

TEAM ID:PNT2022TMID20805

Importing The Required Libraries

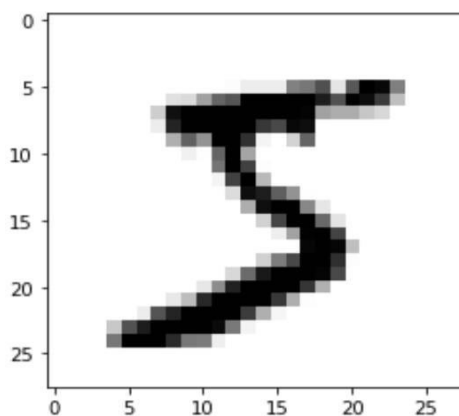
```
import pandas as pd
import numpy as np
import seaborn as sns
from keras.datasets import mnist
from keras.layers import Dense, Flatten, MaxPooling2D, Dropout
from keras.layers.convolutional import Conv2D
from keras.models import Sequential
from tensorflow.keras.utils import to_categorical
import cv2
```

Loading The Data

```
(X_train, y_train), (X_test, y_test) = mnist.load_data()
```

Analyzing The Data

```
plt.imshow(X_train[0], cmap="binary")
plt.show()
print (y_train[0])
```



Reshaping The Data

```
print("---Before reshaping the Data---")
print("Shape of X_train: {}".format(X_train.shape))
```

```

print("Shape of y_train: {}".format(y_train.shape))
print("Shape of X_test: {}".format(X_test.shape))
print("Shape of y_test: {}".format(y_test.shape))
print("-----")
print()
print("---After reshaping the Data---")
X_train = X_train.reshape(60000, 28, 28, 1)
X_test = X_test.reshape(10000, 28, 28, 1)
print("Shape of X_train: {}".format(X_train.shape))
print("Shape of y_train: {}".format(y_train.shape))
print("Shape of X_test: {}".format(X_test.shape))
print("Shape of y_test: {}".format(y_test.shape))
print("-----")

```

---Before reshaping the Data---

```

Shape of X_train: (60000, 28, 28, 1)
Shape of y_train: (60000,)
Shape of X_test: (10000, 28, 28, 1)
Shape of y_test: (10000,)

```

---After reshaping the Data---

```

Shape of X_train: (60000, 28, 28, 1)
Shape of y_train: (60000,)
Shape of X_test: (10000, 28, 28, 1)
Shape of y_test: (10000,)

```
