Artificial Intelligence Lab
KCA 351: Session 2021-22

Experiment – No-9

Problem Statement : Write a program to Implement pattern recognition problems of handwritten digit recognition using dataset as "https://scikit-learn.org/stable/modules/generated/sklearn.datasets.load_digits.html"

[Hint: From the dataset, given attributes ('DESCR', 'data', 'feature_names', 'frame', 'images', 'target', 'target_names'), consider only 'images' and 'target']

Program:

```python
from sklearn import datasets
digits = datasets.load digits ()
dir ( digits )
digits . images . shape
print ( digits . images [0])
import matplotlib . pyplot as plt plt . imshow( digits . images [0] ,cmap=
'binary ') plt . show()
def plot multi ( i ):
  ' ' ' Plots 16 digits , starting with digit i ' ' '
  nplots = 16 fig = plt . figure ( figsize =(15 ,15))
  for j in range ( nplots ):
    plt . subplot (4 ,4 , j+1)
    plt . imshow( digits . images [ i+j ] , cmap='binary ')
    plt . t i t l e ( digits . target [ i+j ])
    plt . axis ( ' off ') plt . show() plot multi (0)
```

Output :

['DESCR','data', 'feature_names', 'frame', 'images', 'target', 'target_names']