APPLICATION OF INTERNET OF THINGS IN AUTOMATED IRRIGATION SYSTEM (3PHASE)

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Introduction:
As agriculture is the back bone of our country we should concentrate on getting high yield in correct amount of time to increase in economy. In our project we are applying IOT technology, along with that we are using sensors like IR sensors to detect rodents, LM35 to know the current temperature, Humidity sensor to know the Humidity value of the atmosphere, Water level sensor to indicate the water level in field. We are using GSM module to operate the motor, whenever the three phase current is obtained the user will get the notification by sending message or calling he can operate the motor. We also have an application in which the details of few crops is obtained.

Objectives:
- To detect the rodents by using IR sensor.
- To detect the temperature by using LM35 sensor.
- To detect the humidity value by using humidity sensor.
- To detect the water level in the field by using water level mechanism.
- To operate the motor by using GSM.

Methodology:
The below diagram is the block diagram of our project, in which microcontroller will control all the activities.

![Block Diagram Image]
- **Temperature sensor**: Is used to detect the temperature.
- **Power supply**: It will supply power to entire circuit.
- **ADC**: It will convert analog to digital signals.
- **GSM**: This module is used for communication purpose.
- **PH value**: It is used to detect the value of the PH of the soil.

**Result and analysis:**

The threshold value is fixed, i.e., 40, based on that value the current temperature value is measured and displayed if it is high and sends voice message to the user.

![Figure 4.1: Simulation result of temperature sensor](image1)

If the threshold value is more than 80, it will display the humidity value and show high if it exceeds the threshold value and sends voice message to the user.

![Figure 4.2: Simulation Result Of Humidity Sensor](image2)

It will display only when the water level in the field increases and sends voice message to the user.

![Figure 4.3: Simulation Result of Water Level Mechanism](image3)
Next we have a results for the details of crops which contain information like name, market price, disease, season, ph value of soil, temperature, pesticides.

Future work:

Future work will progress towards using a sensor which can detect diseases of crops without the help of testing in the laboratory. Using a very low ‘ON’ resistance multiplexer/de-multiplexer. This project has enormous potential and may be used in various other ways due to its cheap and cost efficient design. Using solar panel for power instead of three phase current to operate motor, so that entire system is eco-friendly.