GUJARAT TECHNOLOGICAL UNIVERSITY

Chandkheda, Ahmedabad
Affiliated

L.D. COLLEGE OF ENGINEERING

A
Project Report
On

Solar Plant Monitoring using Audrino Device and Data Logger

Under subject of

DESIGN ENGINEERING – 2B
B. E. Semester – VI
(Electrical Branch)

Submitted by:

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(Faculty Guide)

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Head of the Department

Academic year
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ACKNOWLEDGEMENT

We are extremely grateful to our guide,
Prof. MIHIR VASAVDA Department of Electrical Engineering , for his excellent guidance and supervision, which lead to the completion of this Project. He was always there to help, providing us with all the necessary resources and guidance which helped in successful completion of this
project work.

We would like to greatly thanks to all respected faculty of electrical department for their constant help & support throughout the length of project…

Finally we like to thank all our friends who while working on their respective projects created a great learning environment. The time we spent together has been a great knowledgeable experience.

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INTRODUCTION

Now a days solar plants are quite common in industries as well as residential power production many times to check power output from system is fine or not we have to go there manually to check it by this project we made small device which can be scalable to large projects to check power output of solar plants by just a click of mobile.

So we are making such a project with a data logger device to Monitor data as well as save it for future estimations.

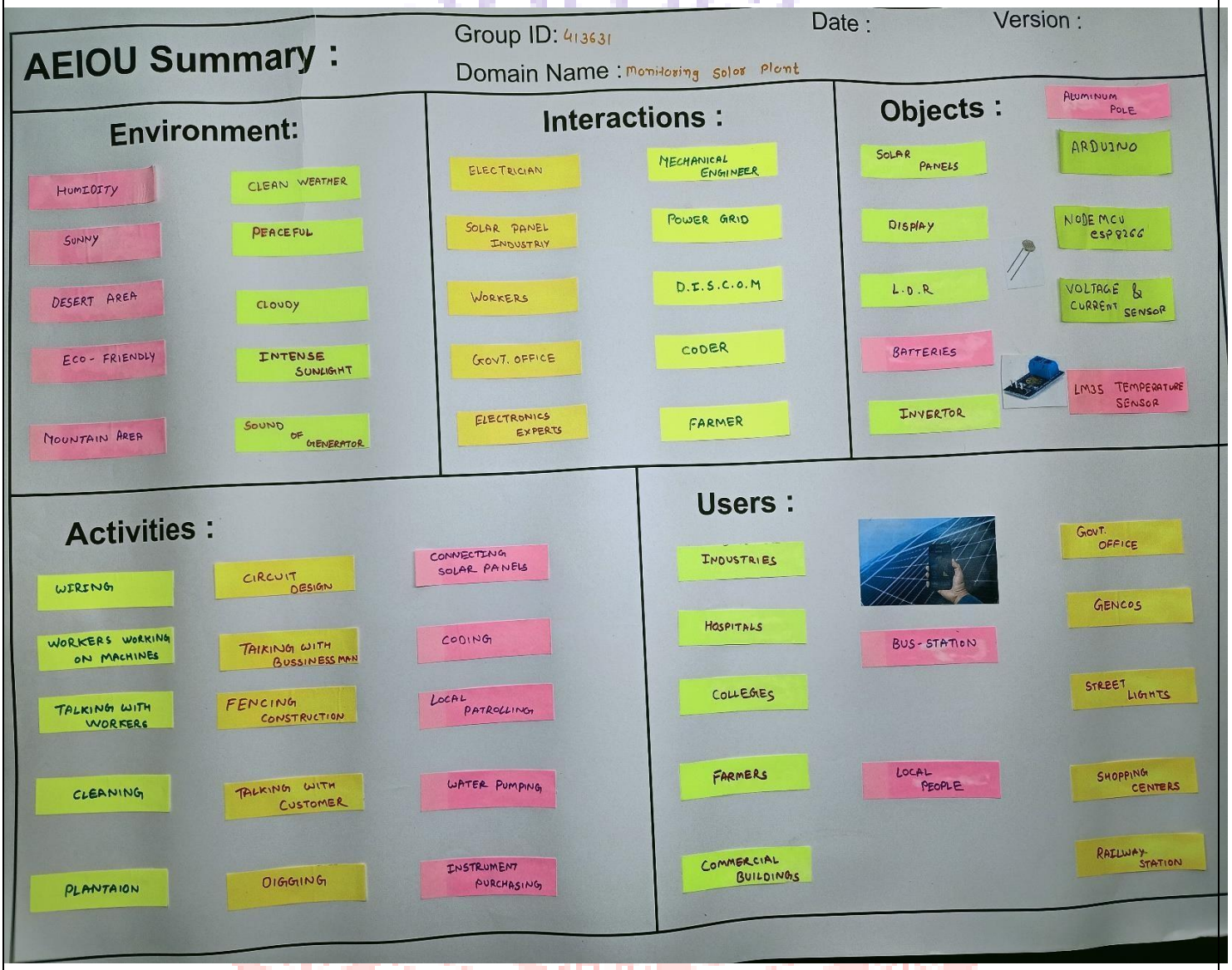
List Of Components We Used:

Sr.no	Components Name	Description	Quantity
1	Arduino Board	Arduino UNO R3 development board	1
2	Temperature Sensor	LM35 Analog Temperature sensor	1
3	Fan	12 V DC fan	1
4	LCD Display	JHD 162A 16*2 LCD display	1
5	Potentiometer	10K	1
6	Transistor	2N2222 NPN Transistor	1
7	Resistor	1K	1
8	Diode	1N4007	1
9	Capacitor	10 uF capacitor	1
10	LED	5mm LED Any Color	1
11	Power Supply	12V Battery	1
12	Connecting Wires	Jumper Wires	20
13	Breadboard	-	1
14	Node MCU Esp8266 Wifi Module		1
15	ACS712 Current Sensor	To measure current	1
16	Voltage Sensor	To measure voltage	1
17	16- Channel Analog Multiplexer		1

ADVANTAGES

- Cost FRIENDLY CONSTRUCTION
- EASY MAINTENANCE & REPAIR
- BETTER RESISTANCE TOWARDS RAINWATER
- LIGHTWEIGHT & FAST CONSTRUCTION

SHEET 1 : AEIOU SUMMARY



Activities:

- Wiring
- Circuit Design
- Coding
- Workers working on Machine
- Talking with Customer

Objects:

- Arduino
- Circuit Design
- Display
- Aluminum Pole
- L.D.R

Environment:

- Humidity
- Sunny Day
- Peaceful
- Cloudy
- Clean Weather

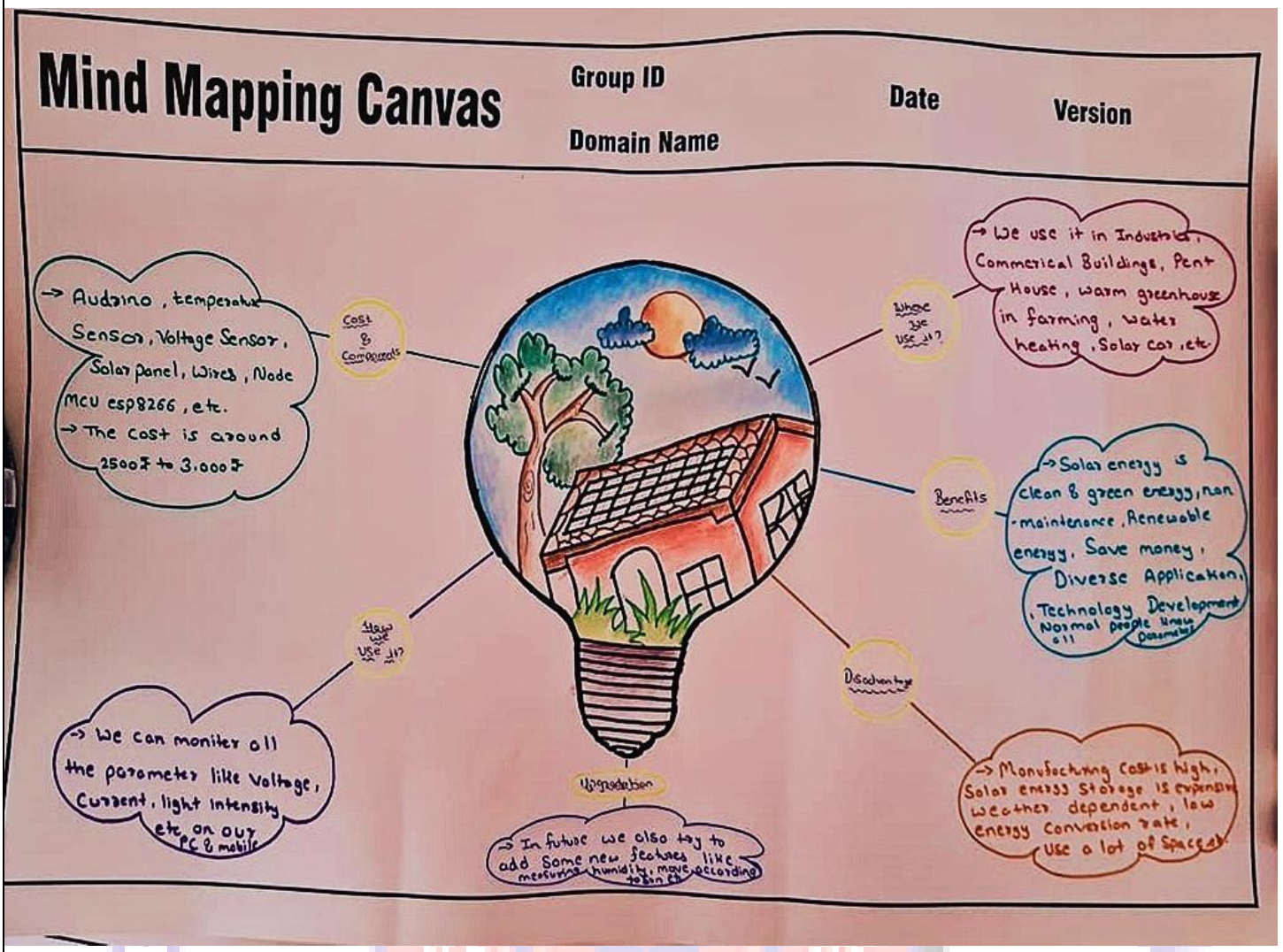
Interactions:

- Electrician
- Power Grid
- Coding
- Coder
- Farmer

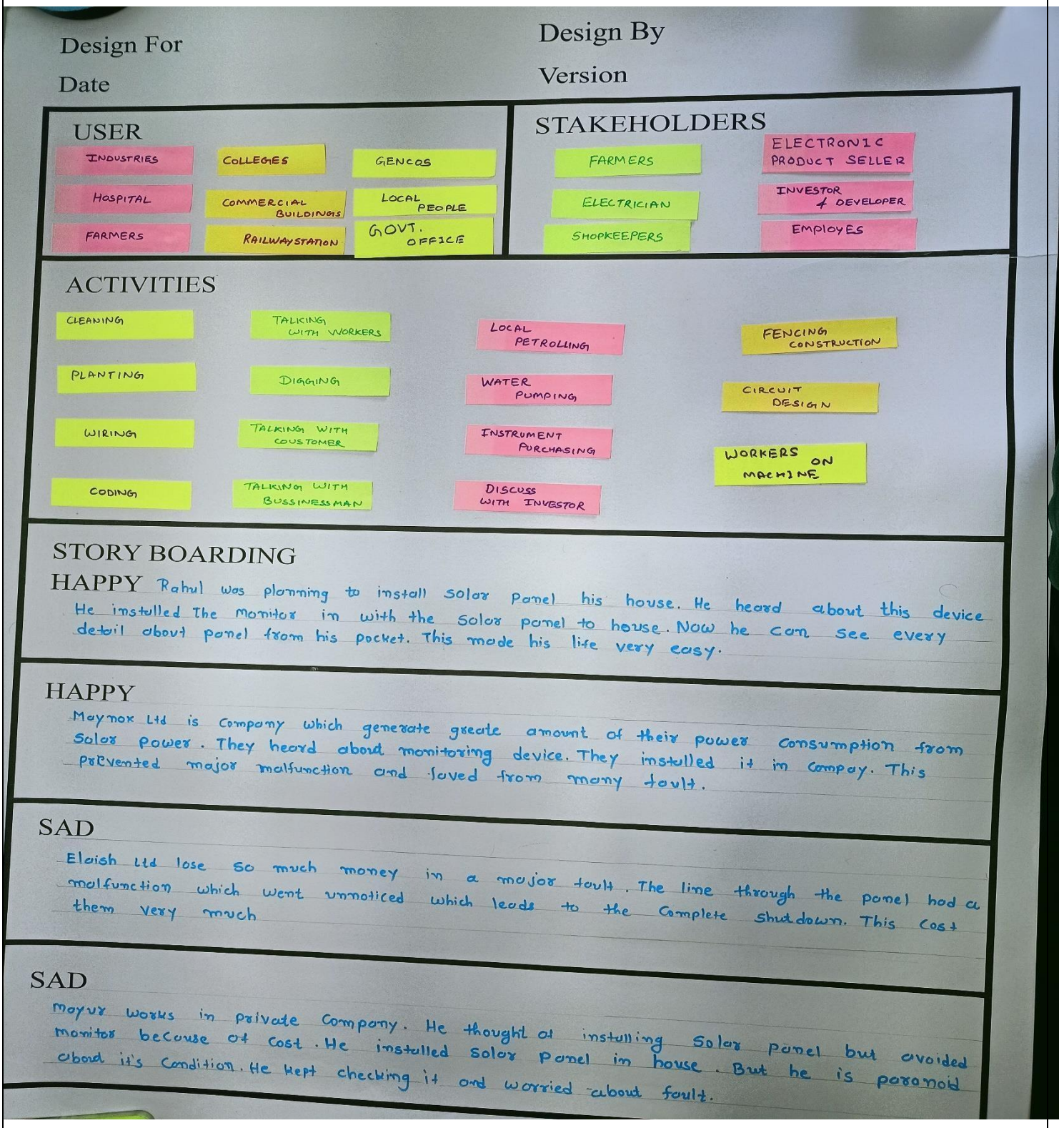
Users:

- Industries
- Hospitals
- Colleges
- Farmers
- Bus-Station

MIND MAP CANVAS



SHEET 2: EMPATHY CANVAS



USERS

- ENGINEER
- PADASTRIALS
- WORKERS

STAKEHOLDER

- PUBLIC
- SHOPKEPEER
- ENGINEER

ACTIVITIES

- SLEEPING
- WATCHUNG TV
- EATING
- PASSING VEHICLES
- SERVING FOOD

STORY BOARDING

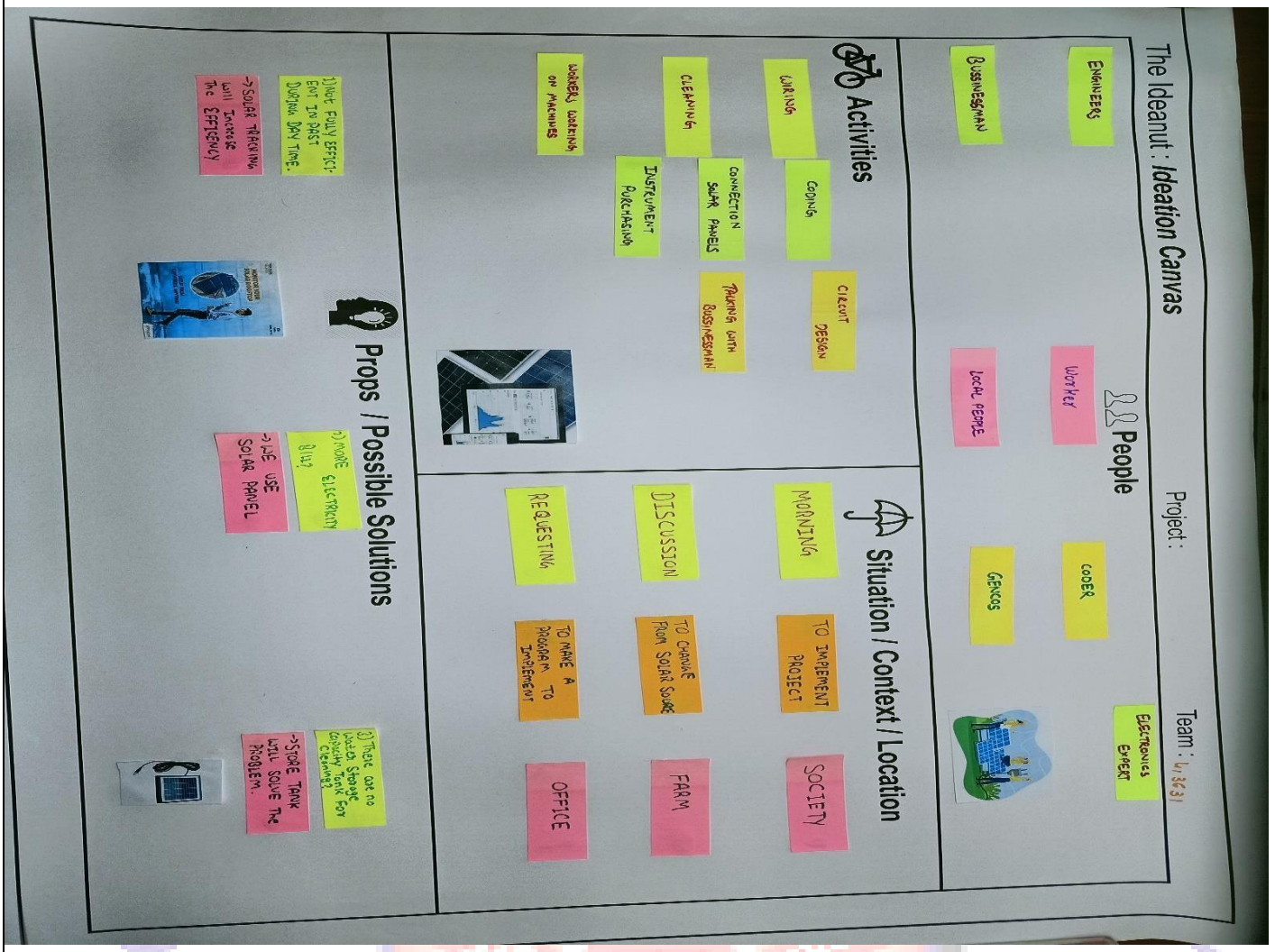
HAPPY

- IN MESS KITCHEN WE USE THIS PRODUCT AS AN EXHAUST FAN, SO WHENEVER WE START COOKING FOOD THE TEMPRATURE OF THE ROOM WILL INCREASE AND THEN AUTOMATICALLY THA FAN WILL TURN ON.

SAD

- SOMETIME IN SUMMER WHEN WE COME FROM OUTSIDE WE FEEL HOT DUE TO HIGH TEMPRATURE OUTSIDE, BUT THE TEMPRATUREINSIDE THE ROOM IS LOW SO THE FAN WILL NOT START WE WILL FELL UNCOMFORTABLE

SHEET 3: IDEATION CANVAS



Users:

- Engineers
- Worker
- Coder
- Local People

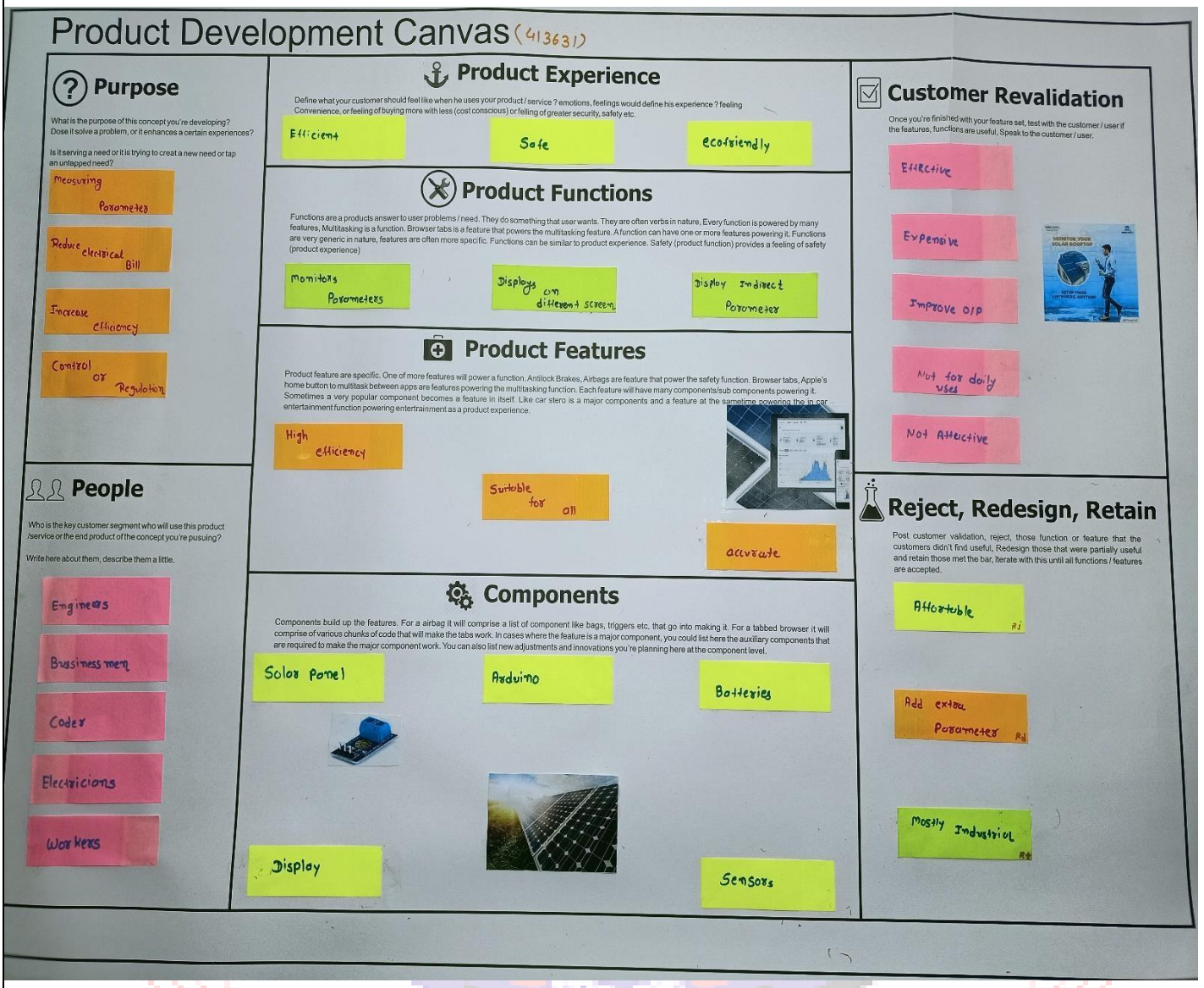
Activities:

- Wiring
- Hospitals
- Coding
- Circuit Design
- Cleaning

Situation:

- Morning
- Society
- Farm
- Office
- Discussion

SHEET 4: PRODUCT DEVELOPMENT CANVAS



Purpose:

- Measuring Parameter
- Increase Efficiency
- Control
- Reduce Electrical Bill

Product Functions:

- Displays On Different Screen
- Monitors Parameter
- Display Indirect Parameter

Product Features:

- High Efficiency
- Suitable for all
- Accurate

Components:

- Solar Panel
- Arduino
- Batteries
- Display

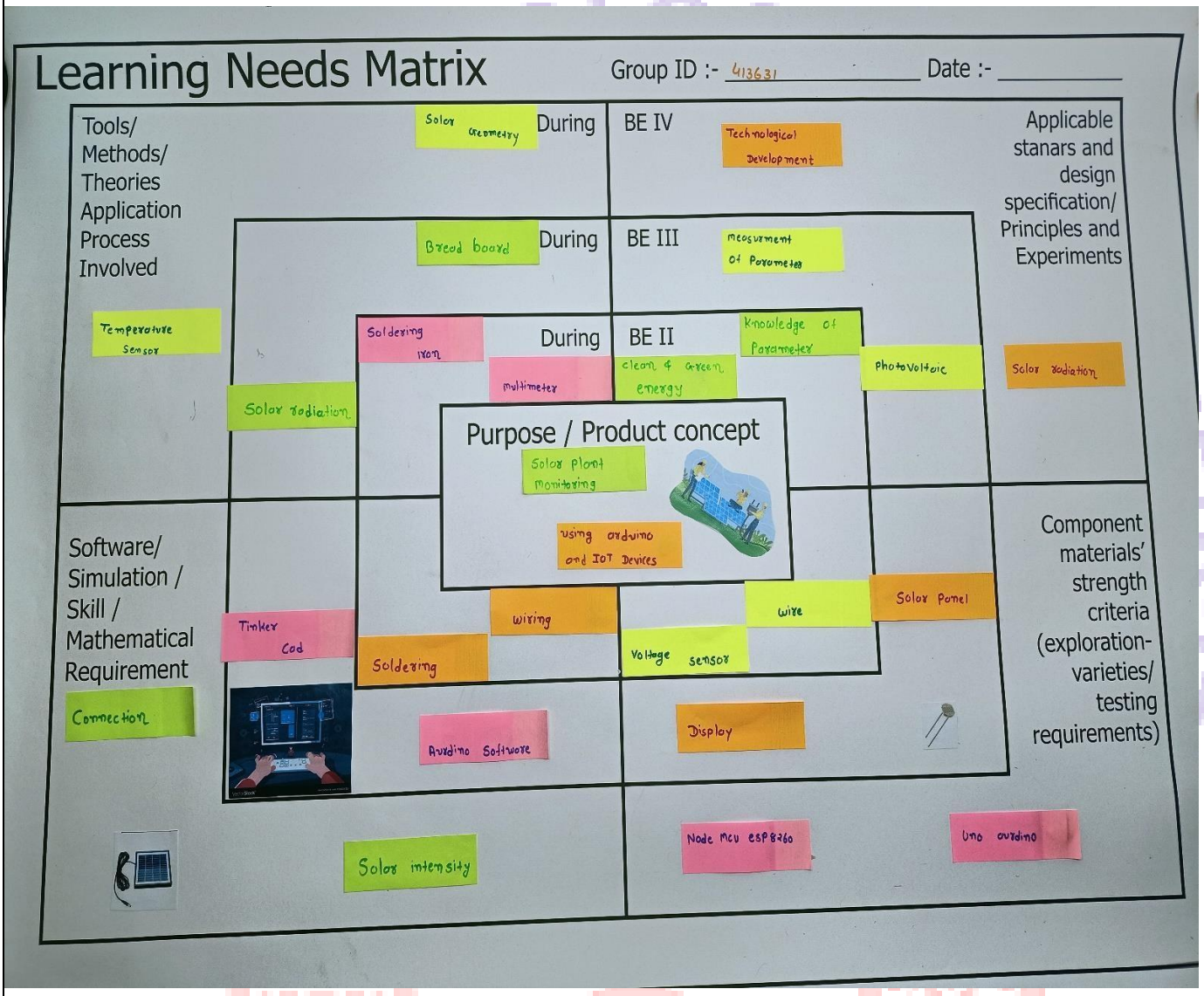
Customer Revalidation:

- Effective
- Expensive
- Improve output
- Not for daily User

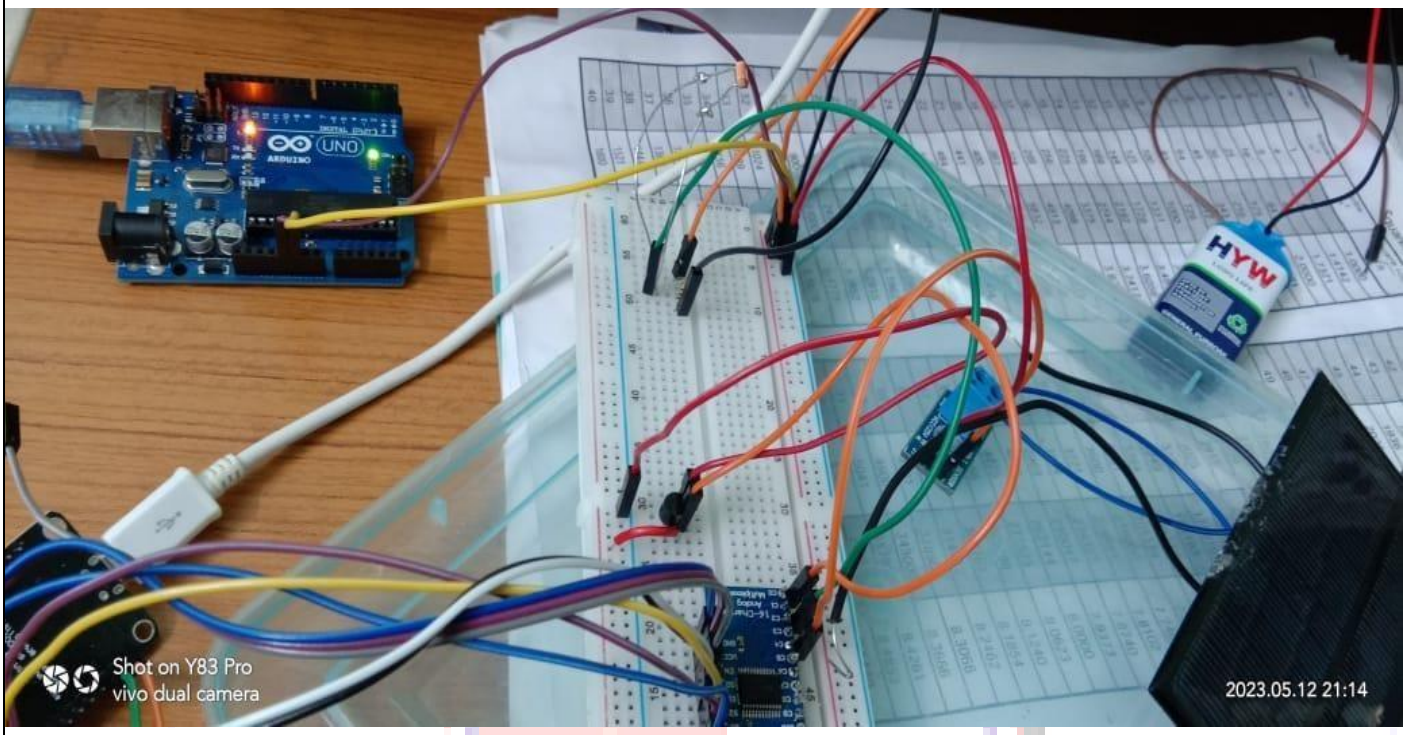
People:

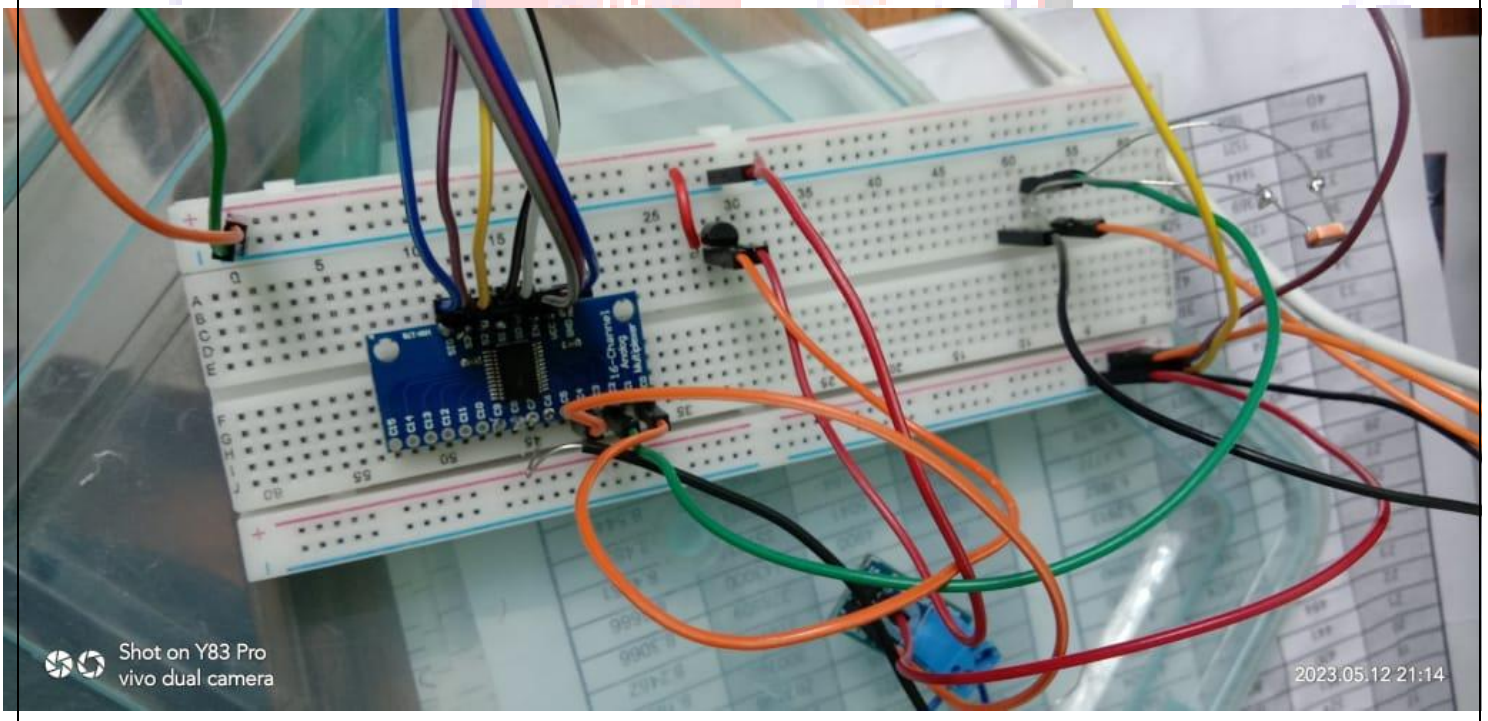
- Engineers
- Electronics
- Coder

SHEET:5 LNM SHEET



PROTOTYPE


UNO
ARDUINO
HYW
Shot on Y83 Pro
vivo dual camera
2023.05.12 21:14


16-Channel
Analog
Multiplexer
Shot on Y83 Pro
vivo dual camera
2023.05.12 21:14

CONCLUSION

By performing this tasks and sheets we conclude that there are many problems faced by the people in future due to Pollution and there are also possible solutions for it.

So by Using Clean energy sources like Solar We can overcome it But harnessing and proper utilization of such is necessary so by This project we done it by making a “Solar Power Monitoring Device With a Data Logger” to properly estimate calculate and utilize Solar energy.

This is a small project but can be scaled to large one also can be Commersialized.

Thank You