ABSTRACT

Eye is one of the senses that function to see. Eye can see the result of the reflection of light entering the eye. Each object has different capabilities in terms of reflecting light. The ability based on materials and color of objects, so that the eye can distinguish every object being viewed. When the light intensity sufficient then look can be done well. As with the condition of a dark place, it will be difficult to see. When there is no reflection of light that enters the eye, it will not be able to see objects that exist.

That condition can be dangerous. Thus, in this thesis will be designed tool that can detect the position of objects using ultrasonic waves. The position of the object will be displayed on the LCD that is set using fuzzy logic so that the position of the object can be seen even in the absence of light. The position of objects detected using ultrasonic sensors to measure the distance of objects. Sensors are used to measure will be placed on servo motor the movement controlled using PWM (Pulse Width Modulation). So that the direction and angle of the object can be determined. This tool will also mention the distance of objects detected using IC ISD2560.

The largest error in the distance measurement is 0.65%. Method fuzzy generated by the tool is approaching the results of MATLAB fuzzy method and calculations. Maximum fuzzy error on the tool is 8.48%. The mention of distance by tool in accordance with the distance detected by the sensor.

Keywords: microcontroller ATMega32, fuzzy logic, Pulse Width Modulation, servo motor, IC ISD2560