

Date	12 November 2022
Team ID	PNT2022TMID46648
Project Name	Real time Communication Powered by AI for specially abled
Maximum Marks	8 Marks

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```

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    "from keras.preprocessing.image import ImageDataGenerator\n",

    "train_datagen=ImageDataGenerator(rescale=1./255,shear_range=0.2,zoom_range=0.2,horizontal_flip= True)\n",

    "test_datagen=ImageDataGenerator(rescale=1./255)"

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        "x_train
train_datagen.flow_from_directory('/content/Dataset/training_set',target_size=(64,64),batch_size
= 300, class_mode='categorical',color_mode='grayscale')"

    ],

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    },

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                "Found 15750 images belonging to 9 classes.\n"

```

```

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test_datagen.flow_from_directory('/content/Dataset/test_set',target_size=(64,64),batch_size=30
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_mode='categorical',color_mode=\"grayscale\")"
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      "text": [
        "Found 2250 images belonging to 9 classes.\n"
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```

```

},
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    "from keras.models import
    Sequential\n", "from keras.layers
    import Dense\n",
    "from      keras.layers      import
    Convolution2D\n", "from  keras.layers
    import      MaxPooling2D\n",      "from
    keras.layers import Dropout\n",
    "from keras.layers import Flatten"
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    "model = Sequential()"
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```

```

},

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    "model.add(Convolution2D(32,(3,3),input_shape=(64,64,1),
    activation='relu'))\n", "#no. of feature detectors, size of feature detector, image size,
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    "model.compile(loss='categorical_crossentropy', optimizer = 'adam', metrics = ['accuracy'])"
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    "model.fit_generator(x_train,steps_per_epoch=24,epochs=10,validation_data    =    x_test,
validation_steps= 40)\n",
    "#steps_per_epoch = no. of train images//batch size"
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```



```

"stderr",

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    "/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:1: UserWarning:
`Model.fit_generator` is deprecated and will be removed in a future version. Please use `Model.fit`,
which supports generators.\n",

    "\n\nEntry point for launching an IPython kernel.\n"

]

},

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        "Epoch 1/10\n",

        "24/24 [=====] - ETA: 0s - loss: 1.2714 - accuracy:
0.6219"

    ]

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{
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        "WARNING:tensorflow:Your input ran out of data; interrupting training. Make sure that
your dataset or generator can generate at least `steps_per_epoch * epochs` batches (in this
case, 40 batches). You may need to use the repeat() function when building your dataset.\n"

    ]

},

{
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"stdout",

```
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[illegible]

"Epoch 2/10\n",

```
"24/24 [=====] - 33s 1s/step - loss: 0.2827 - accuracy: 0.9211\n",
```

"Epoch 3/10\n",

"24/24 [=====] - 34s 1s/step - loss: 0.1448 - accuracy:
0.9615\n",

"Epoch 4/10\n",

"24/24 [=====] - 32s 1s/step - loss: 0.0958 - accuracy:
0.9746\n",

"Epoch 5/10\n",

"24/24 [=====] - 34s 1s/step - loss: 0.0679 - accuracy:
0.9826\n",

"Epoch 6/10\n",

"24/24 [=====] - 32s 1s/step - loss: 0.0424 - accuracy:
0.9909\n",

"Epoch 7/10\n",

"24/24 [=====] - 32s 1s/step - loss: 0.0373 - accuracy:
0.9908\n",

"Epoch 8/10\n",

"24/24 [=====] - 33s 1s/step - loss: 0.0319 - accuracy:
0.9915\n",

"Epoch 9/10\n",

"24/24 [=====] - 32s 1s/step - loss: 0.0235 - accuracy:
0.9940\n",

"Epoch 10/10\n",

"24/24 [=====] - 32s 1s/step - loss: 0.0170 - accuracy:
0.9972\n"

]

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"<keras.callbacks.History at 0x7fe3bd2e8c90>"

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