Temperature controlled Fan speed with Fire alarm system

*Abstract* --These days from modern application till to buyer application mechanization is the most well-known system is utilized. This paper introduces the speed control of DC engine by variety in temperature. Cooling fans, Air conditioner, AC machines and in numerous applications DC engine is utilized. So as to build up the code Arduino ide stage is utilized. Since speed of the engine is constrained by variety in temperature, circuit of estimating temperature is interfaced through Arduino ide. The temperature sensor utilized here is a LM35. Both DC engine and temperature estimation code is done through Arduino ide programming stacked into Arduino board. At first for a lot of temperature the obligation cycle is created utilizing PWM (Pulse Width Modulation) by differing the width of the beat. Also, normal voltage esteems are produced for obligation cycle, these voltage esteems are applied to DC engine for the variety of the speed. DC engine speed increments or diminishes relying upon the variety in temperature, this is constrained by the program done in the Arduino ide . A nonexclusive R-type alarm framework is henceforth built, with an ace slave design interfacing with fire sensors. No additional alteration/restoration is required for those old structures on the grounds that the proposed alarm framework is mounted on structures' wiring framework. Wiring and work expenses are significantly diminished, and the insurance of both human and property are guaranteed and ensured. There will be a switching system to power on/off of the fan. Sometimes we may be out of our houses so that time we could turn off the fan speed control system. And that time only the alarm control system would work.

Literature Review:

Fire hazards can be very dangerous and cause human loss. It is the government rule to install fire alarm in all homes towards alerting home owners of hazards. Such method does not exist in developing countries like Bangladesh.[5] Similarly, nowadays smart devices with microcontroller is preferred in homes. Therefore, our project comes with automated temperature controlled fan speed with a built in fire alarm system. The alarm system is not highly configured with Arduino MEGA with a master-slave architecture along with wiring system and multiple sensors.[3] Rather simple LM35 temperature sensors are used which are much cheaper and can provide satisfactory results. Other researches and projects shows that smoke detector,GSM module,ATmegachip can be used to notify the owner and firestation about fire.[4][12] However,these increases the cost of the system dynamically and makes it much harder to afford. Furthermore,another project showed that a system built on smoke detector,web camp,Arduino and Rashberry Pi is highly efficient as a fire alarms system but it makes it difficult to control the speed of the fan based on temperature.[6] In the present scenario, availability of electricity is found to be in critical stage. One unit saved is one unit generated.[11] There are several ways to operate the fan speed based on temperature.One of them can be closed-looped and adjustable where you can adjust the speed percentage based on the temperature on the LCD screen.[7] Another can be using ARM microcontroller/OS-ll via voltage regulation.[8] Our system takes temperature reading for the LM35 sensor and programmed through Arduino IDE instead of LABVIEW to manipulate the percentage fan speed.[2]. Also the operating voltage is less than 5v, but the fan requires 12v to operate. Fan speed is increased by increasing the voltage or current of mosfet.[1]

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