

## Analyzing The Data

Let's see the Information of an image lying inside the x\_train variable

### Understanding the data

```
x_train[0]#printing the first image
```

```
[ 0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,
  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,
  0,  0],
[ 0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,
  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,
  0,  0],
[ 0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,
  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,
  0,  0],
[ 0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  0,  3,
 18, 18, 18, 126, 136, 175, 26, 166, 255, 247, 127,  0,  0,
 0,  0],
[ 0,  0,  0,  0,  0,  0,  0,  0,  0,  30, 36, 94, 154, 170,
253, 253, 253, 253, 253, 225, 172, 253, 242, 195, 64,  0,  0,
0,  0],
[ 0,  0,  0,  0,  0,  0,  0,  0,  49, 238, 253, 253, 253, 253,
253, 253, 253, 253, 251, 93, 82, 82, 56, 39,  0,  0,  0,
0,  0],
[ 0,  0,  0,  0,  0,  0,  0,  0, 18, 219, 253, 253, 253, 253,
253, 198, 182, 247, 241,  0,  0,  0,  0,  0,  0,  0,  0,
0,  0],
[ 0,  0,  0,  0,  0,  0,  0,  0,  0, 80, 156, 107, 253, 253,
205, 11,  0, 43, 154,  0,  0,  0,  0,  0,  0,  0,  0,
0,  0],
[ 0,  0,  0,  0,  0,  0,  0,  0,  0,  0, 14,  1, 154, 253,
```

Basically, the pixel values range from 0-255. Here we are printing the first image pixel value which is index[0] of the training data. As you see it is displayed in the output.

With respect to this image, the label of this image will be stored in y\_train let's see what is the label of this image by grabbing it from the y\_train variable

```
y_train[0]#printing lable of first image

5
```

As we saw in the previous screenshot, we get to know that the pixel values are printed. Now here we are finding to which image the pixel values belong to. From the output displayed we get to know that the image is '5'.

Lets Plot the image on a graph using the Matplot library



Matplotlib is a comprehensive library for creating static, animated, and interactive visualizations in Python. By using the Matplotlib library we are displaying the number '5' in the form of an image for proper understanding.

**Note:** You can see the results by replacing the index number till 59999 as the train set has 60K images