In [7]:

```
import tkinter as tk
from tkinter import filedialog
from tkinter import *
from PIL import ImageTk, Image

import numpy
#load the trained model to classify sign
from keras.models import load_model
model = load_model('my_model.h5')

#dictionary to label all traffic signs class.
classes = { 1:'Speed limit (20km/h)',
            2:'Speed limit (30km/h)',
            3:'Speed limit (50km/h)',
            4:'Speed limit (60km/h)',
            5:'Speed limit (70km/h)',
            6:'Speed limit (80km/h)',
            7:'End of speed limit (80km/h)',
            8:'Speed limit (100km/h)',
            9:'Speed limit (120km/h)',
           10:'No passing',
           11:'No passing veh over 3.5 tons',
           12:'Right-of-way at intersection',
           13:'Priority road',
           14:'Yield',
           15:'Stop',
           16:'No vehicles',
           17:'Veh > 3.5 tons prohibited',
           18:'No entry',
           19:'General caution',
           20:'Dangerous curve left',
           21:'Dangerous curve right',
           22:'Double curve',
           23:'Bumpy road',
           24:'Slippery road',
           25:'Road narrows on the right',
           26:'Road work',
           27:'Traffic signals',
           28:'Pedestrians',
           29:'Children crossing',
           30:'Bicycles crossing',
           31:'Beware of ice/snow',
           32:'Wild animals crossing',
           33:'End speed + passing limits',
           34:'Turn right ahead',
           35:'Turn left ahead',
           36:'Ahead only',
           37:'Go straight or right',
           38:'Go straight or left',
           39:'Keep right',
           40:'Keep left',
           41:'Roundabout mandatory',
           42:'End of no passing',
           43:'End no passing veh > 3.5 tons' }


#initialise GUI
```

```
top=tk.Tk()
top.geometry('800x600')
top.title('Traffic sign classification')
top.configure(background='#FFA07A')

label=Label(top,background='#FFA07A', font=('arial',15,'bold'))
sign_image = Label(top)

def classify(file_path):
    global label_packed
    image = Image.open(file_path)
    image = image.resize((30,30))
    image = numpy.expand_dims(image, axis=0)
    image = numpy.array(image)
    print(image.shape)
    pred = model.predict(image)
    pred_class = numpy.argmax(pred) + 1
    sign = classes[pred_class]
    print(sign)
    label.configure(foreground='#011638', text=sign)



def show_classify_button(file_path):
    classify_b=Button(top,text="Classify Image",command=lambda: classify(file_
    classify_b.configure(background='#364156', foreground='red',font=('arial',
    classify_b.place(relx=0.79,rely=0.46)

def upload_image():
    try:
        file_path=filedialog.askopenfilename()
        uploaded=Image.open(file_path)
        uploaded.thumbnail(((top.winfo_width()/2.25),(top.winfo_height()/2.25)
        im=ImageTk.PhotoImage(uploaded)

        sign_image.configure(image=im)
        sign_image.image=im
        label.configure(text='')
        show_classify_button(file_path)
    except:
        pass

upload=Button(top,text="Upload an image",command=upload_image,padx=10,pady=5)
upload.configure(background='#364156', foreground='red',font=('arial',10,'bold

upload.pack(side=BOTTOM,pady=50)
sign_image.pack(side=BOTTOM,expand=True)
label.pack(side=BOTTOM,expand=True)
heading = Label(top, text="Know Your Traffic Sign",pady=20, font=('arial',20,'
heading.configure(background='#FFA07A',foreground='#364156')
heading.pack()
top.mainloop()
```

```
(1, 30, 30, 3)
1/1 [==============================] - 0s 123ms/step
Keep right
(1, 30, 30, 3)
1/1 [==============================] - 0s 17ms/step
Speed limit (30km/h)
(1, 30, 30, 3)
1/1 [==============================] - 0s 18ms/step
Road narrows on the right
```

In [ ]:

```
q
```