Hoorja Bank

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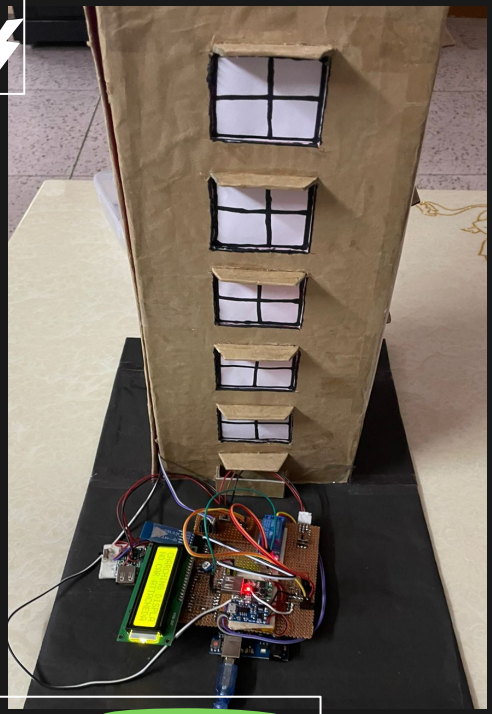
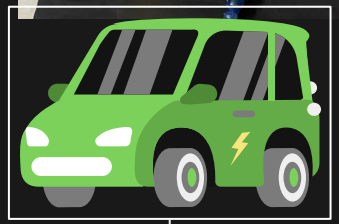
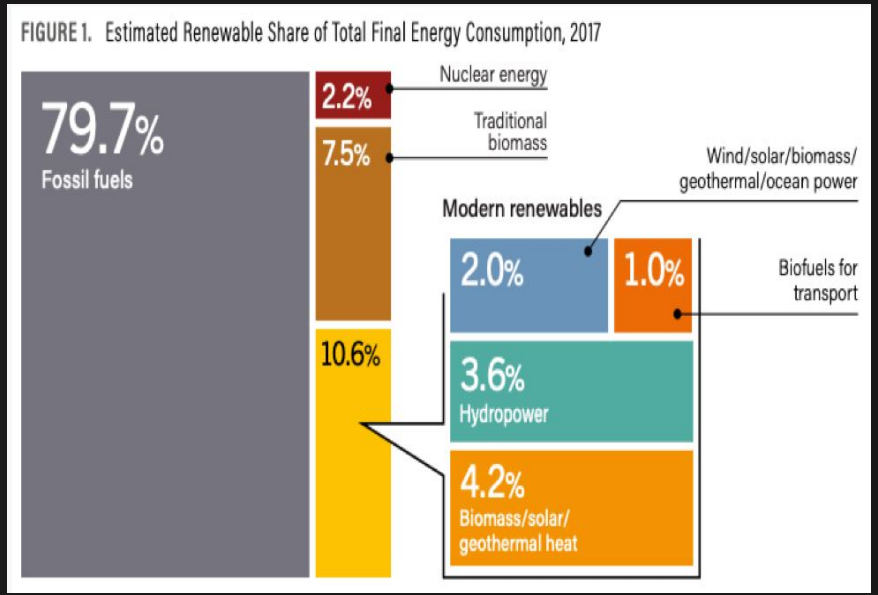




INSTABILITY & UNRELIABILITY OF RENEWABLE ENERGY

- During our discussions, we observed that a vast majority of the population hesitates in using renewable energy due to
  - The instability and unreliability of renewable energy sources
  - Energy storage problems

- Even minute changes- could cause instability- the time, the season, the whether.



PROBLEM IDENTIFICATION

Solar power- the energy source of the future- is rarely implemented on an individual scale and remains largely unused because of its unreliability and how it is primarily weather-dependent.

Inconsistency of energy

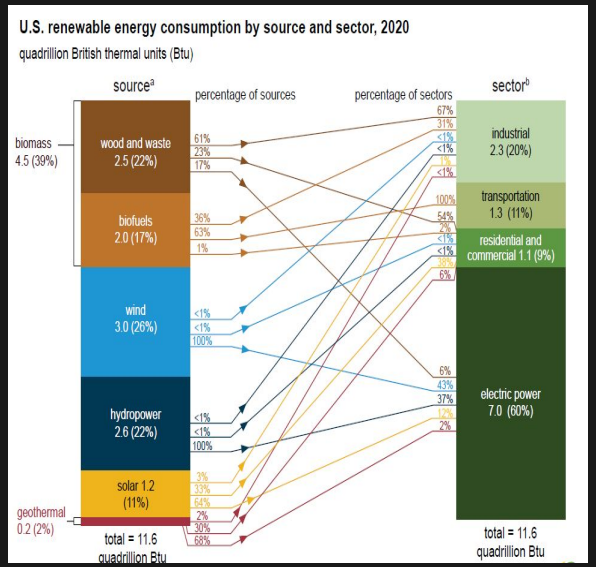
The output varies each day, according to the sunlight intensity.

Weather instability

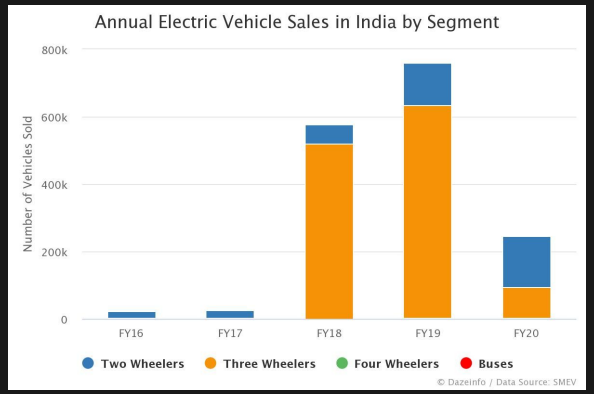
The electricity generated by solar power is entirely weather dependent

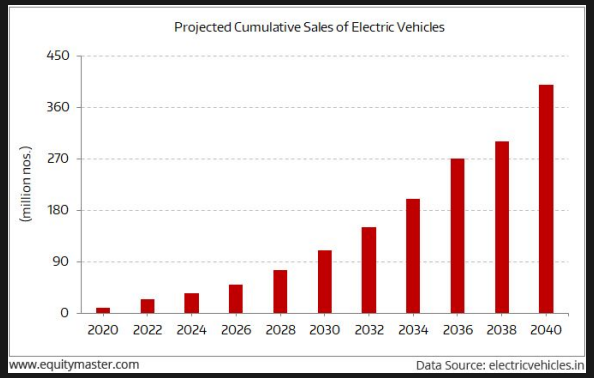
Expensive

Expensive to make, and take care of



OUR RESEARCH





- Demand of Electric vehicles has increased
- Electric vehicles could be the BANK OF ENERGY in future

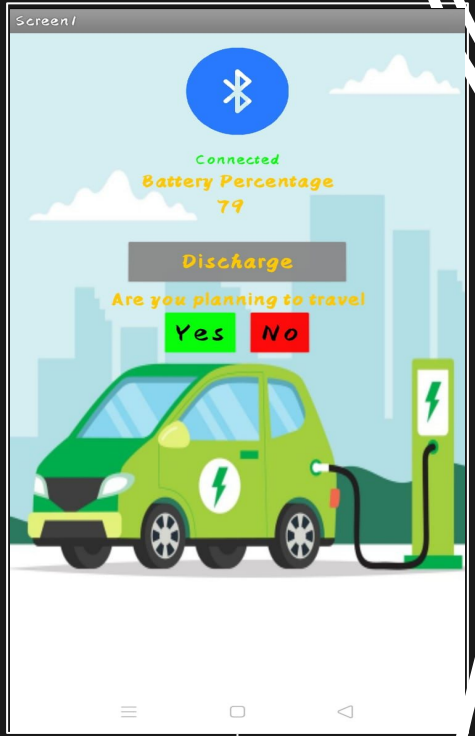
- Vehicles stand in the parking area 80% of the time containing electric charge

OUR SOLUTION

Our Solution “Hoorja bank “ Allows Vehicles to discharge additional charge back to the grid with V2G technology.

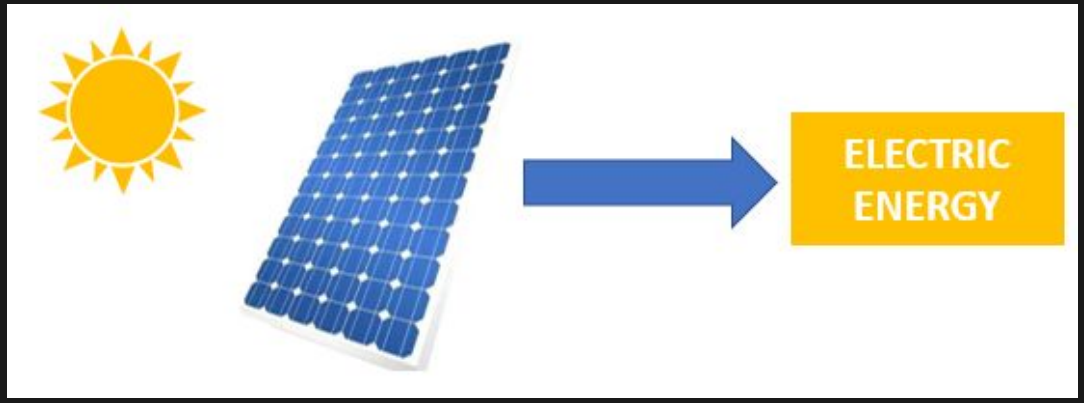
The unused energy stored in an EV can be fed back to the grid at times of peak demand to minimise strain

Our app’s algorithm decides what percentage of battery to charge or discharge from the connected EV based on the distance the owner of the EV intends to travel that day



SOLAR ENERGY

- Solar panels are devices used to absorb the sun's rays and convert them into electricity



- The more light that hits a cell, the more electricity it produces
- This energy will be stored in batteries .

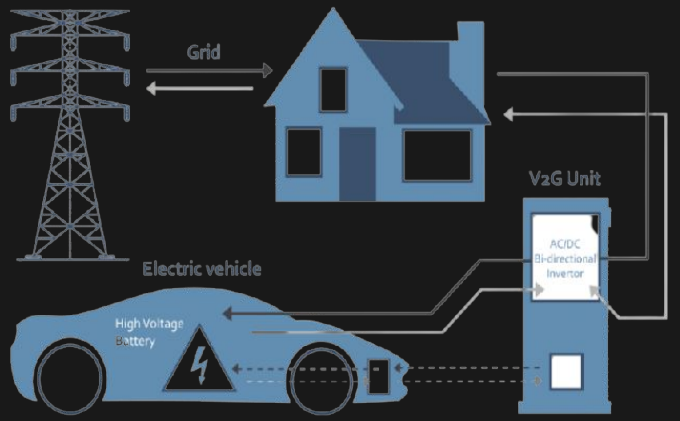
V2G TECHNOLOGY

V2G -vehicle to grid is a technology that enables the two way transfer of energy from a power grid to the battery of an electric car.

Bi-directional charging allows the V2g battery to become an extension of the electrical grid - storing the energy produced while demand is lower, and feeding it back into the system when demand is higher.

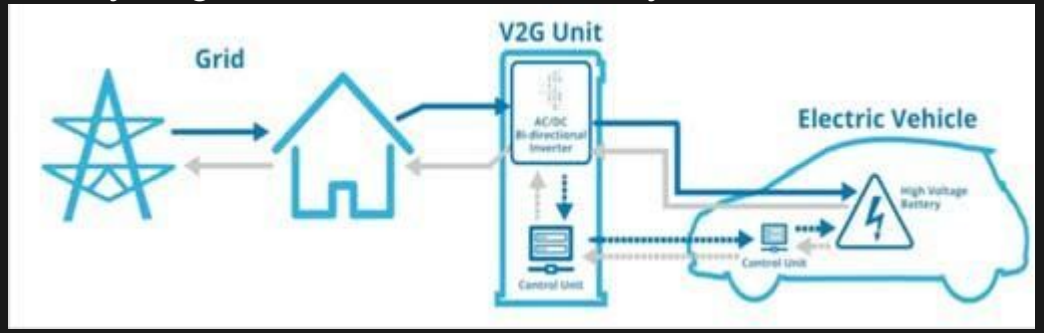
It also eliminates the aspect of instability that most whether-dependent renewable energy sources come with.

problems with energy storage systems that V2G has the power to eliminate



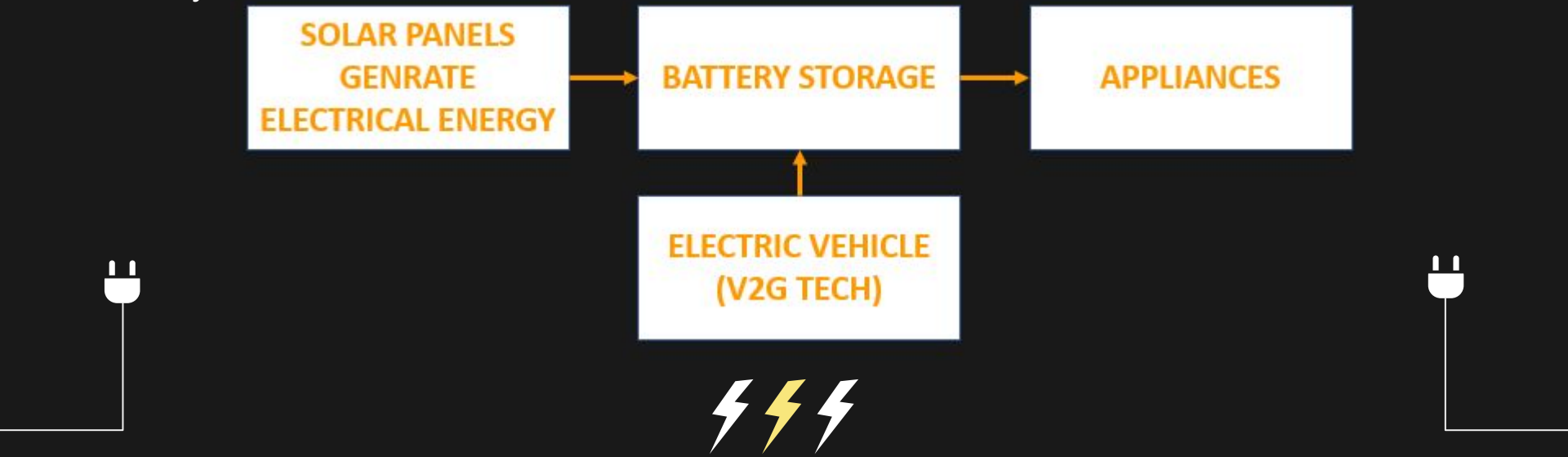
V2G TECHNOLOGY

- Given that the average car is parked for around 80% of the day, V2G connectivity offers the potential to optimise grids by leveraging millions of EVs as decentralised energy storage resources, with no capital or operating costs.
- This approach turns EV drivers into “prosumers" – a consumer of the grid and a provider of energy – thus enabling them to reduce their costs of EV charging and receive other discounts on their electricity usage
- V2G more importantly holds the power to help us reach the zero-carbon emission goal- which truly is a crucial and very large feat for all of humanity.



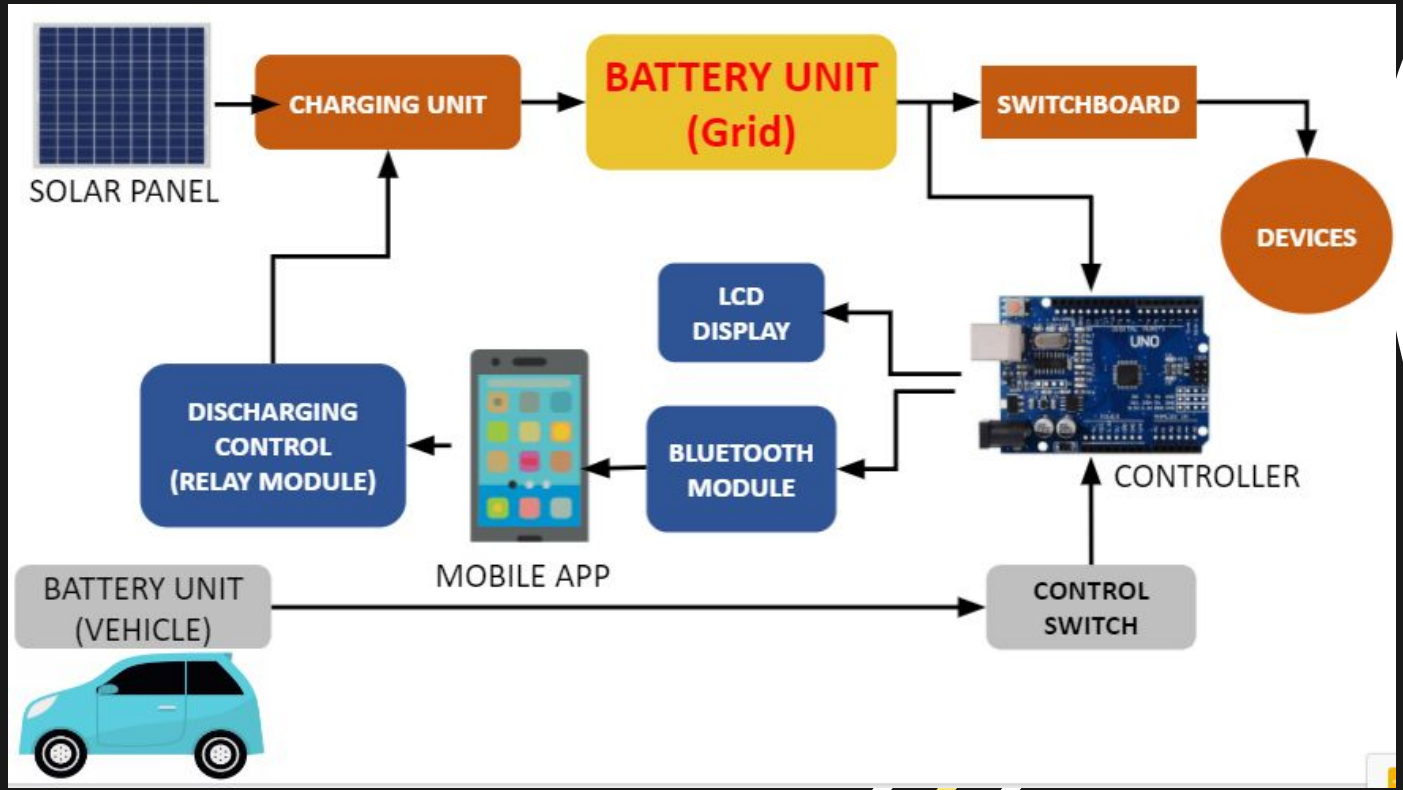
PROTOTYPE WORKFLOW

Solar panels of the solar grid charge the battery when adequate sunlight is present. At night, or in times of peak energy demand, electric vehicles give back energy to the grid- the amount of battery deducted from the vehicle calculated by our app- in order to keep cities running faultlessly.



OUR MODEL'S WORKFLOW

Complete charge cycle of sharing and using renewable energy.



PROTOTYPE -1 :

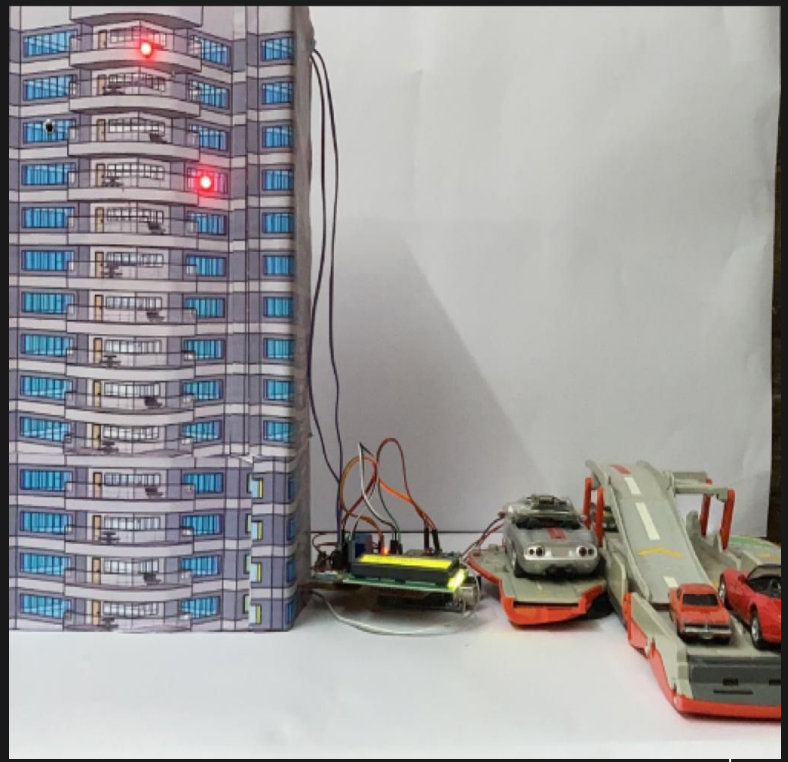
SOLAR GRID TESTING

- We made our first model to test Solar grid .
- We achieved successful result with 6v of energy generation.
- We glowed 3 red leds(2v 20mA) with this energy.

PROTOTYPE -2 :

V2G INTERFACING

- Our final model is complete testing of V2G technology with solar grid
- This circuit allows electric car battery (3.7V 800mA) to charge Solar grid battery (3.7v 100mA) .
- As per our observation car's battery discharged 80%in 40-45 minutes to charge grid battery



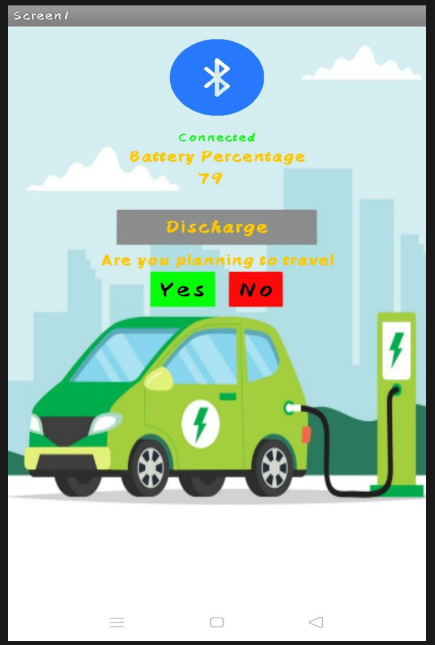
OUR APP

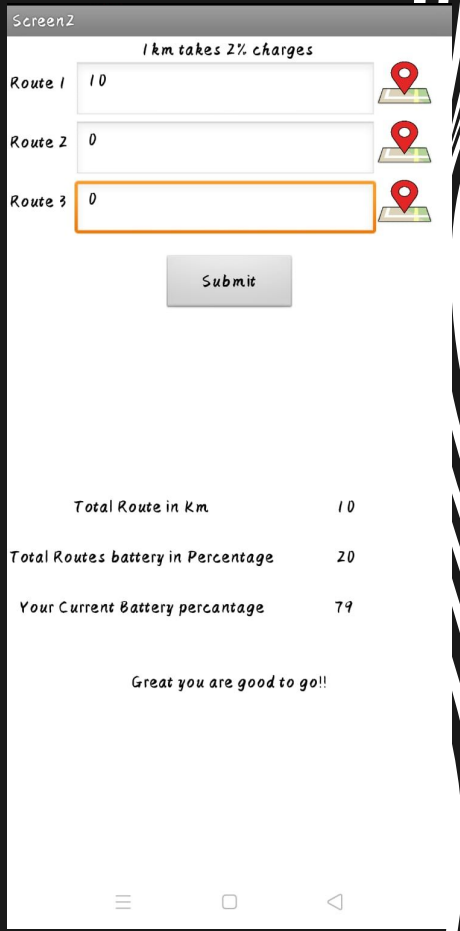
- Our app's algorithm decides how much percentage it would be safe for our vehicle to discharge and the discharging circuit does the work.

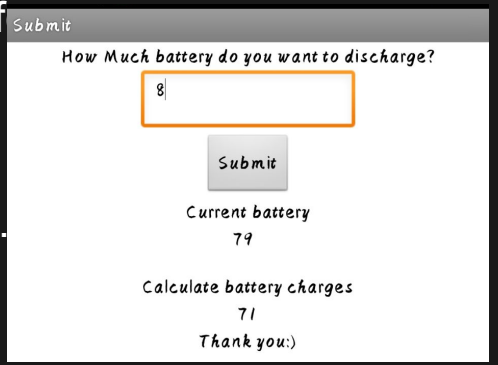
- It takes battery charge as input from Arduino UNO with Bluetooth HC05.

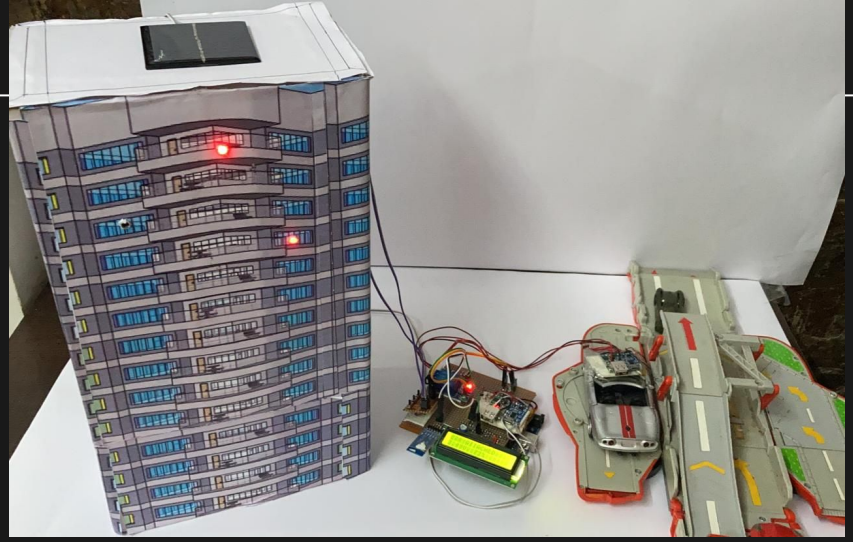
- As per the distance given by customer it calculates the average charge required f the vehicle to complete the distance

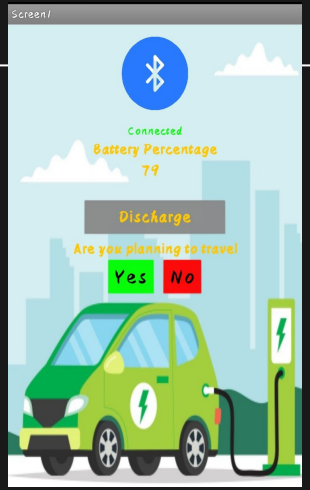
- By keeping the 20% always safe in battery it decides te discarin percentage.

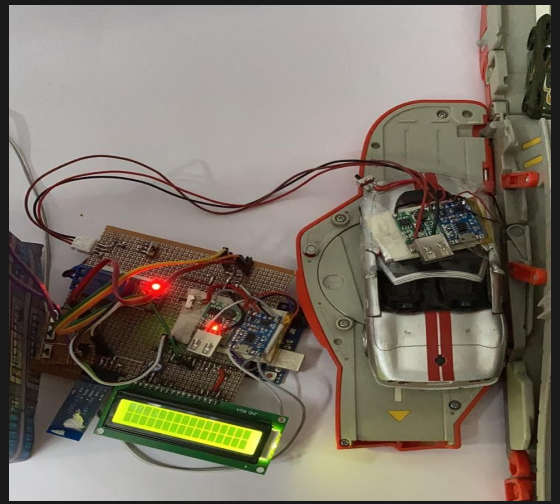


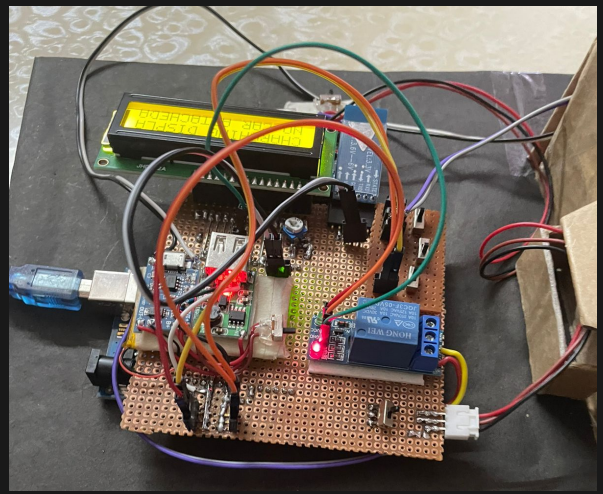







Screen1
Connected
Battery Percentage
79
Discharge
Are you planning to travel
Yes
No






TO START CHARGING
PLUG THE WIRE
AND
PRESS START
START STOP
7KW 12:05
18

THANK YOU