CHAPTER IV
ANALYSIS AND DESIGN

4.1 Analysis

4.1.1 Use Case Diagram

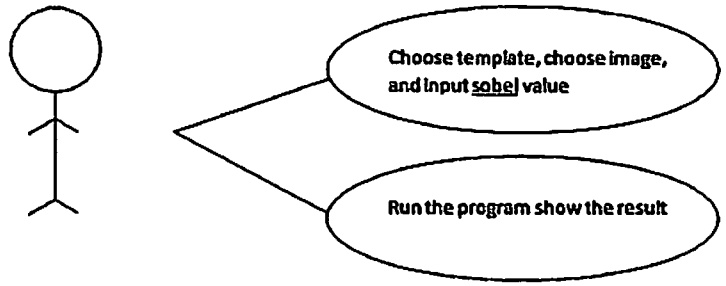

Figure 4.1 Use Case Diagram

4.1.2 Activity Diagram

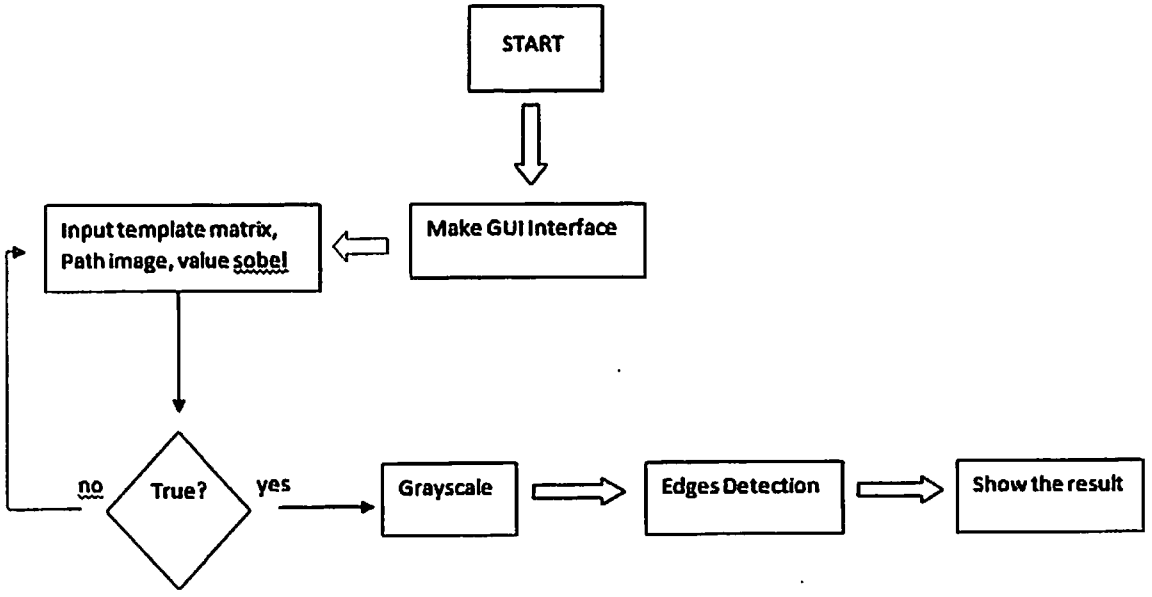

Figure 4.2 Activity Diagram

4.2 Design

4.2.1 Class Diagram

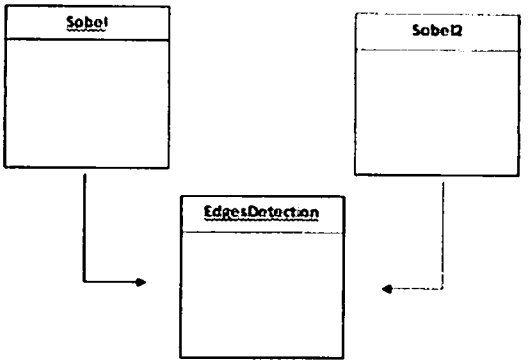

Figure 4.3 Class Diagram

In this class diagram , communication class EdgesDetection use for show the result and to call sobel class to execute sobel matrix 3x3 and call sobel2 class to execute sobel matrix 5x5 Class EdgesDetection is a change in the value of the pixel and class other just do process to edges and send values in class EdgesDetection.

4.2.2 Class Diagram Details

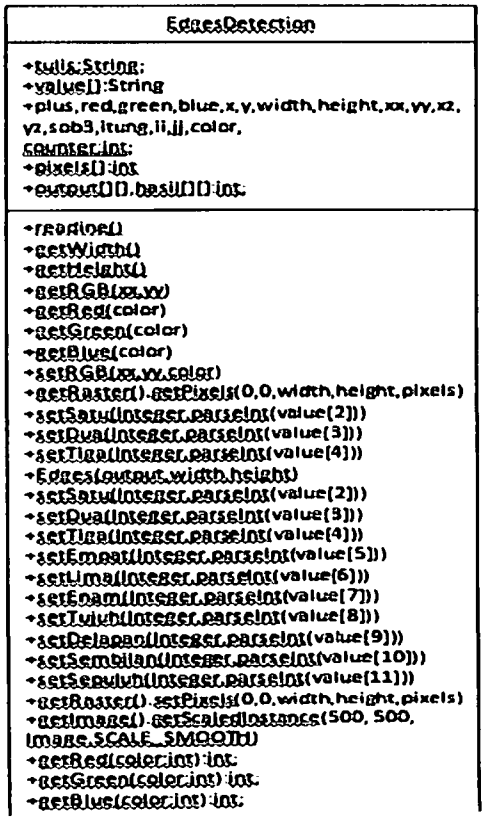

Figure 4.4 EdgesDetection Class

The main purpose class EdgesDetection is to show GUI Interface the result before and after process sobel edges detection, and receive user input, grayscale and also send request to the other class. When after process edges detection complete, the new pixel value sent back to class EdgesDetection for replacing the old with the new pixel which then will be the result in GUI which is an image edges detection.

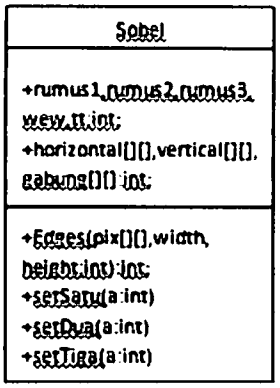

Figure 4.5 Sobel class

The main purpose class Sobel is to make calculate sobel edges detection with matrix 3x3. But before calculate class sobel take value user input from the user through class EdgesDetection. After the process is complete, set the value of pixels to be sent in class EdgesDetection.

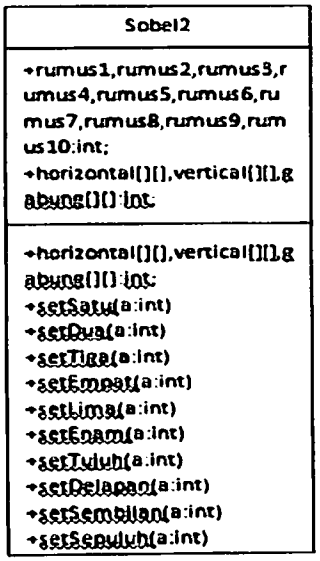

Figure 4.6 Sobel2 Class

The main purpose class Sobel2 is to make calculate sobel edges detection with template 5x5. But before calculate class sobel take value user input from the user through class EdgesDetection. After the process is complete, set the value of pixels to be sent in class EdgesDetection. Need to remember that total input values different with matrix 3x3.