TALKING PLANT USING IOT AND MACHINE LEARNING

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Abstract -*The aim of this work is to bring the Artificial Intelligent (AI) concept in a new level by introducing it to living organisms like plants. In this system, we provide a concrete scenario where an augmented plant, an ePlant can be incorporated in a ubiquitous computing environment in order to work together with other augmented objects, artefacts, in order to provide to the environment status of its condition. Machine learning is a scientific study of algorithms and statistical models that are used by computer systems to perform a certain task without using explicit instructions, relying on patterns and inference instead. It is recognize as a subset of artificial intelligence. Machine learning algorithms construct a mathematical model depend on sample data, called as "training data", in order to make predictions without being explicitly programmed to perform the task. The system presents the enabling infrastructures that are used to make by using application and sensors, we are creating communication between user and plant. The IoT is the addition of Internet connectivity into physical devices and everyday objects. Embedded with electronic devices, Internet connectivity, and other forms of hardware like sensors, such devices can interact with others over the Internet, and they can remotely examined and controlled.*

Key Words:*Artificial Intelligence,Internet Of Things,Eplant, Machine Learning, Sensors.*

1.INTRODUCTION

In this project we create a system so that plant can interact with human easily. In first part of this IoT project, we will search how to use sensors to collect environment information using Arduino and how to send this information to the cloud. In addition, in second part of IoT project, we will search how to enable triggers on the sensor values stored. Moreover, we will send alert to user smartphone through Bluetooth or Wi-Fi when some parameter value is out of the range. We can expand this project adding new features so that we can easily combine it with other systems. For example, we can implement a notification system using Firebase so that we can send an alert when some parameters are out of the specified range. Additionally, we could add an Arduino API interface so that we can read the plant status parameters using external systems. Finally, at the end of this IoT project tutorial, you gained, hopefully, the knowledge about reading data sensors and sending the values to the server.

This project describes how to build smart plant monitoring system that controls the plant health status. This IoT monitoring system checks some environment parameters such as:

- temperature,
- light intensity
- soil moisture

This Smart plant monitoring system based on IoT can be accessed remotely using a browser so that it is attainable to verify the plant health remotely.

2. PROBLEM DEFINITION

This project mainly focuses on the social behavior of living organism who cannot represent their need what they want and what are the problem they have. This system basically focuses in the field of artificial intelligence through which we can gain

knowledge about the behavior of the plant and its responses." The Internet of things (IoT) is the augmentation of Internet connectivity into physical devices and everyday objects.

3. OBJECTIVE

- Easily to use.
- Reduce time.
- To understand the need to plants.
- To nourish the plant with proper fertilizers and ample amount of water.
- To take a new step in automation in agriculture.
- To apply machine learning in the field of cultivation to make it more efficient.
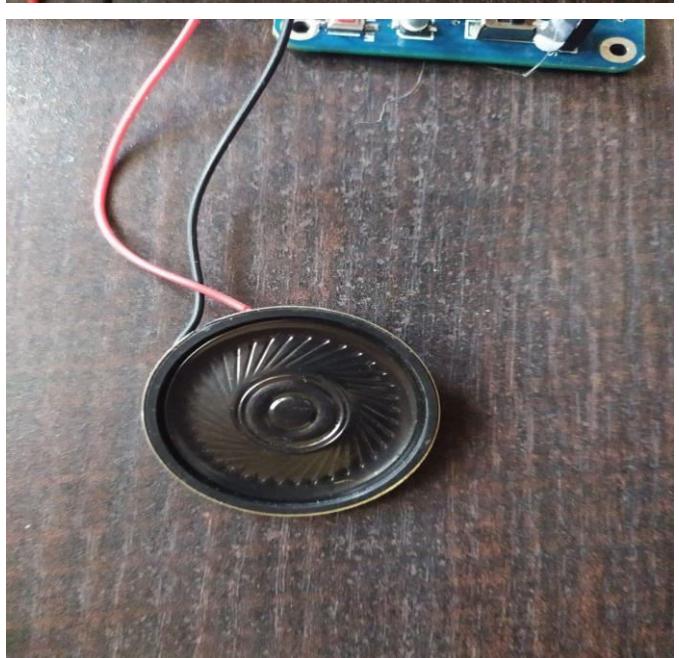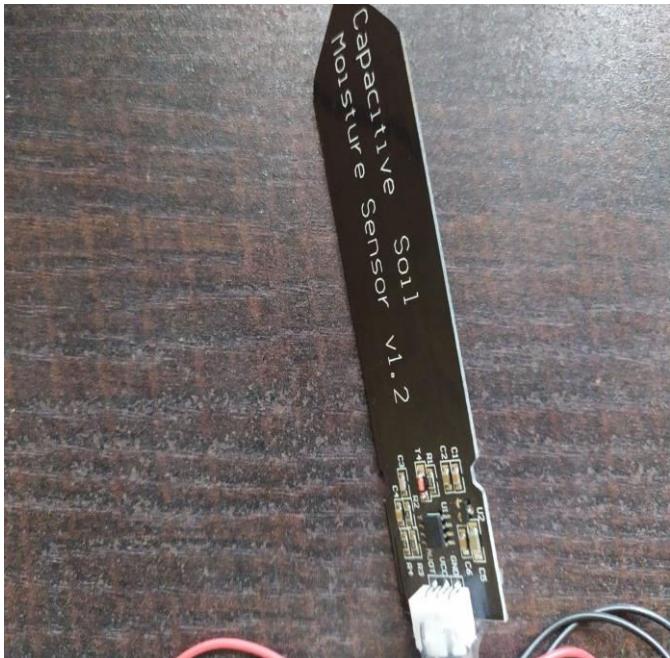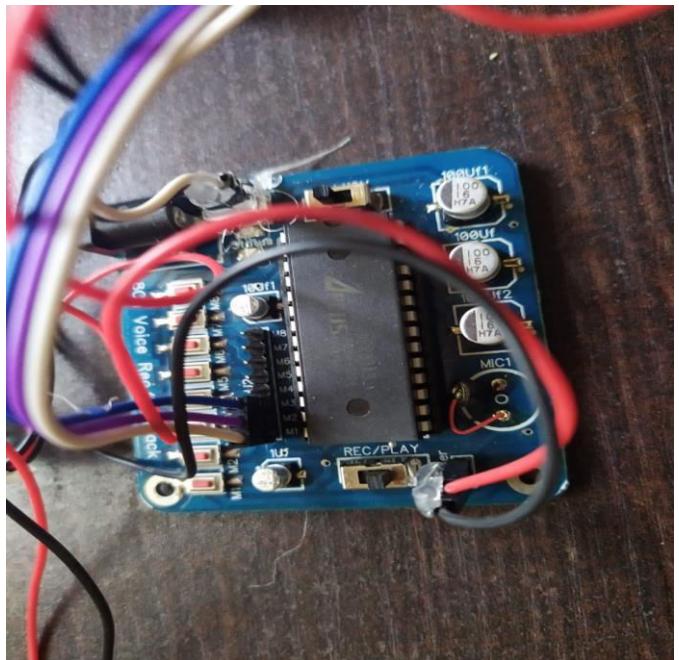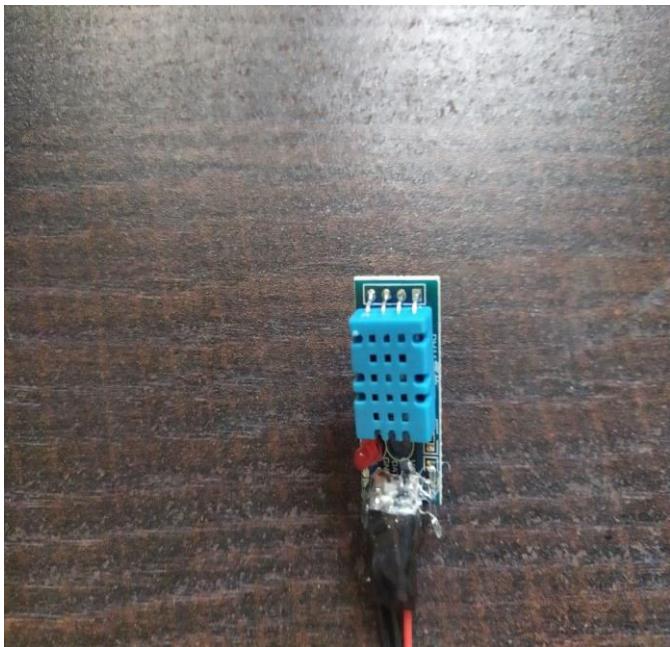
4. HARDWARE REQUIREMENTS

- Processor : Pentium 4, 2 GHz and above
- RAM: 4 GB
- Disk: 500 GB
- Node MCU
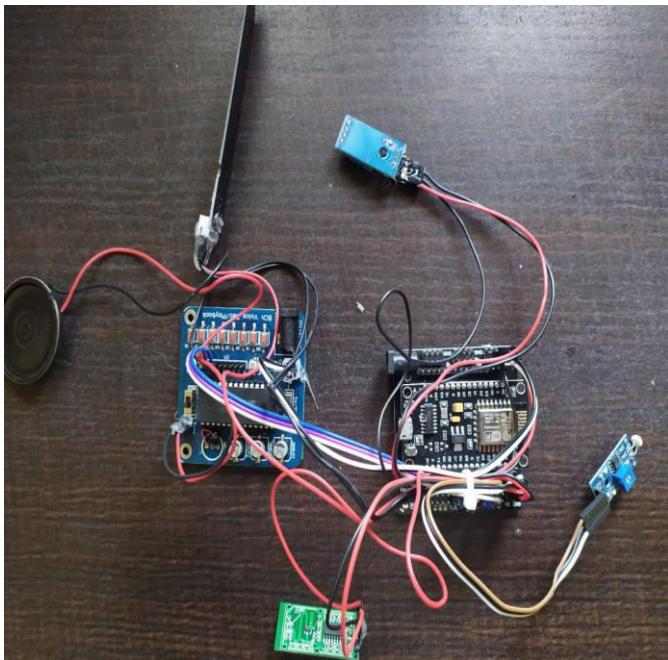- Soil Moisture Sensor
- Temperature Sensor
- Light Intensity Sensor

5. SOFTWARE REQUIREMENTS

- Language :Python 3.3
- Database: MySQL 5.1 or Firbase
- IDE : Arduino IDE
- Operating System : Windows XP/Vista/7/8

5. OUTCOMES
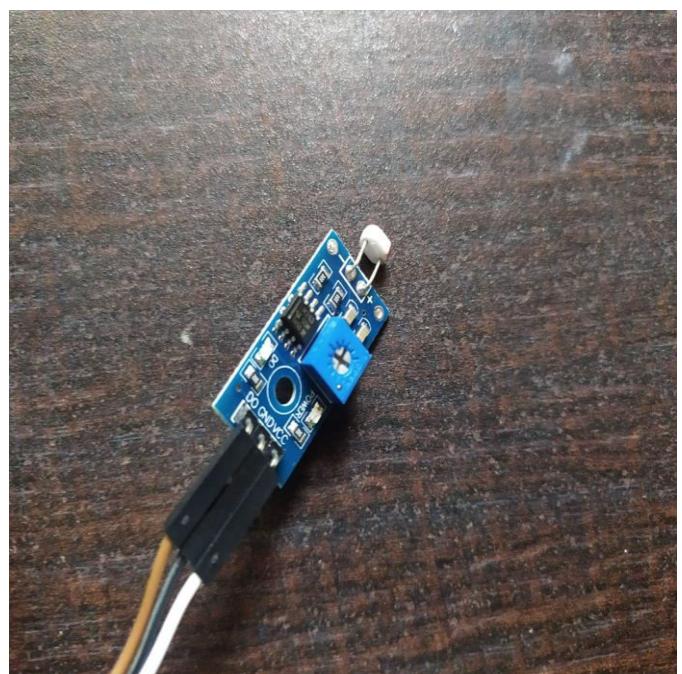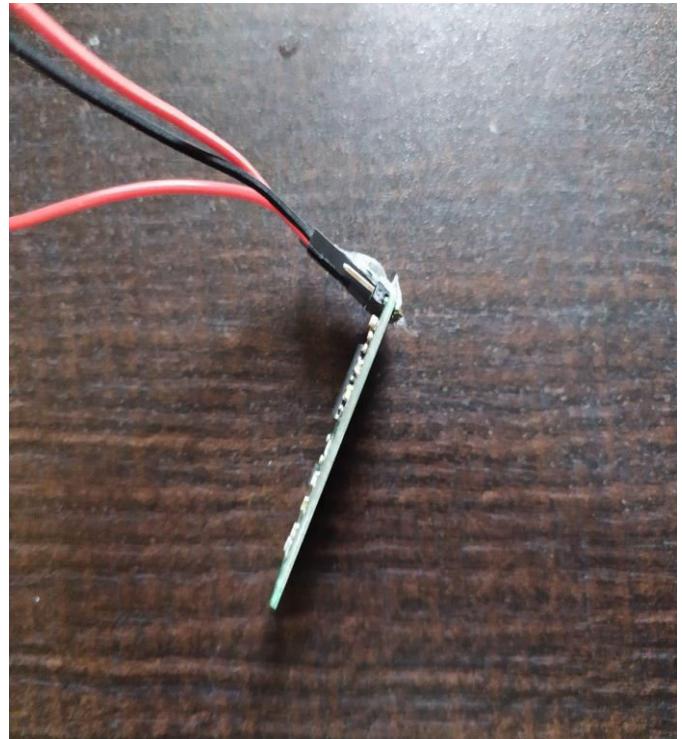
6. CONCLUSIONS

Based on the myth, people might want to chat with theirplants more often. This technique allows the plant grow morerapidly. Studying this new realm of plant interaction, despiteof not having eyes, ears, or a nervous system, plants areanything but uncommunicative. This project will enableplants to clearly let its owner understand how it feels. Thegoal is to encourage a happy relationship between plants andpeople. In addition, in the second part of IoT project, we willexplore how to enable triggers on the sensor values stored.

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