```
!mkdir -p ~/.kaggle
!cp kaggle.json ~/.kaggle/
```

```
!kaggle datasets download -d salader/dogs-vs-cats
```

```
Warning: Your Kaggle API key is readable by other users on this system! To fix this, you can run 'chmod 600 /root/.kaggle/kaggle.json'
Dataset URL: https://www.kaggle.com/datasets/salader/dogs-vs-cats
License(s): unknown
Downloading dogs-vs-cats.zip to /content
 99% 1.05G/1.06G [00:05<00:00, 181MB/s]
100% 1.06G/1.06G [00:06<00:00, 189MB/s]
```

```
import zipfile
zip_ref=zipfile.ZipFile('/content/dogs-vs-cats.zip')
zip_ref.extractall('/content')
zip_ref.close()
```

```
import tensorflow as tf
from tensorflow import keras
from keras import Sequential
from keras.layers import Dense,Conv2D,MaxPool2D,Flatten,BatchNormalization,Dropout
```

```
train_ds=keras.utils.image_dataset_from_directory(
    directory='/content/train',
    labels='inferred',
    label_mode='int',
    batch_size=32,
    image_size=(256,256)
)
validation_ds=keras.utils.image_dataset_from_directory(
    directory='/content/train',
    labels='inferred',
    label_mode='int',
    batch_size=32,
    image_size=(256,256)
)
```

```
Found 20000 files belonging to 2 classes.
Found 20000 files belonging to 2 classes.
```

```
def process(image,label):
  image=tf.cast(image/255. ,tf.float32)
  return image,label

train_ds=train_ds.map(process)
validation_ds=validation_ds.map(process)
```

```
model=Sequential()
model.add(Conv2D(32,kernel_size=(3,3),padding='valid',activation='relu',input_shape=(256,256,3)))
model.add(BatchNormalization())
model.add(MaxPool2D(pool_size=(2,2),strides=2,padding='valid'))

model.add(Conv2D(64,kernel_size=(3,3),padding='valid',activation='relu'))
model.add(BatchNormalization())
model.add(MaxPool2D(pool_size=(2,2),strides=2,padding='valid'))

model.add(Conv2D(128,kernel_size=(3,3),padding='valid',activation='relu'))
model.add(BatchNormalization())
model.add(MaxPool2D(pool_size=(2,2),strides=2,padding='valid'))

model.add(Flatten())

model.add(Dense(128,activation='relu'))
model.add(Dropout(0.1))
model.add(Dense(64,activation='relu'))
model.add(Dropout(0.1))
model.add(Dense(1,activation='sigmoid'))
```

```
model.summary()
```

```
Model: "sequential"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 conv2d (Conv2D)             (None, 254, 254, 32)      896

 batch_normalization (Batch  (None, 254, 254, 32)      128
 Normalization)

 max_pooling2d (MaxPooling2  (None, 127, 127, 32)      0
 D)

 conv2d_1 (Conv2D)           (None, 125, 125, 64)      18496

 batch_normalization_1 (Bat  (None, 125, 125, 64)      256
 chNormalization)

 max_pooling2d_1 (MaxPoolin  (None, 62, 62, 64)        0
 g2D)

 conv2d_2 (Conv2D)           (None, 60, 60, 128)       73856

 batch_normalization_2 (Bat  (None, 60, 60, 128)       512
 chNormalization)

 max_pooling2d_2 (MaxPoolin  (None, 30, 30, 128)       0
 g2D)

 flatten (Flatten)           (None, 115200)            0

 dense (Dense)               (None, 128)               14745728

 dropout (Dropout)           (None, 128)               0

 dense_1 (Dense)             (None, 64)                8256

 dropout_1 (Dropout)         (None, 64)                0

 dense_2 (Dense)             (None, 1)                 65

=================================================================
Total params: 14848193 (56.64 MB)
Trainable params: 14847745 (56.64 MB)
Non-trainable params: 448 (1.75 KB)
_________________________________________________________________
```

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

```
history=model.fit(train_ds,epochs=1,validation_data=validation_ds)
```

```
625/625 [==============================] - 108s 157ms/step - loss: 1.9452 - accuracy: 0.5562 - val_loss: 0.6426 - val_accuracy: 0.6230
```

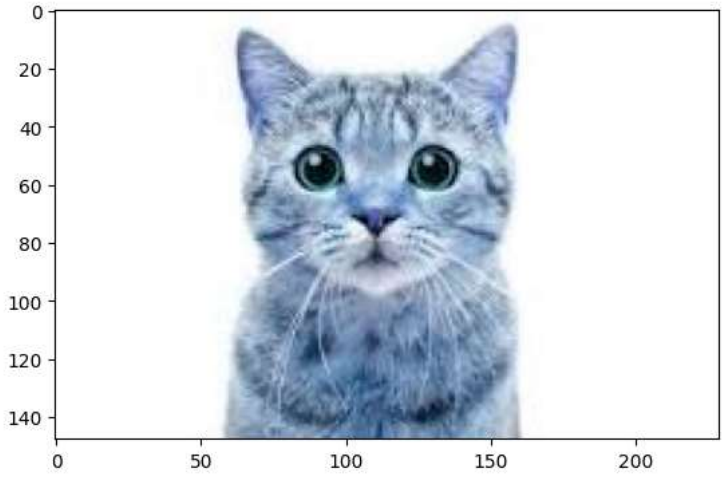
```
import cv2
```

```
test_image=cv2.imread('/content/cat.jpeg')
```

```
import matplotlib.pyplot as plt


plt.imshow(test_image)
```

```
<matplotlib.image.AxesImage at 0x78ff1d1adcc0>
```




```
test_image.shape
```

```
(148, 229, 3)
```

```
test_image=cv2.resize(test_image,(256,256))
```

```
test_input=test_image.reshape(1,256,256,3)
```

```
model.predict(test_input)#output 0 for cat image
```

```
1/1 [==============================] - 0s 18ms/step
array([[0.]], dtype=float32)
```

Start coding or generate with AI.