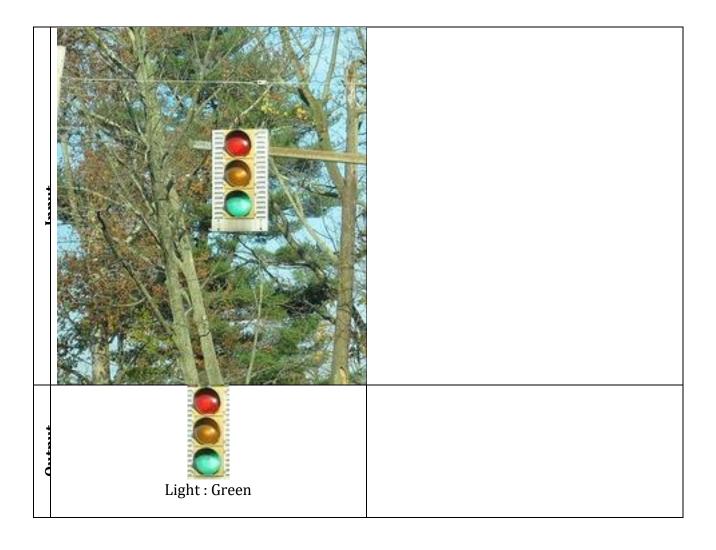# Traffic Lights Detection and Recognition

Description

Main Idea

In [autonomous car driving system](), one of the tasks is to detect and recognize traffic lights. Traffic lights come in standard shape with one of the three colors is lightened at a time.

Given a captured image from street. The application should detect if there is any traffic lights and recognize its state (red, green, and blue)

Input

Output

Light : Green

Minimum Requirements
1. Detect from one frontal view traffic light.
2. Recognize the state of the traffic light.
3. Traffic lights may be close or far from the camera.

Suggested Search Tracks and Keywords
You may use some/all of the following keywords as a guide (not restricted to them):

1- Hough transform
2- Morphological operations
3- Region properties
4- Color processing
5- Rigid shape recognition

Test Images for Minimum Requirements

Case1: Frontal view near traffic sign with simple background

Case2: Frontal view near traffic sign with complex background

Case3: Frontal view far traffic sign with simple background

Case4: Frontal view far traffic sign with simple background