

CHAPTER 3

RESEARCH METHODOLOGY

The steps taken to make this project, prepare the materials used. Like Arduino, PIR Sensor, Arduino E18-D80NK Proximity sensor that I use works to control the work of several sensors that I use. For the purpose you want.

Arduino Uno microcontroller board based on ATmega328 (datasheet). It has 14 input pins of digital output where the 6 input pins can be used as PWM outputs and 6 analog input pins, 16 MHz crystal oscillator, USB connection, power jack, ICSP header, and reset button. To support the microcontroller to be used, it is enough to simply connect the Arduino Uno Board to the computer using a USB cable or electricity with an AC-to-DC adapter or a battery to run it. A USB-to-serial connection using the Atmega8U2 feature programmed as a USB-to-serial converter is different from the previous board that used a USB-to-serial FTDI driver chip.

PIR (Passive Infrared Receiver) is an infrared based sensor. However, unlike most infrared sensors which consist of IR LEDs and phototransistors. PIR does not emit anything like IR LED. As the name implies 'Passive', this sensor only responds to energy from the passive infrared rays that are owned by every object that is detected by it. The object that can be detected by these sensors is usually the human body. In this PIR I set the maximum detected distance of 1 meter and the PIR reads the sensor every 2 seconds.

Proximity E18-D80NK is a sensor that serves to detect the presence or absence of objects in front of it which is almost the same as the principle of proximity sensors. The condition occurs due to the reflection of the infrared led transceiver that is reflected by something solid and is recaptured by the

photodiode receiver. In this E18-D80NK Proximity sensor I set the maximum distance to emit a straight infrared beam with a length of 100cm



After the PIR sensor is set as follows. A PIR sensor is placed at the top of the crib. With the distance between the roof and the bed 165cm. The E18-D80NK Proximity Sensor is installed in the corner of the mattress in the direction of the edge of the mattress.

