Assignment #5

For all your work, submit a Notebook (either Jupyter or Colab.)
Using **TensorFlow/Kera's Core** functionality, provide code snippets for the following Deep Learning tasks:

Perform **Image Classification** using Convolutional Neural Networks (CNNs):
Dataset: MNIST TFDS Dataset

#1 Build the Model
Use these parameters:
Input = all MNIST's gray images (not color!)
Hidden Layers = 2CNN layers (Conv2D) with kernel_size of 2
https://keras.io/api/layers/convolution_layers/convolution2d/
After each CNN layer add a MaxPooling2D layer with pool_size = (2,2)
https://keras.io/api/layers/pooling_layers/max_pooling2d/
All hidden layers have activation_function = 'relu'
The output layer has activation_function = 'softmax'

#2 Compile the Model
Use these parameters:
optimizer='adam'
loss='sparse_categorical_crossentropy'
metric='accuracy'

#3 Train the Model
Use these parameters:
epochs = 100
train dataset = MNIST's train-dataset
train labels = MNIST's train-labels
validation_data = MNIST's test-dataset, MNIST's test-labels