1.DOWNLOAD THE DATA SET

```
!unzip '/content/drive/MyDrive/Flowers-Dataset.zip'
```

2.IMAGE AUGMENTATION

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

train_datagen=ImageDataGenerator(rescale=1./255,
zoom_range=0.2,
horizontal_flip=True)
test_datagen=ImageDataGenerator(rescale=1./255)

xtrain=train_datagen.flow_from_directory('/content/flowers',
target_size=(76,76),
class_mode='categorical',
batch_size=100) Found 4317 images belonging to 5 classes.

xtest=test_datagen.flow_from_directory('/content/flowers',
target_size=(76,76),
class_mode='categorical',
batch_size=100) Found 4317 images belonging to 5 classes.
```

3.CREAT MODEL

```
from tensorflow.keras.models import Sequential

from tensorflow.keras.layers import
Convolution2D,MaxPool2D,Flatten,Dense
```

4.ADD LAYERS

```
model=Sequential()
model.add(Convolution2D(32,
(3,3),activation='relu',input_shape=(76,76,3)))
model.add(MaxPool2D(pool_size=(2,2)))
model.add(Flatten())
model.add(Dense(300,activation='relu'))
model.add(Dense(150,activation='relu'))
model.add(Dense(4,activation='softmax'))
```

5.COMPILE THE MODEL

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

6.FIT THE MODEL

```
model.fit_generator(xtrain,
                    steps_per_epoch= len (xtrain),
epochs= 10,
```

```
validation_data=xtest,
validation_steps= len (xtest))
```

1. SAVE THE MODEL `model.save('flowers.h5')`

8.TESTING THE MODEL

testing 1

```
from tensorflow.keras.preprocessing import image
import numpy as np

img=image.load_img('/content/flowers/daisy/
10140303196_b88d3d6cec.jpg',target_size=(76,76)) img
```

```
x=image.img_to_array(img)
x
x=np.expand_dims(x,axis=0)
pred=np.argmax(model.predict(x))
pred
op=['daisy','dandelion','rose','sunflower','tulip']
op[pred]
```

```
{"type":"string"}
```

testing 2

```
img=image.load_img('/content/flowers/rose/
10503217854_e66a804309.jpg',target_size=(76,76)) img
```

```
x=image.img_to_array(img)
x
x=np.expand_dims(x,axis=0)
pred=np.argmax(model.predict(x)) pred
op=['daisy','dandelion','rose','sunflower','tulip']
op[pred]
```

```
{"type":"string"}
```

testing 3

```
img=image.load_img('/content/flowers/sunflower/
1022552002_2b93faf9e7_n.jpg',target_size=(76,76))
img
```

```
x=image.img_to_array(img)
x
x=np.expand_dims(x,axis=0)
pred=np.argmax(model.predict(x))
pred
op=['daisy','dandelion','rose','sunflower','tulip']
op[pred]
```

```
{"type":"string"}
```