**Lab 3: Loading and displaying some standard datasets**

1. **Write python code to load and display IRIS dataset.**

from sklearn import datasets

import pandas as pd

# Load Iris dataset

iris = datasets.load\_iris()

# Features and target

X = iris.data

y = iris.target

feature\_names = iris.feature\_names

target\_names = iris.target\_names

# Convert to DataFrame for easy display

df = pd.DataFrame(X, columns=feature\_names)

df['target'] = y

df['target\_name'] = [target\_names[i] for i in y]

# Display first 10 rows

print(df.head(10))

1. **Write python code to load and display MNIST dataset.**

import matplotlib.pyplot as plt

from sklearn.datasets import fetch\_openml

# Load MNIST dataset

mnist = fetch\_openml('mnist\_784', version=1, as\_frame=False)  # as\_frame=False returns numpy arrays

X = mnist.data    # shape (70000, 784)

y = mnist.target.astype(int)  # convert labels to int

# Plot some sample images

plt.figure(figsize=(10, 4))

for i in range(12):

    plt.subplot(3, 4, i + 1)

    image = X[i].reshape(28, 28)  # reshape flat vector to 28x28 image

    plt.imshow(image, cmap='gray')

    plt.title(f"Label: {y[i]}")

    plt.axis('off')

plt.suptitle("Sample MNIST Images")

plt.tight\_layout()

plt.show()

1. **Write python code to load and display WINE dataset.**

import pandas as pd

from sklearn.datasets import load\_wine

wine = load\_wine()

X = wine.data

y = wine.target

feature\_names = wine.feature\_names

target\_names = wine.target\_names

df = pd.DataFrame(X, columns=feature\_names)

df['target'] = y

df['target\_name'] = [target\_names[i] for i in y]

print(df.head())

**Your work:**

1. Write program to load and display Breast Cancer dataset.
2. Write program to load and display Digits dataset.