**MINI PROJECT – I**
**(2019-20)**

# Smart Farming

# SYNOPSIS



# Institute of Engineering & Technology

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# PROBLEM STATEMENT

Using smart farming through IoT technologies helps farmer to reduce waste generation and increase the productivity. Another important domain for Iot is the agriculture domain where IoT system plays vital role for soil and crop monitoring and provides a proper solution accordingly.

# REASON

Smart Farming is a farming management concept using modern technology to increase the quantity and quality of agricultural products. Farmers in the 21st century have access to GPS, soil scanning, data management, and Internet of Things technologies. By precisely measuring variations within a field and adapting the strategy accordingly, farmers can greatly increase the effectiveness of pesticides and fertilizers, and use them more selectively. Similarly, using Smart Farming techniques, farmers can better monitor the needs of individual animals and adjust their nutrition correspondingly, thereby preventing disease and enhancing herd health.

## Objective

Water is one of the essential elements of human existence. It is not alwaysto get water supply from natural sources. Here comes the application of irrigation supply. Irrigation is the man-made means of supplying water. The main objectives of irrigation supply are given below

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- Ensure enough moisture essential for plant growth.
- Cool the soil and atmosphere to provide a suitable surrounding
- To develop a smart irrigation system in order to get a significant saving in the consumption of water to irrigate the crops
- To provide sufficient flow capacity to meet the irrigation demand

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## Literature Survey

- Save water and money. Smart irrigation practices help to limit your water use, which can save you money on your utility bill. ...
- Save your customers money. ...
- Protect the community's water supply for generations. ...
- Minimize needs for infrastructure to store and carry water. ...
- Make maintaining yard easy and convenient.

## Future Scope

1. GSM can be added for sending SMS to the concerned person in case of any problem.
2. Other Parameters such as ambient temperature, light intensity & humidity can be measured.
3. Pesticides & fertilizers can also be added automatically in the water.

## Methodology

The outmoded irrigation technique has been replaced with automated technique. Many smart irrigation systems have been devised. A smart irrigation system, contrary to a traditional irrigation method, regulates supplied water according to the needs of the fields and crops. The feedback mechanism of a smart irrigation system is a temperature sensor. This temperature sensor is placed at a specific location on the irrigation field. Based on its value the water is being pumped to corresponding area up to a predetermined time. Wireless communication technology will make the communication possible between transmitter section and receiver section. This will avoid the presence of many wires in the field. Otherwise it may create a lot of problems to ploughing, harvesting, etc.

## Hardware Used

Sensors
Temperature sensor
Soil moisture sensor
Aurdino UNO
Relay
Jumper wires
Breadboard
Motor
Battery

## Contribution

Controlling these two set points reduces the amount of water used by linking it to the moisture level needed in the soil for a particular crop. One of the other major advantages of a smart irrigation system is that precision watering in smart irrigation also deals with efficiencies in the delivery of the water.

## Scope

Future work would be focused more on increasing sensors on this stick to fetch more data especially with regard to Pest Control and by also integrating GPS module in this IoT Stick to enhance this Agriculture IoT Technology to full-fledged Agriculture Precision ready product.

## Conclusion

The project concludes that automation of irrigation system will become easy and comfortable for farmers to operate the irrigation at remote location i.e. from home. This will save time and avoid problem of continuous vigilance. Not only this, it will also control the consumption of water for the irrigation of the field, thus preventing the water wastage and would help in sustain the productivity, increasing the yield.