2.3 Assignment Solution

We hope you enjoyed developing a model that can solve the CIFAR-10 dataset!

There are many possible solutions to this assignment. One good approach (as suggested by the hints), is to use convolutional and pooling layers to find high level features and then dense layers to classify those features. A possible solution to the model design is shown below:

```python
FIRST_LAYER = layers.Conv2D(32, (3, 3), activation='relu',
input_shape=(32, 32, 3))
HIDDEN_LAYER_TYPE_1 = layers.MaxPooling2D((2, 2))
HIDDEN_LAYER_TYPE_2 = layers.Conv2D(64, (3, 3), activation='relu')
HIDDEN_LAYER_TYPE_3 = layers.MaxPooling2D((2, 2))
HIDDEN_LAYER_TYPE_4 = layers.Conv2D(64, (3, 3), activation='relu')
HIDDEN_LAYER_TYPE_5 = layers.Dense(64, activation='relu')
LAST_LAYER = layers.Dense(10)
```

For this assignment an optimizer with an adaptive learning rate often performs quite well and for the loss we want something that can help optimize for differences across categories. Again there are many possible options that will work. A possible solution is:

```python
OPTIMIZER = 'adam'
LOSS = tf.keras.losses.SparseCategoricalCrossentropy(from_logits=True)
```

As always you'll find the link to the assignment again below in case you want to explore it a bit more now that you have a solution.

https://colab.research.google.com/github/tinyMLx/colabs/blob/master/2-3-9-AssignmentQuestion.ipynb