**ASSIGNMENT-03**

**Build CNN Model for Classification Of Flowers**

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| **Assignment Date** | 5 October 2022 |
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| **Student Roll Number** | 113219071007 |
| **Maximum Marks** | 2 Marks |

QUESTION 1:

Download the Dataset

Dataset is downloaded and uploaded

QUESTION 2:

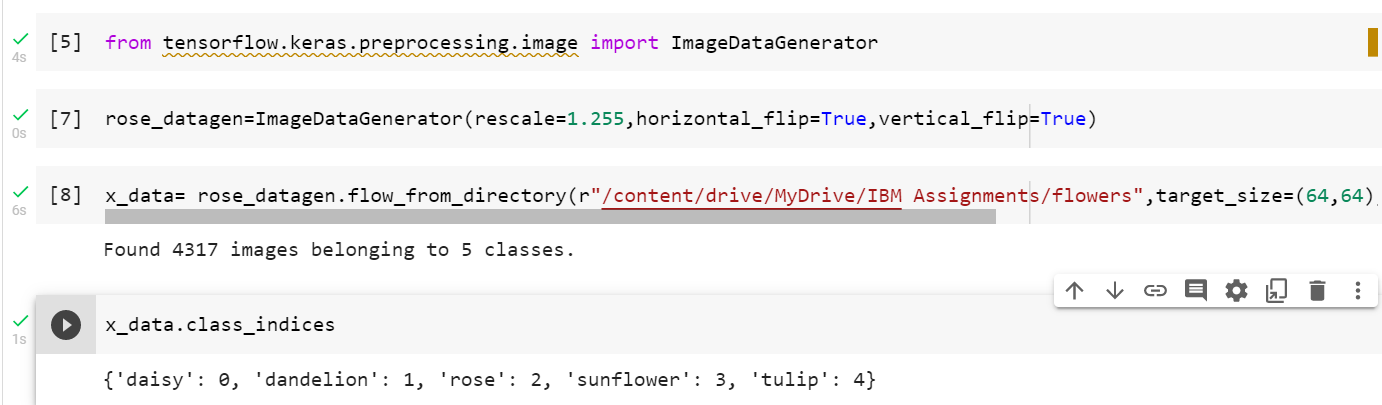
Image Augmentation

from tensorflow.keras.preprocessing.image import ImageDataGenerator

rose\_datagen=ImageDataGenerator(rescale=1.255,horizontal\_flip=True,vertical\_flip=True)

x\_data= rose\_datagen.flow\_from\_directory(r"/content/drive/MyDrive/IBM Assignments/flowers",target\_size=(64,64),class\_mode="categorical",batch\_size=24)

x\_data.class\_indices

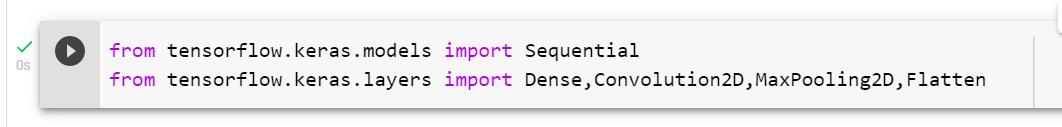


QUESTION 3:

Create Model

from tensorflow.keras.models import Sequential

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



QUESTION 4:

Add Layers (Convolution,MaxPooling,Flatten,Dense-(Hidden Layers),Output

model.add(Convolution2D(34,(3,3),activation="relu",strides=(1,1),input\_shape=(64,64,3)))

model.add(MaxPooling2D(pool\_size=(2,2)))

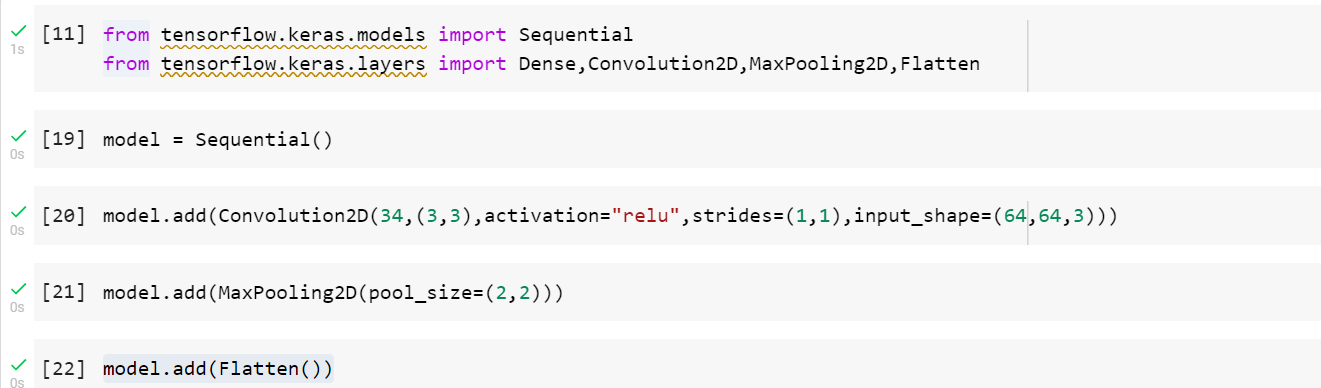
model.add(Flatten())

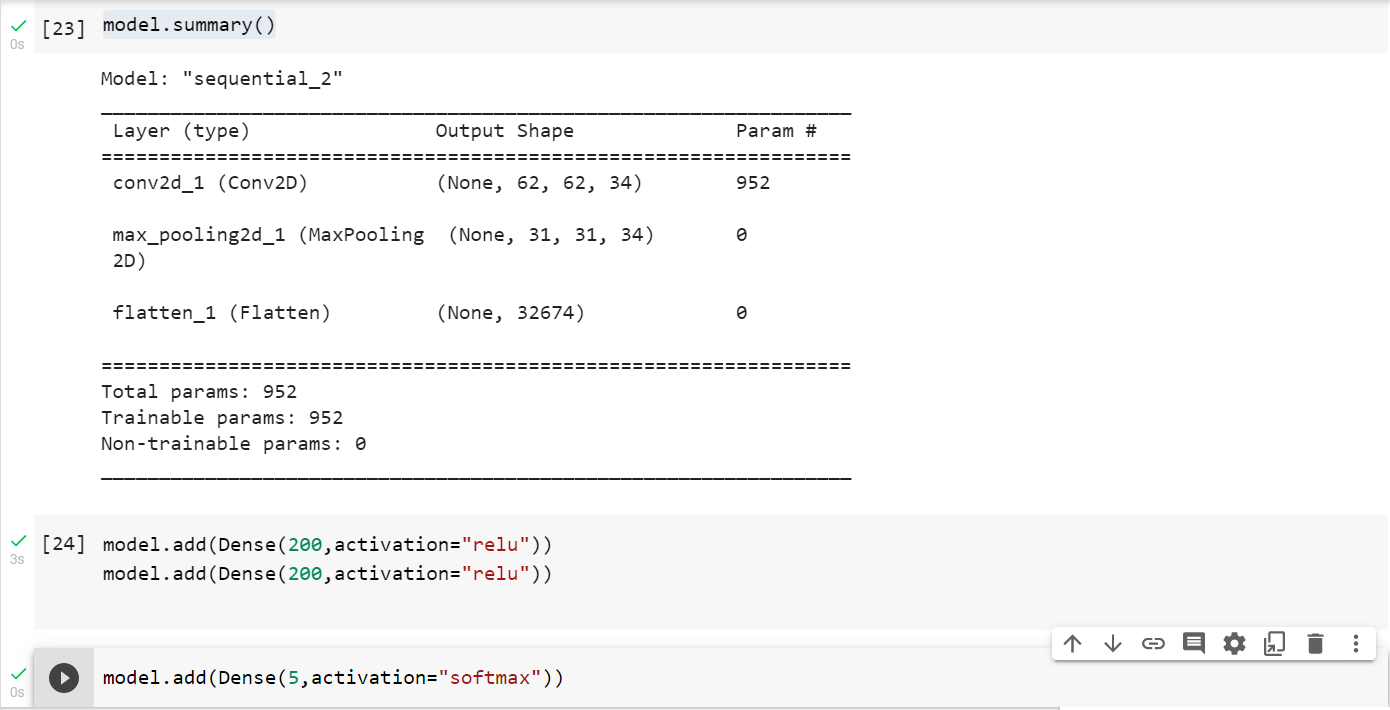
model.summary()

model.add(Dense(200,activation="relu"))

model.add(Dense(200,activation="relu"))

model.add(Dense(5,activation="softmax"))





QUESTION 5:

Compile the Model

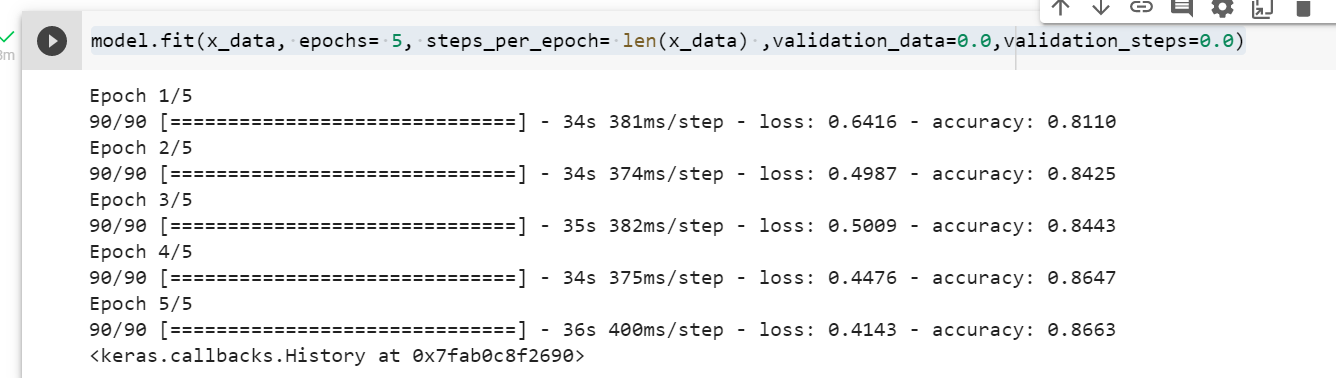
model.compile(loss="categorical\_crossentropy",optimizer="adam",metrics=['accuracy'])



QUESTION 6:

Fit the model

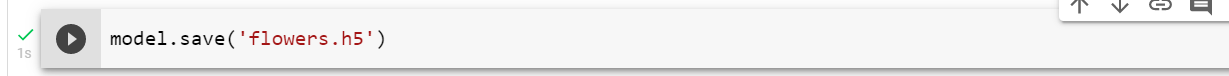
model.fit(x\_data, epochs= 5, steps\_per\_epoch= len(x\_data) ,validation\_data=0.0,validation\_steps=0.0)



QUESTION 7:

Save the Model

model.save('flowers.h5')



QUESTION 8:

Test the Model

import numpy as np

from tensorflow.keras.models import load\_model

from tensorflow.keras.preprocessing import image

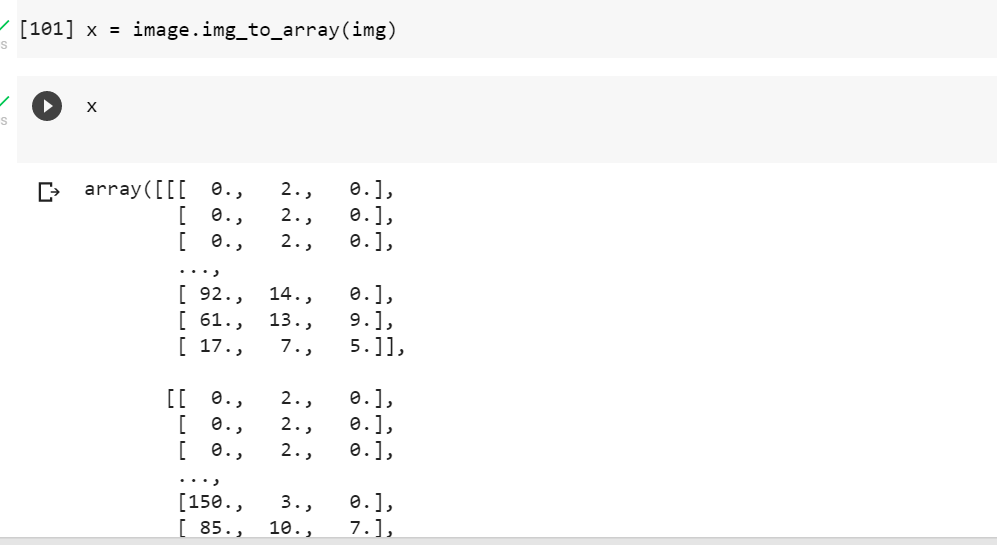
img = image.load\_img(r"/content/drive/MyDrive/IBM Assignments/flowers/rose/10090824183\_d02c613f10\_m.jpg")

img



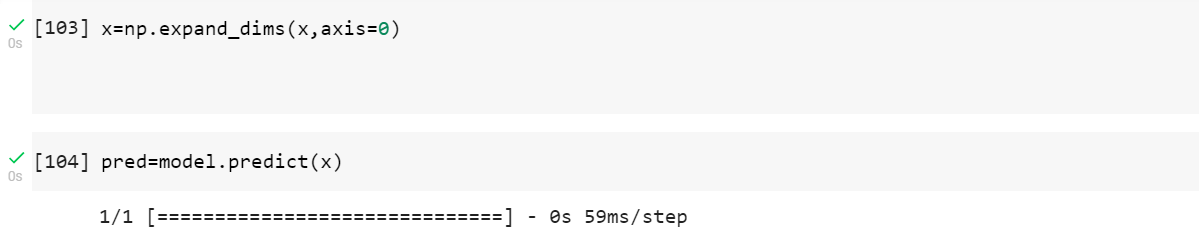
x = image.img\_to\_array(img)

x



x=np.expand\_dims(x,axis=0)

pred= model.predict(x)



x\_data.class\_indices



#predicting

