Lab 13

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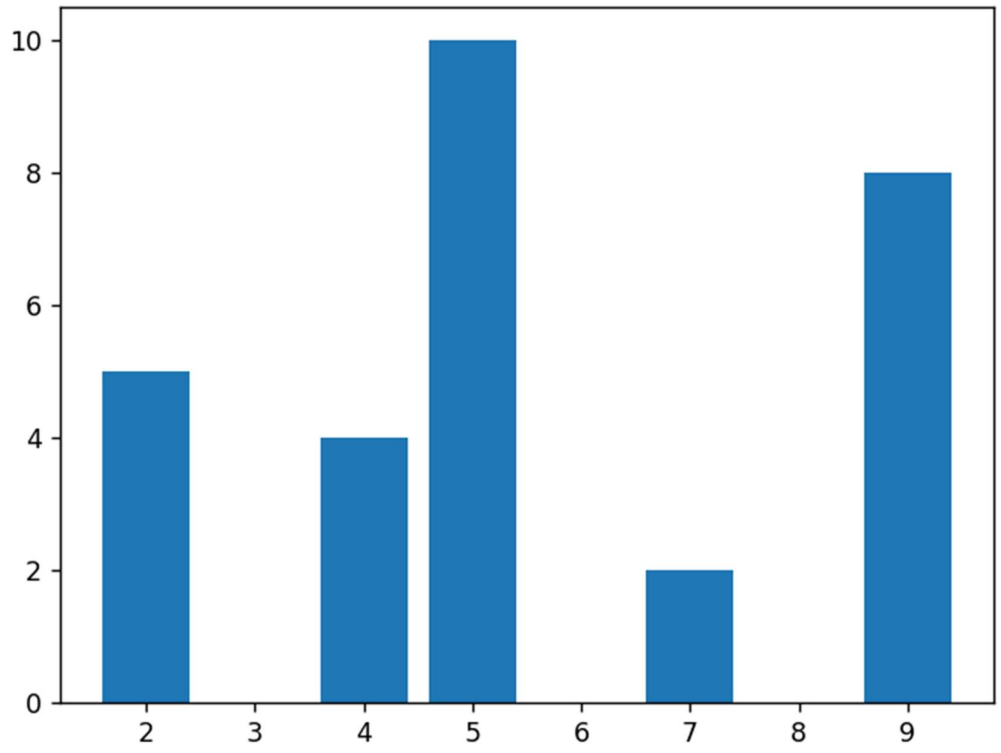
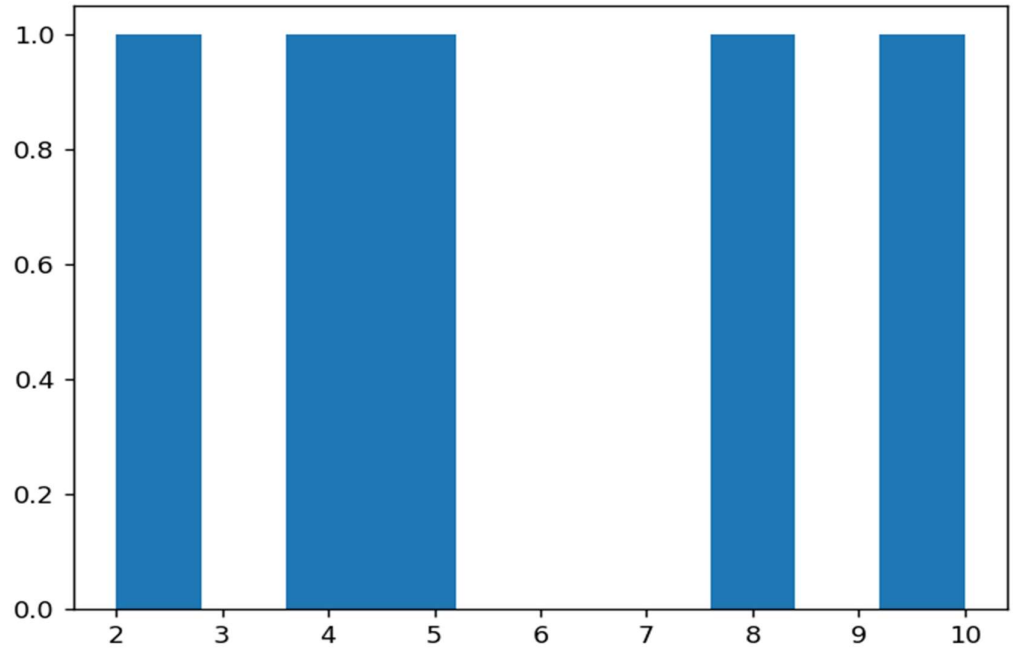
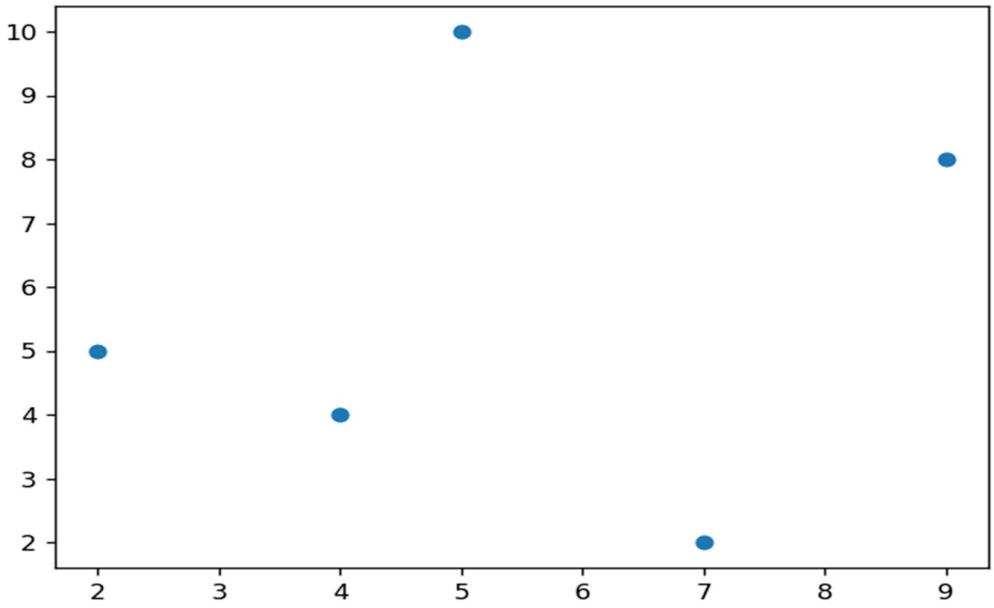
```
import matplotlib.pyplot as plt
import numpy as np



c = [5,2,9,4,7]
d = [10,5,8,4,2]
plt.bar(c,d)
plt.show()
```



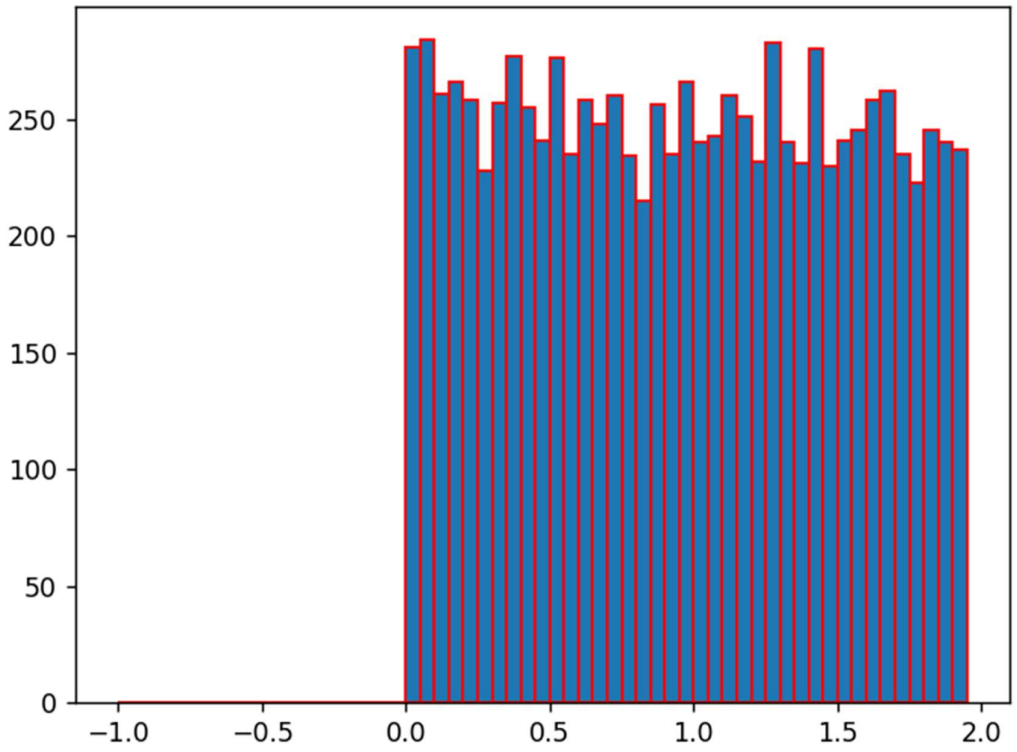

```
y = [10,5,8,4,2]
plt.hist(y)
plt.show()
```




```
f = [5,2,9,4,7]
g = [10,5,8,4,2]
plt.scatter(f,g)
plt.show()
```



```
y = [10,5,8,4,2]
plt.hist(y)
plt.show()
```




```
np.random.seed(10)
size = 10000

sample = np.random.uniform(0,2 ,size)
bin = np.arange(-1,2,0.05)
plt.hist(sample, bins = bin, edgecolor = 'red')
plt.show()


import seaborn as nsn
nsn.kdeplot(np.random.uniform(0,1,size))
nsn.kdeplot(np.random.uniform(0,2,size))
nsn.kdeplot(np.random.uniform(0,3,size))

plt.legend(["a = 0, b = 1",
            "a = 0, b = 2",
```

```
            "a = 0, b = 3"])
plt.show()


# Create random data
plt.rcParams["figure.figsize"] = (20,5)
names = 'Group A', 'Group B', 'Group C', 'Group D',
values = [30,20,20,30]
plt.pie(values, labels=names, labeldistance=1.15)
plt.show()

# Create set of Colors
colors = ['#4F6272', '#B7C3F3', '#DD7596', '#8EB897']
plt.pie(values, labels=names, labeldistance=1.15, wedgeprops={'linewidth' : 1,
'edgecolor' : 'white' }, colors=colors)
plt.show()

# same chart but different specific wedgeprops option:
plt.pie(values, labels=names, labeldistance=1.15, wedgeprops={'linewidth' : 3,
'edgecolor' : 'white'})
```

```
import serial as s
import time as t

ser = s.Serial('com9',9600,timeout=0)
t.sleep(2)
print(ser.name,"connected")
print("Emter 1 to ON led and 0 to OFF led")

while 1:
    input_data=input()
    print("Your input - ",input_data)

    if(input_data =='1'):
        ser.write('1')
        print("On")

    if(input_data=='0'):
        ser.write('0')
        print("Off")

    if(input_data == '3'):
        ser.close()
```