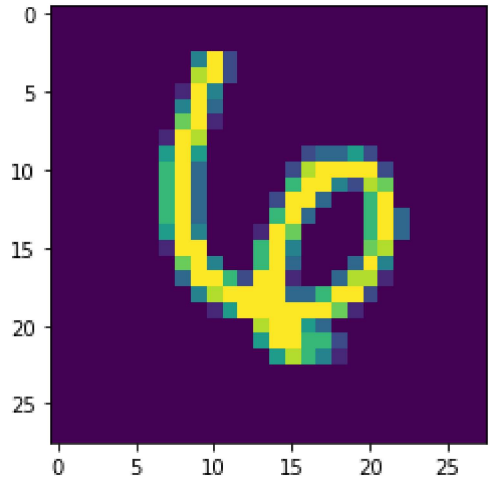
```
from keras.datasets import mnist
import matplotlib.pyplot as plt
from keras.utils import np_utils
```

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

```
Downloading data from https://storage.googleapis.com/tensorflow/tf-keras-datasets/mnist
11490434/11490434 [==============================] - 0s 0us/step
(60000, 28, 28)
(10000, 28, 28)
```

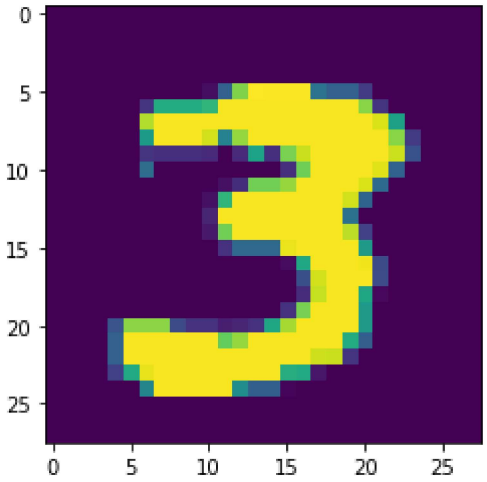
```
print("The label value is ",y_test[22])
plt.imshow(X_test[22])
```

```
The label value is  6
<matplotlib.image.AxesImage at 0x7febb3b85a10>
```




```
print("The label value is ",y_train[27])
plt.imshow(X_train[27])
```

```
The label value is  3
<matplotlib.image.AxesImage at 0x7febb3668bd0>
```




```
X_train = X_train.reshape(60000, 28, 28, 1).astype('float32')
X_test = X_test.reshape(10000, 28, 28, 1).astype('float32')
```

```
number_of_classes= 10
y_train = np_utils.to_categorical(y_train,number_of_classes)
y_test = np_utils.to_categorical(y_test,number_of_classes)
```

```
print("after encoding the value 6 of y_test[22] become", y_test[22])
```

```
after encoding the value 6 of y_test[22] become [0. 0. 0. 0. 0. 0. 1. 0. 0. 0.]
```

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