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Model Building
Importing The Required Model Building Libraries

In [ ]:

```
from tensorflow.keras.preprocessing.image import ImageDataGenerator
```

In [ ]:

```
from keras.models import Sequential, load_model from
keras.layers.core import Dense, Dropout, Activation from keras.utils
import np_utils
```

In [ ]:

```
# Training Datagen train_datagen =
ImageDataGenerator(rescale=1/255,zoom_range=0.2,horizontal_flip=True,vertica
l_flip=False) # Testing Datagen
test_datagen = ImageDataGenerator(rescale=1/255)
```

In [ ]:

```
# Training Dataset
x_train=train_datagen.flow_from_directory(r'/content/drive/MyDrive/Dataset/t
raining_set',target_size=(64,64), class_mode='categorical',batch_size=900)
# Testing Dataset
x_test=test_datagen.flow_from_directory(r'/content/drive/MyDrive/Dataset/tes
t_set',target_size=(64,64), class_mode='categorical',batch_size=900)
```

```
Found 15760 images belonging to 9 classes.  Found
2250 images belonging to 9 classes.
```

In [ ]:

```
print("Len x-train : ", len(x_train)) print("Len
x-test : ", len(x_test))
```

```
Len x-train : 18 Len x-
test :  3
```

In [ ]:

```
# The Class Indices in Training Dataset x_train.class_indices
```

Out[ ]:

```
{'A': 0, 'B': 1, 'C': 2, 'D': 3, 'E': 4, 'F': 5, 'G': 6, 'H': 7, 'I': 8}
```

Model Creation

In [ ]:

```
# Importing Libraries from tensorflow.keras.models
import Sequential
from tensorflow.keras.layers import Convolution2D,MaxPooling2D,Flatten,Dense
```

In [ ]:

```
dataset = pd.read_csv('E:\Datasets
```