DataSet Loading

In [1]:

```
from keras.preprocessing.image import ImageDataGenerator
train_datagen=ImageDataGenerator(rescale=1./255,shear_range=0.2,zoom_range=0
test_datagen=ImageDataGenerator(rescale=1./255)
```

In [2]:

```
x_train=train_datagen.flow_from_directory('/content/drive/MyDrive/flowers/Fl
```

```
Found 4322 images belonging to 5 classes.
```

In [3]:

```
x_test=test_datagen.flow_from_directory('/content/drive/MyDrive/flowers/Flow
```

```
Found 4322 images belonging to 5 classes.
```

Image Augmentation & adding layers

In [13]:

```
from keras.models import Sequential
from keras.layers import Dense
from keras.layers import Convolution2D
from keras.layers import MaxPooling2D
from keras.layers import Dropout
from keras.layers import Flatten
```

In [14]:

```
model= Sequential()
```

In [15]:

```
model.add(Convolution2D(32,(3,3),input_shape=(64,64,1),activation='relu'))
```

In [16]:

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

In [17]:

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

In [18]:

```
model.add(Dense(units=512,activation='relu'))
```

In [19]:

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

Creating Model

In [20]:

```
model.compile(loss='categorical_crossentropy',optimizer='adam',metrics=['acc
```

Saving model

In [ ]:

```
model.fit_generator(x_train,steps_per_epoch=24,epochs=10,validation_data=x_t
```

```
Epoch 1/10
```

In [21]:

```
model.save('aslpng1.h5')
```

Model Testing

In [22]:

```
from keras.models import load_model
import numpy as np
import cv2
```

In [23]:

```
model=load_model('/content/aslpng1.h5')
```

In [24]:

```
from skimage.transform import resize
def detect(frame):
  img = resize(frame,(64,64,1))
  img = np.expand_dims(img,axis=0)
  if(np.max(img)>1):
    img=img/255.0
  prediction = model.predict(img)
  print(prediction)
  predictions = (model.predict(x_test) > 0.5).astype("int32")

  print(prediction)
```

In [ ]:

```
frame = cv2.imread(r"/content/drive/MyDrive/flowers/Flowers-Dataset/flowers/
data = detect(frame)
```

```
[[0.1347757  0.1006939  0.09727424 0.1056136  0.11490836 0.11649807
  0.11035961 0.12321131 0.09666524]]
```