

TEAM ID:PNT2022TMID10395

► Understanding the Data (Sprint-1)

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▼ Dening Model (sprint-2)

```
#Import libraries from keras.models import
Sequential from keras.layers import Dense,
Dropout, Flatten from keras.layers import
Conv2D, MaxPool2D

#Adding Layers model = Sequential() model.add(Conv2D(filters=32,
kernel_size=(4,4),activation='relu',input_shape=(28,28,1)))
model.add(MaxPool2D(pool_size=(2,2))) model.add(Flatten())
model.add(Dense(128,activation='relu')) model.add(Dense(10,activation='softmax'))

#Compilation of the model
model.compile(loss='categorical_crossentropy',optimizer='Adadelta',metrics=['accuracy'])

#Early Stopping and Callbacks from
tensorflow.keras.callbacks import EarlyStopping

early_stop = EarlyStopping(monitor='val-loss', patience=1)

#Test the Model model.fit(x_train,y_cat_train,
epochs=15,
validation_data=(x_test,y_cat_test),
callbacks=[early_stop])
```

Epoch 1/15

1858/1875 [=====>.] - ETA: 0s - loss: 0.0072 - accuracy: 0.997

1875/1875 [=====] - 7s 3ms/step - loss: 0.0072 - accuracy: 0

Epoch 2/15

1869/1875 [=====>.] - ETA: 0s - loss: 0.0067 - accuracy: 0.997

1875/1875 [=====] - 6s 3ms/step - loss: 0.0067 - accuracy: 0

Epoch 3/15

1865/1875 [=====>.] - ETA: 0s - loss: 0.0063 - accuracy: 0.997

1875/1875 [=====] - 6s 3ms/step - loss: 0.0063 - accuracy: 0

Epoch 4/15

1866/1875 [=====>.] - ETA: 0s - loss: 0.0059 - accuracy: 0.998

1875/1875 [=====] - 6s 3ms/step - loss: 0.0059 - accuracy: 0

Epoch 5/15

1866/1875 [=====>.] - ETA: 0s - loss: 0.0054 - accuracy: 0.998

1875/1875 [=====] - 7s 4ms/step - loss: 0.0056 - accuracy: 0

Epoch 6/15

1868/1875 [=====>.] - ETA: 0s - loss: 0.0052 - accuracy: 0.998

1875/1875 [=====] - 7s 4ms/step - loss: 0.0052 - accuracy: 0

Epoch 7/15

1861/1875 [=====>.] - ETA: 0s - loss: 0.0050 - accuracy: 0.998

1875/1875 [=====] - 7s 4ms/step - loss: 0.0050 - accuracy: 0

Epoch 8/15

1868/1875 [=====>.] - ETA: 0s - loss: 0.0046 - accuracy: 0.998

1875/1875 [=====] - 6s 3ms/step - loss: 0.0047 - accuracy: 0

Epoch 9/15

1861/1875 [=====>.] - ETA: 0s - loss: 0.0045 - accuracy: 0.998

1875/1875 [=====] - 6s 3ms/step - loss: 0.0045 - accuracy: 0

Epoch 10/15

1863/1875 [=====>.] - ETA: 0s - loss: 0.0043 - accuracy: 0.998

1875/1875 [=====] - 6s 3ms/step - loss: 0.0043 - accuracy: 0

Epoch 11/15

1866/1875 [=====>.] - ETA: 0s - loss: 0.0041 - accuracy: 0.998

1875/1875 [=====] - 7s 4ms/step - loss: 0.0041 - accuracy: 0

Epoch 12/15

1865/1875 [=====>.] - ETA: 0s - loss: 0.0039 - accuracy: 0.998

1875/1875 [=====] - 7s 4ms/step - loss: 0.0039 - accuracy: 0

Epoch 13/15

1867/1875 [=====>.] - ETA: 0s - loss: 0.0037 - accuracy: 0.998

1875/1875 [=====] - 8s 4ms/step - loss: 0.0037 - accuracy: 0

Epoch 14/15

1872/1875 [=====>.] - ETA: 0s - loss: 0.0036 - accuracy: 0.998

1875/1875 [=====] - 7s 4ms/step - loss: 0.0036 - accuracy: 0

Epoch 15/15

1859/1875 [=====>.] - ETA: 0s - loss: 0.0034 - accuracy: 0.998

1875/1875 [=====] - 7s 4ms/step - loss: 0.0034 - accuracy: 0

<keras.callbacks.History at 0x7f403c0cf190>

