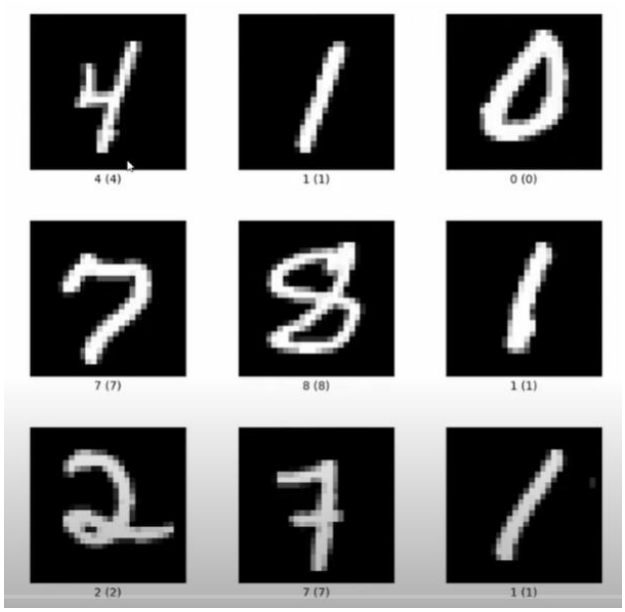
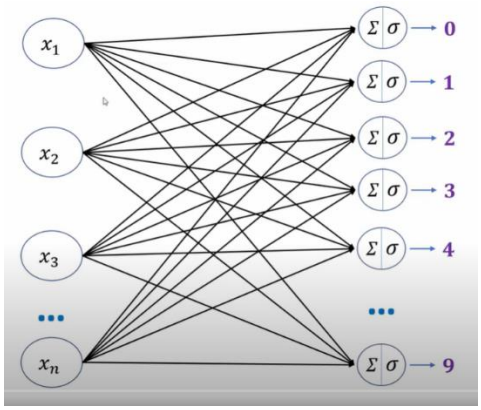


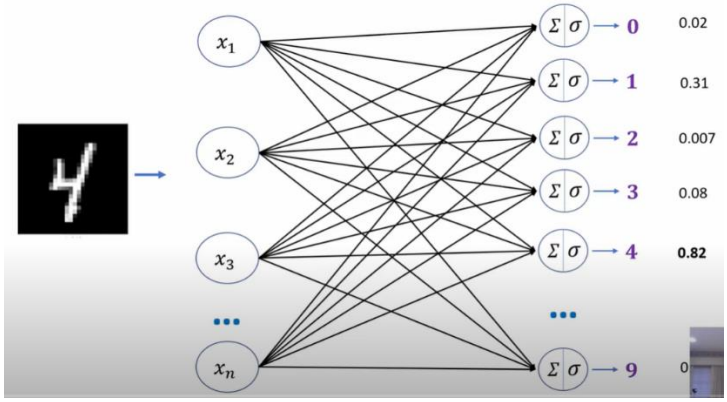
We will design a very simple neural network for classifying handwritten digits



Where we will feed an image to the input layer and the output layer will have 10 neurons

Bcz we are classigying an image into 10 different classes which is 0 to 9

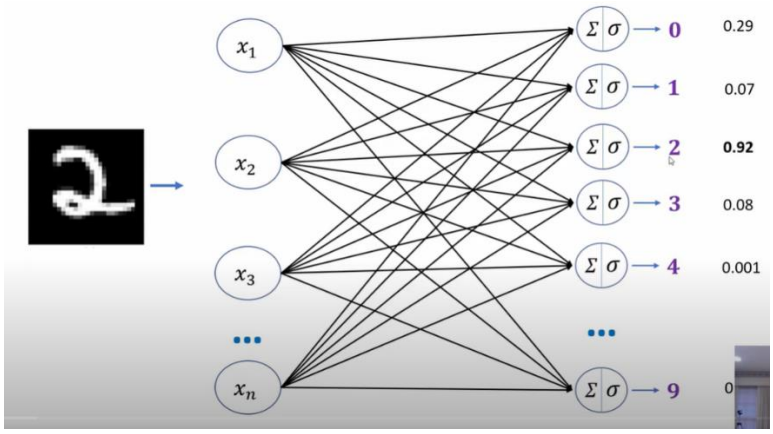
And we want to classify an image as one of these classes



So if we feed this image the output will have this kind of score, since we are using sigmoid function the output will be in between 0 to 1

4 has got the highest score 0.82, that means 0.82 percent it looks like 4

So we will say the image is 4



Similarly for 2

Now the question is how do u convert the image into neuron

Bcz we have x1,x2,x3….xn neurons

So we have to feed the image into these neurons

So how can we supply these neurons

For image what we do is

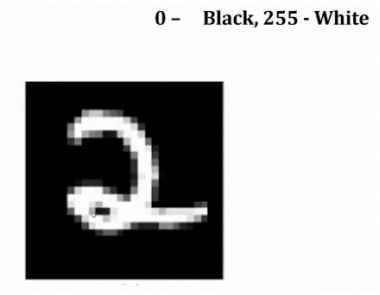


Image is ultimately a 2-dimensional matrix, where each pixel is represented with a number between 0 to 255

255 is white

0 is black

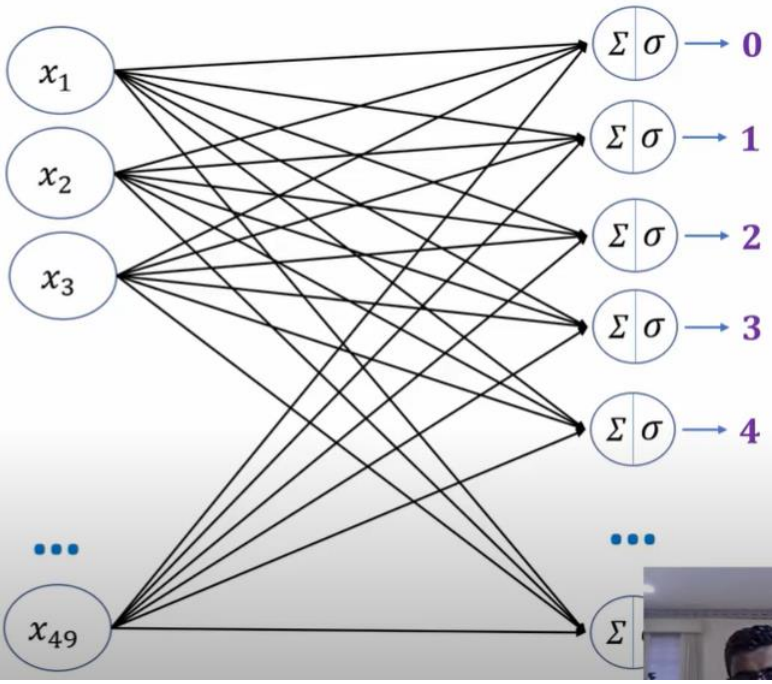
and in between we have numbers

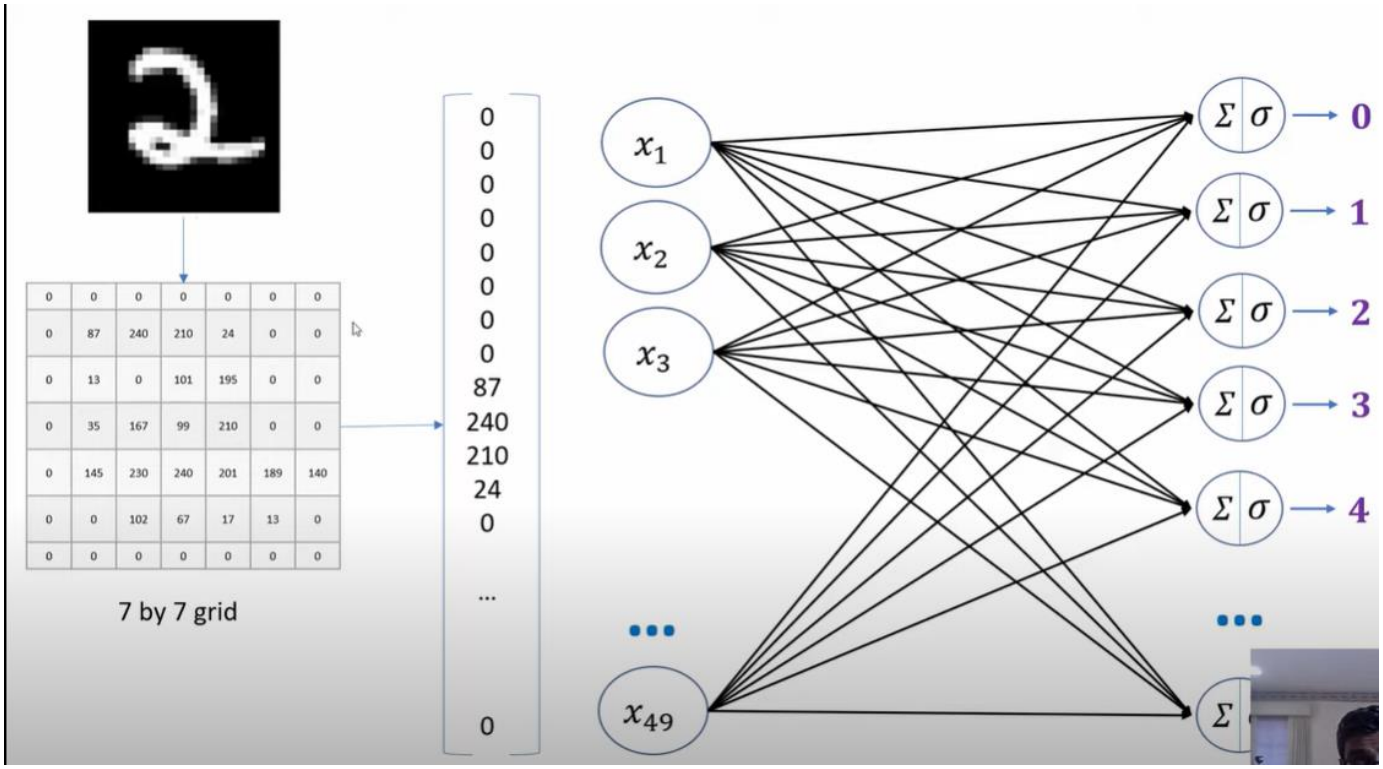
0 – Black, 255 - White

0	0	0	0	0	0	0
0	87	240	210	24	0	0
0	13	0	101	195	0	0
0	35	167	99	210	0	0
0	145	230	240	201	189	140
0	0	102	67	17	13	0
0	0	0	0	0	0	0

0	0	0	0	0	0	0
0	87	240	210	24	0	0
0	13	0	101	195	0	0
0	35	167	99	210	0	0
0	145	230	240	201	189	140
0	0	102	67	17	13	0
0	0	0	0	0	0	0

7 by 7 grid





We can convert the 2-dimensional array into 1-dimensional array . we can flatten the array