

# ADD THE FLATTEN LAYERS

**Team ID : PNT2022TMID06310**

**Title: Real-Time Communication System Powered by AI for Specially Abled**

Loading the Dataset & Image Data Generation

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

```
# Training Datagen
```

```
train_datagen =
```

```
ImageDataGenerator(rescale=1/255, zoom_range=0.2, horizontal_flip=True, vertical_flip=False)
```

```
# Testing Datagen
```

```
test_datagen = ImageDataGenerator(rescale=1/255)
```

```
# Training Dataset
```

```
x_train=train_datagen.flow_from_directory(r'~/content/drive/MyDrive/Dataset/training_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/test_set', target_size=(64,6
```

```
4), class_mode='categorical', batch_size=900)
```

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

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

```
print('Len x-train : ', len(x_train))
```

```
print('Len x-test : ', len(x_test))
```

```
Len x-train : 18
```

```
Len x-test : 3
```

```
# The Class Indices in Training Dataset
```

```
x_train.class_indices
```

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

Model Creation

### # Importing Libraries

```
from tensorflow.keras.models import Sequential
```

```
from tensorflow.keras.layers import Convolution2D,MaxPooling2D,Flatten,Dense
```

# Creating Model

```
model=Sequential()
```

# Adding Layers

```
model.add(Convolution2D(32,(3,3),activation='relu',input_shape=(64,64,3)))
```

```
model.add(MaxPooling2D(pool_size=(2,2)))
```

```
model.add(Flatten())
```

# Adding Dense Layers

```
model.add(Dense(300,activation='relu'))
```

```
model.add(Dense(150,activation='relu'))
```

```
model.add(Dense(9,activation='softmax'))
```

# Compiling the Model

```
model.compile(loss='categorical_crossentropy',optimizer='adam',metrics=['accuracy'])
```

TEAM ID: PNT2022TMID06310