(X\_train, y\_train), (X\_test,y\_test) **=** tf**.**keras**.**datasets**.**cifar10**.**load\_data()

**Data Visualization**

**def** plot\_sample(index):

plt**.**figure(figsize **=** (10,1))

plt**.**imshow(X\_train[index])

classes **=** ["airplane","automobile","bird","cat","deer","dog","frog","horse","ship","truck"]

**Preprocessing: Scale images**

X\_train\_scaled **=** X\_train **/** 255

X\_test\_scaled **=** X\_test **/** 255

y\_train\_categorical **=** keras**.**utils**.**to\_categorical(y\_train, num\_classes**=**10, dtype**=**'float32')

# y\_test\_categorical **=** keras**.**utils**.**to\_categorical(y\_test, num\_classes**=**10, dtype**=**'float32')

|  |  |
| --- | --- |
|  | OUTPUT |
| plot\_sample(3) | A picture containing text  Description automatically generated |
| classes[y\_train[3][0]] | Deer |
| y\_train**.**shape | (50000, 1) |
| X\_train**.**shape | (50000, 32, 32, 3) |
| y\_train[:3] | array([[6],  [9],  [9]], dtype=uint8) |
| y\_train\_categorical[0:3] | array([[0., 0., 0., 0., 0., 0., 1., 0., 0., 0.],  [0., 0., 0., 0., 0., 0., 0., 0., 0., 1.],  [0., 0., 0., 0., 0., 0., 0., 0., 0., 1.]], dtype=float32) |

Si se hace

**Preprocessing/Scaling: Since our columns are on different scale (between 0, 1)**

**from** sklearn **import** preprocessing

sx **=** preprocessing**.**MinMaxScaler()

sy **=** preprocessing**.**MinMaxScaler()

scaled\_X **=** sx**.**fit\_transform(df**.**drop('price',axis**=**'columns'))

scaled\_y **=** sy**.**fit\_transform(df['price']**.**values**.**reshape(df**.**shape[0],1))

**We should convert target column (i.e. price) into one dimensional array. It has become 2D due to scaling that we did above but now we should change to 1D**

scaled\_y**.**reshape(20,)