In [1]:
```
#EXP-6
```

In [2]:
```
#Aim various types of graph
```

In [3]:
```
# Name:Payal Devanand Manwar
# Roll no.: 37
# Sec:A
# Subject:ET1
# Date: 25/08/2025
```

In [8]:
```
#importing the basic library
import numpy as np
from matplotlib import pyplot as plt
```

In [9]:
```
x=np.arange(1,11)
```

In [10]:
```
x
```

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

In [12]:
```
print(x)
```

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

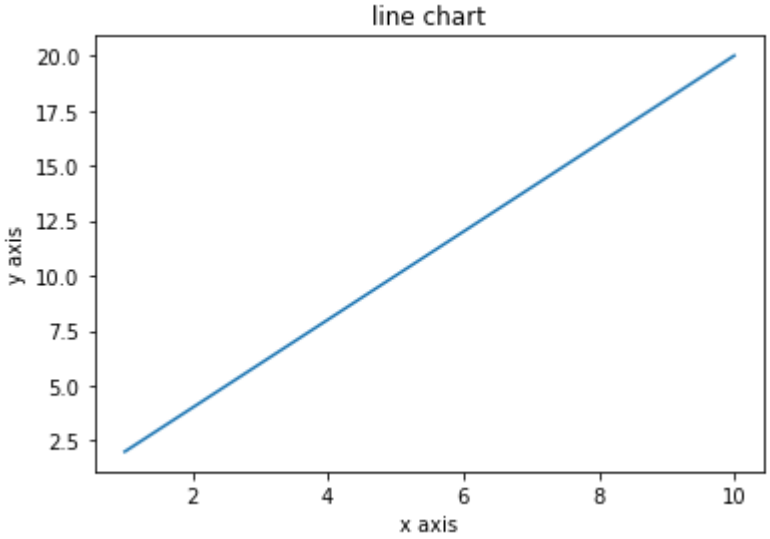
In [13]:
```
y=2*x
```

In [14]:
```
y
```

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

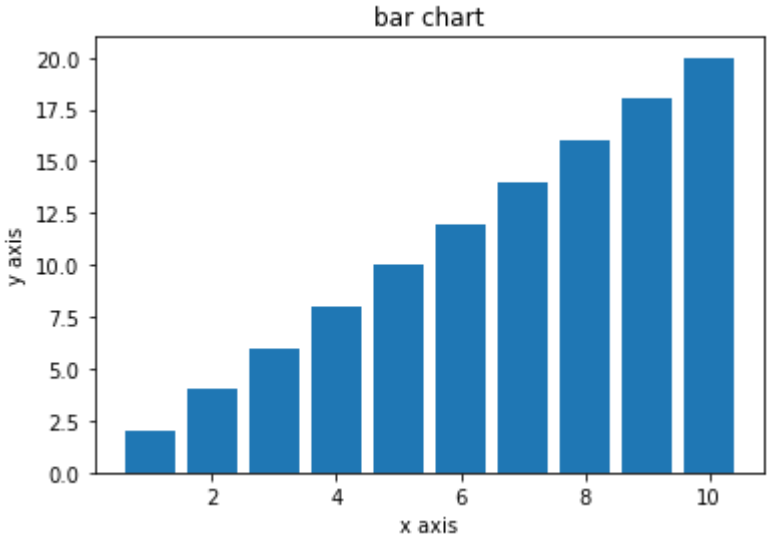
line chart

In [15]:
```
plt.plot(x,y)
plt.title("line chart")
plt.xlabel("x axis")

plt.ylabel("y axis")
plt.show()
```



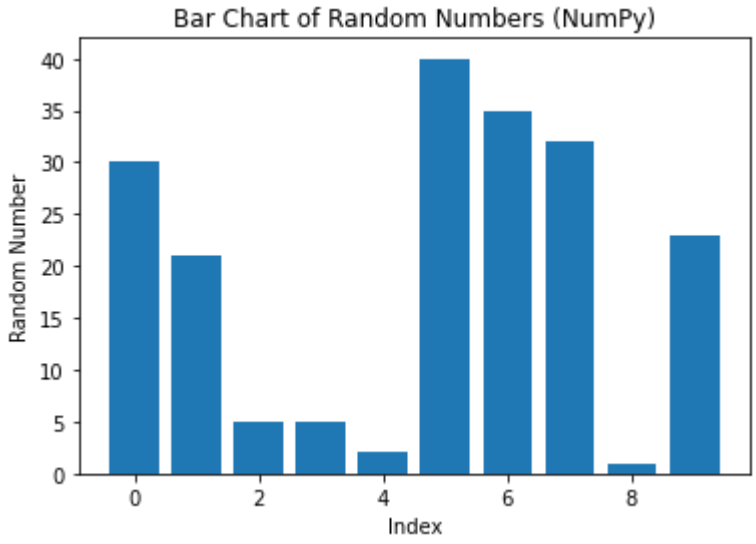
BARCHART

In [16]:
```
plt.bar(x,y)
plt.title("bar chart")
plt.xlabel("x axis")

plt.ylabel("y axis")
plt.show()
```



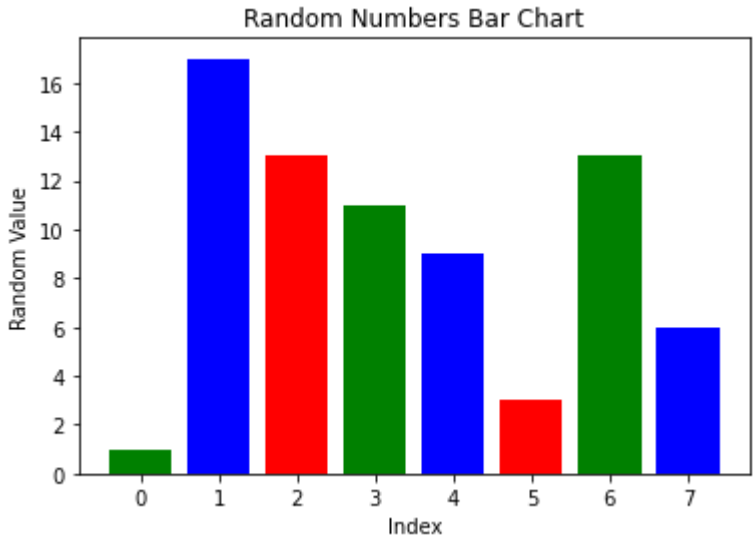
In [17]:
```
import numpy as np
import matplotlib.pyplot as plt

# Step 1: Generate random numbers
# For example, 10 random integers between 1 and 50
data = np.random.randint(1, 50, size=10)

# Step 2: Create x-axis values (like labels for each bar)
x = np.arange(len(data))

# Step 3: Plot bar chart
plt.bar(x, data)

# Step 4: Add Labels and title
plt.xlabel("Index")
plt.ylabel("Random Number")
```

```
plt.title("Bar Chart of Random Numbers (NumPy)")

# Step 5: Show chart
plt.show()
```



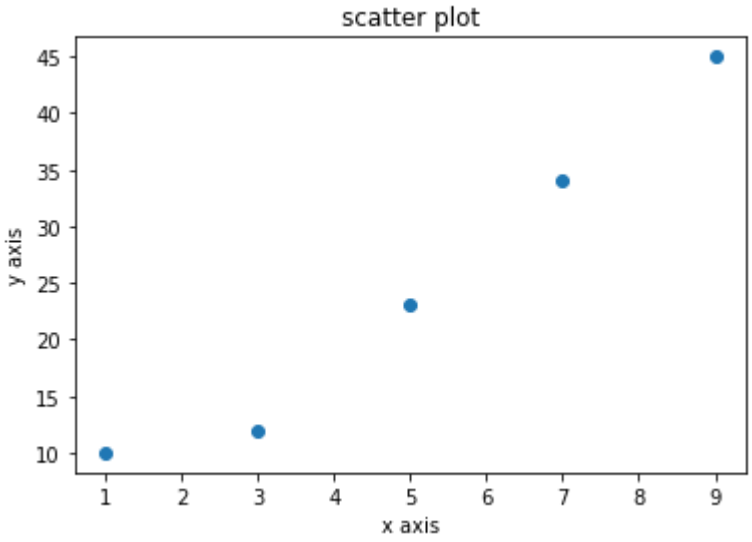
In [18]:

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

# Step 1: Generate random numbers
data = np.random.randint(1, 20, size=8)  # 8 random numbers between 1 and 20

# Step 2: Create bar chart
x = np.arange(len(data))  # positions for bars

# Step 3: Change bar colors
colors = ['green', 'blue', 'red']

plt.bar(x, data, color=colors)

# Add labels
plt.xlabel("Index")
plt.ylabel("Random Value")
plt.title("Random Numbers Bar Chart")

# Show plot
plt.show()
```



Scatter plot

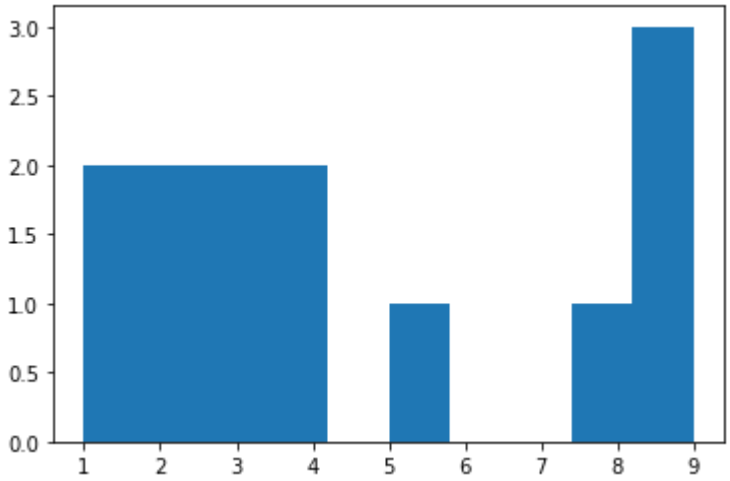
In [19]:
```
a=(1,5,9,3,7)
b=(10,23,45,12,34)

plt.scatter(a,b)
plt.title("scatter plot")
plt.xlabel("x axis")

plt.ylabel("y axis")
plt.show()
```



HISTRO-GRAM

In [25]:
```
H=(1,2,3,4,5,1,2,3,4,8,9,9,9)
```

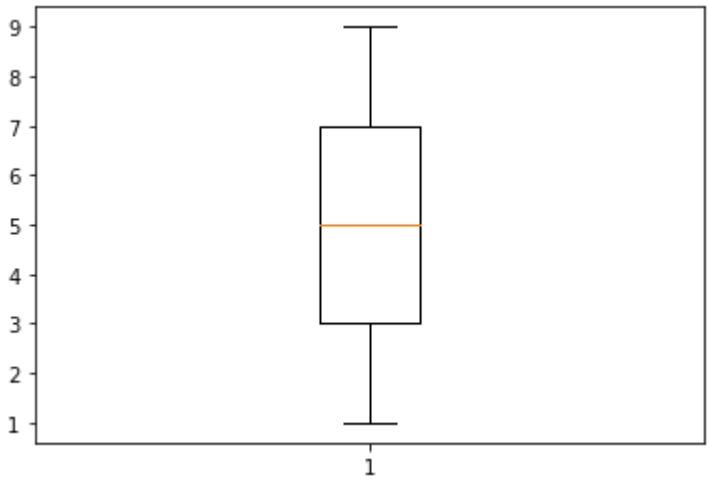
In [26]:
```
plt.hist(H)
plt.show()
```



BOXPLOT

In [27]:
```
B=[1,2,3,4,5,6,7,8,9]
```

In [29]:
```
plt.boxplot(B)
plt.show()
```



In [ ]: