

```
##installing modules for upgrading !pip install --upgrade module_name
```

```
import tensorflow as tf
from tensorflow import keras
from tensorflow.keras import layers
from tensorflow.keras.preprocessing.image import ImageDataGenerator
img_size=224
batch_size=32
```

```
train_datagen=ImageDataGenerator(rescale=1./255,validation_split=0.2)
train_generator=train_datagen.flow_from_directory(
    r'/content/drive/MyDrive/Train-20240627T045845Z-001',
    target_size=(img_size,img_size),
    batch_size=32,
    class_mode='binary',
    subset='training'
)
```

```
val_generator=train_datagen.flow_from_directory(
    r'/content/drive/MyDrive/Train-20240627T045845Z-001',
    target_size=(img_size,img_size),
    batch_size=32,
    class_mode='binary',
    subset='validation'
)
```

Found 2408 images belonging to 1 classes.
Found 602 images belonging to 1 classes.

```
model=keras.Sequential([
    layers.Conv2D(32,(3,3),activation='relu',input_shape=(img_size,img_size,3)),
    layers.MaxPooling2D(2,2),
    layers.Conv2D(64,(3,3),activation='relu'),
    layers.MaxPooling2D(2,2),
    layers.Conv2D(128,(3,3),activation='relu'),
    layers.MaxPooling2D(2,2),
    layers.Flatten(),
    layers.Dense(128,activation='relu'),
    layers.Dense(1,activation='sigmoid')
])
```

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

```
model.fit(train_generator,validation_data=val_generator,epochs=5)
```

Epoch 1/5
76/76 [=====] - 468s 6s/step - loss: 0.0092 - accuracy: 0.9946 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 2/5
76/76 [=====] - 347s 5s/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 3/5
76/76 [=====] - 307s 4s/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 4/5
76/76 [=====] - 313s 4s/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
Epoch 5/5
76/76 [=====] - 303s 4s/step - loss: 0.0000e+00 - accuracy: 1.0000 - val_loss: 0.0000e+00 - val_accuracy: 1.0000
<keras.src.callbacks.History at 0x7ef86d07f0>

```
model.save("Model.h5")
```

/usr/local/lib/python3.10/dist-packages/keras/src/engine/training.py:3103: UserWarning: You are saving your model as an HDF5 file via `model.save` which is discouraged. Please use `model.save_to_hdf5` as an alternative.

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

```
model=load_model(r'/content/Model.h5')  
print("model loaded")
```

→ model loaded

```
test_image_path=r"/content/drive/MyDrive/Train-20240627T045845Z-001/Train/yes/y1007.jpg"  
img=image.load_img(test_image_path,target_size=(224,224))  
img_array=image.img_to_array(img)  
img_array=np.expand_dims(img_array,axis=0)
```

```
img_array /=255.  
prediction=model.predict(img_array)  
print(prediction)
```

→ 1/1 [=====] - 0s 51ms/step
[[0.5201253]]

```
if prediction<0.5:  
    print("no")  
else:  
    print("yes")
```

→ yes