

ECE 411

10/14/20

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3 Practicum Idea Descriptions

Idea #1

The first idea was to create an air quality system where a sensor can read the air particle matters and decide on the air quality lighting up 3 leds. Green light means great air quality, yellow light means OK quality, and red light is bad quality. The sensor is the air particulate matter, the actuator are the LED's and the controller is the air particulate thresholds and deciding on which led to light up.

Idea #2

The second idea was to create an automatic radiator for any devices. This project is made by some parts which are temperature detection system, alarm mechanism system and processing execution system. Temperature sensors(sensors can be put to supervise the temperature of devices and green/red lights can show the 'health' situation of devices. When the red light turns on, it means the device's temperature is so high that we need to make it cooler, then the microprocessor(controller) will receive the message from light and temperature sensors and make the fans(actuator) open to make the equipment dissipate heat. When the temperature is back to normal, the green light will turn on instead of red light. The most advanced advantage is

that we can make this thing anyway we want, whether it is huge or small, according to our demand and this product is fully automatic without manual control.

Idea #3

The third idea is a water temperature controller. To use it, the desired temperature must first be set, then a temperature probe at the outlet to detect the temperature of the water, a switch to control the amount of water flowing through the hot water pipe and a switch on the cold water pipe to control the amount of water flowing through the hot water pipe. When the water temperature is higher than the set temperature, the cold water control will cause more cold water to flow out and the hot water control will reduce the hot water flow until the set temperature is reached.