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QUANTIFICATION AND PREDOMINACE OF SOIL MOISTURE BASED ON CAN PROTOCOL

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ABSTRACT

As stated by the modern agriculture facility for the need of irrigation control is based on quantification and predominance of temperature and soil moisture using Double CAN Bus is planned. . This model consists of Arduino Uno, CAN protocol, temperature sensor, moisture sensor, gas sensor, fan, water pump, buzzer,LCD Module. CAN can be used to get accurate data so that the environment can be properly analyzed. If the environment is properly analyzed then appropriate decisions can be made towards the environment, improving the quality of the crop and the fertility of the soil. This system will help the user to produce a high yield and good quality of the crops.

Keywords: -Arduino Nano, CAN Protocol,Gas sensor,Humidity sensor, Master-Slave unit, soil sensor, Temperature sensor, Wi-Fi

1. Introduction

Nowadays, the agriculture facilities are the most emerging area for research field, which results in the engineering, automation and information technologies combining together. The control of soil moisture is one of the most important factor in agriculture for crop growth. There is an enormous amount of water being wasted, whereas on the other hand there is a very little quantity of water left. So, for the need of low costs and high efficiency, we are developing a quantification and predominance of the soil moisture and temperature using CAN Protocol. Using this technology, we can get an exact information about the irrigation system and this also tells us how much water to be used and which gas is present in the environment in what quantity, and it readily helps in increasing the yield.

2. Literature Survey

As stated by the requirement of irrigation the power of current agriculture solution, a Quantification and Predominance of soil moisture based on CAN protocol is been constructed. By combining this system with agricultural specialist structure, not only rationalized limitations and administration, but also quantification and restriction in division as stated by the need that can be attained, so the crops get a punctual and require specific

irrigation. To refine the utilization ratio of equipment and water as well as it esteems the high yield and quality of the crops that can be grown.

In accordance to the control equipment for the classification of signal processing, it is structured from a Temperature and Moisture and Humidity sensor, CAN protocol in this paper. CAN protocol acts as the hub for the whole control system. Here the value is displayed from the LCD modules and significant notifications is given to the user using Wi-Fi.

3. Proposed Work

Present structure tells us about the managing the basic needs of the environment which satisfies the user for his day- to- day lifestyle. Mobile phone connected using Wi-Fi to a microcontroller and sensors to give the required information needed to the user [1].

Environment monitoring technology has continually improved and a better atmosphere always helps in production of high quality crops, and increases the production which later gives a great importance theoretically and increases the value for the study. This system uses a WiFi for notifying the users on duly basis [2].

The analysis includes quantification and predominance of temperature and soil moisture. By combining this system with agricultural specialist structure, not only rationalized limitations and administration, but also quantification and restriction in division as stated by the need that can be attained, so the crops get an uniform and require specific irrigation. [3].

Monitoring and controlling the environmental parameters using master- slave way of working. This system includes a soil moisture, personal computer, temperature and humidity modules, WiFi, and CO_2 monitoring modules [4].

The software construction is based on the Embedded C-Programming which regulates and restricts the climatic conditions in a uniform manner. [5].

The program uses control algorithms sending signals to the sensors and the modules in order to reach the desired output. The system also uses LCD display which tells the user about the humidity and temperature. This also in return makes the whole system a user friendly system [6].

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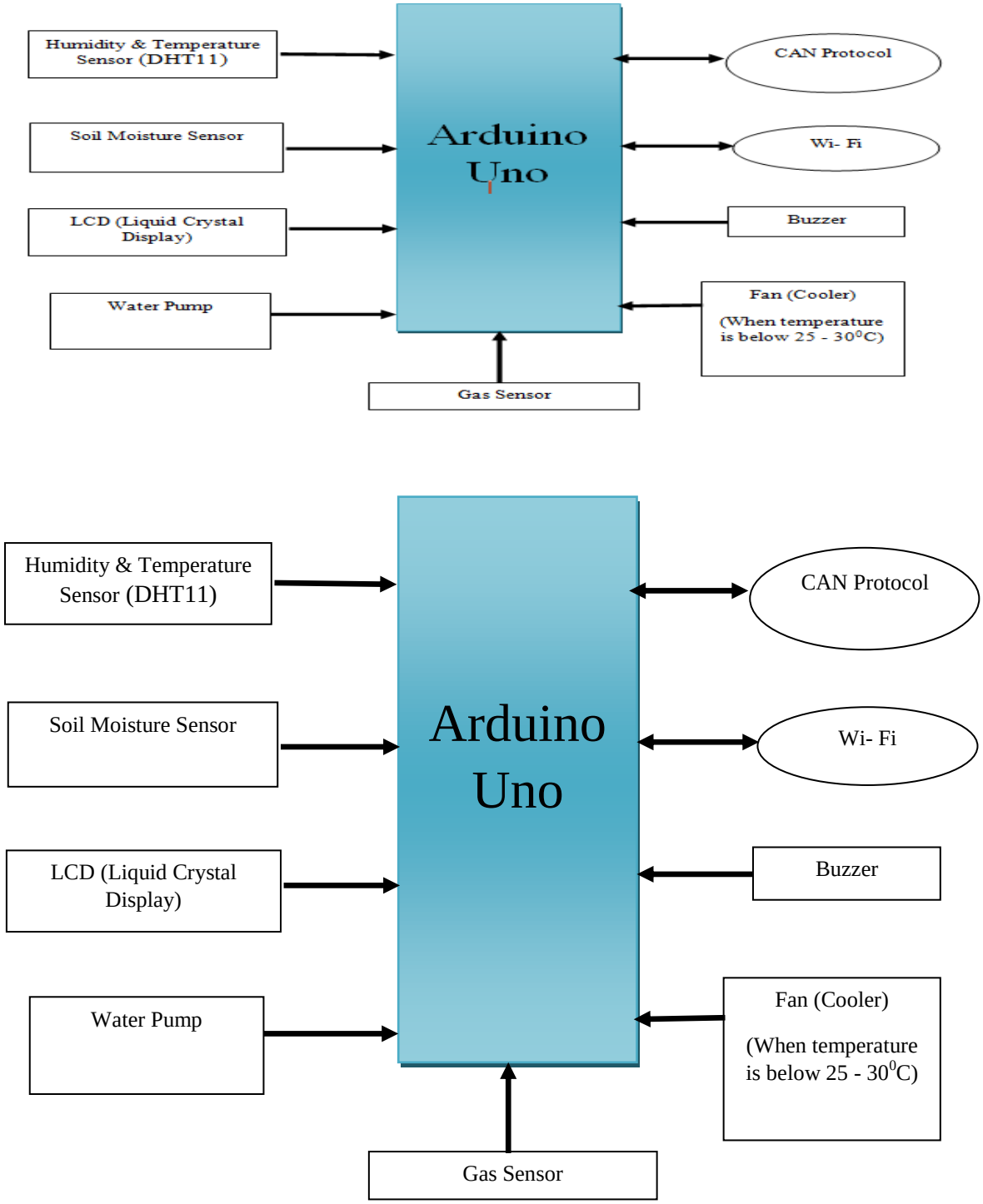

Fig1: Block Diagram

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4. Result

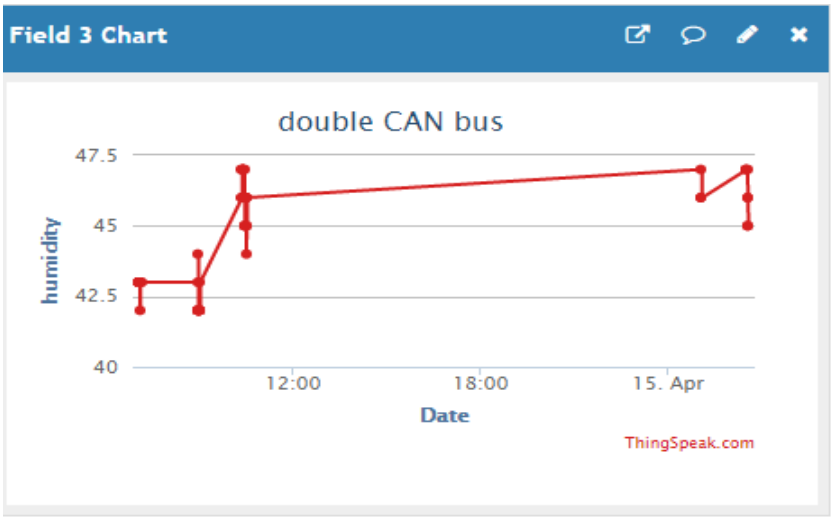

Fig 2: The Graph of Humidity Sensor

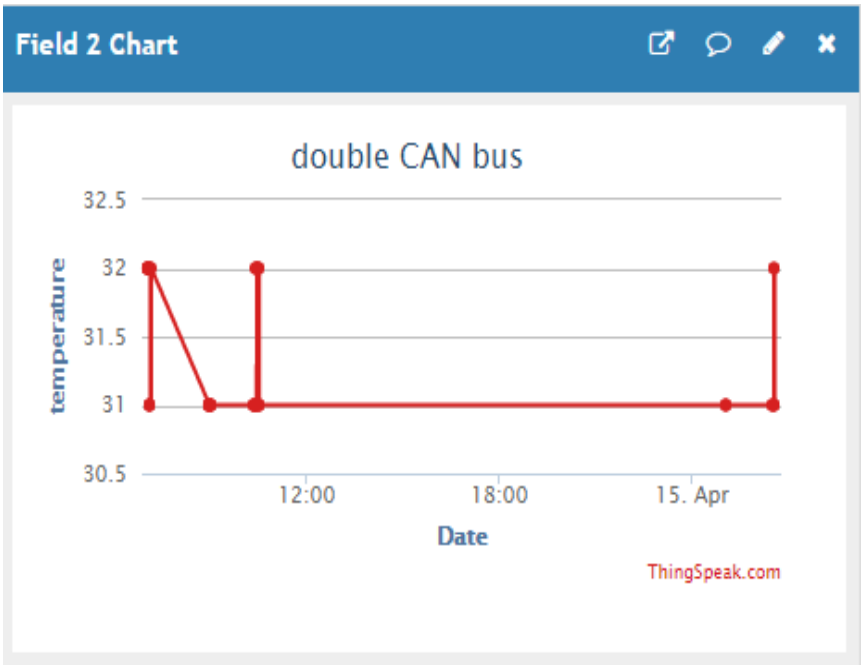

Fig 3: The Graph of Temperature Sensor

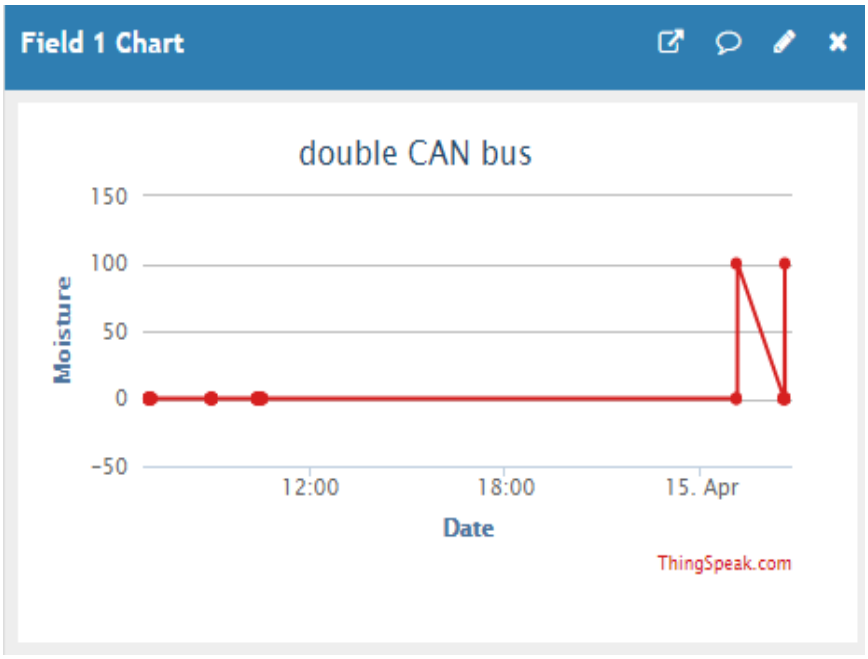

Fig 4: The Graph of Moisture Sensor

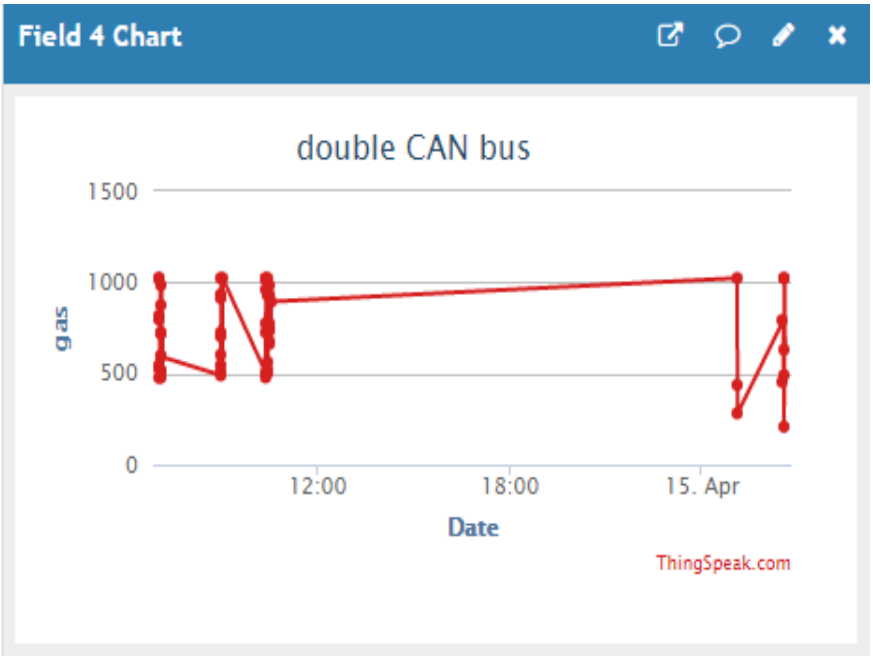

Fig 5: The Graph of Gas Sensor

5. Conclusion

With the help of this model the user gets to know about the needs of the environment for the fast development of the agriculture. We get to detect the level of moistures and gases present in our surroundings. Future scope for this model is that the user gets the messages through Wi-Fi and with this little modification, this project can be implemented as a robotic model. Buzzer plays an important role when the sensors exceeds its limit it turns on.

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