SMART HOME AUTOMATION SYSTEM

Efficient Use of Household Resources.

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ABOUT PROJECT

The project aims to provide an IoT-based solution for efficient utilisation of household resources such as electricity and water in Malawi. The problem of power scarcity and under utilization of water is a big problem here in Malawi hence the proposed solution seeks to improve the comfortability of living in urban homes while offering an intelligent platform for monitoring and controlling consumption of household amenities.

01

PROJECT BACKGROUND

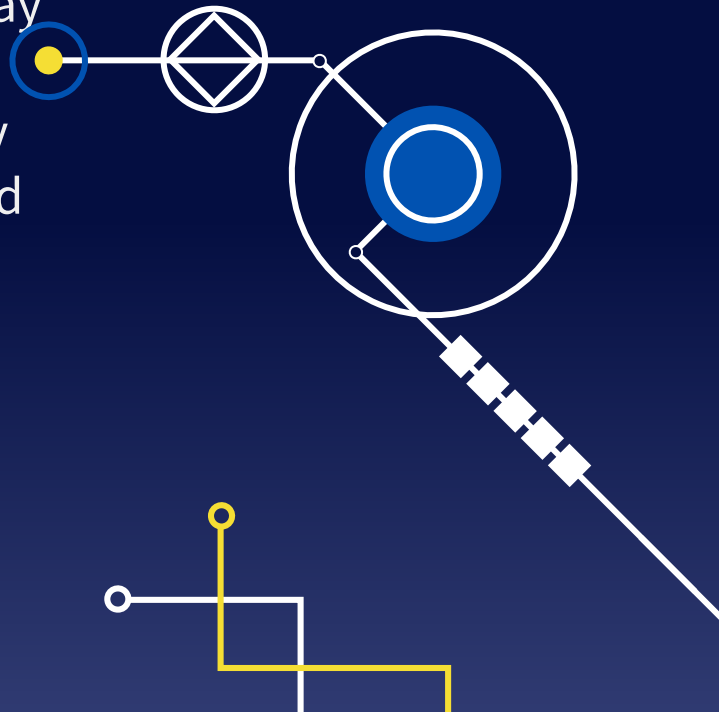
The big picture behind home automation:/ Efficient use of household resources.

Electrical energy remains one of the most expensive utilities in a Malawian household. Thus the solution proposed addresses the efficient use of such a resource.

Clean water is such a vital component for sustainable development and equally important is implementation of water management policies at a household level.

CORE OF HOME AUTOMATION.

Home automation is the idea of digitizing everyday activities within the home and being able to control, manage and monitor them electronically without manual mechanical intervention involved in conducting routine/repetitive tasks.

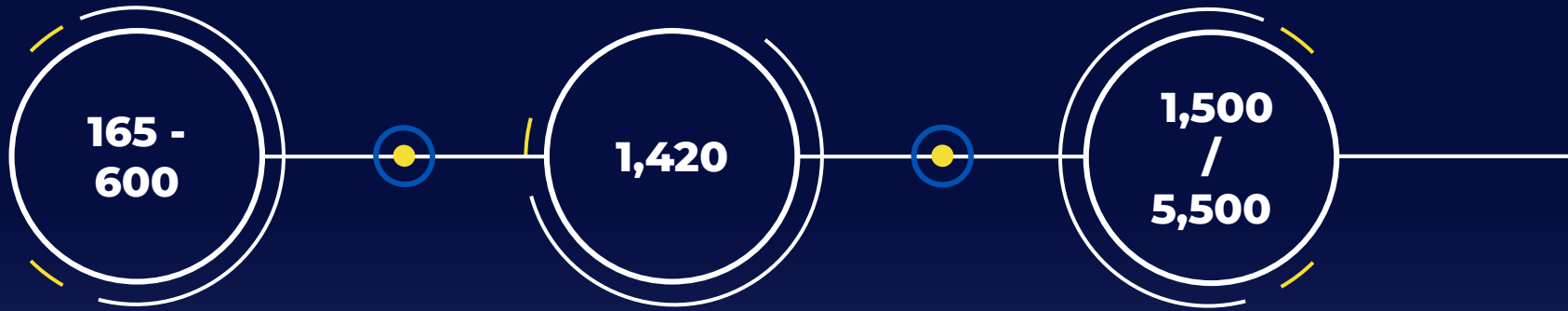


02

PROJECT RELEVANCY

The significance of the project in a Malawian context

ELECTRICITY CONSUMPTION



Kwh/annum

Rural Household
Typical Sub-Saharan Africa

Kwh/annum

Urban Household
Typical Sub-Saharan Africa

Kwh/annum

Rural/Urban Household
Rest of Developed World

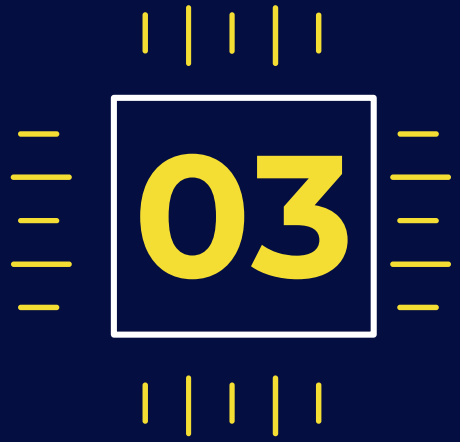
UNIQUENESS

Currently known and applied strategies for achieving energy efficiency have included:

- Target load shedding
- Increased energy tariffs

Our proposed solution

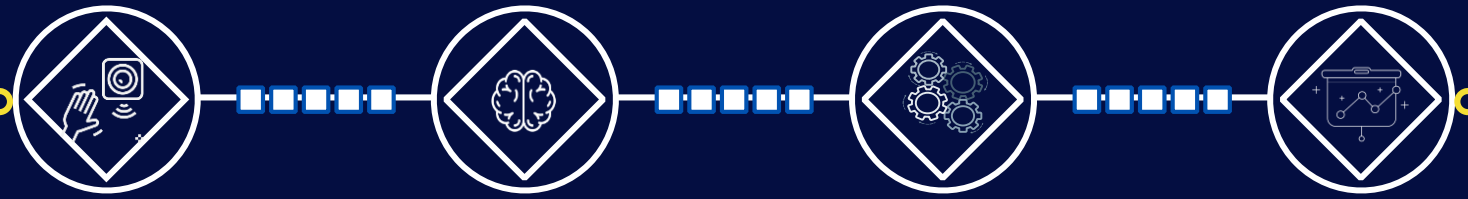
- offers a user-centric utility usage policing scheme unlike those imposed by service providers.
- Allows for management of utilities at a microeconomic household scale



TECHNOLOGY

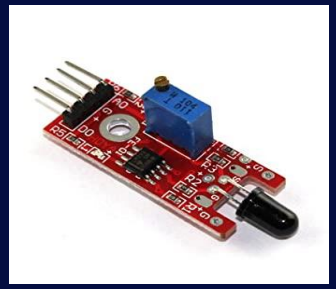
Technical Specifications of Product

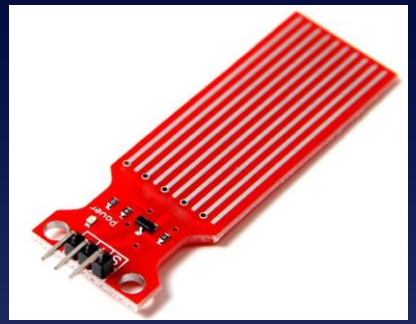
LAYERED TECHNICAL OVERVIEW

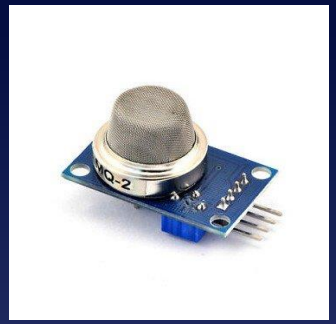


PERCEPTION CONTROLLER APPLICATION BUSINESS

PERCEPTION LAYER



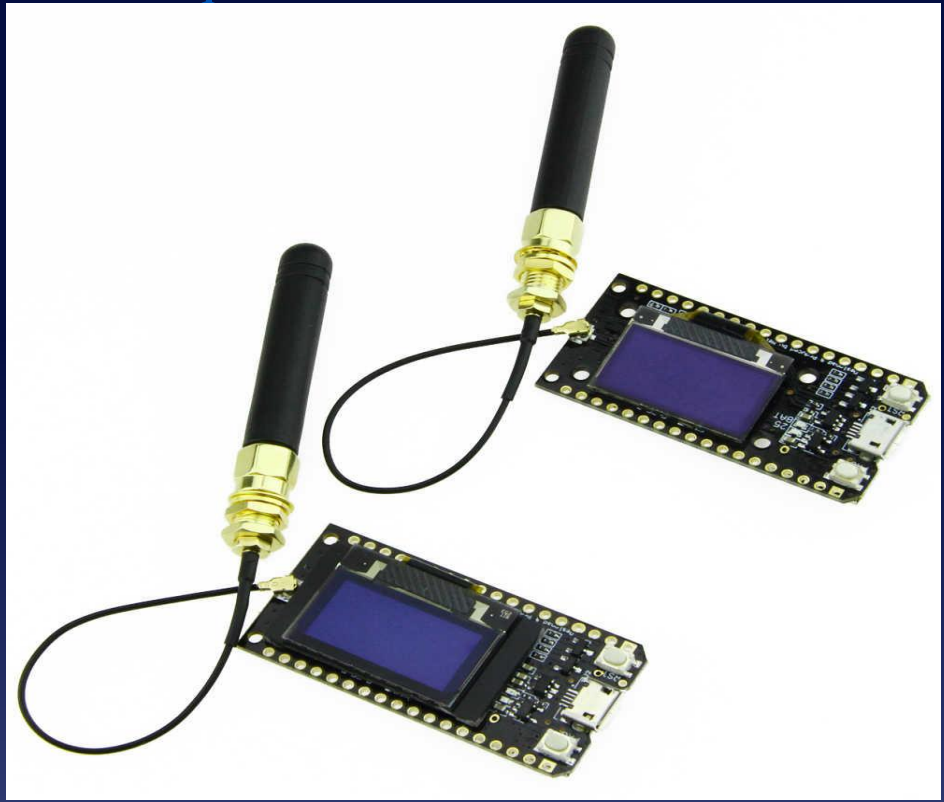




Left to Right:

- Light Dependent Resistor
- DHT22 Temperature & Humidity Sensor
- Flame/Smoke Detection Sensor
- Passive Infrared (PIR) Motion Detection Sensor
- Water Leakage/Immersion Sensor
- Gas Sensor

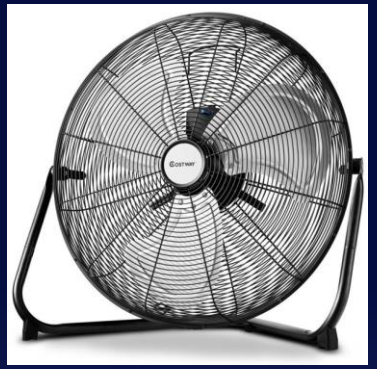
CONTROLLER LAYER

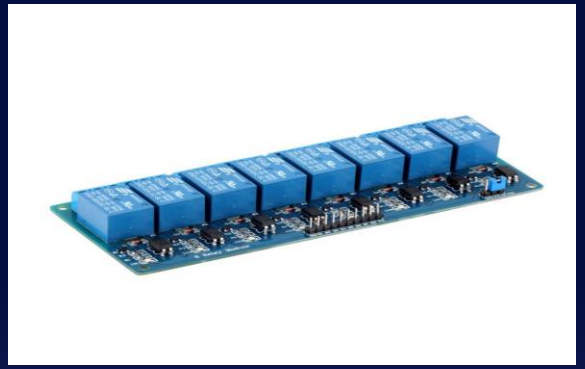


LILLY GO’S TTGO LORA32 868 MHZ V1.3

- Wi-Fi and Bluetooth Board

APPLICATION LAYER

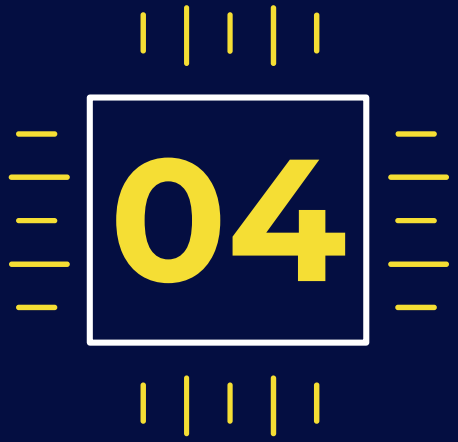




Left to right:

- Security lights.
- Air circulation control fan.
- 8 channel relay power controller.
- Room light bulb.
- Piezoelectric buzzer- security alert.

BUSINESS LAYER



PROJECT SCOPE

Product Features & Progress Report

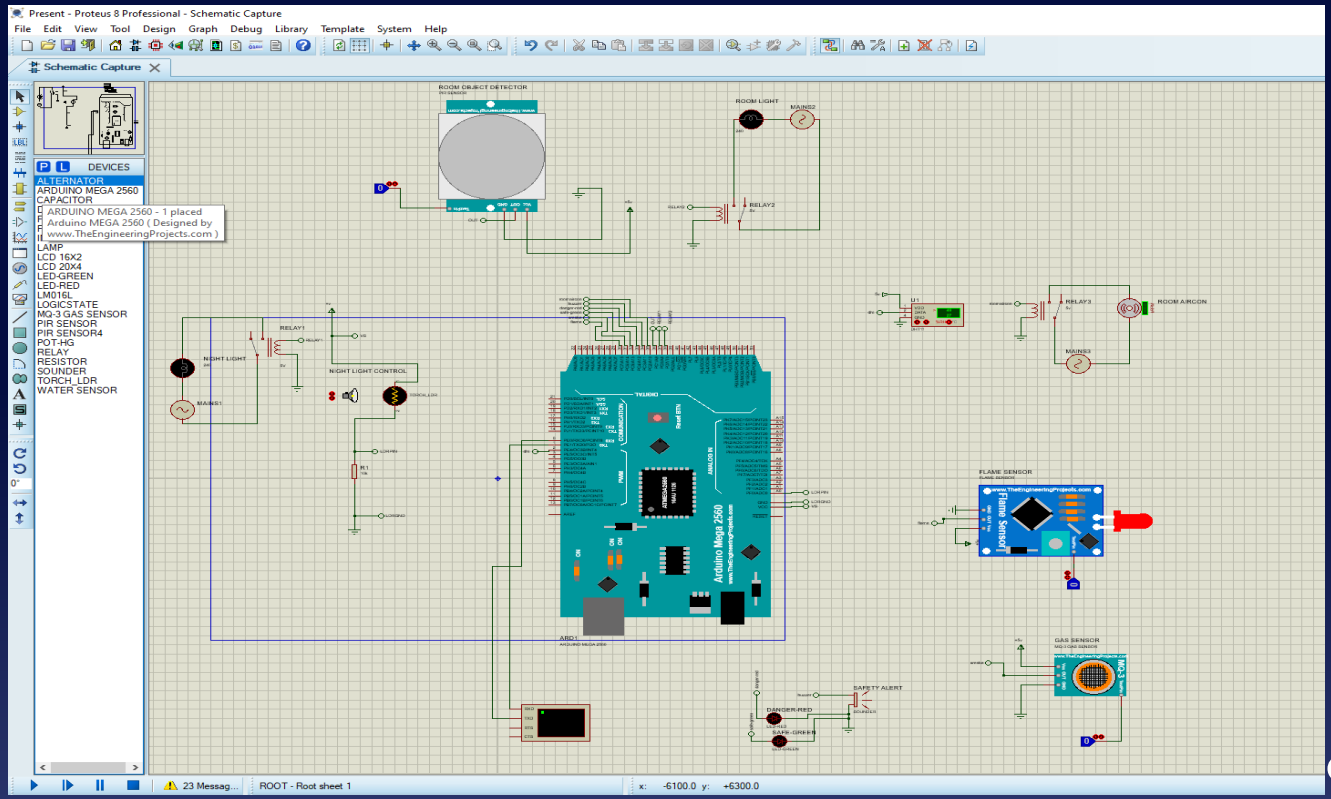
Schematic Design

Circuit Assembly

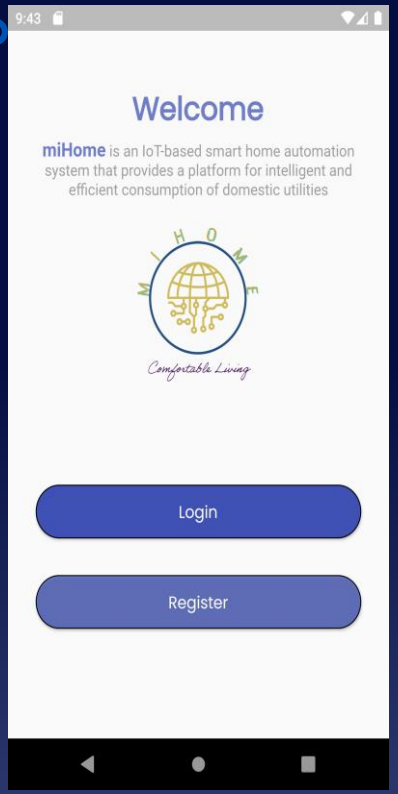
User Application Development

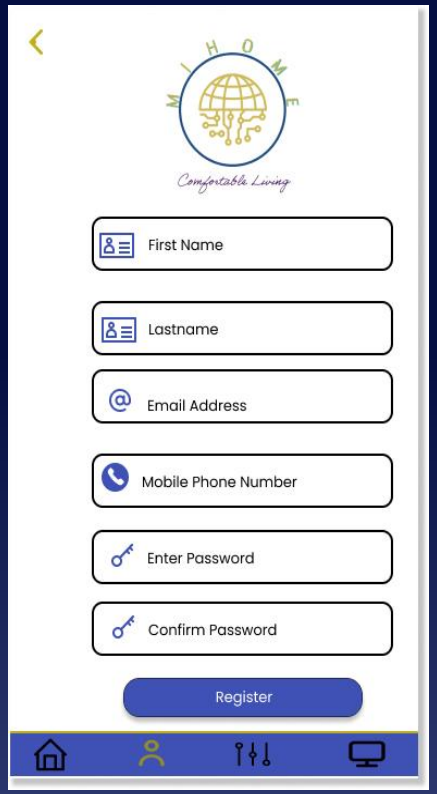
Firebase Integration

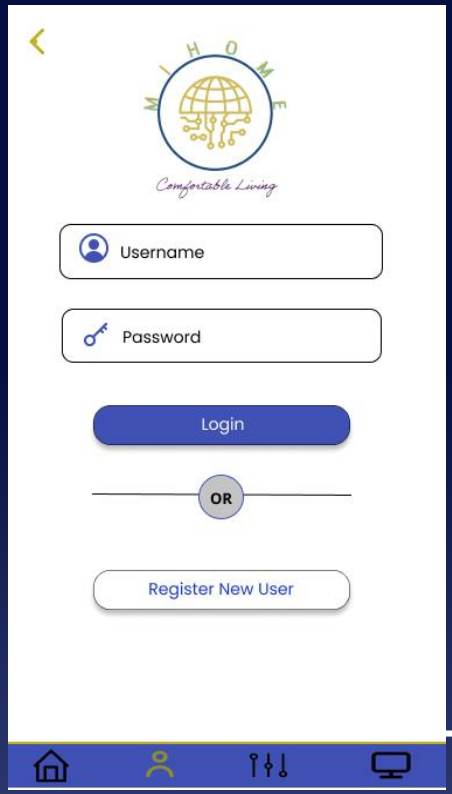
SCHEMATIC DESIGN



Android App Design & Development







EAST OR WEST, SMART HOME IS THE BEST.

-wiseman-