

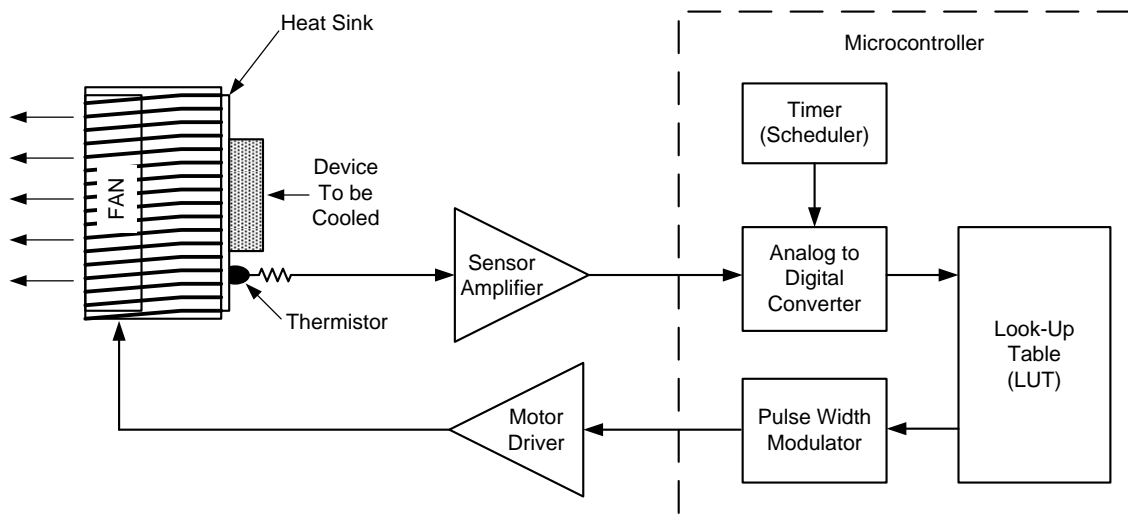
Senior Design Mini-Project Description

The purpose of this project is to provide a review of some basic circuit design and embedded systems concepts in order to design a temperature control system to meet a set of specified requirements. The project will be completed using a modular approach where the individual labs will be performed to build up the components of the system. The completed system will be an intelligent fan controller that will vary the speed of a cooling fan as a function of temperature.

The individual tasks are as follows:

- 1) To understand and characterize the thermal sensor (thermistor)
- 2) To design, construct and tune the sensor amplifier circuit.
- 3) To capture the amplified sensor voltage and convert this analog value into a digital value using an Analog to Digital Converter.
- 4) To compare the sensor value with predetermined speeds and adjust the duty cycle of the pulse width modulator controlling the fan speed.

Mini-Project Block Diagram:



Mini-Project Test Configuration:

