INTERNET TECHNOLOGY

EXPERIMENT 7 CREATE A WEB MASHUP OF WEB SERVICES USING OPEN SOURCE FRAMEWORK

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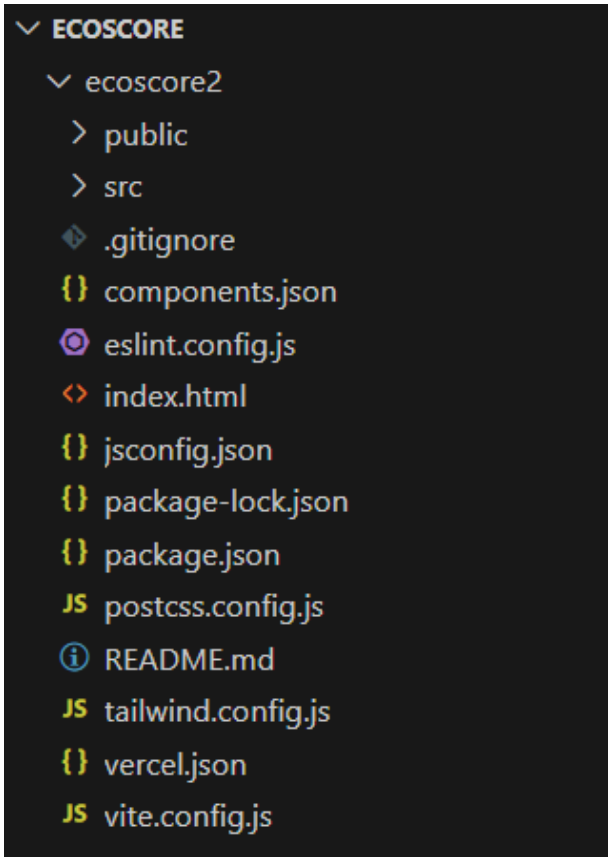
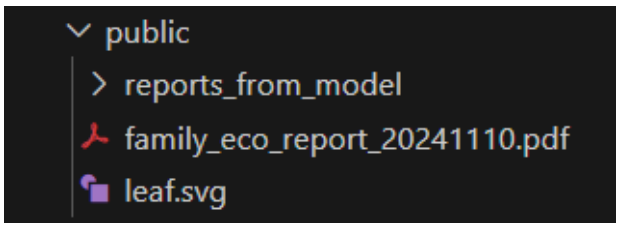
TE AIML B 2022 6000 [id]

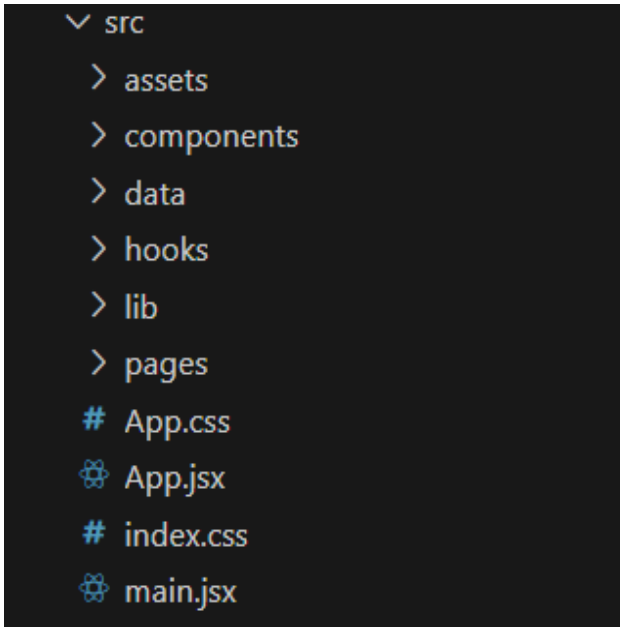
AIM

CREATE A WEB MASHUP OF WEB SERVICES USING OPEN SOURCE FRAMEWORK

PROJECT STRUCTURE





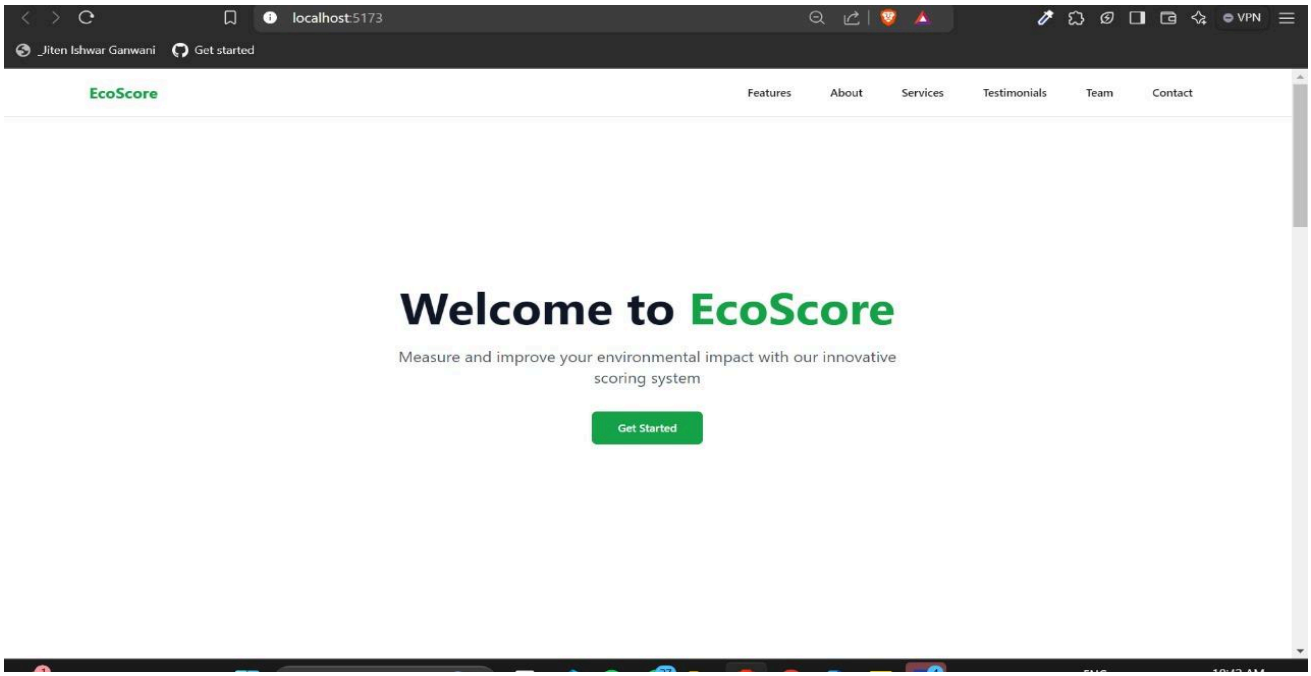


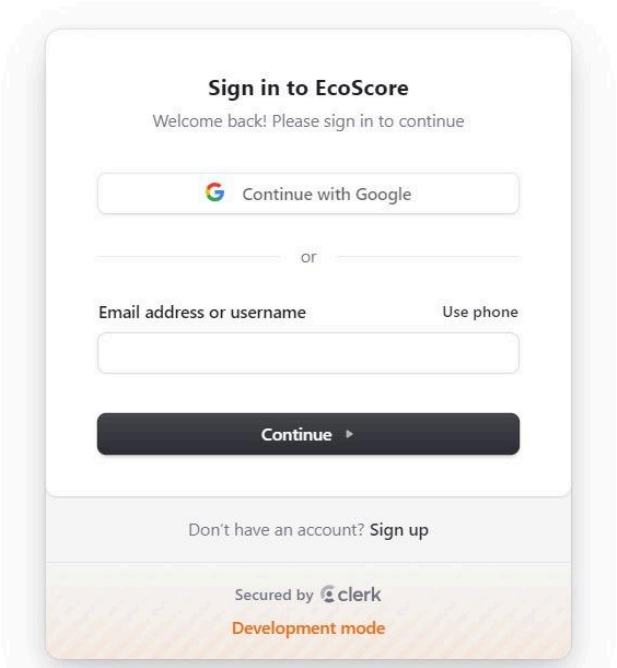
REPOSITORY

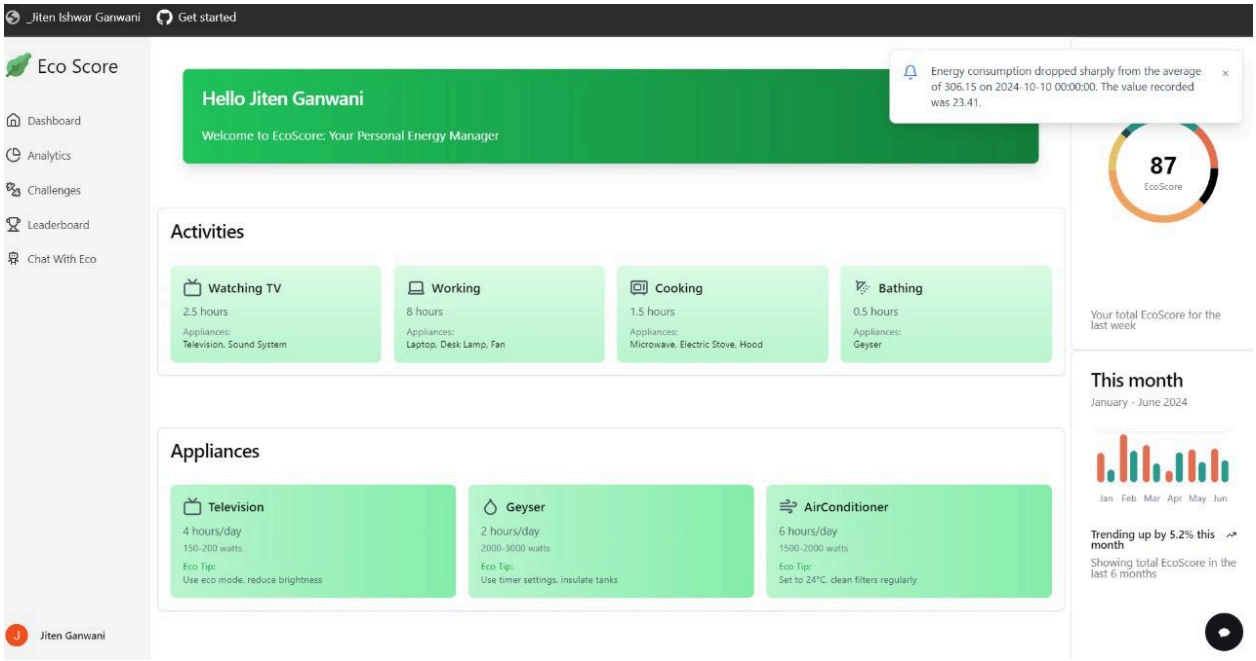
https://github.com/maazmalik2004/ecoscore.git

https://github.com/Jitz10/technovate_ai/blob/main/app.py

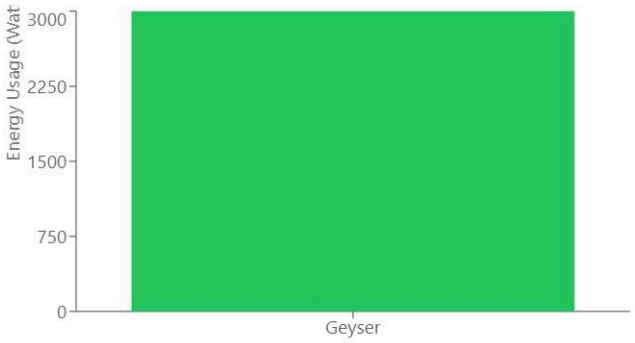
SOFTWARE COMPONENT







Bathing Energy Usage



Activity Duration: 0.5 hours

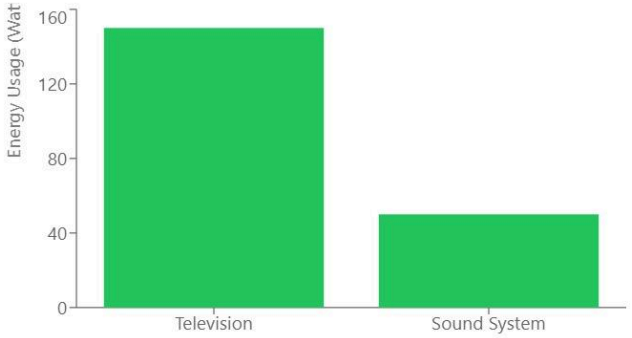
Total Power Draw: 3000 watts

Average Appliance Usage: 3000.0 watts

Energy Saving Tips:

- Reduce shower time
- Install a low-flow shower head
- Set optimal water temperature

Watching TV Energy Usage



Activity Duration: 2.5 hours

Total Power Draw: 200 watts

Average Appliance Usage: 100.0 watts

Energy Saving Tips:

- Adjust TV brightness to room lighting
- Use TV's built-in speakers when possible
- Enable power-saving mode


Eco Score
Dashboard
Analytics
Challenges
Leaderboard
Chat With Eco
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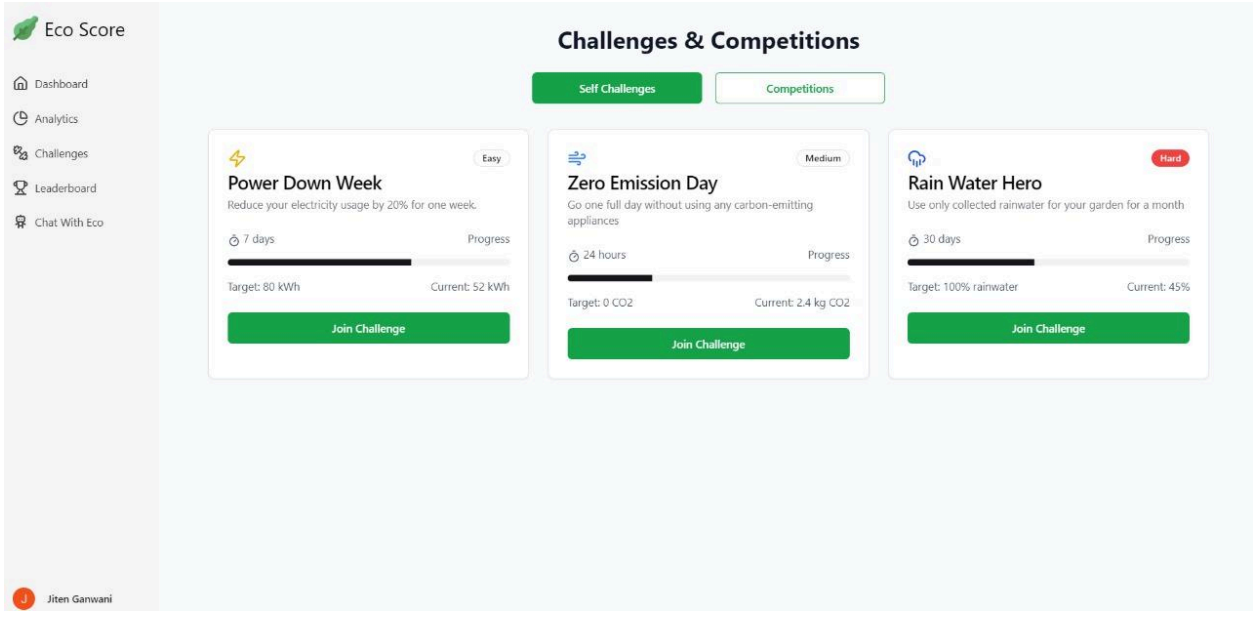
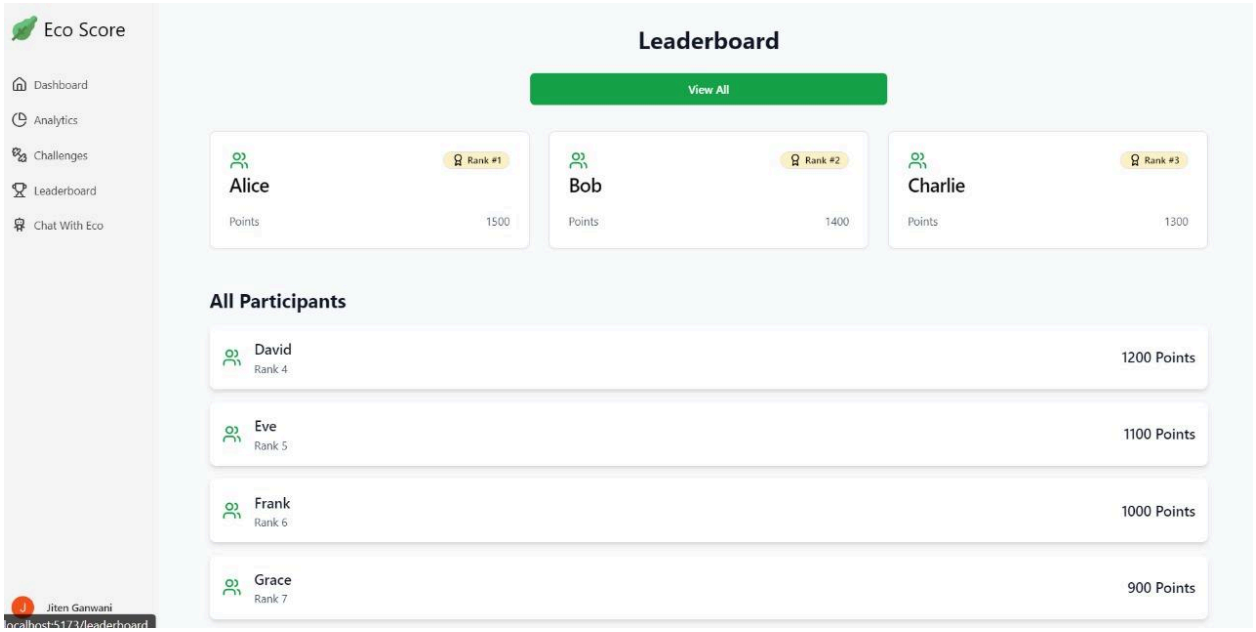
System Efficiency
70%
Renewable Energy
70%
Carbon Reduction
40%
Summary
Key metrics showing positive trends
Energy Usage
360
270
180
90
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
energy
Daily Energy Cost
Carbon Footprint CO2
All Years
Past Year
Past Month
CO2 Emissions (ton
32
24
16
8


Eco Score
Dashboard
Analytics
Challenges
Leaderboard
Chat With Eco
Jiten Ganwani
Challenges & Competitions
Self Challenges
Competitions
Easy
Power Down Week
Reduce your electricity usage by 20% for one week.
7 days
Progress
Target: 80 kWh
Current: 52 kWh
Join Challenge
Medium
Zero Emission Day
Go one full day without using any carbon-emitting appliances
24 hours
Progress
Target: 0 CO2
Current: 2.4 kg CO2
Join Challenge
Hard
Rain Water Hero
Use only collected rainwater for your garden for a month
30 days
Progress
Target: 100% rainwater
Current: 45%
Join Challenge



HARDWARE COMPONENT

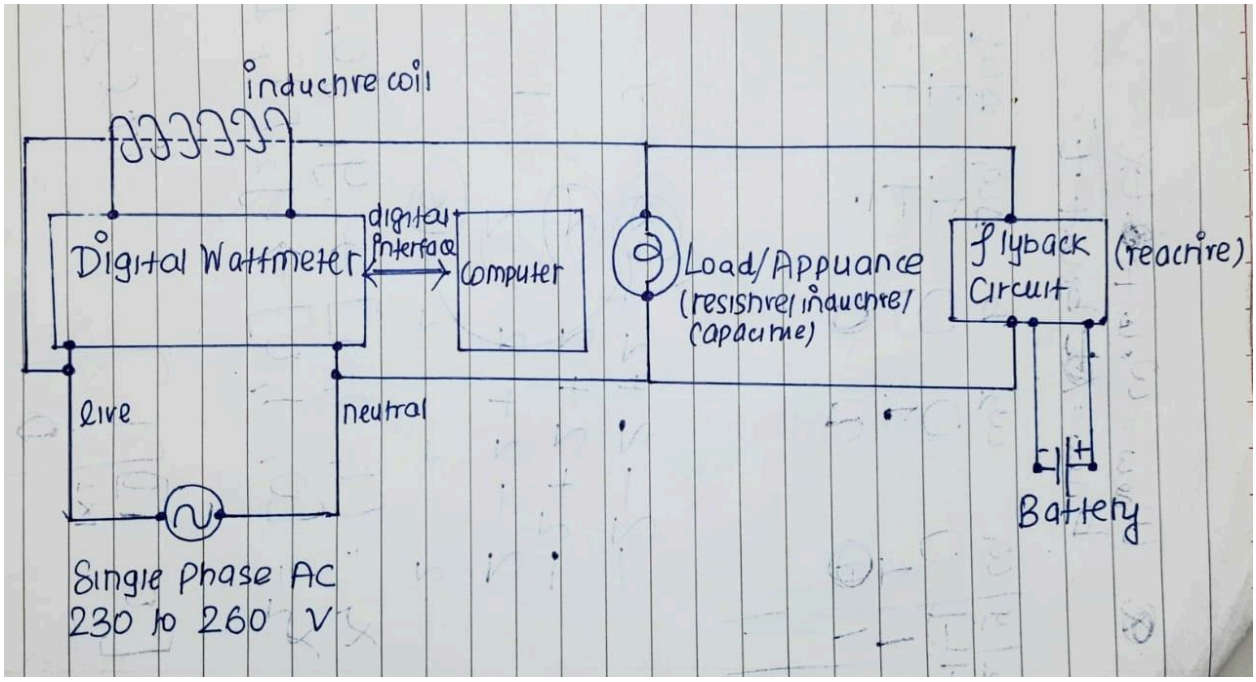
CALCULATIONS

ENERGY CONSUMPTION(Watt-hour) = AVERAGE POWER(Watt) * TOTAL DURATION(hour)

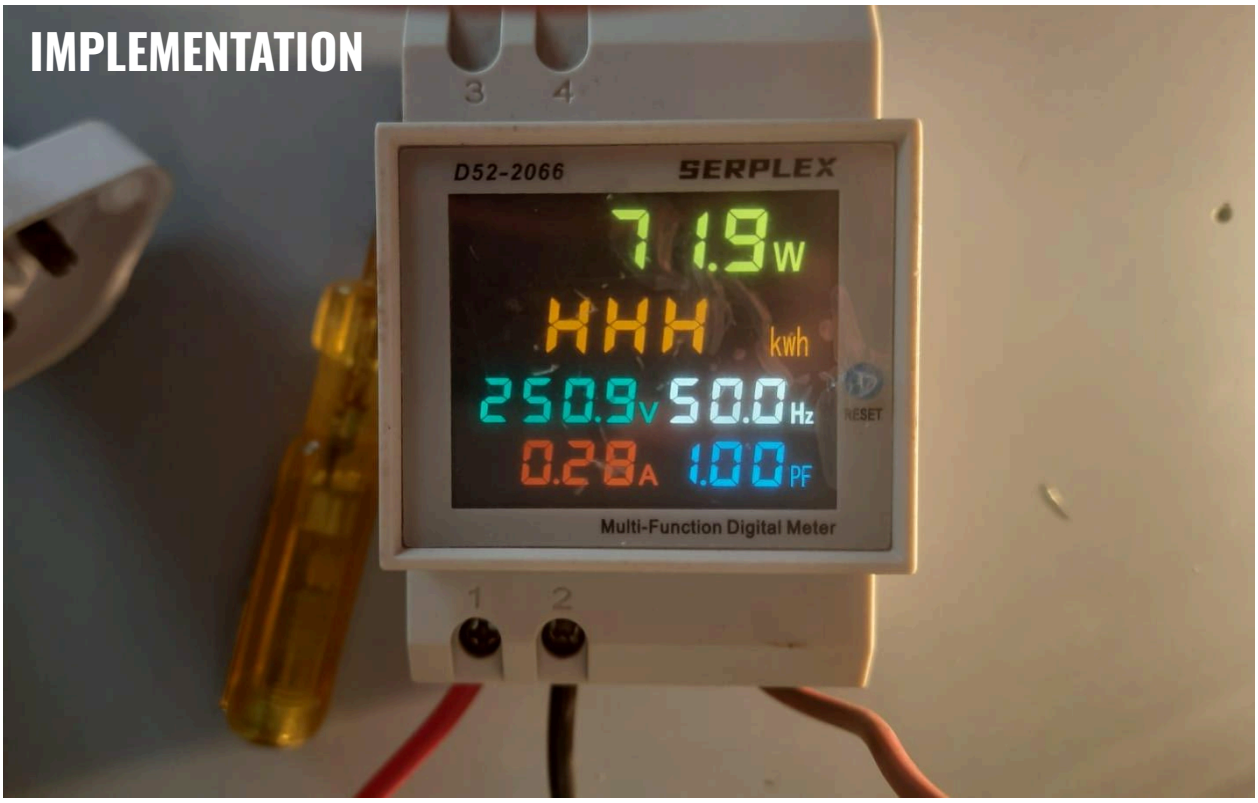
1 Watt-hour = 3600 Joules

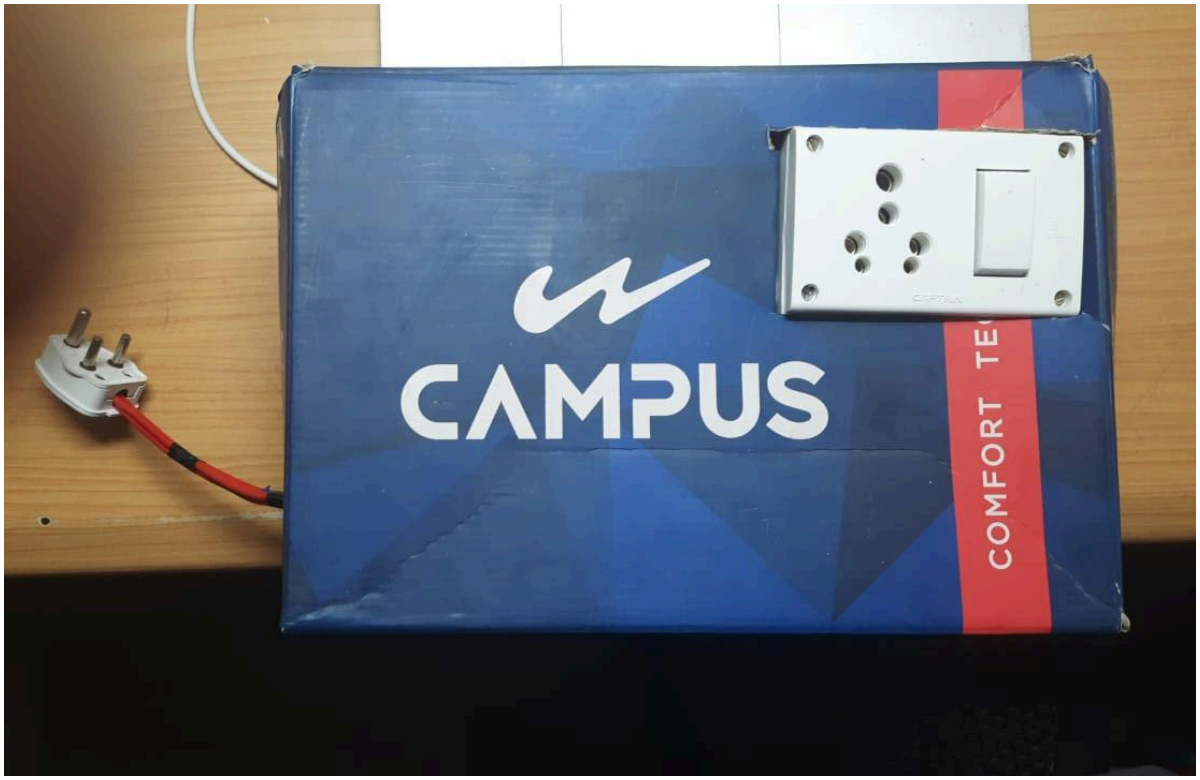
ESTIMATED BILL(Rupees) = ENERGY CONSUMED(Joules) * AMOUNT PER UNIT ENERGY (Rupees/ Joule) * φ(POWER FACTOR RANGES FROM 0 (purely reactive circuits) TO 1(purely resistive circuits))

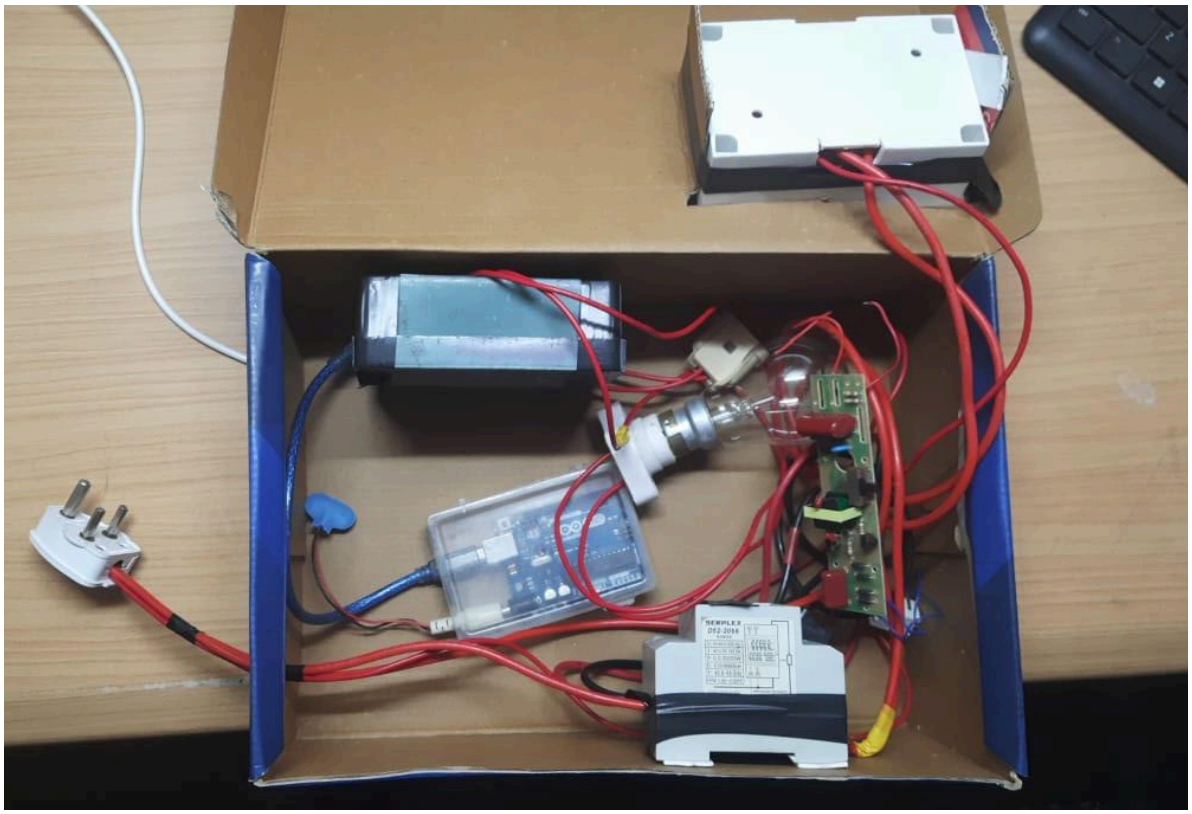
CIRCUIT DIAGRAM

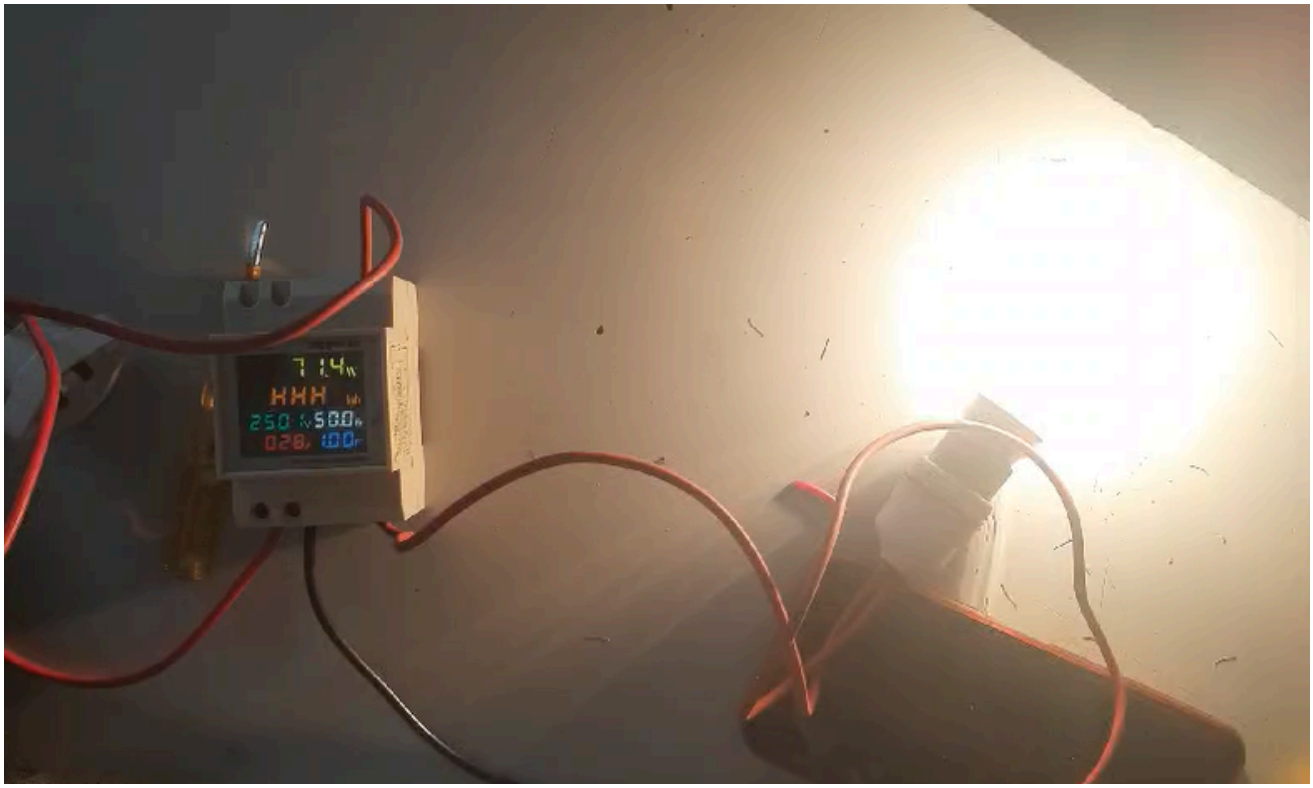


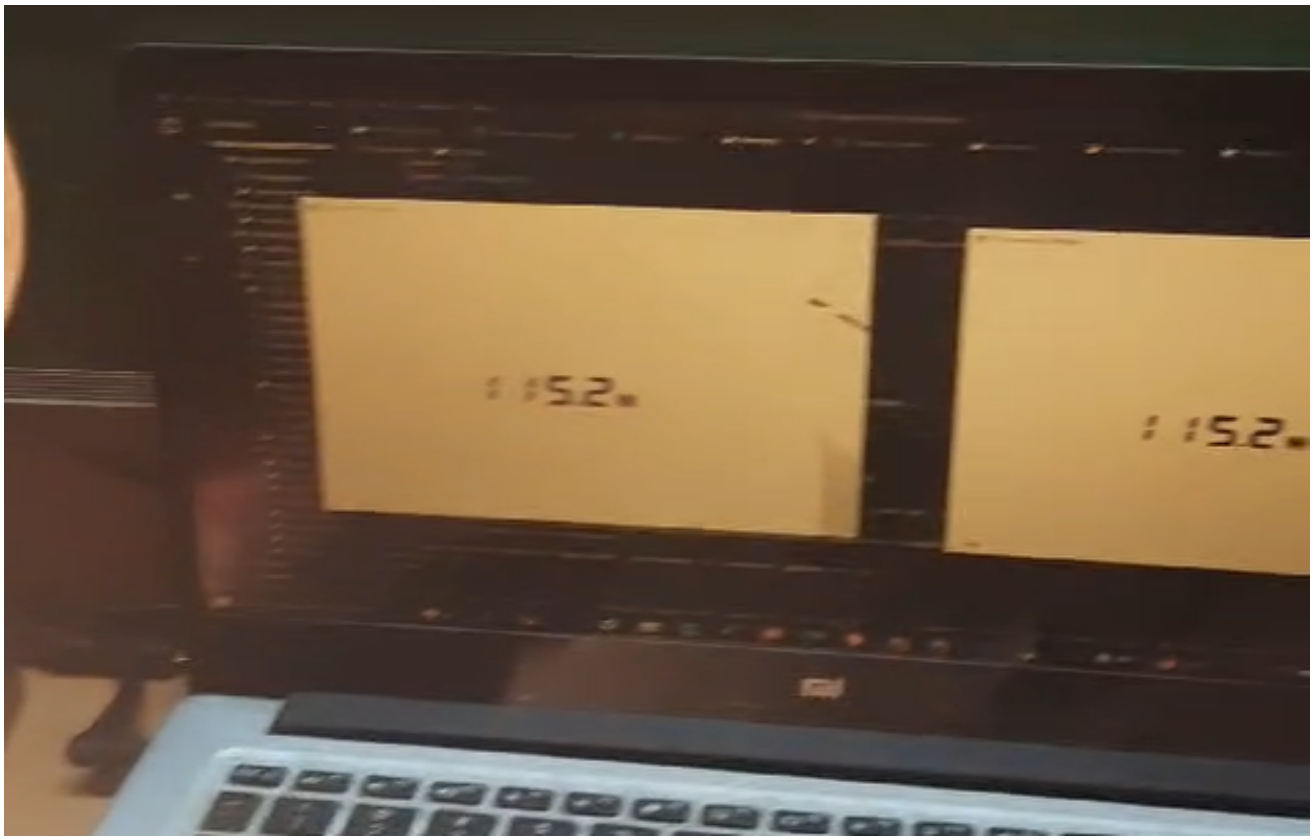
IMPLEMENTATION




CAMPUS
COMFORT







CONCLUSION

In conclusion, we successfully developed an energy consumption management system by integrating a web mashup of services using open-source frameworks. The system features a gamified and minimalistic interface, enhancing user engagement and ease of use. Leveraging React for the frontend and Node.js for the backend, we created a seamless and interactive platform capable of analyzing real-time power consumption data provided by a custom-built hardware sensor. This experiment demonstrated the effective use of modern web technologies, hardware integration, and innovative design principles to address energy management challenges, paving the way for scalable and efficient solutions in this domain.