DATA PROCESSING (SPRINT 1)

Team ID	PNT2022TMID26205
Project Name	A Novel Method for Handwritten Digit Recognition
	System

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from tensorflow.keras.datasets import mnist
(x_train, y_train), (x_test, y_test) = mnist.load_data()
Downloading data from https://storage.googleapis.com/tensorflow/tf-
keras-datasets/mnist.npz
x_train
array([[[0, 0, 0, ..., 0, 0, 0],
        [0, 0, 0, \ldots, 0, 0, 0]],
       [[0, 0, 0, \ldots, 0, 0, 0],
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          [0, 0, 0, \ldots, 0, 0, 0],
          [0, 0, 0, ..., 0, 0, 0]]], dtype=uint8)
x train.shape
(60000, 28, 28)
one img = x train[0]
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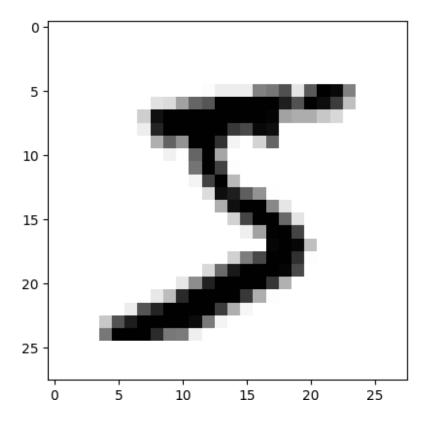
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plt.imshow(one_img,cmap='binary')

<matplotlib.image.AxesImage at 0x1c0f14903a0>



y_train
array([5, 0, 4, ..., 5, 6, 8], dtype=uint8)
from tensorflow.keras.utils import to_categorical
y_train.shape
(60000,)

```
y_example = to_categorical(y_train)
print(y_example,y_e)
```