CHAPTER 3
RESEARCH METHODOLOGY

1. Probelm Analysis

   Research create a system that can analyze the height of a vehicle. This data can be used to know the number of vehicles that go through the campus exit.

2. Study journal

   From this journal study, researcher read journals that concern this research. The purpose to create a basis of this research and to gain new knowledge that cannot be understood by researcher.

3. Tools

   The tools used in this research is Ultrasonic Sensors and Ethernet Shield. Ultrasonic Sensors is used for reading the vehicle height. Ethernet Shield is used to send data via LAN cable to the server.

4. Coding

   Coding is made using the Arduino IDE and PHP. Arduino IDE is used to run Arduino UNO that is connected to Ethernet Shield and Ultrasonic Sensors. PHP is used to send data from arduino to the server.

5. Gathering Data

   The data gathered is vehicle height and the difference time sent by the Ultrasonic Sensor. Data is not recorded if the height of the object is below 10 cm or more than 200 cm.

6. Analysis Data

   After conducting many experiments, the data is compared with previous data to see the differences and errors that occur. Then a restriction to count the vehicles number is created using the pattern learned from the data. A view is created using the restriction made.