BHARATI VIDYAPEETH'S

COLLEGE OF ENGINEERING, KOLHAPUR.

BACHELOR OF TECHNOLOGY

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

A WEEKLY REPORT

ON

"DEVELOPMENT AND COMMERTIALIZATION OF IOT BASED VERTICAL FARMING."

SUBMITTED BY

Miss. Rajashree Vasant Dhalgade.	Roll.No.- 10
Miss. Aaditi Amar Gonugade.	Roll.No.- 16
Miss. Chetana Mohan Malwadkar.	Roll.No.- 35

UNDER THE GUIDANCE OF

Dr. K.R.Desai

Weekly Project Progress Report

Week 1:

Work Done:

- Discussed on Previously done projects and field of the project with project guide.
- Also discussed on various Technology can be used on project.
- Decided to search requirement of industries.

Website Visited:

- **https://codemint.net**
- https://www.upgrad.com/blog/final-year-projects-ideas-topics/

Project Notes Prepared:

- Visited different websites and gathered problem statement for project.

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Miss. Aaditi A. Gonugade

Miss. Chetana M. Malwadkar

Signature of Guide:

Weekly Project Progress Report

Week 2:

Work Done:

- After searching requirement in industries we listed out some project titles and problem statement

Website Visited:

- https://nevonprojects.com/iot-projects/
- https://github.com/topics/iot-projects

Project Notes Prepared:

Problem statement:

After the search of various project title we decided to take IoT Based project cause IoT can be a powerful technology for a wide range of projects, but it is essential to carefully evaluate the specific needs and constraints of your project before determining if IoT is the best choice.

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Weekly Project Progress Report

Week 3:

Work Done:

- Searched new ideas about the project.
- Listed them out and added to previous list.

Website Visited:

- **https://www.researchgate.net/publication/319867877_Vertical_farming_monitoring_system_using_the_internet_of_things_IoT**

Project Notes Prepared:

- Ideas about the project
- Selecting components for respected project

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Weekly Project Progress Report

Week 4:

Work Done:

- Discussed on searched topics with project guide.
- Preference had given to the topics.

Website Visited:

- **https://www.researchgate.net/publication/319867877_Vertical_farming_monitoring_system_using_the_internet_of_things_IoT**

Project Notes Prepared :

Preference

- Agriculture using IoT
- Different techniques of Vertical

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Weekly Project Progress Report

Week 5:

Work Done:

- Gathered some research papers on the project.
- Gathered Information about Vertical Farming(Hydroponics and Soil Based)
- Visit Vertical Farming centre of Kolhapur

Website Visited:

https://en.wikipedia.org/wiki/VerticalFarming

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Miss. Chetana M. Malwadkar

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Weekly Project Progress Report

Week 6:

Work done:

- After Various searches we decided to do Soil-based Vertical Farming
- Visit Vertical Farming centre of Kolhapur

Website Visited:

https://www.foodnavigator.com/Article/2021/12/09/Future-Crops-develops-first-soil-based-indoor-vertical-farm-developed-for-greater-crop-stability-and-resistance

Project Notes Prepared:

- The technique that we will used is Soil Based vertical farming

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Weekly Project Progress Report

Week 7:

Work Done:

- After the Search we decided to do this project Hardware as well as Software base using Mobile App.

Website Visited:

- **https://www.researchgate.net/publication/319867877_Vertical_farming_monitoring_system_using_the_internet_of_things_IoT**
- https://www.researchgate.net/publication/366143520_IoT_Based_Mobile_Application_for_Monitoring_of_Hydroponic_Vertical_Farming

Project Notes Prepared:

- Gathered some research paper on the basis of the project.
- Important information was pointed out by group members.

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Weekly Project Progress Report

Week 8:

Work Done:

- Made contact with project related industries and research laboratories.
- Selected project idea **'Development and Commercialization of IoT Based Vertical Farming'**.

Website Visited:

- **https://www.researchgate.net/publication/319867877_Vertical_farming_monitoring_system_using_the_internet_of_things_IoT**
- https://www.researchgate.net/publication/375167499_IoT-enabled_system_for_monitoring_and_controlling_vertical_farming_operations

Project Notes Prepared:

- Gathered some research paper on the basis of the project.
- Important information was pointed out by group members.

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Weekly Project Progress Report

Week 9:

Work Done: Block diagram

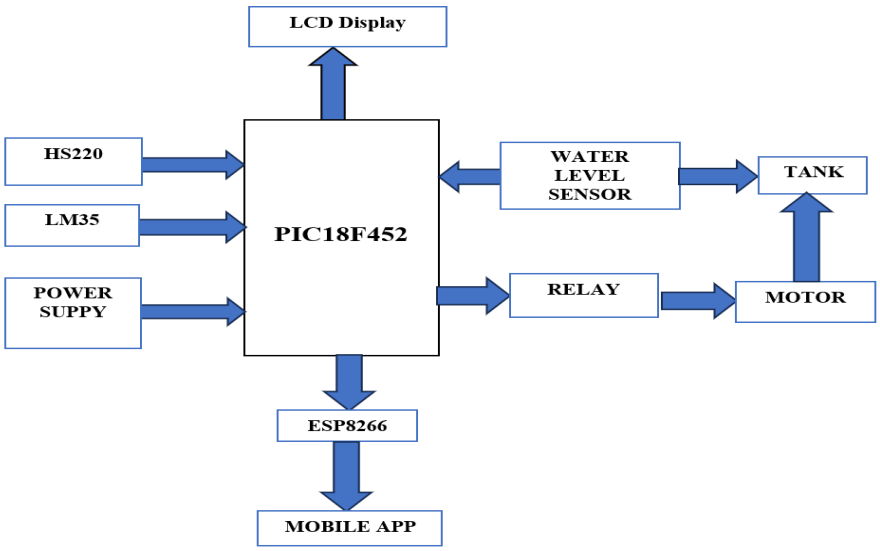

Fig: Block diagram

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Miss. Chetana M. Malwadkar

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Weekly Project Progress Report

Week 10:

Work Done:

- Studied about various sensors

Website Visited:

- **https://www.researchgate.net/publication/319867877_Vertical_farming_monitoring_system_using_the_internet_of_things_IoT**
- https://www.researchgate.net/publication/375167499_IoT-enabled_system_for_monitoring_and_controlling_vertical_farming_operations

Project Notes Prepared:

- If wireless communication and IoT capabilities are crucial, ESP microcontrollers are a strong choice.

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Week 11:

Work done:

- **Replacing PICmicrocontroller to ESP32.**
- **Gathered information about ESP32.**

Website Visited:

- **https://en.wikipedia.org/wiki/ESP32**

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Weekly Project Progress Report

Week 12:

Work done: Modified block diagram for project

ESP32 is the microcontroller used here which is responsible for taking the data from the sensor and taking appropriate action. The DHT11 sensor can be used for Humidity measurement and Temperature measurement. The DHT11 sensor detects the humidity level of the environment in which they are placed. Humidity changes with temperature. If the temperature increases, so will the humidity. Then the water level sensor is used and informs whether the tank is empty or not.

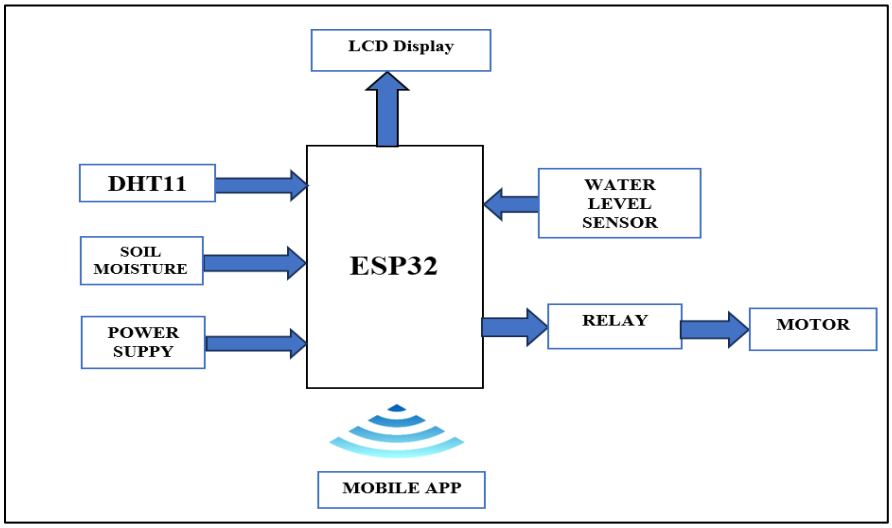

Fig: Modified Block diagram

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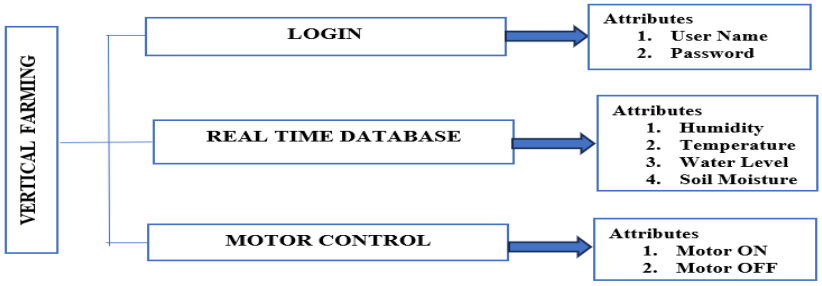
Weekly Project Progress Report

Week 13:

Work done:

- **Application Building**



Block Diagram of Application

Website Visited:

- **https://kissflow.com/application-development/what-is-application-development/#:~:text=Application%20development%2C%20or%20app%20development%2C%20is%20the%20process,on%20projects%20or%20by%20a%20single%20freelance%20developer.**

Project notes prepared

- Basic structure of Application Development

Signature of Students:

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Signature of Guide:

Weekly Project Progress Report

Week 14:

Work Done:

- Gathered some research papers on the project.
- Discussed the various key factors about project with guide.
- Synopsis was prepared by our project group.

Website Visited:

https://www.researchgate.net/publication/319867877_Vertical_farming_monitoring_system_using_the_internet_of_things_IoT

https://www.researchgate.net/publication/375167499_IoT-enabled_system_for_monitoring_and_controlling_vertical_farming_operations

Project Notes Prepared:

- Synopsis was prepared by our group.
- Some faults were pointed out by project guide.

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Signature of Guide:

Weekly Project Progress Report

Week 15:

Work Done:

- Modified the synopsis as per instruction given by our project guide.

Website Visited:

1. **https://www.researchgate.net/publication/375167499_IoT-enabled_system_for_monitoring_and_controlling_vertical_farming_operations**
2. **https://www.researchgate.net/publication/319867877_Vertical_farming_monitoring_system_using_the_internet_of_things_IoT**
3. **https://www.researchgate.net/publication/370483405_IoT-Based_Home_Vertical_Farming**

Project Notes Prepared:

- We come to conclusion to bring up with a new component flow meter.

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Weekly Project Progress Report

Week 16:

Work Done:

- **Seminar report was prepared by our group.**

Website Visited:

1. **https://www.researchgate.net/publication/375167499_IoT-enabled_system_for_monitoring_and_controlling_vertical_farming_operations**
2. **https://www.researchgate.net/publication/319867877_Vertical_farming_monitoring_system_using_the_internet_of_things_IoT**
3. **https://www.researchgate.net/publication/370483405_IoT-Based_Home_Vertical_Farming**

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Weekly Project Progress Report

Week 17:

Work done:

- Project costing estimation & program for ESP8266 prepared by project group. • Gathered some research papers on the project.

Website Visited:

https://www.foodnavigator.com/Article/2021/12/09/Future-Crops-develops-first-soil-based-indoor-vertical-farm-developed-for-greater-crop-stability-and-resistance

Project Notes Prepared:

- Synopsis is done
- Seminar report is done

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Weekly Project Progress Report

Week 18:

Work done:

- Start Making our project setup

Website Visited:

https://www.foodnavigator.com/Article/2021/12/09/Future-Crops-develops-first-soil-based-indoor-vertical-farm-developed-for-greater-crop-stability-and-resistance

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Weekly Project Progress Report

Week 19:

Work done:

- Start Researching about how we make our project setup

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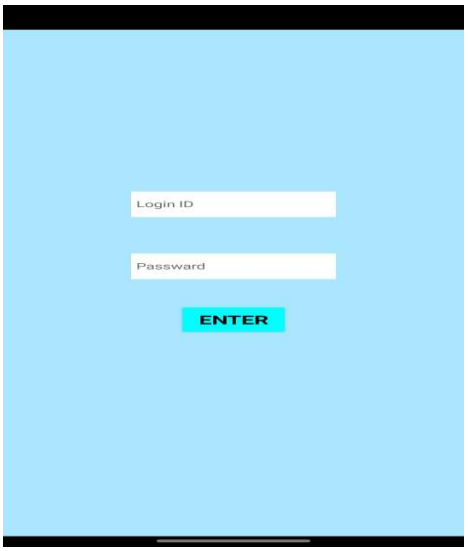
Weekly Project Progress Report

Week 20:

Work done:

- Started building the app using MIT App Inventor



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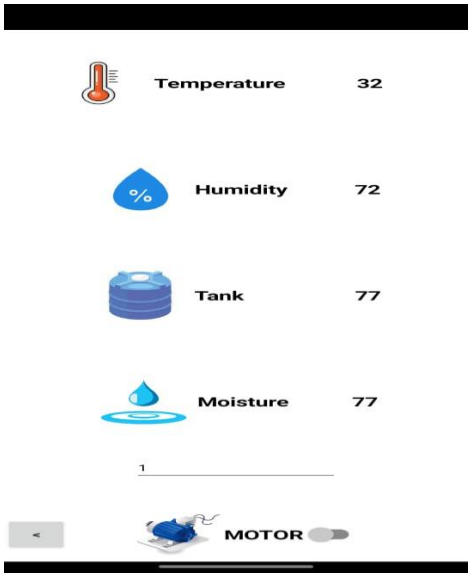
Weekly Project Progress Report

Week 21:

Work done:

- Final structure of App done using Block Diagram



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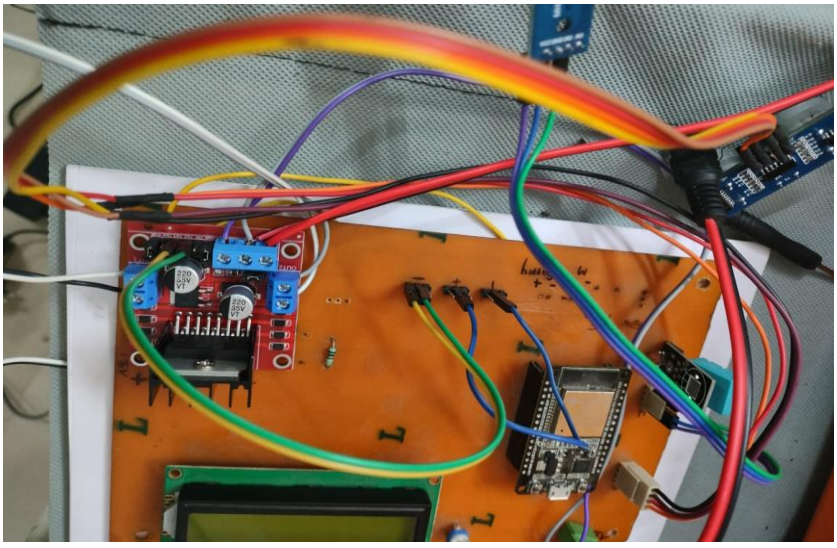
Weekly Project Progress Report

Week 22:

Work done:

- Assembled all the components in a box
- checked its functionality.



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Weekly Project Progress Report

Week 23:

Work done:

- Grow plants(HUBS) in trays.

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Weekly Project Progress Report

Week 24:

Work done:

- Prepared a Final set up of Project.

Signature of Students:

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