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# Temperature Prediction by Machine Learning using Bolt Cloud

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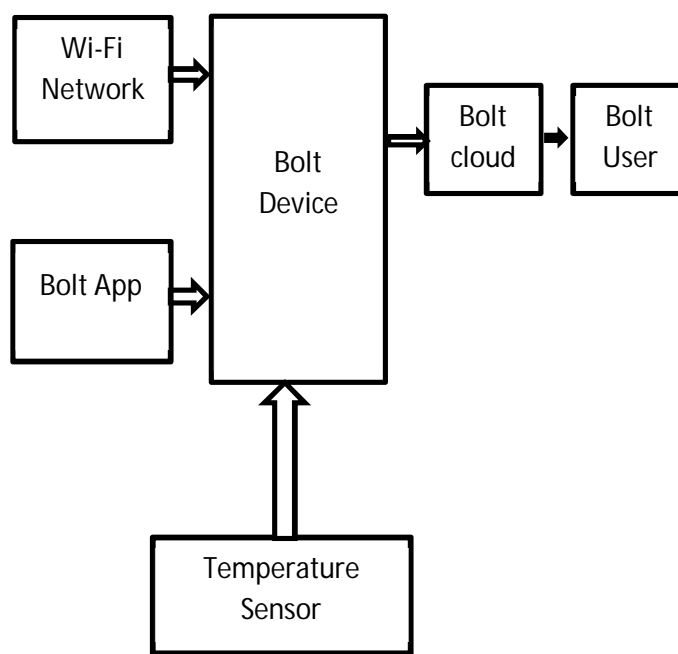
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**Abstract:** The project deals with the sensing of temperature with the help of LM35 in nay industrial level, say any pharmaceuticals company, which manufactures medicines. It is mandatory for the pharmaceuticals companies to keep track of the temperature they are using for the manufacturing purpose of medicines. Bolt cloud one can control and monitor devices over the internet, create personalized dashboards to visualize the data, monitor the device health, run machine learning algorithms etc. Internet of Things is the usage pf computing devices via the internet. The utilization of Machine Learning in prediction of temperature in short period of time, which can on less resource-intensive Computing system. This project can be extended to predict the future sensor values via Machine Learning over the bolt cloud.

## I. INTRODUCTION

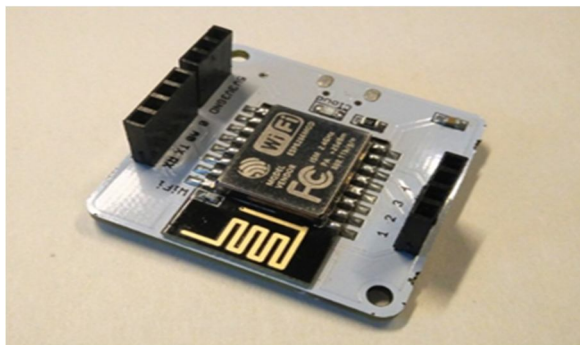
Starting form the traditional crops to the artificial ones in food industries, from drugs to chemical manufactured in the pharmaceutic al industries, all of them need the right amount of temperature to be maintained for manufacture. Our homes too had thermostat installed which monitor and regulate the temperature. Maintaining using this project, you will be able to built such a monitoring system where you will be able to monitor the temperature of the environment in the form of visual graphs. This project can then be extended to predict the future sensor values via Machine Learning over the Bolt cloud. The advancement in technology, Internet of things is the next great thing With increased demand of automation and smart appliances at industrial level as well as personal home level, Internet of Things the need to make the objects smart.

Block Diagram



### A. Block Diagram Description

Hardware specification- Bolt Iot and Bolt wifi Module I t is a 32 bit RISC CPU. Its operating voltage is 3.3V and its Clock Frequency is about 80MHz. It consists of five digital pins and one analog pin. It consists of LED indicators. Its Boot time is less than 1 second.



- 1) *Temperature Sensor:* LM35 sensors can be operated at the temperature of -40 to 110, -55 to 150, 0 to 100 and 0 to 70 And it can be performed in the voltage Minimum of 4V to Maximum of 30V.



- 2) *Male/Female Jumper Wire:* There are three types of jumper wires among that male to female wires are used. It consists of length up to 200mm.



- 3) *USB-A To Mini USB Cable*: It can be connected to a Digital Camera, PDA, Cell Phone to a USB port on a computer or laptops or hub.



### B. Software Specification

**BOLT IOT ANDROID APP**- This is an open source and it consists of WIFI module through which the sensors can be performed and it is used to store, analyze the data in the form of visual graphs.

### C. Proposed Method

In today’s modern world, most of the products that we produce have a very crucial factor that is temperature. From drugs to chemical manufactured in the pharmaceutical industries, all of them need the right amount of temperature to be maintained for manufactured in the pharmaceutical industries; all of them need the temperature part of these sectors. Maintaining the right temperature is required for the medicine so as it can withstands for months. If the right temperature is not maintained, the medicines will expire. This project can be extended to predict the future sensor value via Machine Learning over the Bolt Cloud. The drawbacks of using that it has more number of pins and it cannot store more values. By using Arduino we cannot store the information on Cloud as the cloud technique is not supported for the Arduino. So the task of completing this project will be complex while using Arduino the humidity sensor is used so as to calculate the temperature. Code has to be coded so that it may function effectively. Input pins need to be set correctly so that the power supply is given to perform well

## II. RESULT



The result can be viewed in the form of visual graphs. In this case, it is determined that the temperature is calculated between each and every hour. And this graph is calculated according to the room temperature.

## III. DISCUSSION

Temperature prediction by machine learning using bolt cloud in this we can calculate the room temperature. Using bolt cloud, we can calculate the output in the form of visual graphs. These are mainly used in the places where temperature is the crucial factor. So, this project is used in pharma companies. In future by using Machine Learning Technique, we can code automatically for future as well.

#### IV. ACKNOWLEDGMENT

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