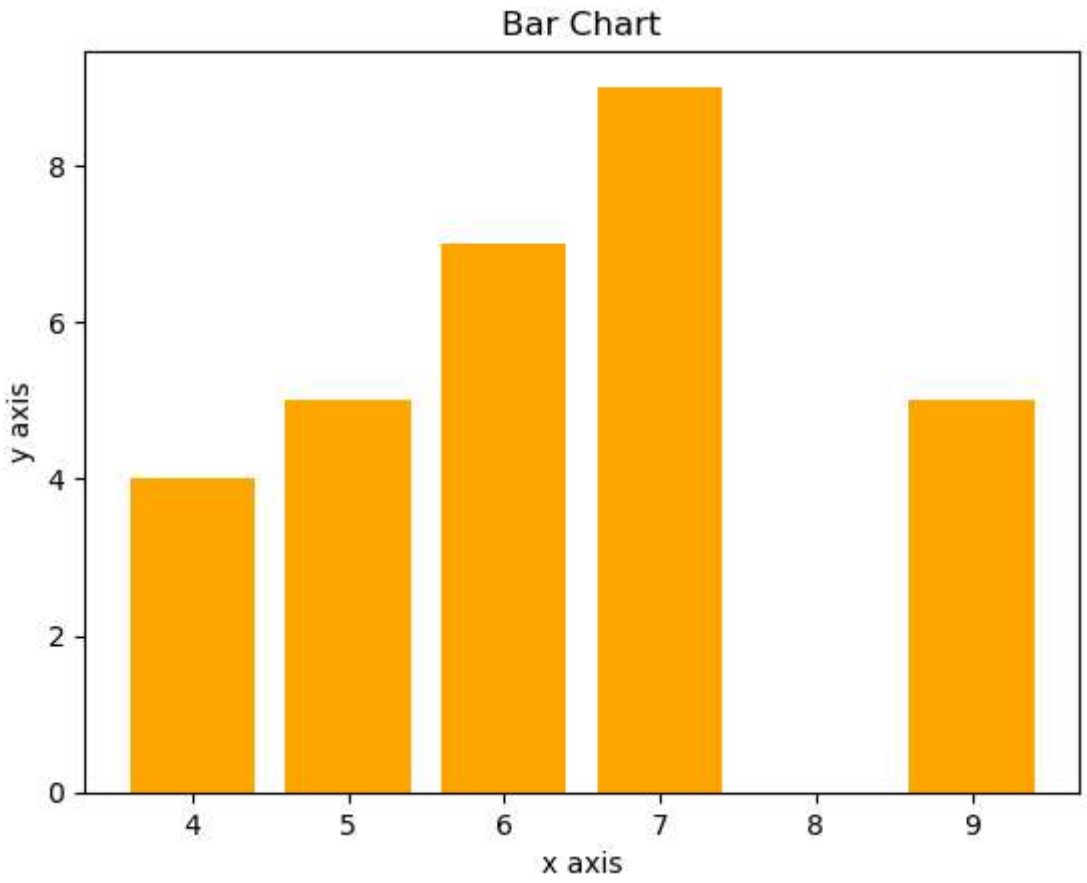
In [12]:
```
y=np.random.randint(1,10,9)
y
```

Out[12]:
```
array([9, 6, 5, 4, 8, 4, 2, 7, 5], dtype=int32)
```

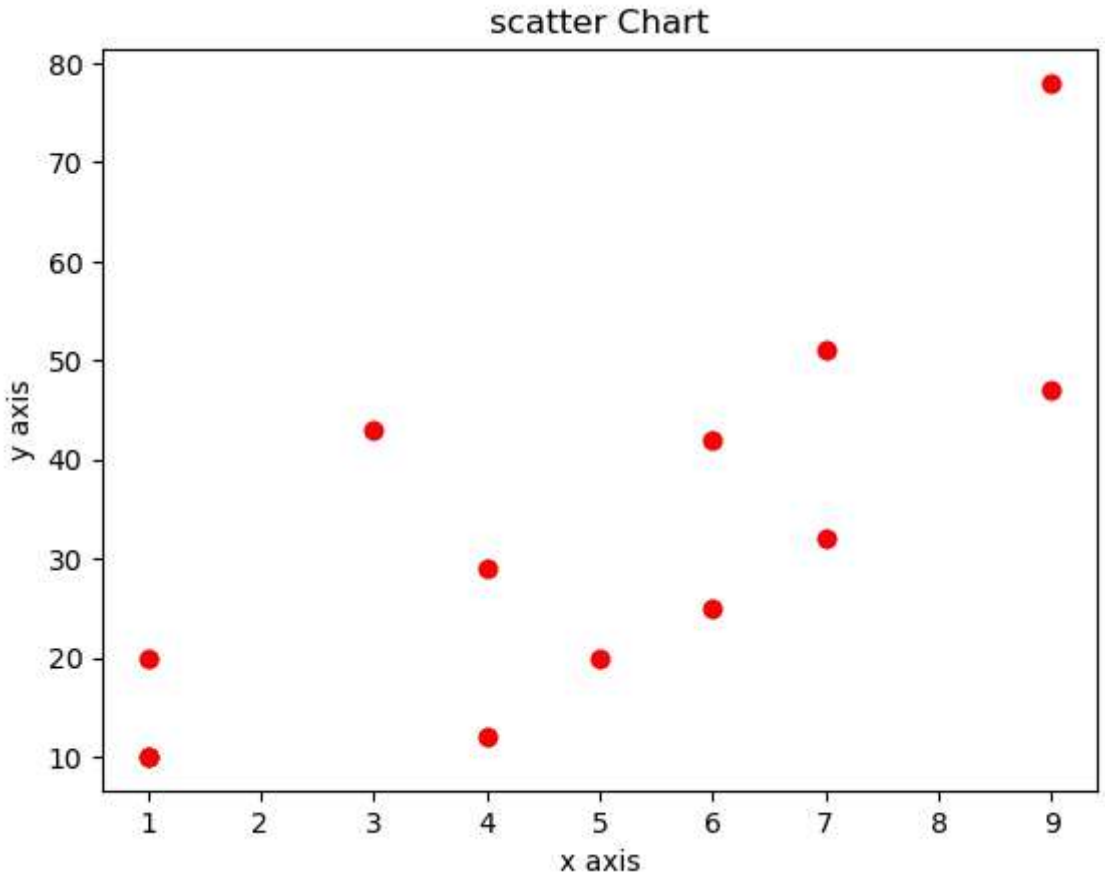
In [13]:
```
plt.plot(x,y)
plt.title("Line Chart")
plt.xlabel("x axis")
plt.ylabel("y axis")
plt.plot(x,y, color="red")
plt.show()
```



In [14]:
```
plt.bar(x,y)
plt.title("Bar Chart")
plt.xlabel("x axis")
plt.ylabel("y axis")
plt.bar(x,y, color="orange")
plt.show()
```

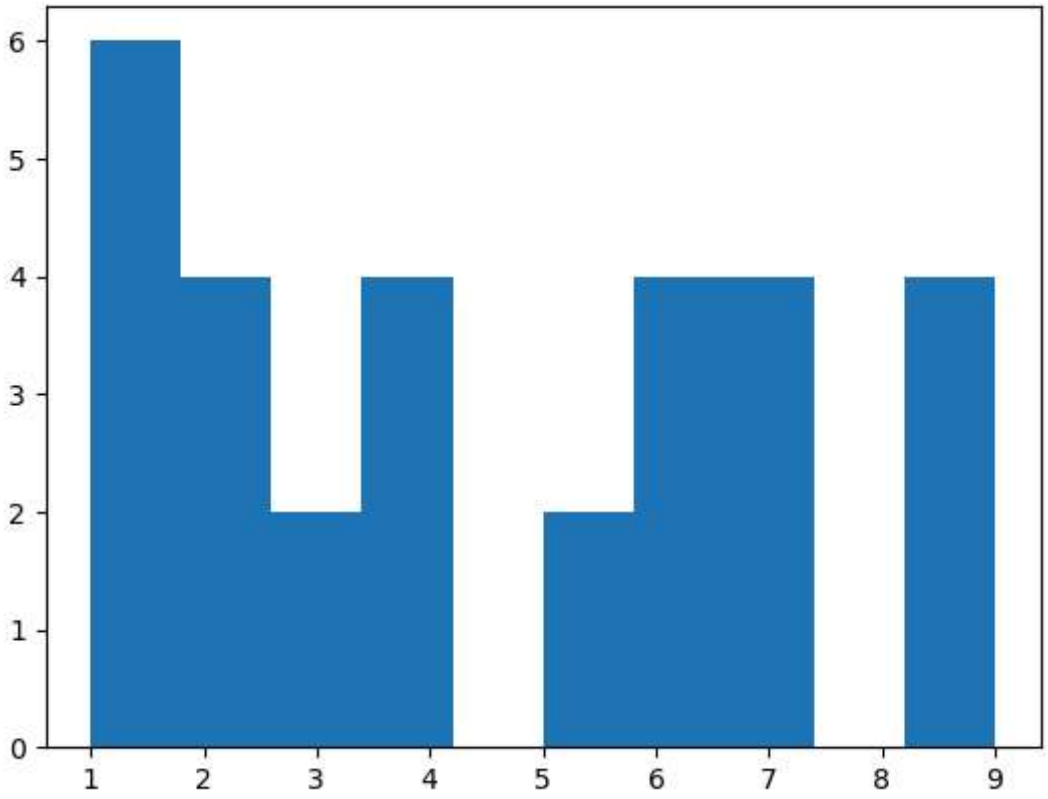


In [15]:
```
 a=(1,5,4,7,6,9,3,7,1,4,6,9,1)
 b=(10,20,12,51,42,47,43,32,20,29,25,78,10)
plt.scatter(a,b)
 plt.title("scatter Chart")
 plt.xlabel("x axis")
 plt.ylabel("y axis")
 plt.scatter(a,b, color="red")
 plt.show()
```



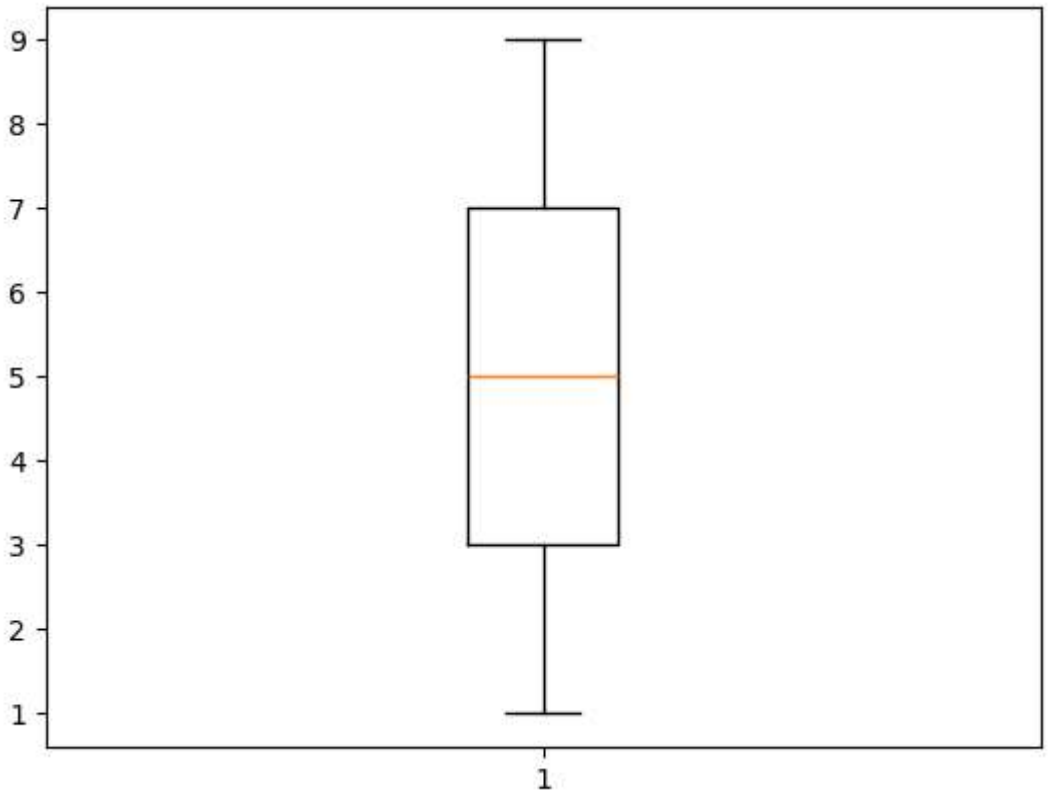
In [16]:
```
H=(1,5,4,7,6,9,3,7,1,4,6,9,1,1,5,4,7,6,9,3,7,1,4,6,9,1,2,2,2,2)
```

In [17]:
```
plt.hist(H)
plt.show()
```

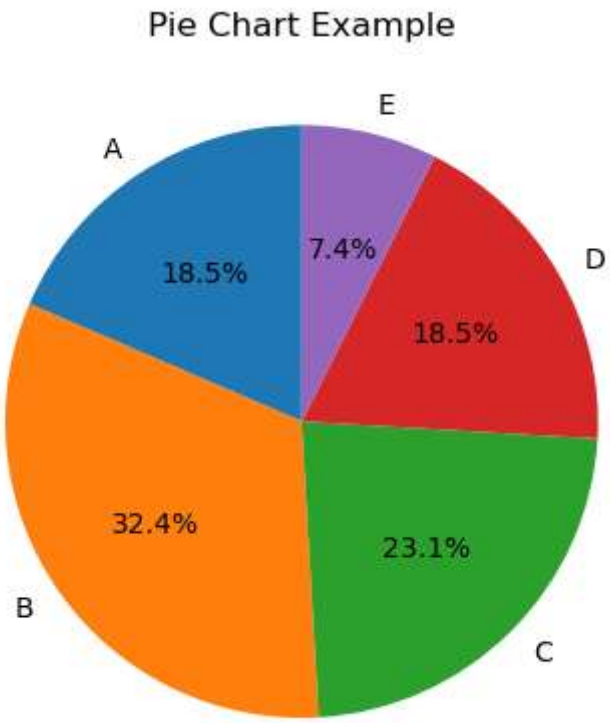


In [18]:
```
B=[1,5,4,7,6,9,3,7,1,4,6,9,1]
```

In [19]:
```
plt.boxplot(B)
plt.show()
```



In [20]:
```
c = [20, 35, 25, 20, 8]
d = ['A', 'B', 'C', 'D', 'E']
plt.pie(c, labels=d, autopct='%1.1f%%', startangle=90)
plt.title("Pie Chart Example")
plt.show()
```



In [ ]:

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