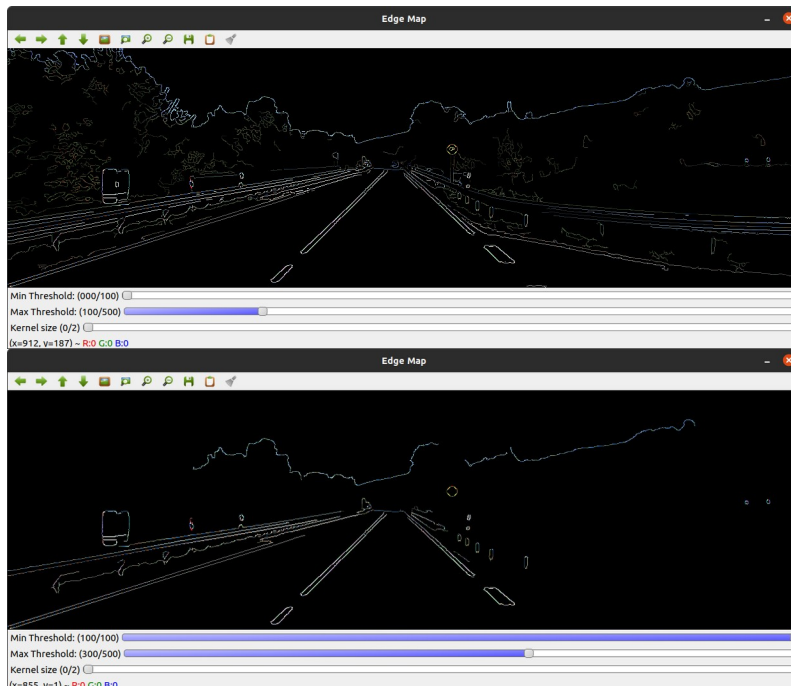


Lab_4: 08/04/2024

Task1: Execution command: `./Task1 street_scene.png`

By moving the trackbars we can modify lowThreshold, highThreshold and kernel size.

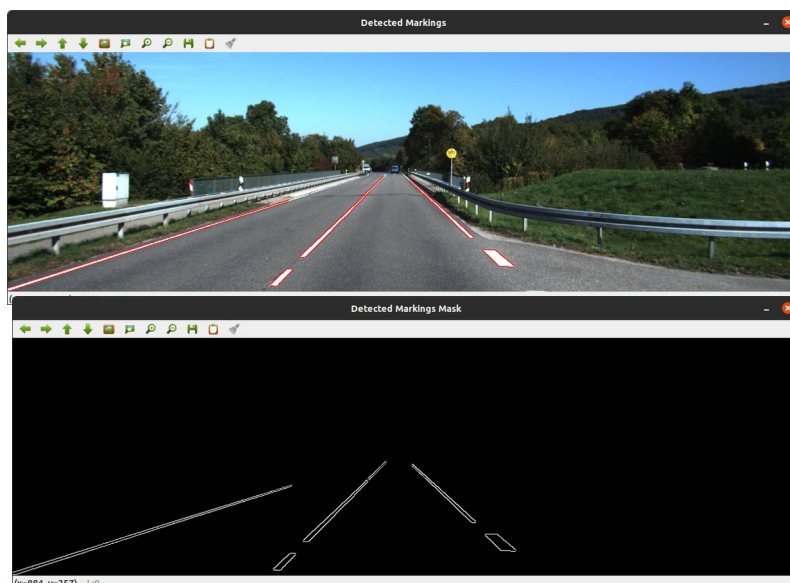


Task2: Execution command: `./Task2 street_scene.png`

Series of operation for this task are: grayscale → GaussianBlur → Sobel operator in the y direction → Canny edge detector → White Thresholding → dilation → noise removal.

The result achieved by applying a sequence of filters (such as Gaussian and Sobel), along with the Canny edge detector and thresholding for white color. Then combine canny and sobel mask to create stronger edges and finally combine the white threshold mask and canny_sobel mask together to create the final mask.

For noise removal, I removed areas with less than 100 pixels using connected components. Here we can see detected marking which it has been shown by red color and the mask of detected marking.



Task3: Execution command: `./Task3 street_scene.png`

Series of operation for this task are: grayscale → blur → Canny edge detector → Hough transform → applying below conditions to draw the lines and fill the polygon.

The condition are:

1. to avoid drawing multiple lines for the same lane marking
2. only consider lines between angles 40 - 60 for the middle marking and 130 – 150 degrees for the right lane marking.



Task4: Execution command: `./Task4 street_scene.png`

Series of operation for this task are: grayscale → Median filter → Hough transform.
The detected road sign it has been shown by yellow color.

