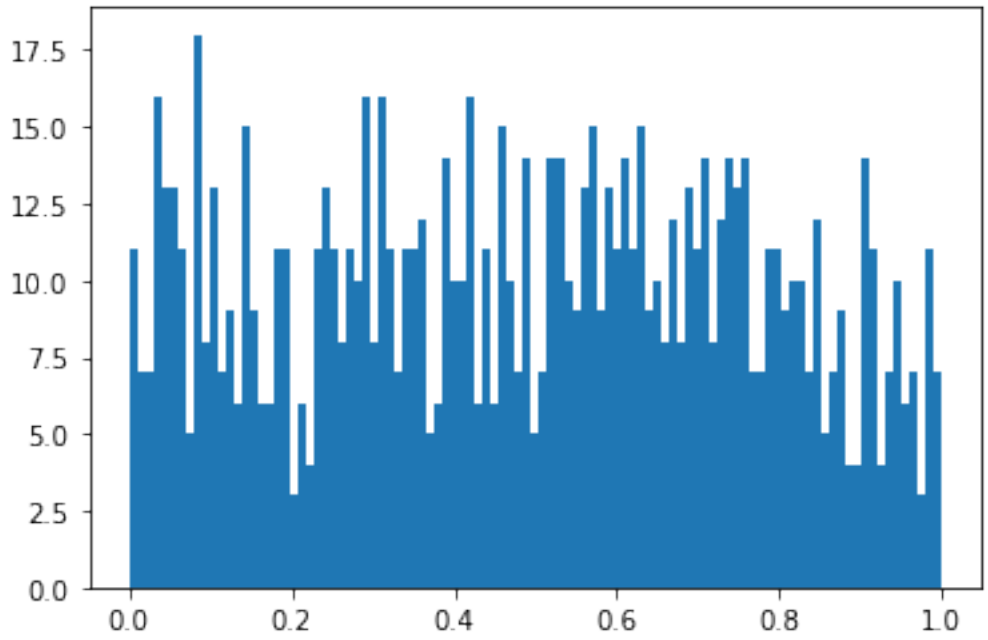
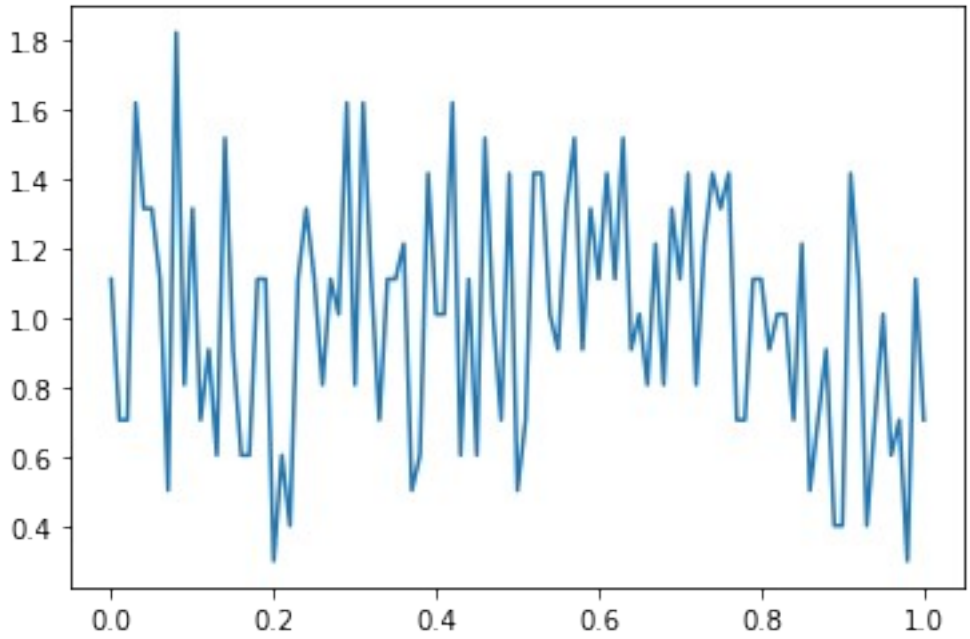
```
import numpy as np
import random
import matplotlib.pyplot as plt
```

Data to PDF

```
a=np.random.uniform(0,1,1000)
counts,bins,bars=plt.hist(a,bins=101)
plt.show()
```




```
probability=counts/1000
pdf=probability/(bins[1]-bins[0])
x=np.linspace(0,1,101)
plt.plot(x,pdf)
plt.show()
```



PDF to Data

```
x=np.linspace(0,1,101)
length=x[2]-x[1]
dataFrequency=pdf*1000*length
dt=np.zeros(100)
for i in range(0,100):
    dt[i]=int(dataFrequency[i])
data=[]
i=1
print(dt)
for b in dt:
    if i<101:
        for a in range(0,int(b)):
            c=np.random.uniform(x[i-1],x[i])
            data.append(c)
    i+=1
plt.hist(data,bins=101)
plt.plot()
```

```
[11.  7.  7. 16. 13. 13. 11.  5. 18.  8. 13.  7.  9.  6. 15.  9.  6.
6.
 11. 11.  3.  6.  4. 11. 13. 11.  8. 11. 10. 16.  8. 16. 11.  7. 11.
11.
 12.  5.  6. 14. 10. 10. 16.  6. 11.  6. 15. 10.  7. 14.  5.  7. 14.
14.
 10.  9. 13. 15.  9. 13. 11. 14. 11. 15.  9. 10.  8. 12.  8. 13. 11.
14.
  8. 12. 14. 13. 14.  7.  7. 11. 11.  9. 10. 10.  7. 12.  5.  7.  9.
```

```
4.
  4. 14. 11.  4.  7. 10.  6.  7.  3. 11.]
[]
```