



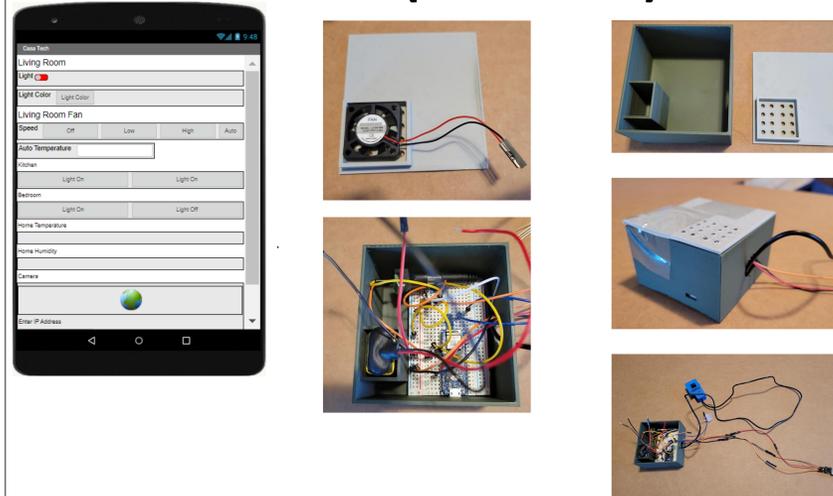
Introduction:

Are you too busy to keep track of power consumption? High electric bills? Can't go solar? Well look no further as Casa Tech will help you. Casa Tech is an Android app that will assist you in keeping track of power consumption throughout the day. It also provides other features such as turning on/off lights, A/C temperature control, and live feed camera.

Objective:

- Develop user-friendly clear front-end application
- Develop Backend to store information and receive notifications
- Develop control box that will use sensors to read amount of temperature in home and relay that information to backend via the cloud to get the reading of humidity and temp in home.
- CCTC with Live feed straight on smart device to have visualization of the user's property
- Control Lights in home from mobile application developed by us. Using smart bulbs installed in home.
- Provide control to Air conditioning with temperature sensor feature (Simulated with small fan).

Android Phone (front end):



Control Box housing Detail:

- Lid with fan: 90x84x2 mm
- Base dimensions: 90x84x52 mm
- Wiring hole: 22x20x2mm
- Wall thickness: 2mm
- Batter holder: 50.5 x 21.5 x 30.5mm
Thickness: 2 mm
- Brackets(will be 3d printed): 91x 85x53mm

How it works?:

- We create a control box, that consists of a microcontroller (Arduino Nano RP2040 connect).
- The hardware from this project is connected to the microcontroller.
- The front end communicates with the microcontroller through the cloud.
- Microcontroller sends data from sensors to the cloud (firebase)
- Then sends the data to the frontend which displays temperature, and energy in Watts.

Software development:

- ARDIUNO IDE 2.0.4 (C++/C)
- MIT APP INVENTOR (frontend)
- Firebase (cloud)

Hardware:

- Arduino nano RP2040 connect
- DHT22 sensor
- YHDC SCT013 CT sensor
- LED BULBS
- FAN
- ESP32-CAM

House model demo:

