CHAPTER 3
RESEARCH METHODOLOGY

This chapter describes the research methodology in detail to describe the formulation of the problem.

3.1.   Literature Study

In this process is to collect and read journals related to mask detection in various ways. The algorithm used uses Haar Cascade to determine the presence of face, eyes, nose, and mouth objects. All these journals are for reference for projects and programs.

3.2.   Collecting Dataset

This project uses videos containing images which will be input into the program to detect the use of masks. Here we use a total of 125 data consisting of 50 images of people wearing masks, 50 people not wearing masks, and 25 people not wearing masks properly. The data will be combined into one video.

3.3.   Implementation With Programs

The program converts images from normal color to grayscale and then converts them to black and white. Then detects face objects, detects eye objects, detects nose objects and detects mouth objects with the Haar Cascade library. Furthermore, the program will be made in the Python programming language.

3.4. Testing

The test was carried out with a video containing images of the use of masks with several scenarios. The first program will be tested for faces that use masks then tested for faces that do not use masks, then will be tested on faces using masks that are incorrectly. The program will capture when it is detected not using a mask or not using a mask correctly.

3.5. Performance Evaluation

The analysis of this program will run optimally if there is using one face and more than one face on the video and whether this program is accurate in detecting masks. The algorithm used by Haar Cascade, Haar Cascade works in detecting an object that varies with video containing images or real time using a camera. In this algorithm contains many positive and negative images to classify objects. In this study, the objects of the face, eyes, nose, and mouth were detected.