```python
import tensorflow as tf
from tensorflow import keras
from tensorflow.keras import layers
from tensorflow.keras.preprocessing.image import ImageDataGenerator

IMG_SIZE = 244
BATCH_SIZE = 32

train_datagen =
ImageDataGenerator(rescale=1./255,validation_split=0.2)
train_generator = train_datagen.flow_from_directory(
    '/content/drive/MyDrive/covid/Covid19-dataset',
    target_size=(IMG_SIZE,IMG_SIZE),
    batch_size=BATCH_SIZE,
    class_mode='binary',
    subset='training'
)

val_generator = train_datagen.flow_from_directory(
    '/content/drive/MyDrive/covid/Covid19-dataset',
    target_size=(IMG_SIZE,IMG_SIZE),
    batch_size=BATCH_SIZE,
    class_mode='binary',
    subset='validation'
)
```

```
Found 254 images belonging to 2 classes.
Found 63 images belonging to 2 classes.
```

```python
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=['ac
curacy'])

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

```
Epoch 1/5
8/8 [==============================] - 89s 11s/step - loss: 1.3858 -
accuracy: 0.7795 - val_loss: 0.5456 - val_accuracy: 0.7937
Epoch 2/5
```

```
8/8 [==============================] - 44s 5s/step - loss: 0.5194 -
accuracy: 0.7913 - val_loss: 0.5294 - val_accuracy: 0.7937
Epoch 3/5
8/8 [==============================] - 46s 6s/step - loss: 0.4612 -
accuracy: 0.7913 - val_loss: 0.5669 - val_accuracy: 0.7937
Epoch 4/5
8/8 [==============================] - 44s 5s/step - loss: 0.4166 -
accuracy: 0.7913 - val_loss: 0.7035 - val_accuracy: 0.7937
Epoch 5/5
8/8 [==============================] - 48s 6s/step - loss: 0.3873 -
accuracy: 0.8031 - val_loss: 0.6715 - val_accuracy: 0.7937

<keras.src.callbacks.History at 0x7aae8d4f5210>
```

```python
model.save("Model.h5","label.txt")
```

```
/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()`. This file format is considered legacy. We
recommend using instead the native Keras format, e.g.
`model.save('my_model.keras')`.
  saving_api.save_model(
```

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

model = load_model('/content/Model.h5')
test_image_path =
'/content/drive/MyDrive/covid/Covid19-dataset/test/Covid/0100.jpeg'
img = image.load_img(test_image_path, target_size=(244, 244))
img_array = image.img_to_array(img)
img_array = np.expand_dims(img_array, axis=0)

img_array = img_array / 255.0

predictions = model.predict(img_array)
print(predictions)
```

```
1/1 [==============================] - 0s 160ms/step
[[0.83532554]]
```

```python
if predictions > 0.5:
    print("This is a covid")
else:
    print("This is a normal")
```

```
This is a covid
```