Custom Layers
Graded Quiz • 30 min

Due Mar 29, 1:59 AM CDT

! Try again once you are ready

TO PASS 80% or higher

Try again

GRADE
70%

Custom Layers

LATEST SUBMISSION GRADE

70%

1. Lambda layer allows to execute an arbitrary function only within a Sequential API model.

1 / 1 point

○ True

● False

✓ **Correct**
Correct!

2. Which one of the following is the correct syntax for mapping an increment of 2 to the value of "x" using a Lambda layer? (tf = Tensorflow)

0 / 1 point

○ tf.keras.layers.Lambda(lambda x: tf.math.add(x, 2.0))

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● tf.keras.layers.Lambda(x: tf.math.add(x, 2.0))

! **Incorrect**
Incorrect! Lambda function needs to be passed as argument to the lambda layer.

3. One drawback of Lambda layers is that you cannot call a custom built function from within them.

1 / 1 point

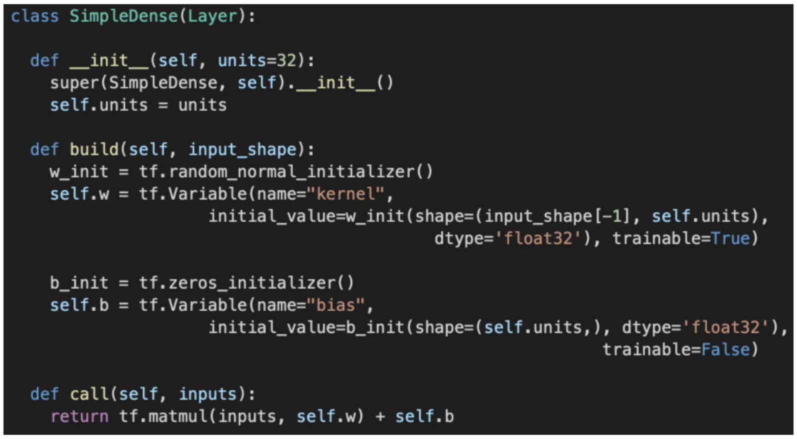
○ True

● False

✓ **Correct**
Correct!

4. A *Layer* is defined by having "States" and "Computation". Consider the following code and check all that are true:

0.5 / 1 point



```
class SimpleDense(Layer):

  def __init__(self, units=32):
    super(SimpleDense, self).__init__()
    self.units = units

  def build(self, input_shape):
    w_init = tf.random_normal_initializer()
    self.w = tf.Variable(name="kernel",
                initial_value=w_init(shape=(input_shape[-1], self.units),
                                       dtype='float32'), trainable=True)

    b_init = tf.zeros_initializer()
    self.b = tf.Variable(name="bias",
                initial_value=b_init(shape=(self.units,), dtype='float32'),
                                        trainable=False)

  def call(self, inputs):
    return tf.matmul(inputs, self.w) + self.b
```

☑ You use def build(self, input_shape): to create the state of the layers and specify local input states.

✓ **Correct**
Correct!

☑ After training, this class will return a w*X + b computation, where X is the input, w is the weight/kernel tensor with trained values, and b is the bias tensor with trained values.

! **This should not be selected**
Incorrect! bias *b* will not be trained, instead maintain its initial value, as the *trainable* parameter for it is set to False within the build function.

False within the build function.

□ In def __init__(self, units=32): you use the *super* keyword to initialize all of the custom layer attributes

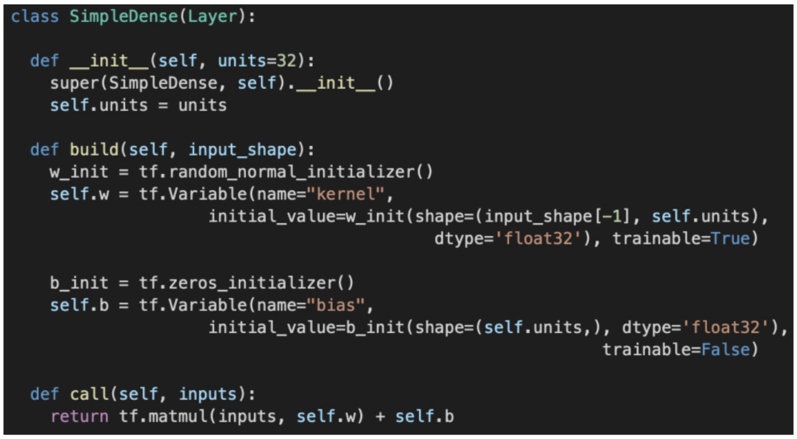
☑ def call(self, inputs): performs the computation and is called when the Class is instantiated.

! **This should not be selected**

Incorrect! This function is called during training.

5. Consider the following code snippet.

1 / 1 point



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```

What are the function modifications that are needed for passing an activation function to this custom layer implementation?

○ def build(self, input_shape):

.

.

self.activation = tf.keras.activations.get(activation)

def call(self, inputs):

return self.activation(tf.matmul(inputs, self.w) + self.b)

○ def build(self, units=32, activation=None):

.

.

self.activation = activation

def call(self, inputs):

return self.activation(tf.matmul(inputs, self.w) + self.b)

○ def __init__(self, units=32):

.

.

self.activation = tf.keras.activations.get(activation)

def call(self, inputs):

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● def __init__(self, units=32, activation=None):

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✓ **Correct**

Correct!