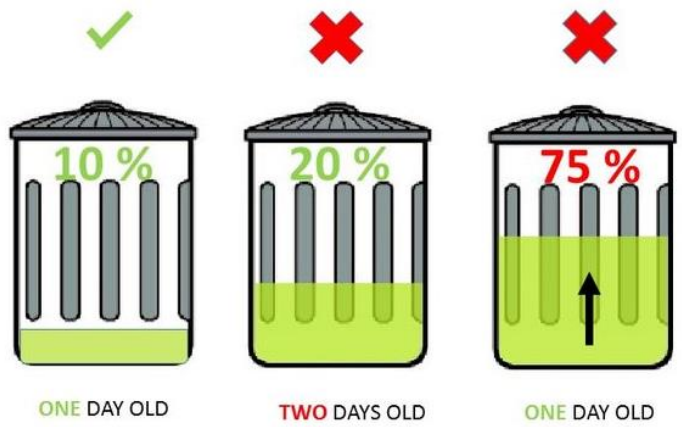
IOT ESSENTIALS

SMART GARBAGE MONITORING SYSTEM



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MOTIVATION FOR WORK:

Now a days due to urbanisation, a lot of area in major cities and towns are highly populated and in order to accommodate those people many apartments and flats have built. This is due to high housing demands which have been drastically risen as a result of migration from villages to cities to find works. In order to accommodate the growing population in the urban area, the government has built flats, apartments or condominiums, to provide shelter for them. Due to this drastic rise of population in major cities, it leads to many problems in the community.

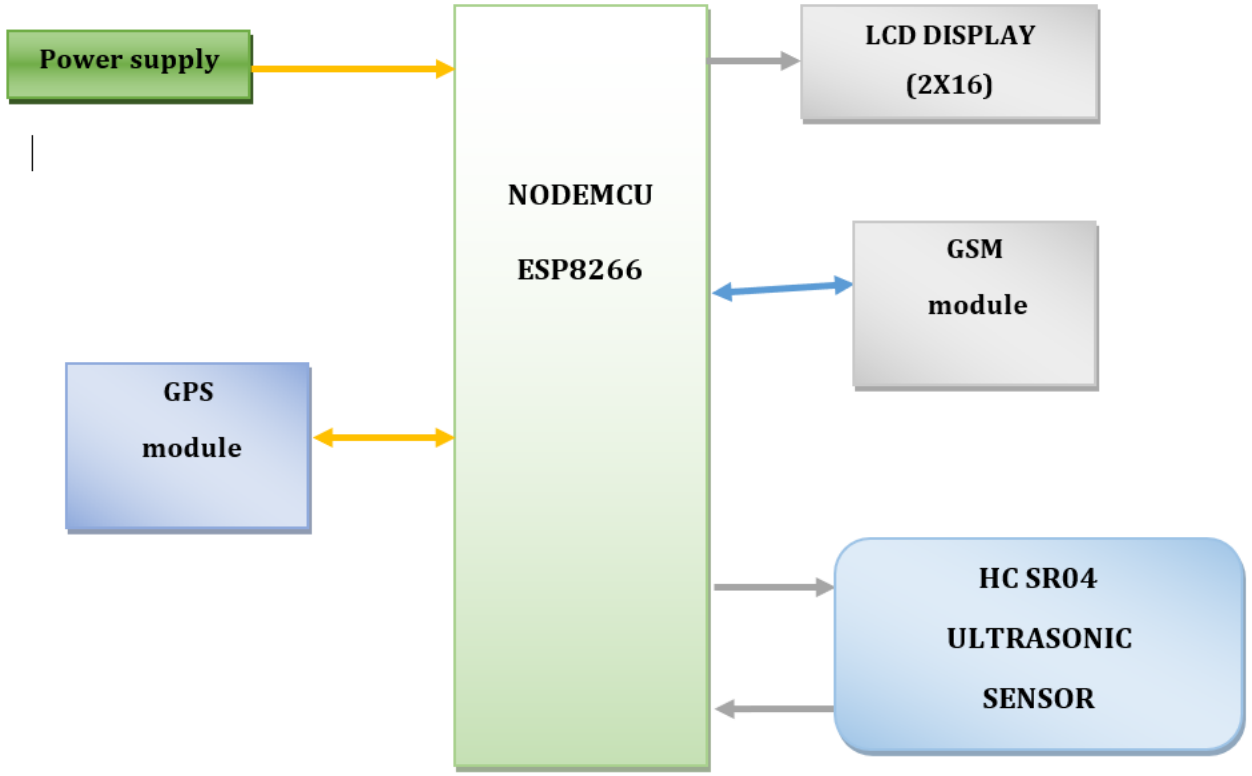
One such major problem is improper disposal of waste at highly populated areas. This problem arises due to accumulation of high amount of wastes due to high population and improper disposal of those wastes accumulated leads to pollution and even it affects human relations.

The waste disposal can be managed more properly and efficiently by constantly monitoring the bin status and the garbage level. In addition, the municipality can be alerted when the bin is full or almost full, thus promoting dynamic scheduling and routing of the garbage collection. By comparing to the conventional static scheduling and routing, this dynamic scheduling and routing are said to allow operational cost reduction, by reducing the number of trucks, the manual labour cost and the transport mileage savings.

LITERATURE REVIEW

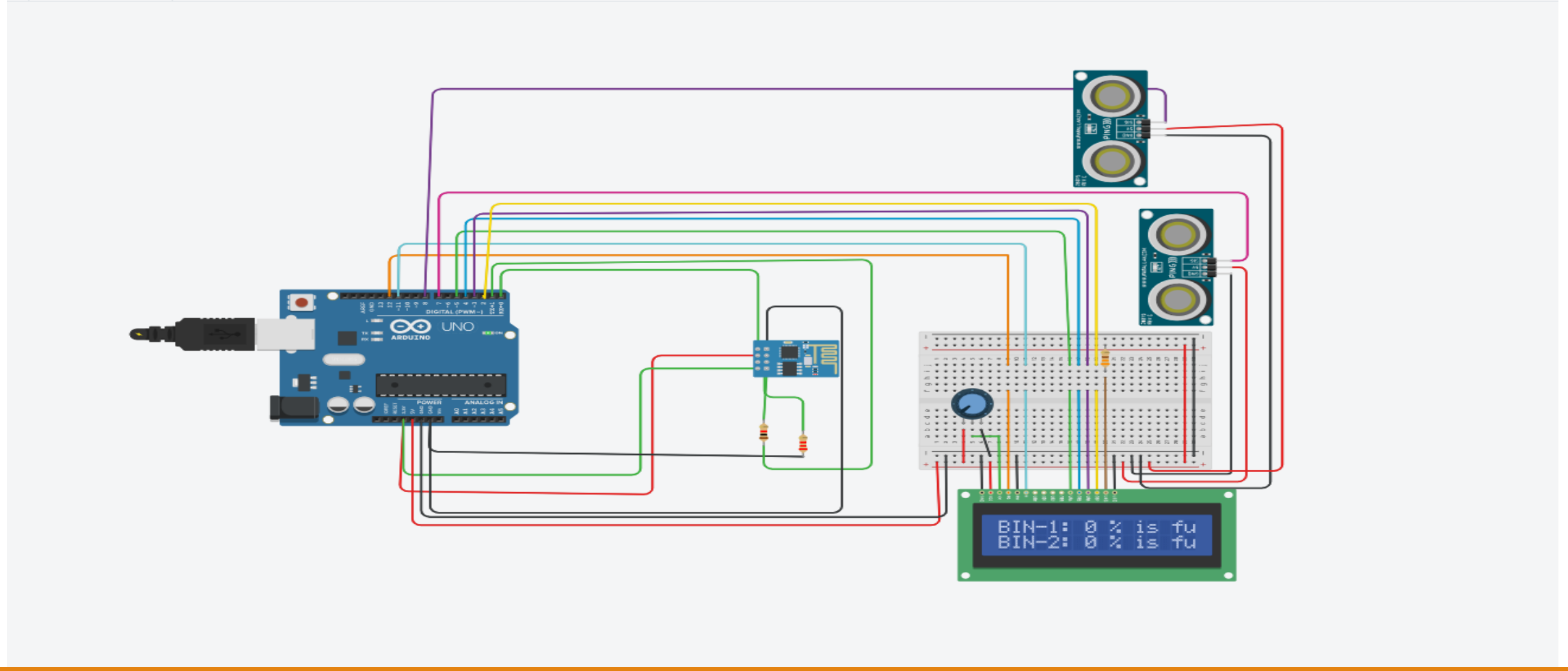
A Smart Dustbin proposed by , based on IoT in which the smart bin was built on a platform which was based on Arduino board which was interfaced with a GSM modem, GPS module and an ultrasonic sensor. The sensor was placed on the top of the bin. A threshold level was set to 90% of bin height. As the garbage reaches the level of threshold, the sensor triggers the GSM modem which alerts the associated authority till the garbage in the bin is emptied with real time location of bin which is detected using GPS module. At the end a conclusion was made that various issues like affordability, maintenance and durability were addressed when these smart bins were designed. It also contributed towards a hygienic and clean environment in the process of building a smart city.

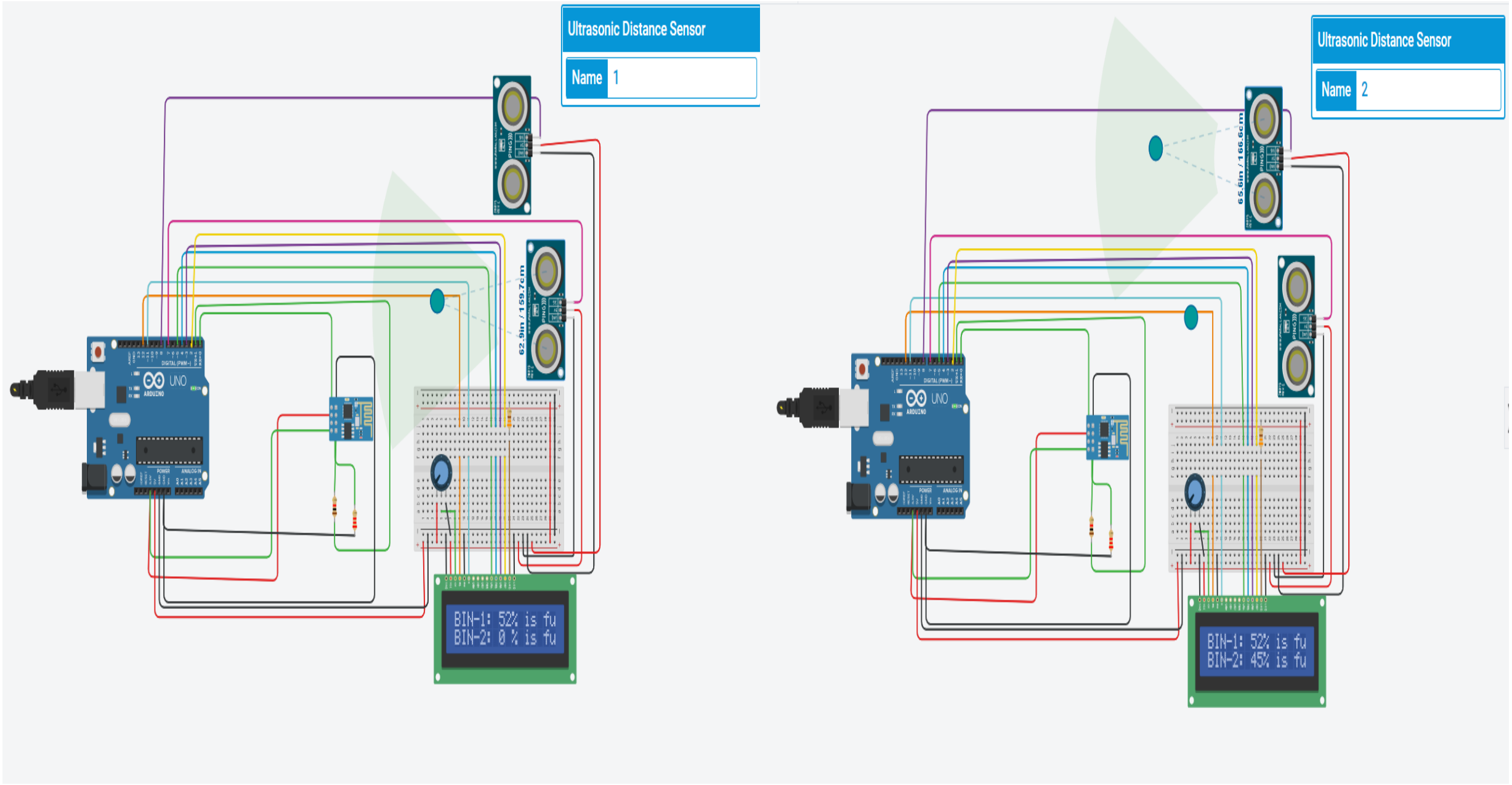
PROPOSED IDEA

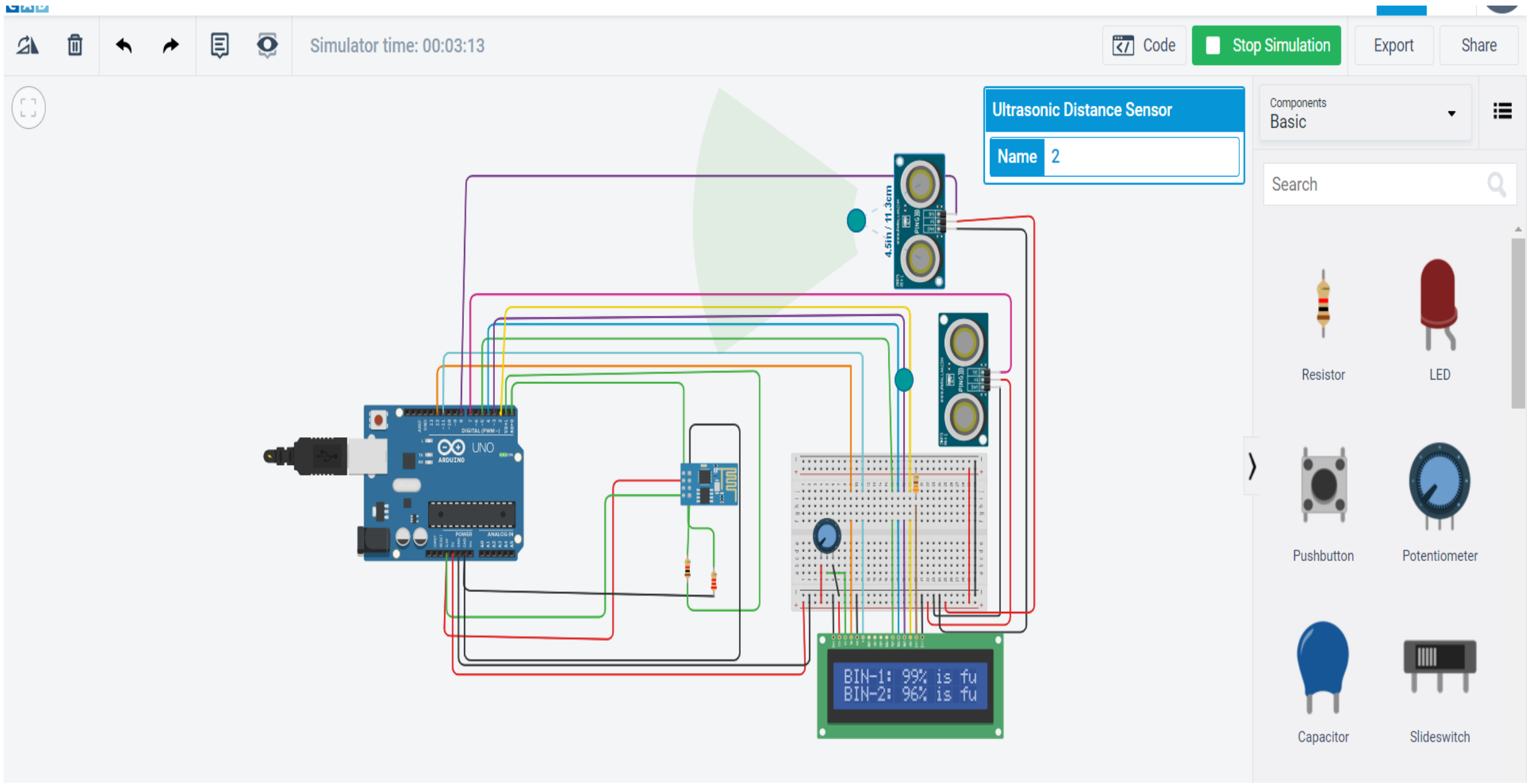


RESULTS

Software Simulation

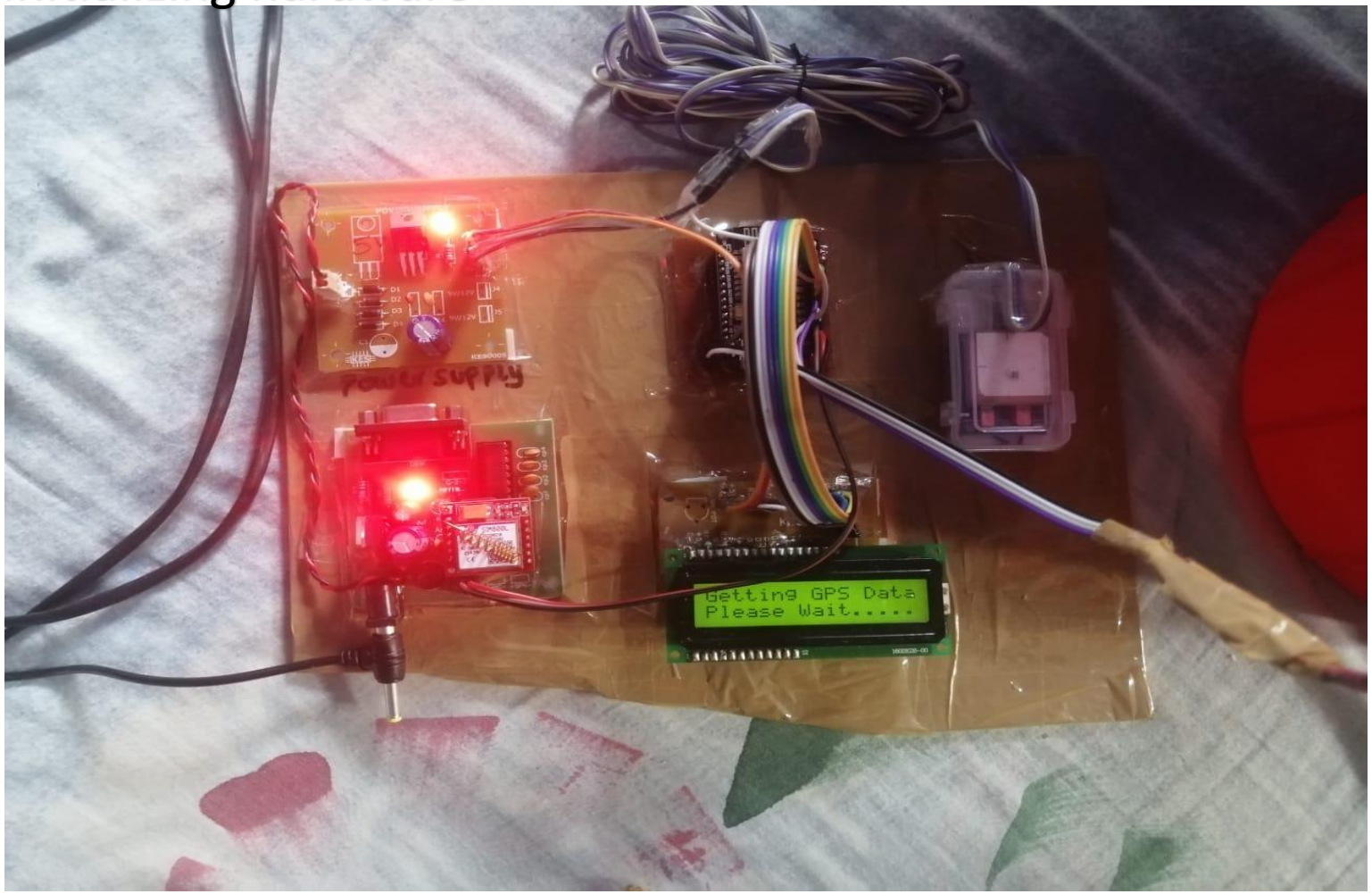



Ultrasonic Distance Sensor
Name 1
62.9in / 159.7cm
BIN-1: 52% is fu
BIN-2: 0 % is fu
Ultrasonic Distance Sensor
Name 2
65.6in / 166.6cm
BIN-1: 52% is fu
BIN-2: 45% is fu


Simulator time: 00:03:13
Code
Stop Simulation
Export
Share
Ultrasonic Distance Sensor
Name 2
Components
Basic
Search
4.5in / 11.3cm
UNO
ARDUINO
BIN-1: 99% is fu
BIN-2: 96% is fu
Resistor
LED
Pushbutton
Potentiometer
Capacitor
Slideswitch

HARDWARE RESULTS

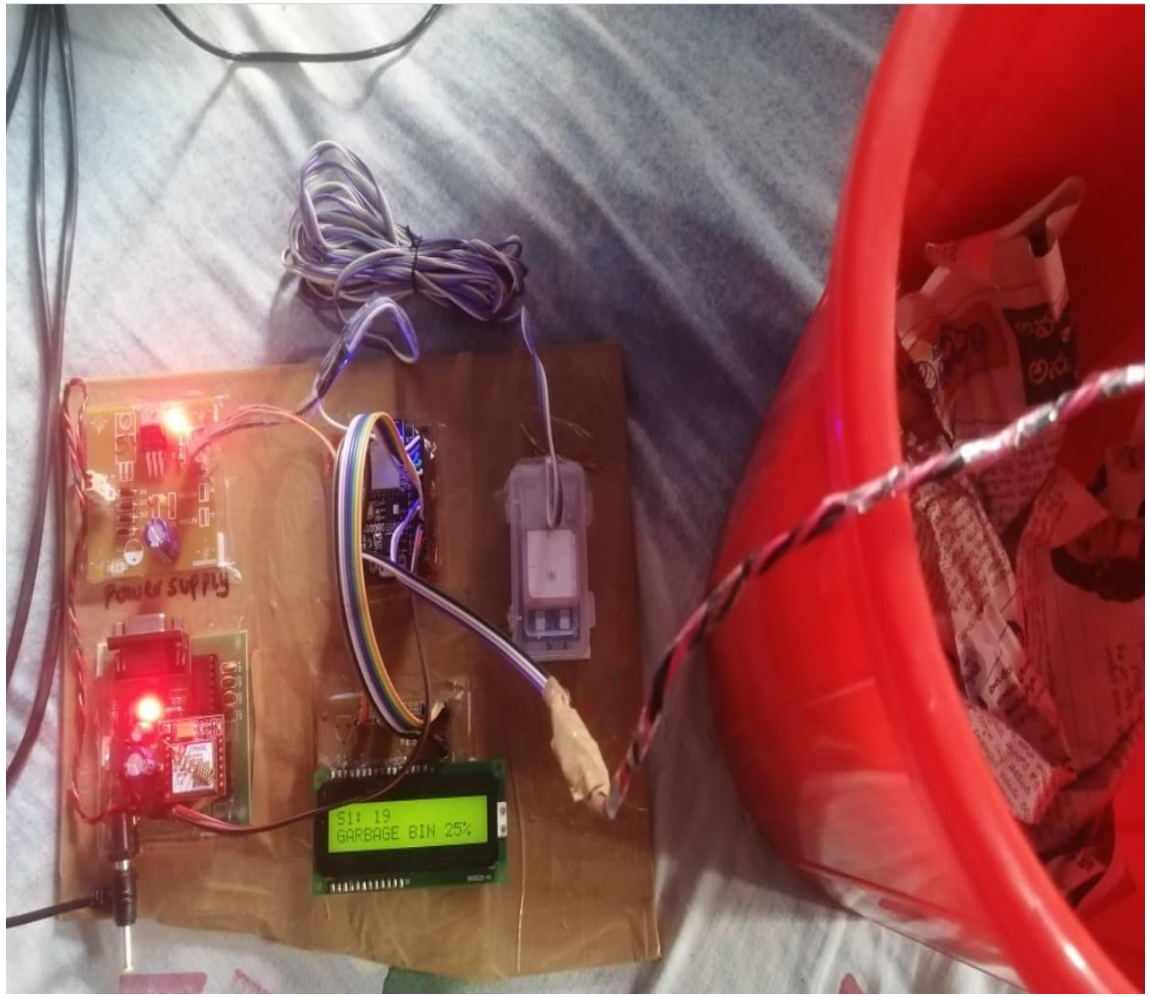
Initializing hardware



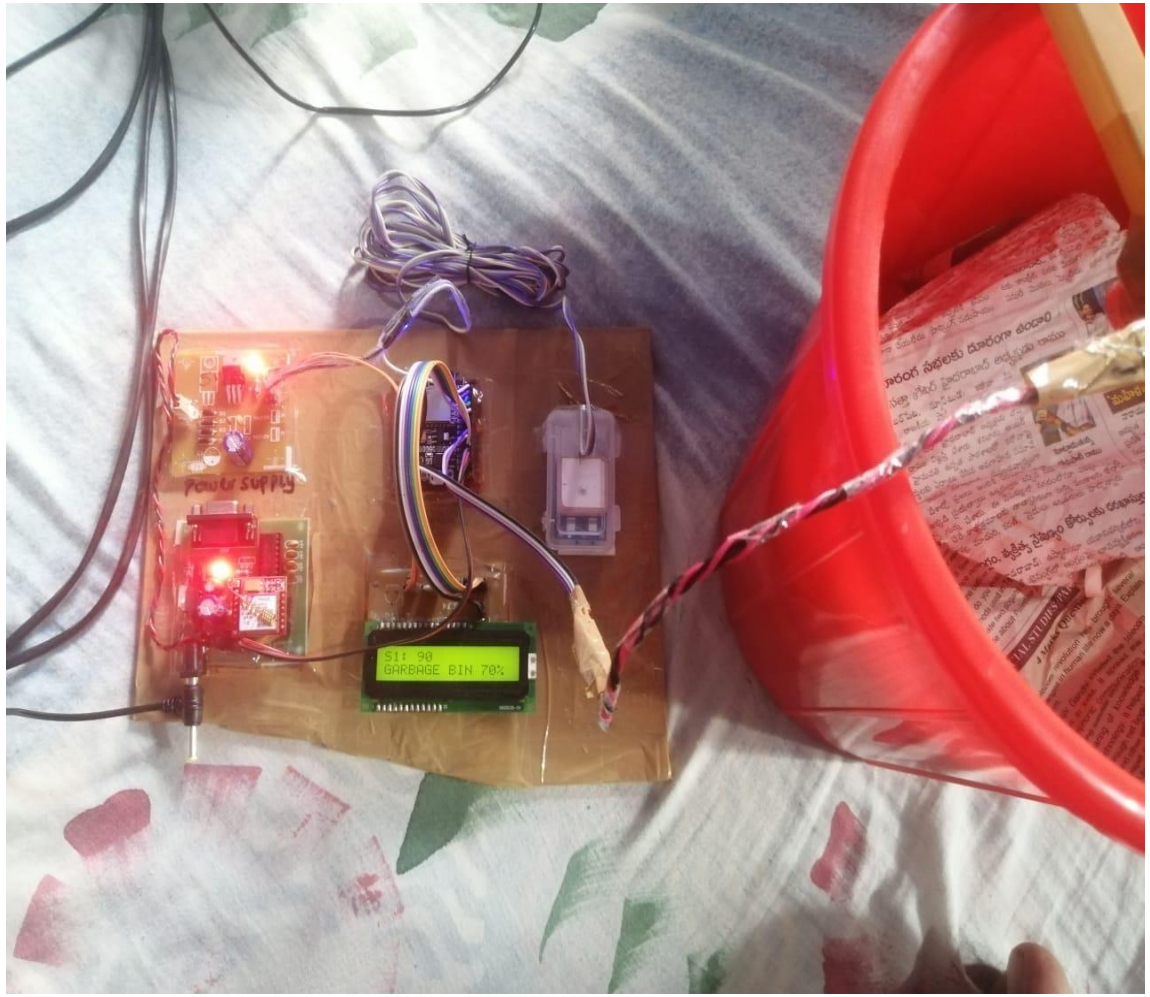
When no garbage is present

When bin is 10 percent filled

25 percent garbage

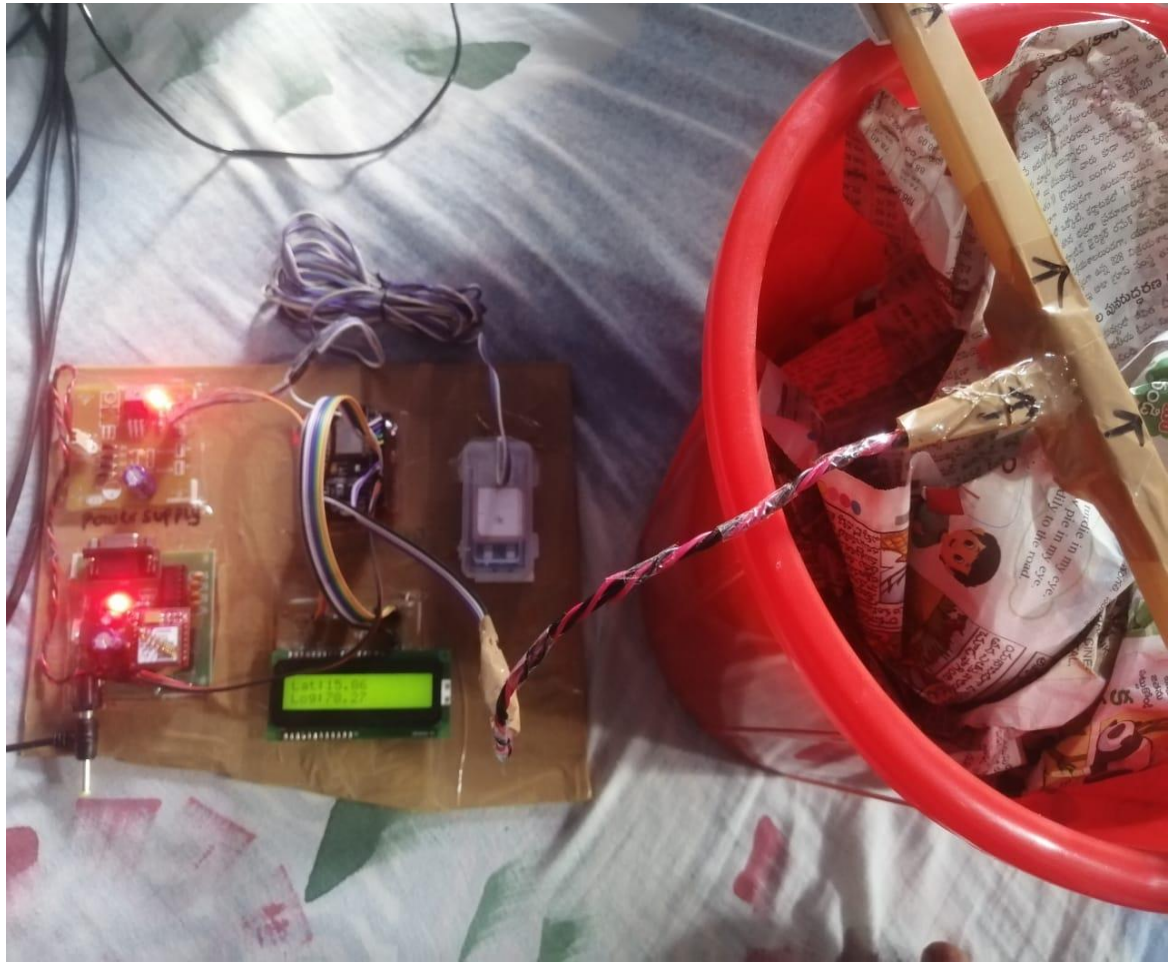


70 percent garbage

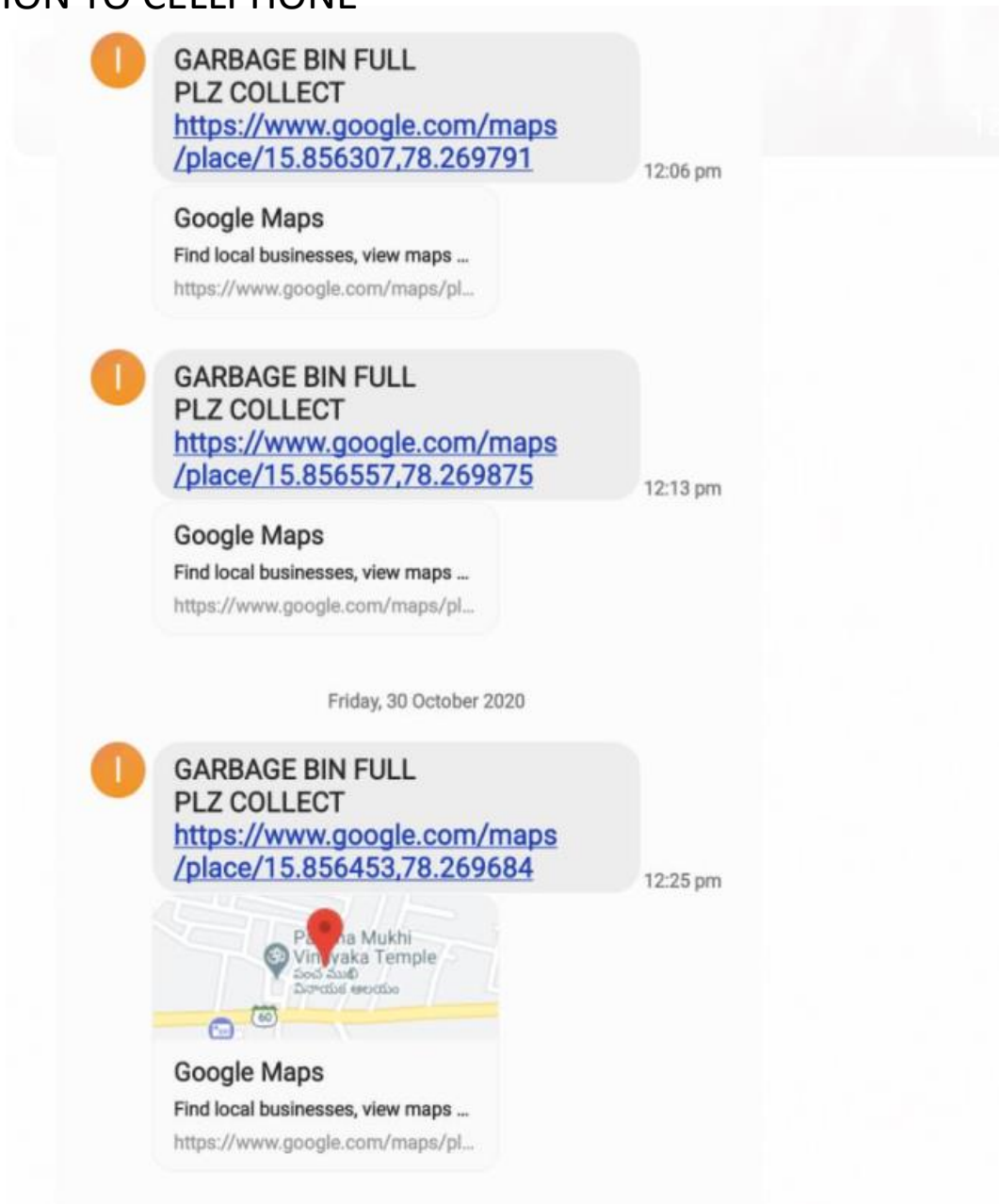


Garbage bin full

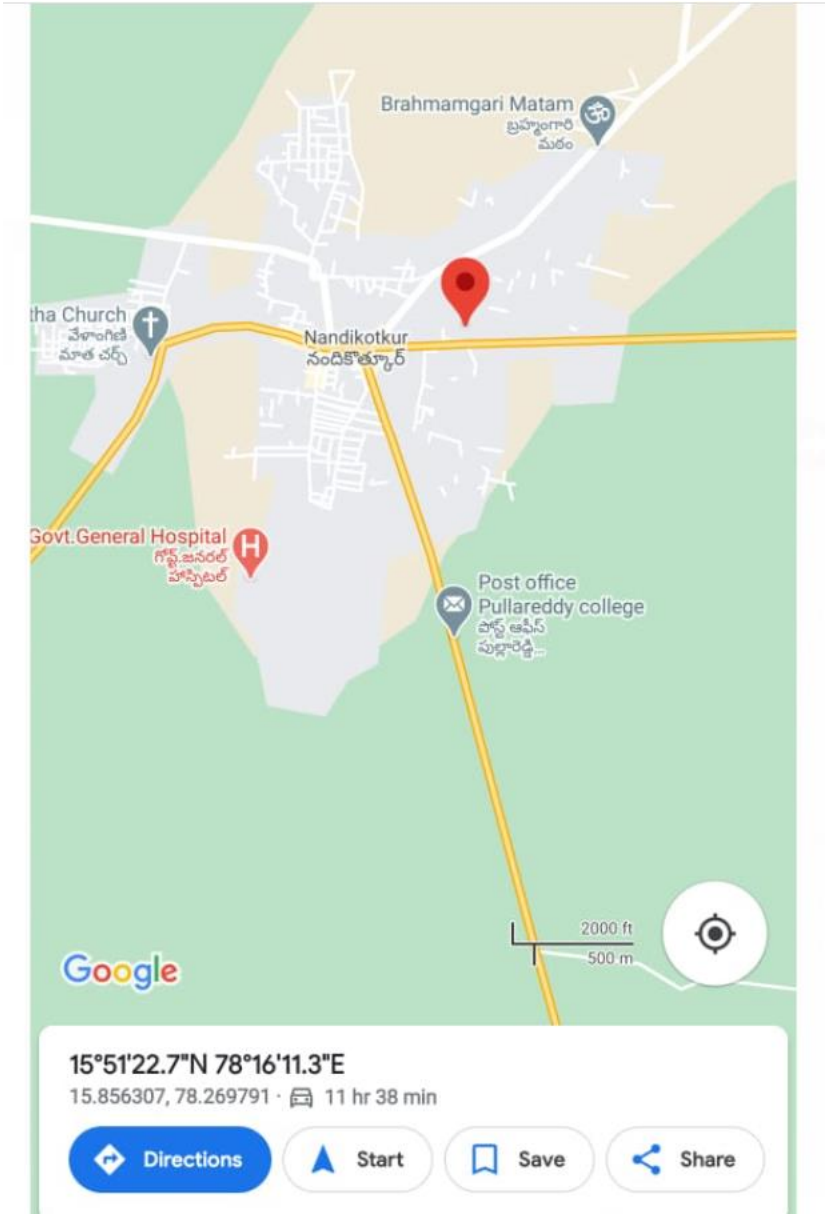
Fetching GPS location

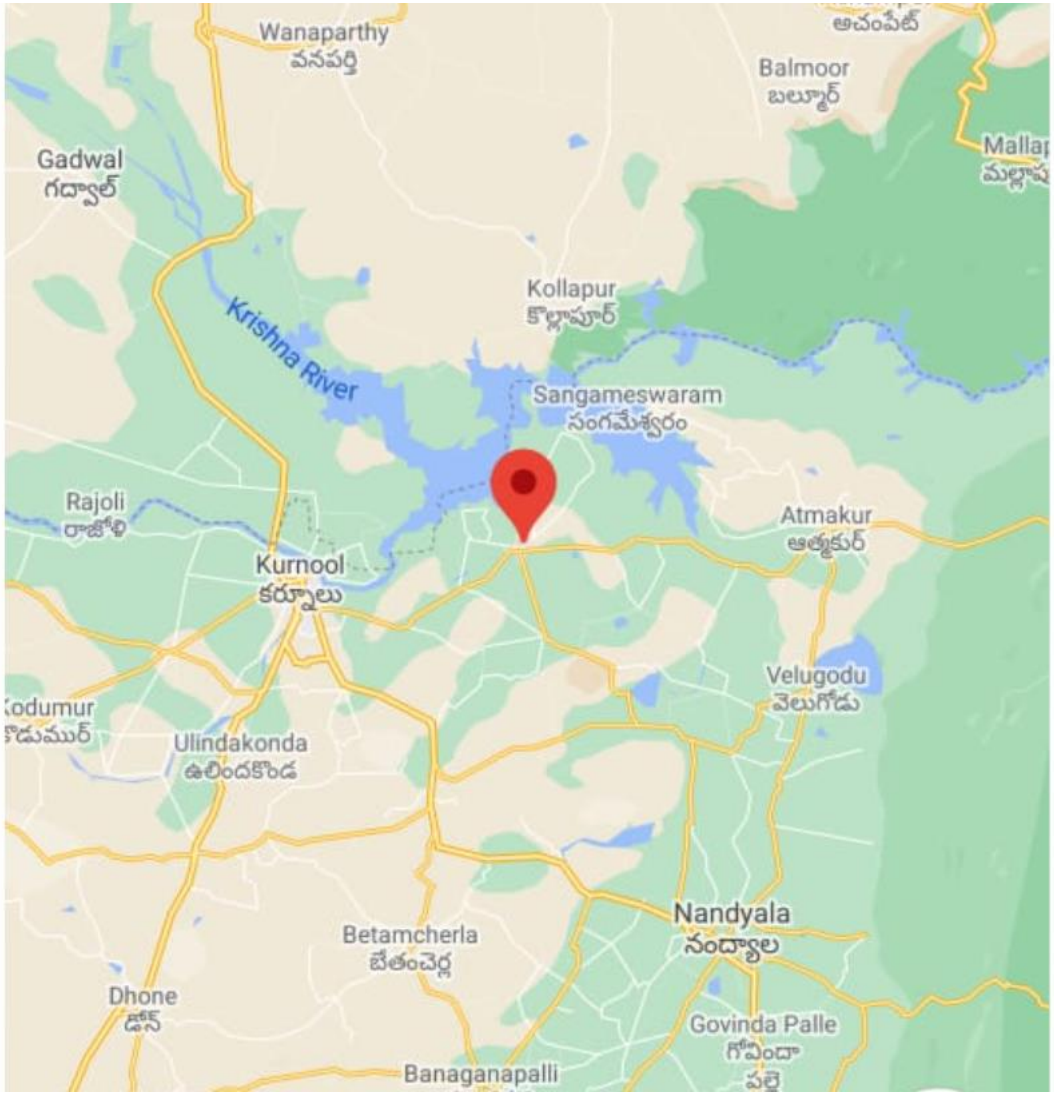


GETTING THE MESSAGE NOTIFICATION TO CELLPHONE

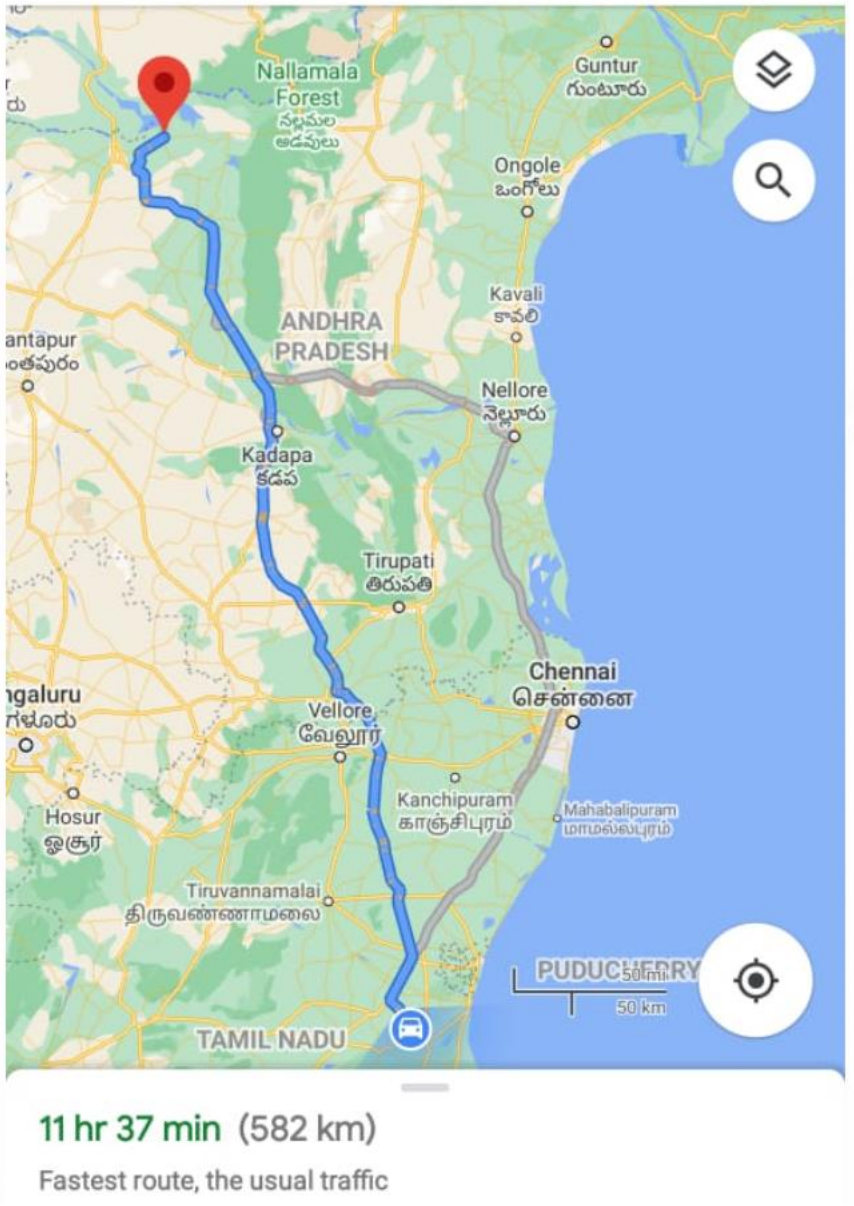


TRACK OF GOOGLE MAP LOCTION




Wanaparthy
వనపర్తి
Balmoor
బల్మూర్
Gadwal
గద్వాల్
Krishna River
Kollapur
కొల్లాపూర్
Sangameswaram
సంగమేశ్వరం
Rajoli
రాజోళి
Atmakur
ఆత్మకూర్
Kurnool
కర్నూలు
Velugodu
వెలుగోడు
Ulindakonda
ఉలిందకొండ
Nandyala
నంద్యాల
Betamcherla
బేతంచెర్ల
Dhone
డోన్
Govinda Palle
గోవిందా
పల్లె
Banaganapalli

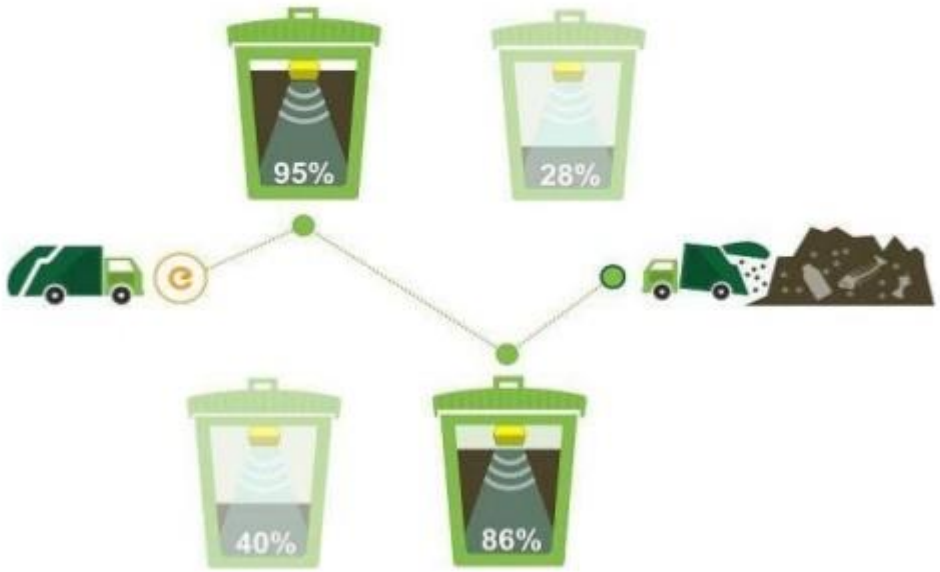
SHOWING THE DIRECTION TO THE GARBAGE SPOT:



FUTURE WORKS

There is a need to manage all the garbage bins that are present all over the city to be properly managed to reduce the costs they spend on clearing the garbage bins and to reduce the man power that are involved now in this work.

This can be done by interfacing cloud computing with IOT and machine learning where the truck drivers get their roadmap which shows the efficient path to be followed and collect the garbage bins quickly to save time and least travelled path to save fuel.



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