# Lakehead University

**Department of Computer Science**

**MSc Project Presentation**

# Smart Home Automation based on temperature sensor and Arduino as the master controller.

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**Abstract:**

The living standards of the modern society along with human behavior and thinking are changing dramatically with the advancement of technology, and the idea of a simple home is changing into a smart home. The popularity of home automation has been increasing vastly in recent years due to much higher affordability and simplicity. Being able to control aspects of our houses, and for having the feature to respond automatically to events, it is becoming more and more popular and necessary due to security and cost purposes.

This project proposes to implement an integrated home automation system using Arduino UNO as the master controller. It provides the concept to build a low cost-effective home control and monitoring system with the assistance of an integrated web server with internet protocol (IP) connectivity for access of equipment and devices remotely using ThingSpeak – a web-based app. This 3-Console system does not require a dedicated workstation as compared to other similar systems and offers a new communication protocol for monitoring and controlling the home environment with more than just switching functionality through a local server. The Arduino consoles control sensors and actuators that monitor a specified location and take action based on defined parameters like temperature, humidity etc. It also logs data captured by the sensor and projects it over the website, so as to provide access to users who are not on the same network of the connected devices. The data is secured from unauthentic access through the ThingSpeak app. The console can also send alerts if it detects an abnormality. The console sends a tweet whenever it detects the abnormal drift in temperature of the defined location. It also sends a tweet about the specific interaction with the actuators.

Requesting all Department of Computer Science faculty members and students to grace us with your presence!!