ABSTRACT

Control system plays a very important rule at the present time. Almost in every place found a tool that uses a control system, one of which is the dc motor. The reason is because the dc motor selection has linear characteristics and ease of doing more than ac motor control. And one of the control systems that can be used to control the speed of dc motor is Fuzzy Logic with specialization in Model Sugeno Fuzzy Inference System.

In this final project design dc motor speed control system using a model Sugeno fuzzy inference system. The design of the system is divided into 2 parts, hardware and software. The hardware includes minimum system microcontroller ATMEGA8, dc motor, motor driver L293D, line tracker sensor. As for software design using C as the programming language and as a compiler is CodeVisionAVR.

This analysis uses the technique of PWM (Pulse Width Modulation) as a technique to control the speed of a DC motor. Results to be achieved from the design of this system is the stability and precision dc motor speed by administering varying loads. When the load became more heavy into the system, so that the high voltage signal will be wide and duty cycle will be increase.. Beside of that, this system can work effectively because the accuration of this system is 97,625%.

Key Word : DC motor, Fuzzy Logic, microcontroller