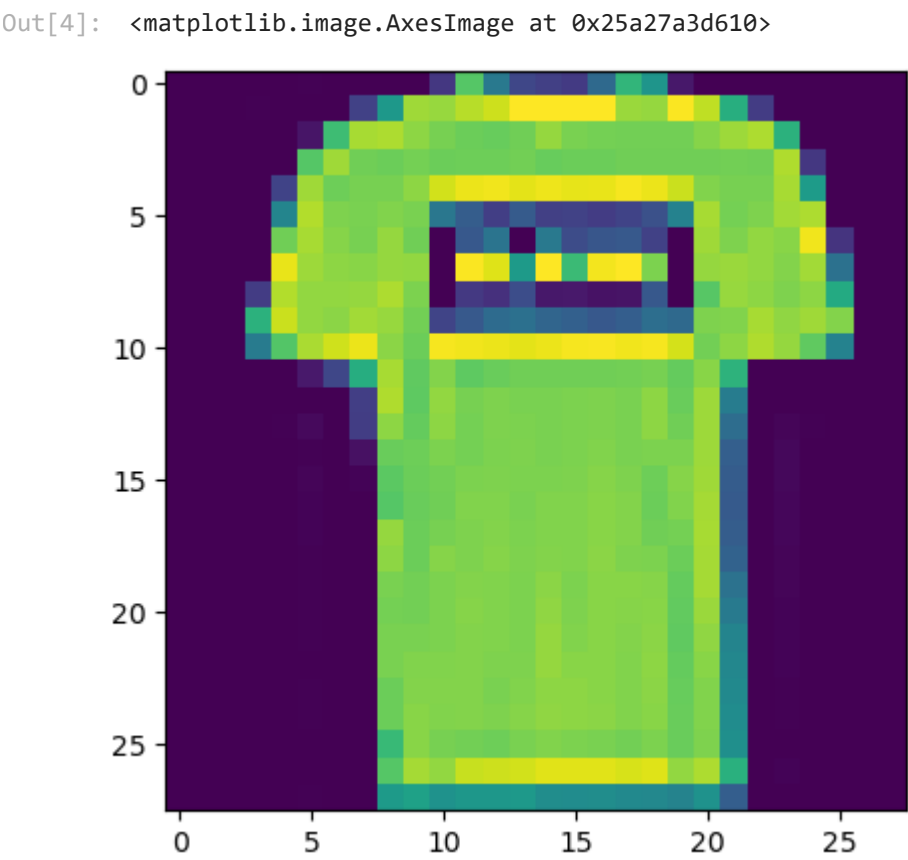


```
In [2]: import tensorflow as tf
import matplotlib.pyplot as plt
from tensorflow import keras
import numpy as np

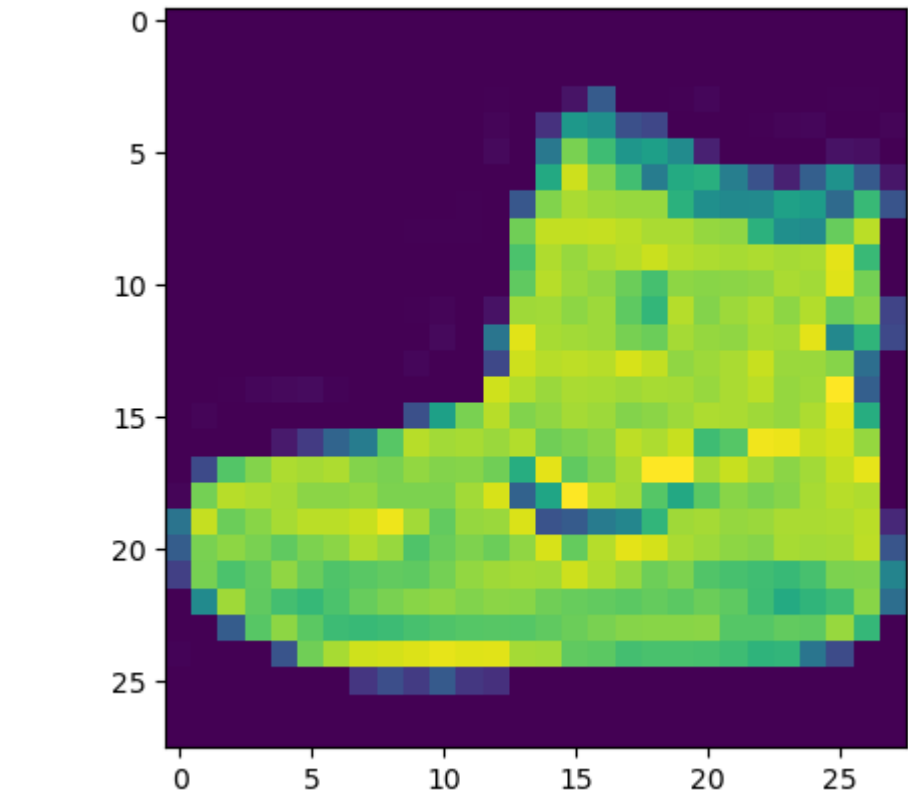
In [9]: (x_train,y_train),(x_test,y_test) = keras.datasets.fashion_mnist.load_data()

In [4]: plt.imshow(x_train[1])
```



```
In [5]: plt.imshow(x_train[0])

Out[5]: <matplotlib.image.AxesImage at 0x25a2d2b8a10>
```



```
In [6]: x_train = x_train.astype('float32') / 255.0
x_test = x_test.astype('float32') / 255.0
x_train = x_train.reshape(-1,28,28,1)
x_test = x_test.reshape(-1,28,28,1)
```

```
In [10]: x_train.shape
(60000,28,28)
x_test.shape
(10000,28,28,1)
y_train.shape
(60000)
y_test.shape
(10000)
```

Out[10]: 10000

```
In [12]: model = keras.Sequential([keras.layers.Conv2D(32, (3,3), activation='relu',input_shape = (28,28,1)),
keras.layers.MaxPooling2D((2,2)),
keras.layers.Dropout(0.25),
keras.layers.Conv2D(64,(3,3),activation='relu'),
keras.layers.MaxPooling2D((2,2)),
keras.layers.Dropout(0.25),
keras.layers.Conv2D(128,(3,3), activation='relu'),
keras.layers.Flatten(),
keras.layers.Dense(128, activation='relu'),
keras.layers.Dropout(0.25),
keras.layers.Dense(10, activation='softmax')])
```

```
In [13]: model.summary()
```

Model: "sequential_1"

Layer (type)	Output Shape	Param #
conv2d_3 (Conv2D)	(None, 26, 26, 32)	320
max_pooling2d_2 (MaxPooling2D)	(None, 13, 13, 32)	0
dropout_3 (Dropout)	(None, 13, 13, 32)	0
conv2d_4 (Conv2D)	(None, 11, 11, 64)	18,496
max_pooling2d_3 (MaxPooling2D)	(None, 5, 5, 64)	0
dropout_4 (Dropout)	(None, 5, 5, 64)	0
conv2d_5 (Conv2D)	(None, 3, 3, 128)	73,856
flatten_1 (Flatten)	(None, 1152)	0
dense_2 (Dense)	(None, 128)	147,584
dropout_5 (Dropout)	(None, 128)	0
dense_3 (Dense)	(None, 10)	1,290

Total params: 241,546 (943.54 KB)
Trainable params: 241,546 (943.54 KB)
Non-trainable params: 0 (0.00 B)

```
In [ ]:
```