import tensorflow\_datasets as tfds  
import tensorflow as tf  
import numpy as np  
from PIL import Image  
from ipywidgets import widgets  
import io

idx2label = {  
 0: "tench",   
 1: "English springer",   
 2: "cassette player",   
 3: "chain saw",   
 4: "church",   
 5: "French horn",   
 6: "garbage truck",  
 7: "gas pump",   
 8: "golf ball",   
 9: "parachute"  
}

def classify(image, model):  
 image = tf.convert\_to\_tensor(np.array(image)).numpy()  
 image = tf.image.resize(image, (160, 160))  
 batch = tf.expand\_dims(image, 0)  
 res = model(batch)  
 conf\_idx = tf.argmax(tf.sigmoid(res[0]))  
 print(f"It's a: {idx2label[tf.argmax(res[0]).numpy()]} with a confidence of {tf.sigmoid(res[0])[conf\_idx] \* 100:.3f}%")

from ipywidgets import FileUpload  
upload = FileUpload()  
upload

model = tf.keras.models.load\_model("best.hdf5")

button = widgets.Button(description='Classify!')  
out = widgets.Output()  
  
def on\_button\_clicked(\_):  
 with out:  
 with tf.device('/CPU:0'):  
 data = upload.data  
 image = Image.open(io.BytesIO(data[-1]))  
 classify(image, model)  
   
button.on\_click(on\_button\_clicked)  
widgets.VBox([button,out])