



TAGORE ENGINEERING COLLEGE

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai
Rathinamangalam, Vandalur – Kelambakkam Road, Chennai, Tamil Nadu 600127, India

Department of Computer Science and Engineering

Faculty Name :Dr. B.Jaishanthi, Associate Professor, CSE

Subject : IT in Agriculture

Project-based Learning (PBL)

Project-Based Learning is an instructional methodology that centers around students completing projects that require them to apply their knowledge and skills to real-world challenges. PBL emphasizes hands-on, collaborative learning, fostering critical thinking and problem-solving skills.

Benefits

- Student-Centric Focus
- Active Learning
- Flexibility and Adaptability
- Technology Integration
- Problem-Solving Emphasis
- Creativity
- Encouragement Real-World Relevance

Problem : Students were asked to design and narrate about Farm Cultivation using IoT

Sample of solutions given by the students

29/02/2023

Embedded System and IoT

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Class BE CSE
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Aim:

To provide a solution to prevent dryness in soil using IoT devices like sensors and microcontrollers.

Problem Definition

Due to lack of water supply to crops especially during summer, the plants may lead to die. This will affect the whole cultivation and results in loss to the farmer. To avoid these

type of issue, an automation system can prevent the crops to get dried. This mechanism can be done with the help of IoT devices called sensors and microcontrollers.

Requirements

Microcontroller with required specifications
Humidity Sensor
Transmitter

Temperature Sensor

Other common components

Solution to the problem

Using the above listed components we can make an automation system that can maintain and manages the water level to the plants. This can be done using humidity and temperature sensor. Whenever the humidity level of the surrounding is low, this mechanism will trigger the water enough water to the plants. This mechanism will

29/02/23

FARM CULTIVATION AUTOMATION

Semester V
BE (CSE)
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Problem statement

In the traditional agriculture, we had mostly manual work but the advancement of modern agriculture

is very important to turn towards modernization of manual work with information technology.

Modern agriculture is one of the most famous applications in the IoT.

In the IoT has been using deep across such as manufacturing, healthcare, etc.

1. Smart Greenhouse

To yield their various vegetables, fruit or crops, the greenhouse controls the environment parameters to be improved and easily using the IoT.

2. Robotic Harvesting System

Plant the robots is to identify the ripe of fruits and vegetables played out.

3. Livestock

Large farm owner can using the benefit of IoT to collect the data regarding the animal location.

4. Fish Farming and breeding

→ To increase the productivity and reduce the input cost, it will need the IoT application to monitor and see the Oxygen level.

→ Automating feed system providing and improve the quality and quantity.

5. Automated Irrigation System

Using the IoT application to plant the automated and water irrigate regularly or automated.

And using the sensor to see the water level of plants using IoT.

EMBEDDED SYSTEMS & IOT DEVICES

Farm cultivation in
automation using
IoT devices

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- We can automate the tasks in farm cultivation using various IoT devices and sensors which play a major role in the field of agriculture.
- In this project, we are going to implement the following sensors: Weather sensor, Humidity sensor, soil health sensor, Water nutrients predicting sensor, Air pollution predicting sensor, Plant nutrients predicting level sensor.
- We can incorporate these sensors in the farm cultivation in automation and increase the automation level by reducing human work.
- Each of the sensors above do specific kind of automation in its own fashion and helps reduce

unwanted frequencies.

• For eg, weather predicting sensor can be helpful in predicting weather conditions so as to plant the plants which suits for the weather condition.