Congratulations! You passed!

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1.
Which of these can be used as the final layer of a multi-class classifier?

○ Sigmoid

○ Softmax

Correct

○ Identity

○ ReLU

○ TanH

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2.
Suppose that you have 2000x3000 (6MB) color images taken by a camera. If you create a linear model with all the pixels from the camera as input, how many input nodes will there be in your model?

○ 1

○ 18 million

Correct
6 million pixels, and 3 values (rgb) per pixel, makes each image contain 18 million floating point values that will be fed into the model as inputs

○ 6 million

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3.

In this module, we demonstrated DNNs on MNIST which is a 28x28 image. Deep neural networks with dense layers do not perform well when applied directly to real-world images. Why do you think that is?

○ Real-world images are larger, and so, there are too many weights to optimize

Correct

A 100x50x10 neural network when applied to a "low-resolution" 1000x1000x3 image will need to optimize 150 billion weights. It is unlikely that you will have enough training data.

○ Dropout doesn't work with dense layers, and so we need to regularize using L2 which is too slow

○ DNNs do not work with color images and so we will have to build 3 separate models

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4.

In the labs in this module, we used a custom estimator rather than a prebuilt estimator like the LinearClassifier. Why?

○ So that we can call train_and_evaluate

○ LinearClassifier has no way to work with pixel values because this is not structured data.

○ So that we can change the image classifier model in later modules.

Correct

For what we did in this chapter, we could have used LinearClassifier and DNNClassifier. The inputs would have been a numeric feature column.

○ So that we can show both linear and DNN models