VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi, Karnataka 590018.

Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY

(An Autonomous Institute, Affiliated to Visvesvaraya Technological University, Belagavi, Accredited by NAAC, with 'A" Grade)
Near Jnana Bharathi Campus, Bengaluru - 560056

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Major Project (CSP83) Presentation on

"SMART IRRIGATION MODEL USING IoT"

Submitted by

KUNAL JAYSWAL	1DA17CS067
NABIN KHADKA	1DA17CS087
POOJIT CHOWDRY	1DA17CS110
PRAGIK TIMSINA	1DA17CS111

For the academic year 2020-21

Under the Guidance of

Mrs. LAVANYA SANTHOSH
Assistant Professor
Dept. of CSE,
Dr. AIT, Bengaluru – 56.

PROBLEM STATEMENT

- Under-Irrigation and Over-Irrigation.
- Less attention provided by terrace farmers to plants.
- Global rise in temperature and it’s effect on crops.
- Depleting water resources
- Increasing Production Cost

EXISTING SYSTEM/S

- Farmer's experience and gut feeling
- Traditional Techniques
- Labor Intensive
- Inefficient Resource Utilization
- Unscientific Techniques

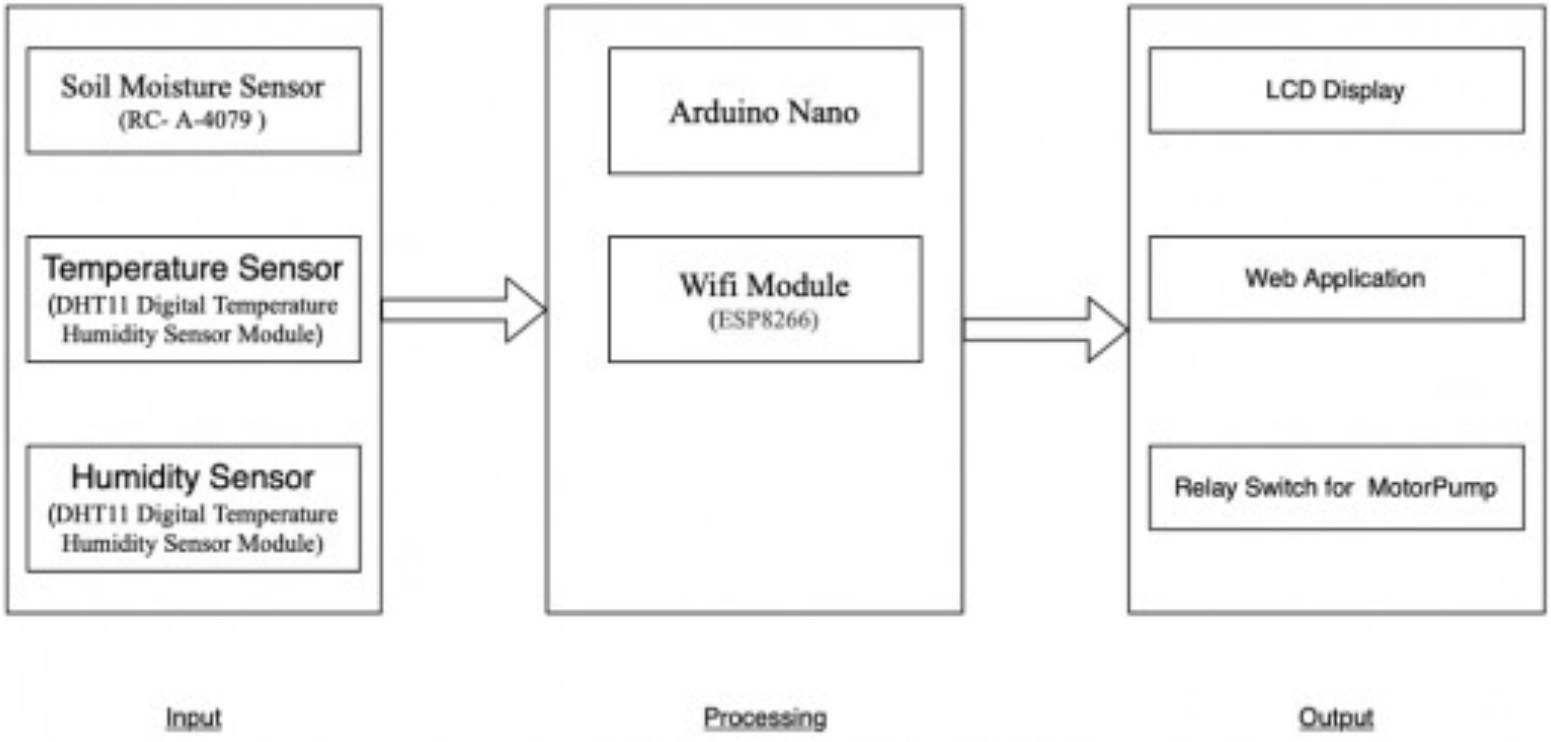
PROPOSED SYSTEM

- Real time data.
- Real time system control.
- Efficient Resource Utilization
- Cost Efficient
- User-friendly
- Remotely Accessibility
- Huge potential for expansion.

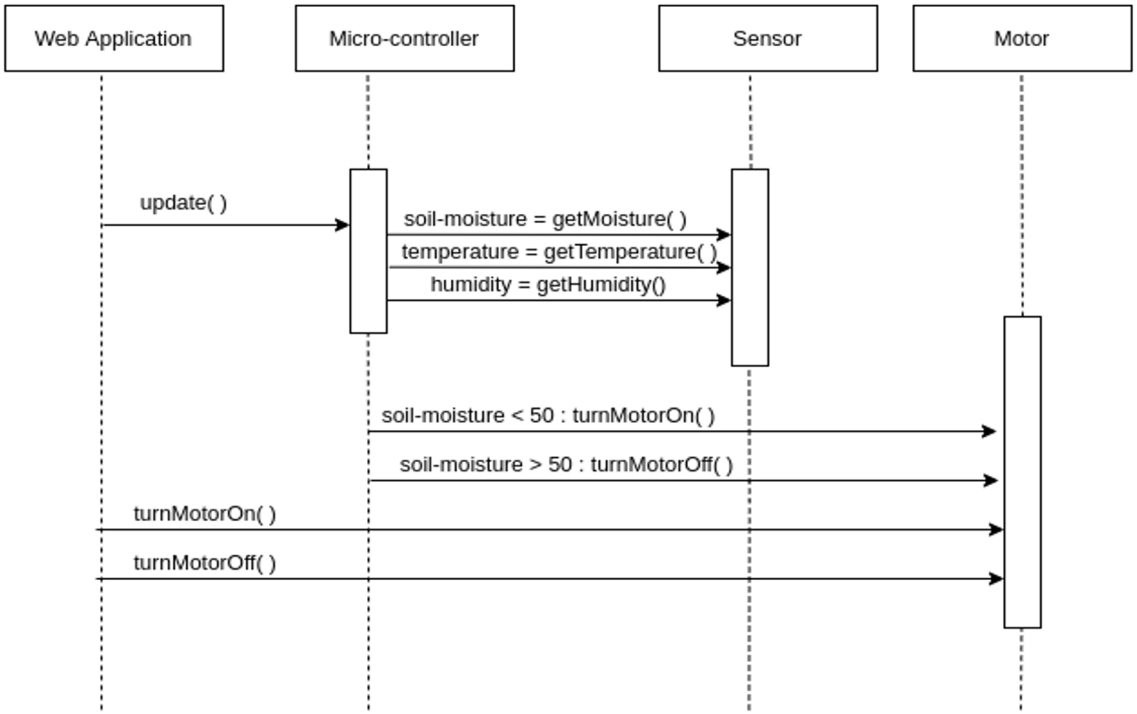
OBJECTIVES OF THE PROJECT

- Obtain real time data remotely as well as locally
- To provide real time system control to the user
- To monitor the soil moisture level at any given time
- To save time and be cost efficient
- To utilize available resources efficiently
- To be user friendly and minimalistic
- Obtain Maximum Flexibility and Scalability

METHODOLOGY

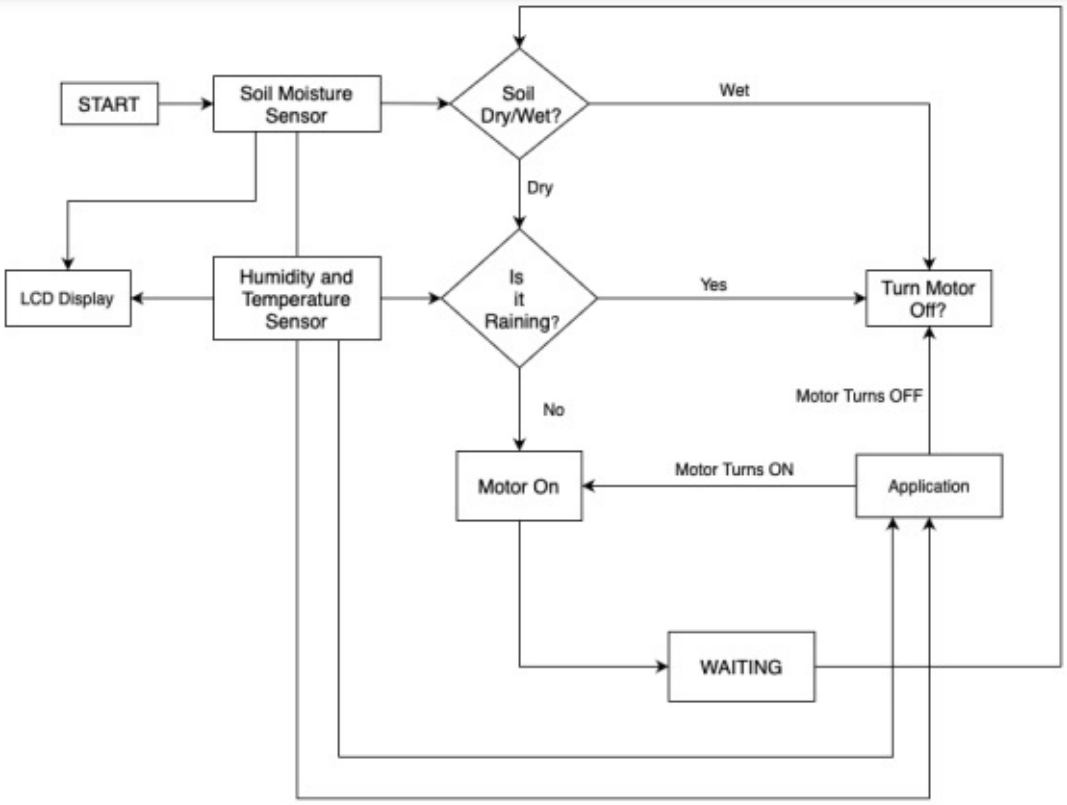


IMPLEMENTATION



Sequence diagram

IMPLEMENTATION



Activity diagram

EXPERIMENTAL RESULTS

- If soil moisture drops below 40%, the water pump is turned on automatically.
- Web Application works as intended i.e. displays real time data and provides control buttons.
- Manual Override can be performed during system failure.
- Flexible for commercial as well as non-commercial use.
- Scalable for commercial as well as non-commercial use.
- Labor intensive tasks are automated.

CONCLUSION

- Labor Intensive tasks were automated.
- Increase in production and quality of crops is predicted.
- No physical contact required with operation of the system
- Objective of Maximum Resource Utilization was met
- Objective of being cost efficient was met.
- Objective of Saving Time was met.
- Objective of being User-Friendly was met.

FUTURE WORK

- Use of API's rather than sensors for large fields.
- Use of additional sensors for detailed and multiple elaborated data.
- Addition of Software Modules to enable notification and remote control.
- Use of cloud server for efficient remote operations.
- Clustered Architecture for large fields.
    - Replace Arduino with basic microcontroller for raw data transmission.
    - Cluster Architecture can be controlled with a powerful central system to avoid on-module data processing which leads to better power efficiency in modules.

PUBLICATION RELATED TO PROJECT WORK

Si. No.	Name of the Journal/Conference, Year	Title of the Paper	Authors of the paper	Challenges of the paper	Limitations of the paper
1	IJARESM ISSN: 2455-6211 Volume 9 Issue 7, July -2021	Smart Irrigation Model Using IOT	Kunal Jayswal Nabin Khadka Poojit Chowdry Pragik Timsina	Unable to replace sensors with APIs.	Unable to demonstrate clustered system model.


DR. AMBEDKAR INSTITUTE OF TECHNOLOGY
ESTD : 1980
VIDYA VIDYA PEETHA WELFARE TRUST (R)
Aided By Govt. of Karnataka

Thank You