DEVICE AUTOMATION AND CONTROL USING ESP8266 (DACE)

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INTRODUCTION

In a world where technology is showcasing incessant development and advancements, people are trying to cope up with it. People are getting smart, and devices are getting smarter. The need of the hour is automation and Internet Of Things (IoT) is a foundation stone for this. IoT can basically be defined as interconnectivity for various devices and gadgets. Thus, IoT is slowly becoming an indispensable part of our lives.

This new wave of connectivity is going beyond laptops and smartphones, it's going towards connected cars, smart homes, connected wearables, smart cities and connected healthcare. So, in our project, we aim to connect and control devices within a network established by ESP8266.

OBJECTIVE

The aim of the project is to collect data from sensors (in this case, LM35 Temperature sensor) and store that data on a hosted server. Also, the module allows to control the state of a device from the server itself and also using voice control.

MATERIALS AND METHODS

Our Approach

Collecting data from LM35 temperature sensor and hosting it on a local server, controlling the speed of a DC Motor from server and via voice commands

Data Used

LM35 temperature data, ESP8266 Documentation, Arduino Functioning

Implementation

- Collected data from LM35
- Hosted data on a local server
- Controlled speed of motor from server and via voice commands through Alexa
- Generated tweet if temperature exceeded a certain value
- Controlled bulb through Alexa

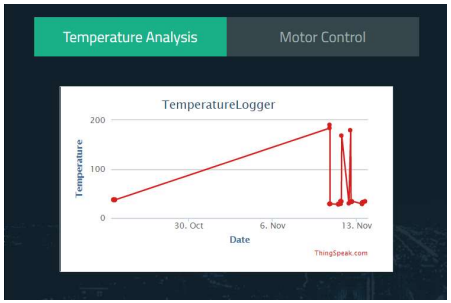
System/Technologies Used

- Arduino Uno
- PHP, MySQL
- WAMP
- CSS, HTML5

RESULT

The completion of the project resulted in recording of real time temperature readings from LM35 and displaying them in a graphical format on a localhost.

Also, the speed of a DC Motor was controlled from a server wherein ESP8266 worked in receiver mode. The last recorded temperature was retrieved from a simple voice command to Alexa which was also used to control a light bulb. Finally, a tweet was also generated if the temperature exceeded a particular value. In all, the project module replicated a "Smart Network" provided by ESP8266.



BENEFITS

- Accessibility
- Authorized Connectivity
- Voice Assisted Commands
- State of the Art
- Ability to form a smart network

REFERENCES

Arduino Forum : https://forum.arduino.cc/
ESP8266 Manual : https://espressif.com/sites/default/files/.../esp8266-technical_reference_en.pdf

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