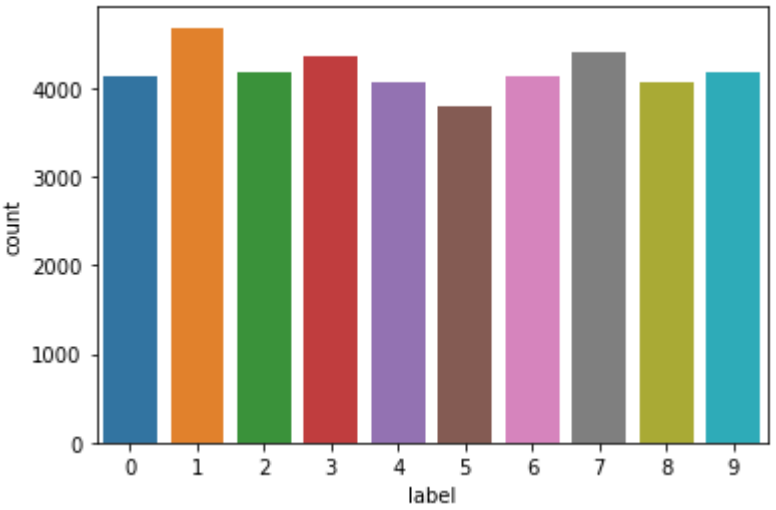
【Lab2】Kaggle Digit Recognizer

Deep柴

1. 資料觀察
   A. 確認是否有NA　沒有
   B. 確認是否有 Unbalance 問題　　沒有

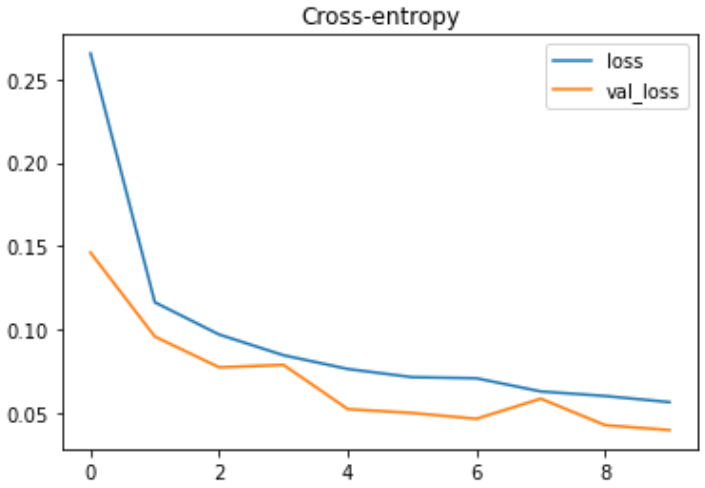


2. 資料前處裡
   A. 將 row data 轉換成 Image (2D array)
   B. Normalize: 將數值除以255

3. 程式碼: 使用 Jupyter Notebook 運行，下圖是模型的訓練程式碼
   A. 使用 Lenet 5 Model，加入三層 Dropout

```
: # Create Model
lenet_5_model = keras.models.Sequential()
# 32*32*1
lenet_5_model.add(Conv2D(6, (5, 5), input_shape=[28, 28, 1], padding='same', activation='relu'))
lenet_5_model.add(Dropout(rate=0.5))
# 28*28*6
lenet_5_model.add(MaxPooling2D(pool_size=(2, 2)))
lenet_5_model.add(Dropout(rate=0.4))
# 14*14*6
lenet_5_model.add(Conv2D(16, (5, 5), padding='same', activation='relu'))
lenet_5_model.add(Dropout(rate=0.3))
# 10*10*16
lenet_5_model.add(MaxPooling2D(pool_size=(2, 2)))
# 5*5*16
lenet_5_model.add(Conv2D(120, (5, 5), activation='relu'))
# 1*1*120
lenet_5_model.add(tf.keras.layers.Flatten())
lenet_5_model.add(tf.keras.layers.Dense(84, activation='relu'))
# 84
lenet_5_model.add(tf.keras.layers.Dense(10, activation='softmax'))
# 10
```

4. 模型訓練
   A. epochs=10
   B. validation_data = training data 的前 5000 筆



5. 結果