In [1]:
```
#Exp_06
```

In [2]:
```
#Data Visualation using matplotlib
```

In [1]:
```
#Name:Dev Sanjay Vaidya
#Roll no:69
#Sec:B
#Subject:ET-1
#Date: 28/08/25
```

In [4]:
```
import numpy as np
from matplotlib import pyplot as plt
```

In [5]:
```
x=np.arange(1,11)
```

In [6]:
```
x
```

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

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

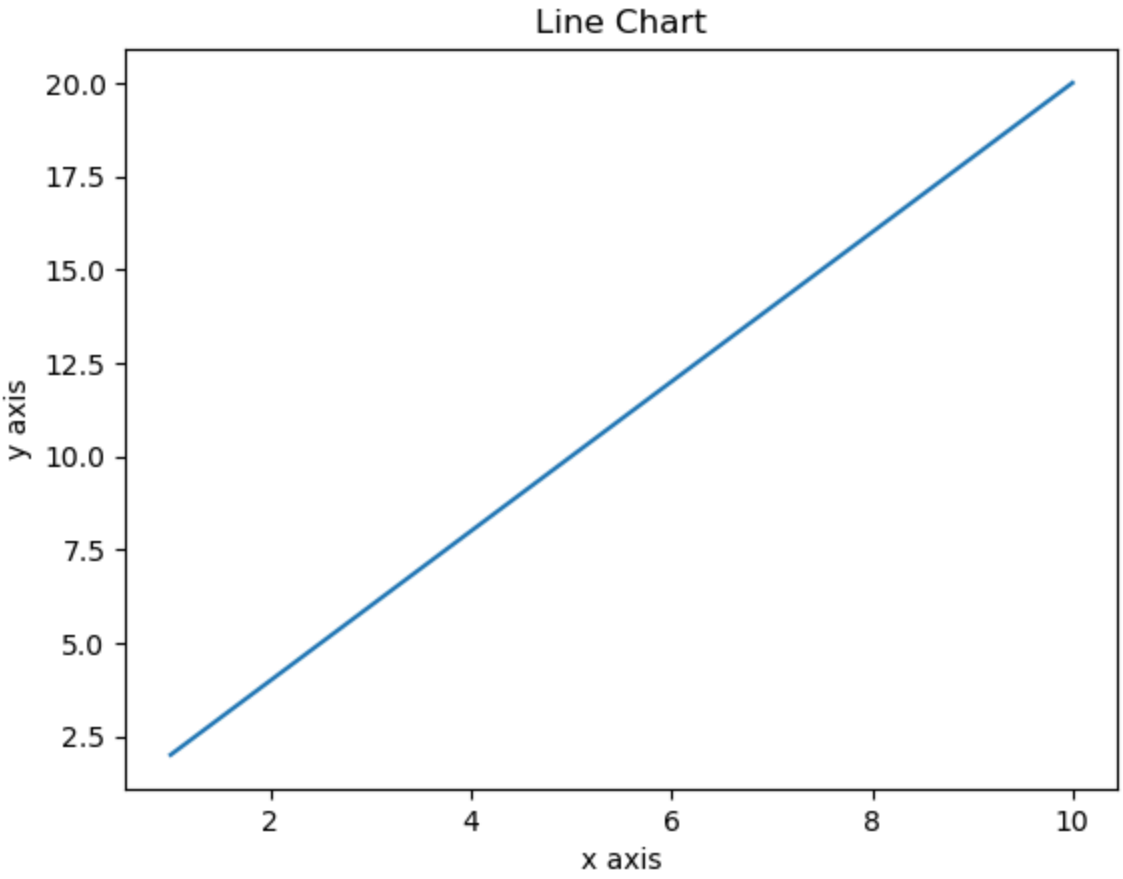
In [8]:
```
y
```

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

Line chart

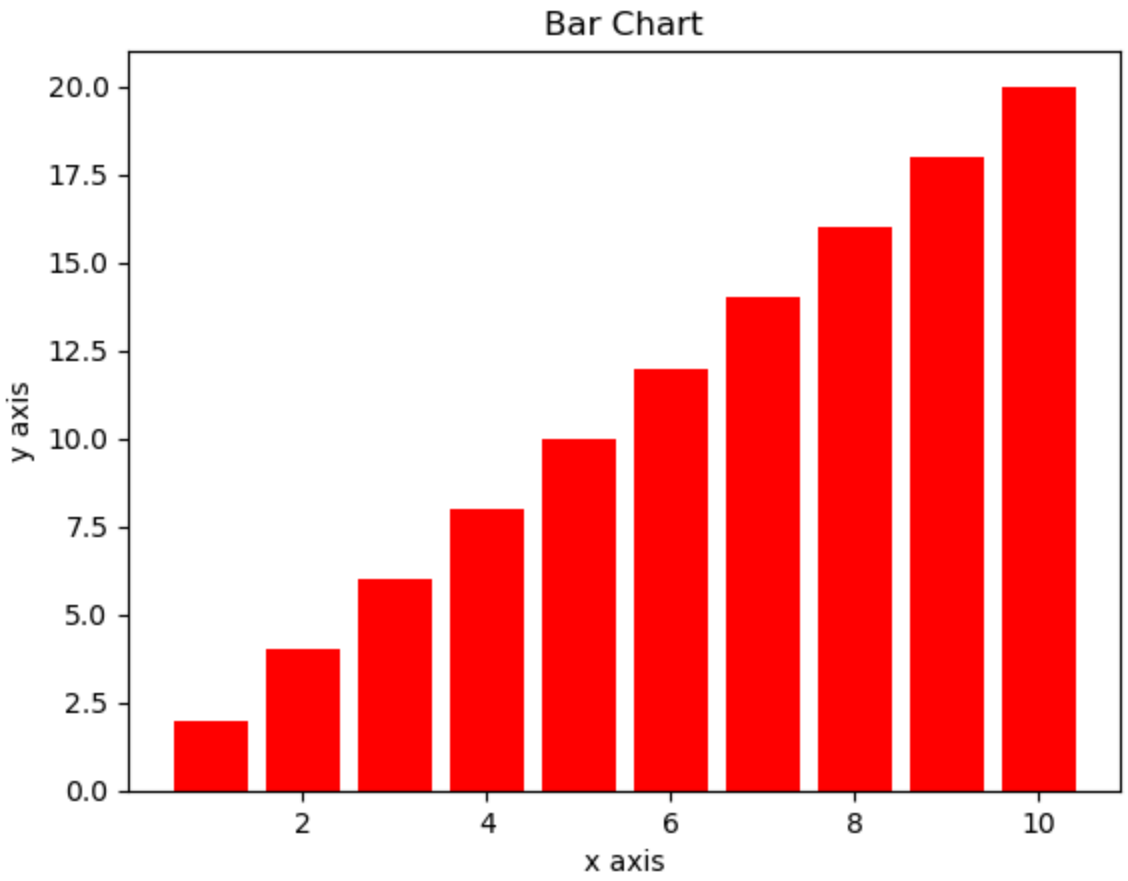
In [9]:
```
plt.plot(x,y)
plt.title("Line Chart")
plt.xlabel("x axis")
plt.ylabel("y axis")
plt.show
```

Out[9]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



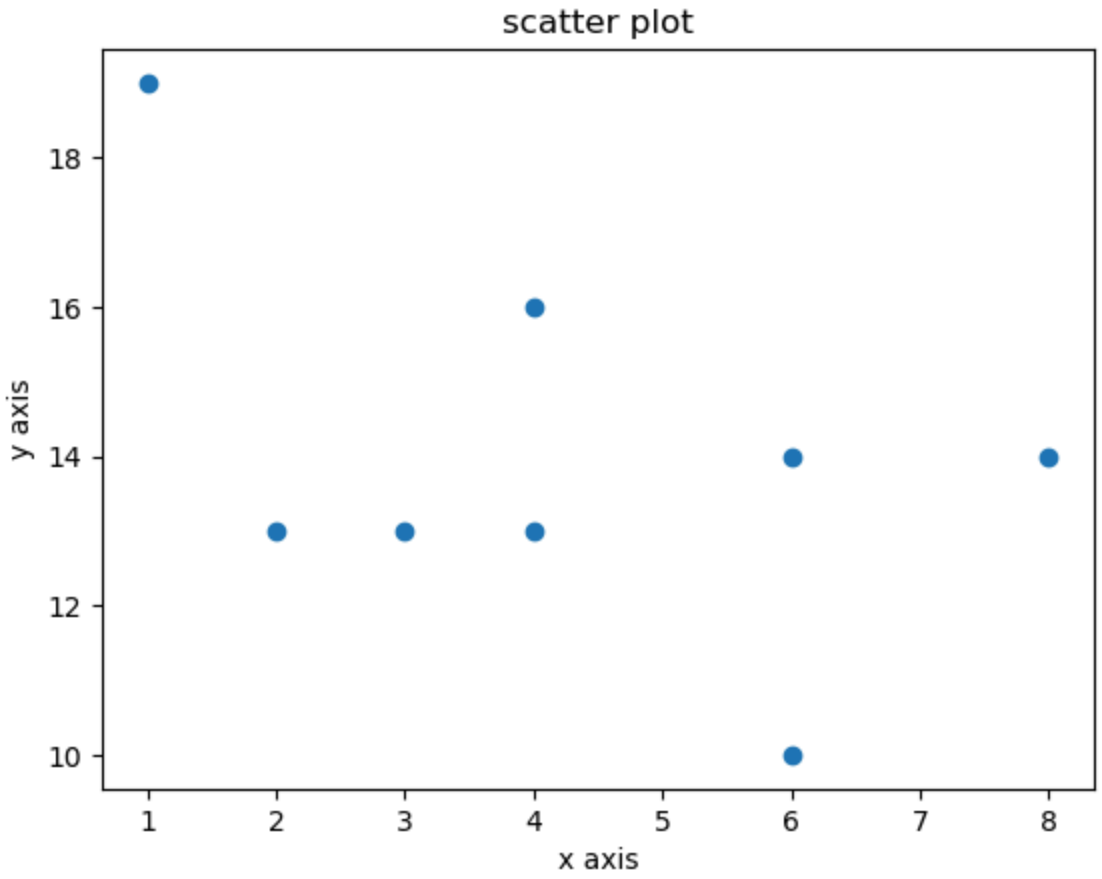
In [10]:
```
plt.bar(x,y,color ='Red')
plt.title("Bar Chart")
plt.xlabel("x axis")
plt.ylabel("y axis")
plt.show
```

Out[10]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



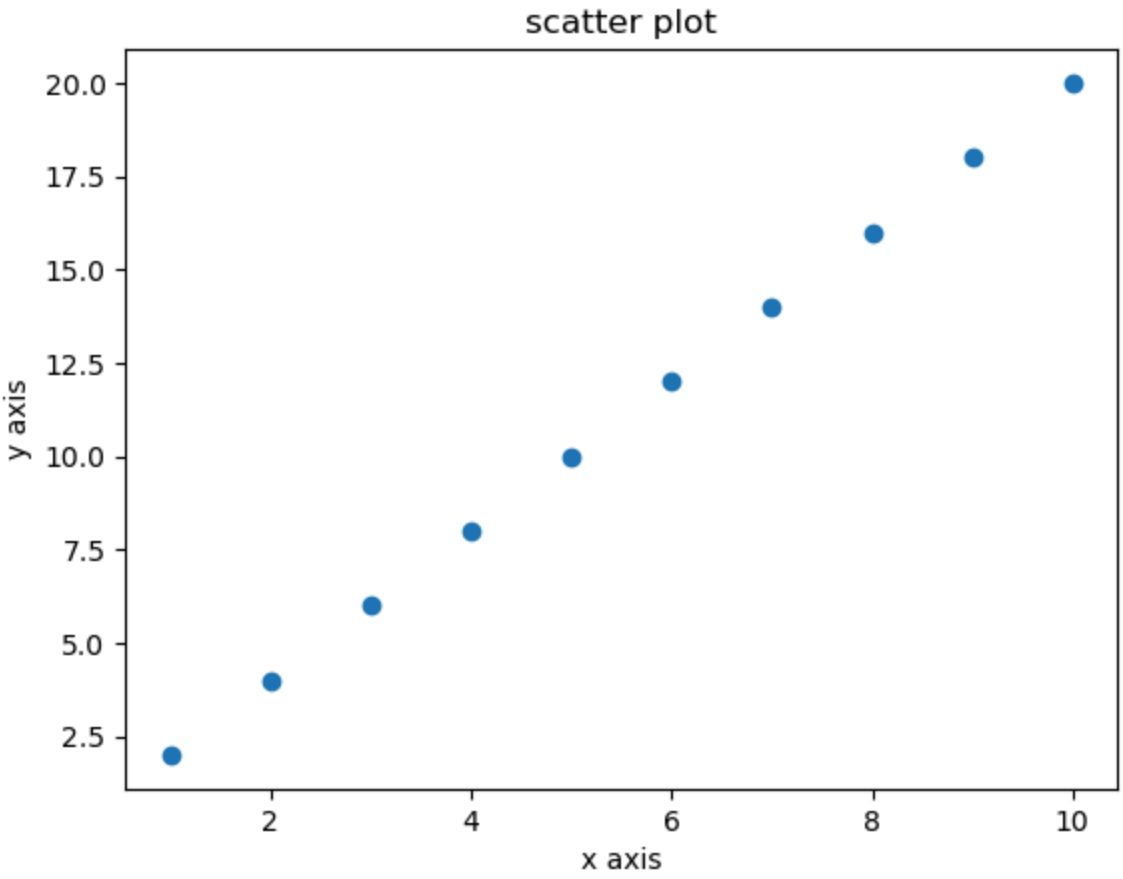
In [11]:
```
a=(1,3,2,6,4,8,4,6)
b=(19,13,13,10,16,14,13,14)

plt.scatter(a,b)
plt.title("scatter plot")
plt.xlabel("x axis")
plt.ylabel("y axis")
plt.show
```

Out[11]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```

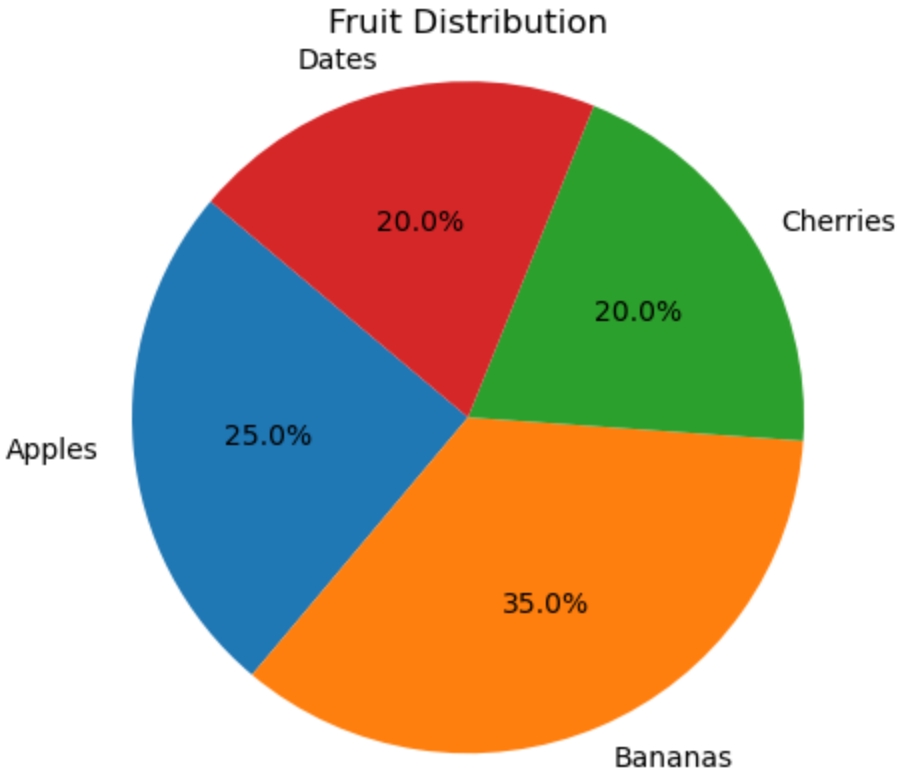


In [12]:
```
a=(1,3,2,6,4,8,4,6)
b=(19,13,13,10,16,14,13,14)

plt.scatter(x,y)
plt.title("scatter plot")
plt.xlabel("x axis")
plt.ylabel("y axis")
plt.show
```

Out[12]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



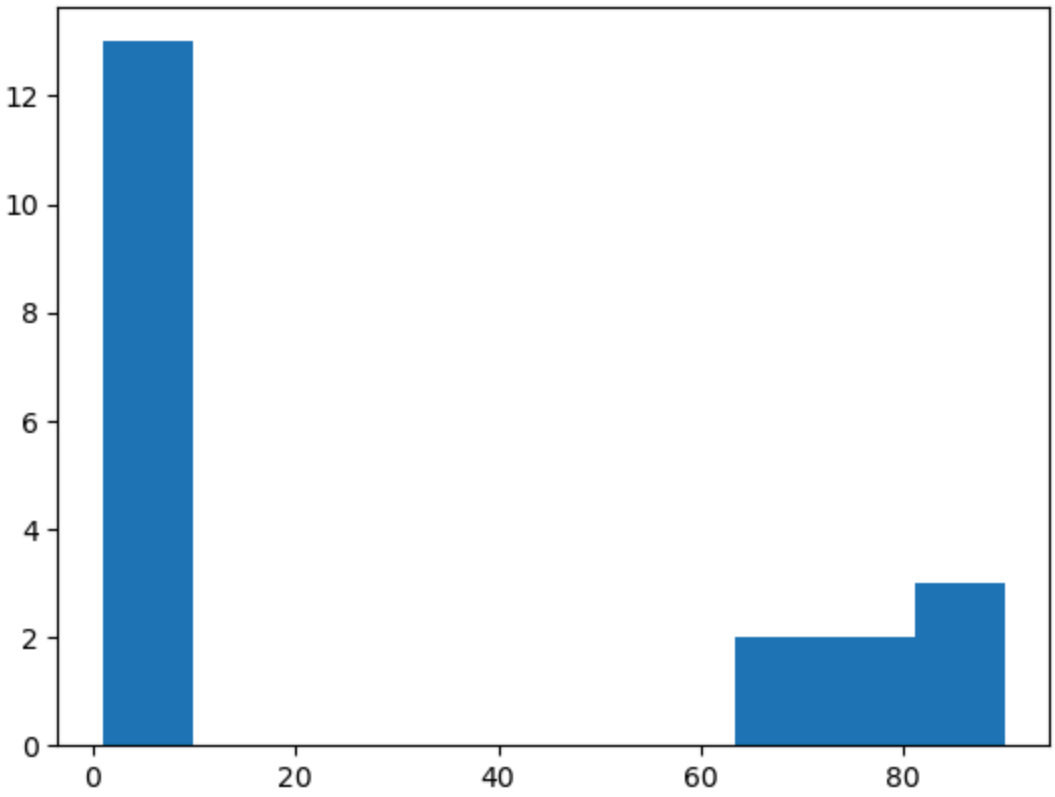
In [13]:
```python
import matplotlib.pyplot as plt

# Data
labels = ['Apples', 'Bananas', 'Cherries', 'Dates']
sizes = [25, 35, 20, 20]

# Create pie chart
plt.pie(sizes, labels=labels, autopct='%1.1f%%', startangle=140)
plt.title("Fruit Distribution")
plt.axis('equal')  # Equal aspect ratio ensures the pie is a circle
plt.show()
```



Histogram

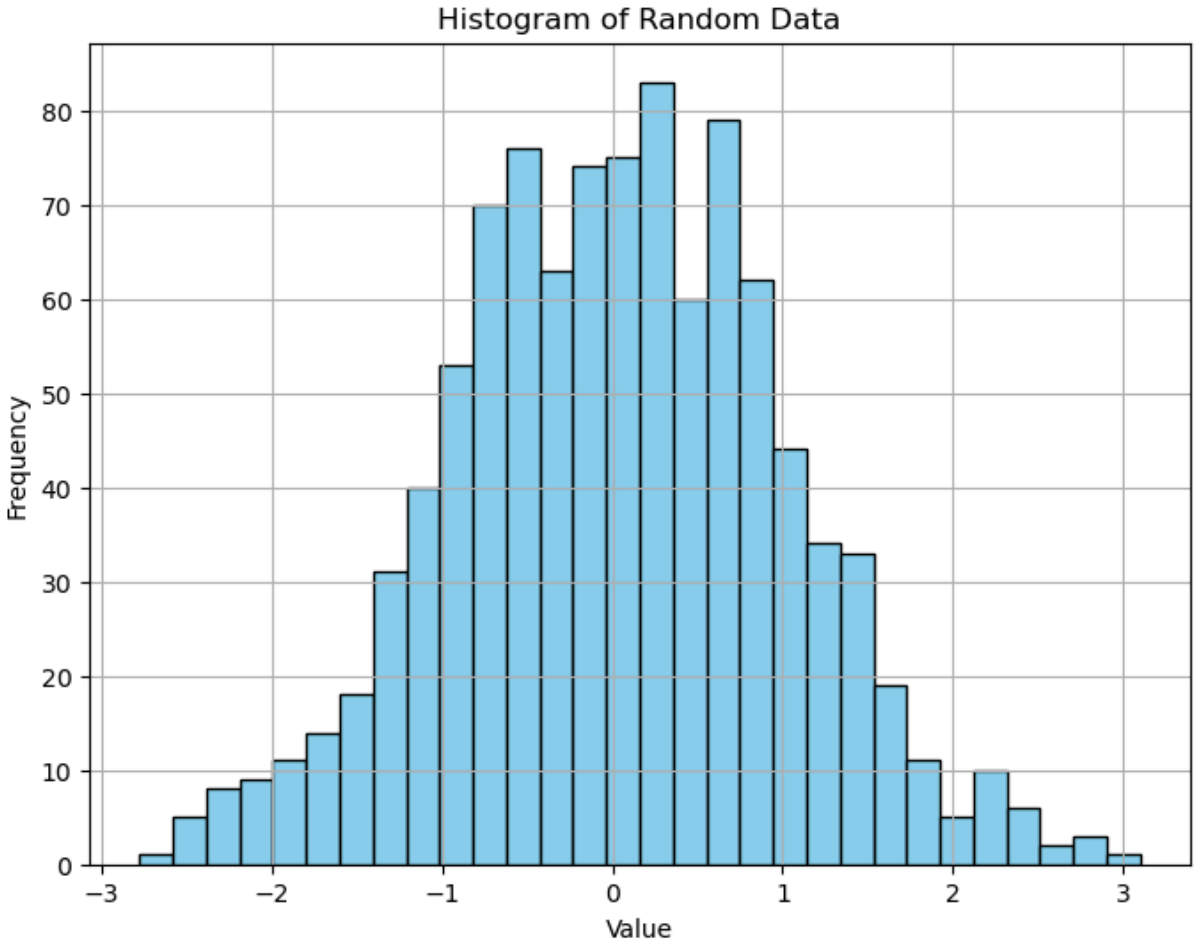
In [14]:
```
H=(1,2,2,3,3,3,4,2,5,5,5,5,6,77,76,65,65,88,88,90)
```

In [15]:
```
plt.hist(H)
plt.show()
```



In [17]:

```python
import matplotlib.pyplot as plt
import numpy as np

# Generate random data
data = np.random.randn(1000)  # 1000 values from a normal distribution

# Create histogram
plt.figure(figsize=(8, 6))
plt.hist(data, bins=30, color='skyblue', edgecolor='black')

# Add titles and labels
plt.title('Histogram of Random Data')
plt.xlabel('Value')
plt.ylabel('Frequency')

# Show the plot
plt.grid(True)
plt.show()
```


Histogram of Random Data
Frequency
Value
0
10
20
30
40
50
60
70
80
−3
−2
−1
0
1
2
3