Name : Saloni Vishwakarma

Batch-Roll no. : C1-13

Date of execution : 01 November 2023

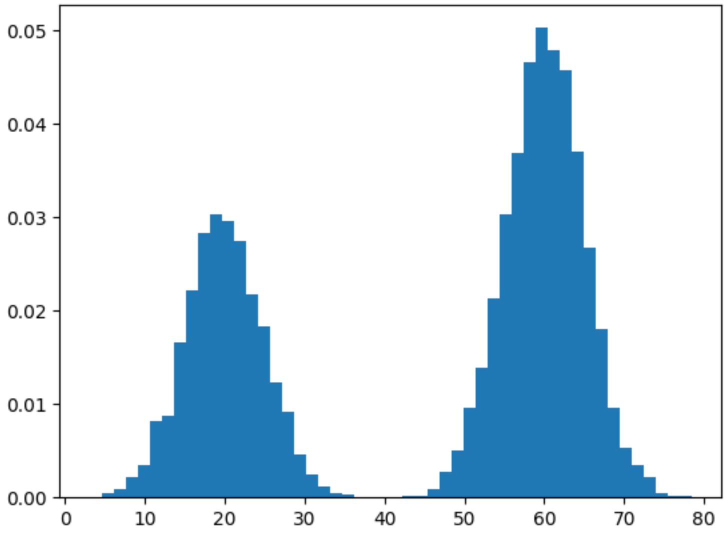
Practical No. 07(Part 2)

```
from numpy.random import normal
import pandas as pd
import numpy as np
from matplotlib import pyplot
```

```
X1=normal(loc=20,scale=5,size=3000)
X2=normal(loc=60,scale=5,size=5000)

X=np.hstack((X1,X2))
```

```
pyplot.hist(X,bins=50,density =True)
pyplot.show()
```



```
from sklearn.mixture import GaussianMixture
```

```
X=X.reshape(len(X),1)
model=GaussianMixture(n_components=2,init_params='kmeans')
model.fit(X)
```

```
▾         GaussianMixture
GaussianMixture(n_components=2)
```

```
Y_pred=model.predict(X)
print(Y_pred[: 100])
```

```
[1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1]
```

```
print(model.weights_)
print(model.means_)
print(model.covariances_)
```

```
[0.62500059 0.37499941]
[[60.01433443]
 [19.96111977]]
[[[24.845985  ]]

 [[24.15871084]]]
```