**Project Work**

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| **Project Title** | Temperature Controlled LEDs Using ARUINO Microcontroller |
| **Team Members** | NIHARIKA MATHUR(15BCE0418), B.Tech. (CSE)  Y VAISHALI KUMARI (15BCE2085), B.Tech. (CSE) |
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| **Semester / Year** | Winter 2017 |
| **Project Abstract** | We are building a simple yet very useful circuit using Temperature Sensor LM35. In this circuit, we are going to control the LEDs according to temperature around. If temperature goes beyond a particular level (60 Degree in this circuit) then Red LED will glow automatically, otherwise GREEN LED remains on below that particular temperature. This threshold temperature value can be set by adjusting the Variable resistor in the circuit, according to requirement.   This Temperature controlled Lights circuit can be useful in many ways, like it can work as temperature indicator or it can trigger any device like fan or alarm beyond a particular temperature. It can also work as fire alarm if you set the threshold temperature very high like 100 Degree Celsius. In this circuit you will also learn about how to use LM35 sensor in any circuit. LM35 is very popular and inexpensive temperature sensor generally used as digital thermometer or to measure temperature. |
| **Codes** and **standards** | IEEE Standard 1118 : IEEE Standard Microcontroller System Serial Control Bus |
| **Realistic design constraints** | There is no Upper Limit Specified for the Range of Temperature for which the RED LED glows and the Buzzer Buzzes,hence they remain on a ON state as soon as the Threshold Value is reached. |
| **Trade-offs** | Since the voltages measured by the potentiometer may keep on changing , we compromise on this by taking the average value of 10 voltages. |
| **Computing aspects** | The system is split into three modules :   * Acquisition of the room temperature and converting into voltage. * Comparing the aquired voltage with the reference voltage. * Processing the signal from the potentiometer and Glowing LEDs and Buzzer according to the heart rate pulse. |