EXPERIMENT – 09

Write a Python Program to Implement Expectation & Maximization Algorithm

CODE :

```
# Simple EM Algorithm using Gaussian Mixture Model


import numpy as np

from sklearn.mixture import GaussianMixture


# Sample data

X = np.array([[1], [2], [3], [8], [9], [10]])


# Create GMM model (EM algorithm)

model = GaussianMixture(n_components=2, random_state=0)


# Train model

model.fit(X)


# Predict cluster labels

labels = model.predict(X)


print("Data points:\n", X.flatten())

print("Cluster labels:", labels)

print("Means:", model.means_.flatten())
```

OUTPUT :