

Product Name: *CleanoBot*

Product Tag Line : *Clean India healthy India*

Problem:

Garbage Bins remain overflowed. Many areas remain unclean or due to some reason. Concerning authorities do not get to know about that. Nagar Palika or related department don't do their duties properly and nobody gets to know about that. Those who do there work properly, still there is a problem as it cost much to them because they need travel everytime in city.

Solution:

Making the dustbin smarter with IOT using ultrasonic and LDR sensors connected to a server. So, that we get the live report about the garbage and the cleanliness of the area. As soon as garbage reaches a threshold value that dustbin will automatically be added to the list of cleaning. Thereafter we will add those dustbins to the path using machine learning, which will have a prediction of 95% of garbage in the next two hours.

Now our algorithm will look for the shortest path between these nodes(dustbins) using Dijkstra and Traveling salesman algorithm. And now we have the shortest path to be covered, so we look for the locations of those dustbins from the file and return this data in JSON format using the flask to the API server which will mark the point on the map using Google maps API.

JSON format:

```
{
  "locations":[
    { "Lat":"28.564327", "Ing":"77.380004" },
    { "Lat":"28.579393", "Ing":"77.377375" },
    { "Lat":"28.576567", "Ing":"77.366899" }
  ]
}
```

Now, on the other side, there is a voting app. All the city locations will be added to it along with the location ID and the number of dustbins in that area. People can vote up or down according and notification will be generated to the concerning authorities. All the data and stats will be live and public so one can look after the working and duties of the department. In the morning or a particular time user will receive a small notification to vote. Voting will be collected on the daily basis and If there is a regular negative response that area will be reported to the department and people can see the progress of the work. All the voting results will also be public. They can see the map of the dustbins installed in the city and the garbage truck can use this map to travel the minimum distance to the collect the garbage. This efficient path will be generated by the ML part discussed above.

Competitors:

Extra carbon, Papermen

Collaborator:

Vital Waste, Sahas zero waste and all government departments and departments working on smart city project.

What's innovative?

Making dustbin and garbage collection smarter and live to the public and higher departments, which will include direct voting from the individual persons. In this way anyone can easily contribute to the clean India Project.

What is our team?

2 Data Science people, 1 product designer, and cloud engineer.