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ABSTRACT

The Internet of Things (IoT) has generated excitement for a few years now, with start-ups and established businesses placing bets on the industry's growth.

Along with the business solutions, IoT has been very vital in connecting things to the internet. Thereby achieving a communication among the connected devices. In this Thesis, I have conducted a research on opportunities and challenges of IoT. In the research study, I explored the need of IoT, possible ways to implement IoT, various sensors and devices etc. The study has been well explained in this thesis. Internet of Things has << definition, pros and cons>>.

Various implementations of IoT could be done by using both proprietary hardware and open hardware. To implement a home automation, I need to study the insides of the hardware, which could not be possible by proprietary hardware. So I found the freedom and chose open hardware for the implementation of an instance of applications of IoT. NodeMCU boards has been very cost effective and easy to implement. Upon few software instructions, the NodeMCU board would work as per the instructions with the connected devices.

I have place a NodeMCU board with an OS and an application called "Telegram" to deploy the IoT software to sense and state the temperature and humidity of a location. Accordingly, I have recorded the values against the reports generated by the bot of telegram. In mere future I see this to be connected to the entire house and can be centrally operated by the bot technology of telegram application .This implements IoT to automate the control of connected thing in a house.