Reuse
Reduce
Relish

Objective

Our objective is to utilise the everyday food waste produced in our homes, in restaurants, industries etc. in the most efficient way.
This can help reduce other problems such as air and environment pollution.

Problem Statement

Preventing wastage by sales prediction - (Food Management)

Today, the globe wastes or loses nearly a third of the food it generates, while approximately 690 million people remain hungry. On the basis of past logs of ration shops and food suppliers, we can understand the consumption patterns. Similarly, with the past municipality logs and waste analysis of fast-running restaurants, we can understand the wastage on a periodic basis.

Important Statistics

1

India is among the top food wasting countries. 7.5 tonnes of food is wasted across 400 Safal outlets in Delhi each day.

2

Out of 11,000 metric tons of waste in Delhi only half of it is used for useful activities.

3

According to the UNEP report for 2021 called UN Food Waste Index Report 2021, India wastes as much as 50 kilos of food per person per year. That amounts to a staggering 68,760,163 metric tonnes of household food waste per year.

Timeline

Brainstorming

We discussed all the problem statements and realized food is the basic necessity of an individual and it's wastage needs to be adressed.

Researching

We researched about food wastage in the country. We also found a dataset from Google dataset search(Re FED).

ML Model

We trained a model using Linear Regression for predicting the surplus food in a particular sector. This will help in managing the unused food.

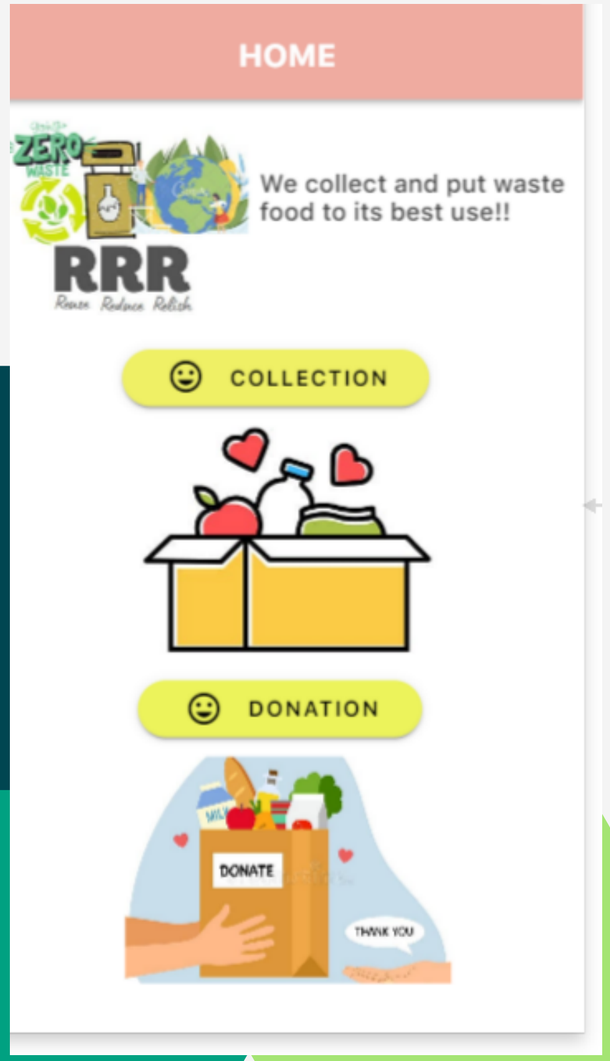
Processing

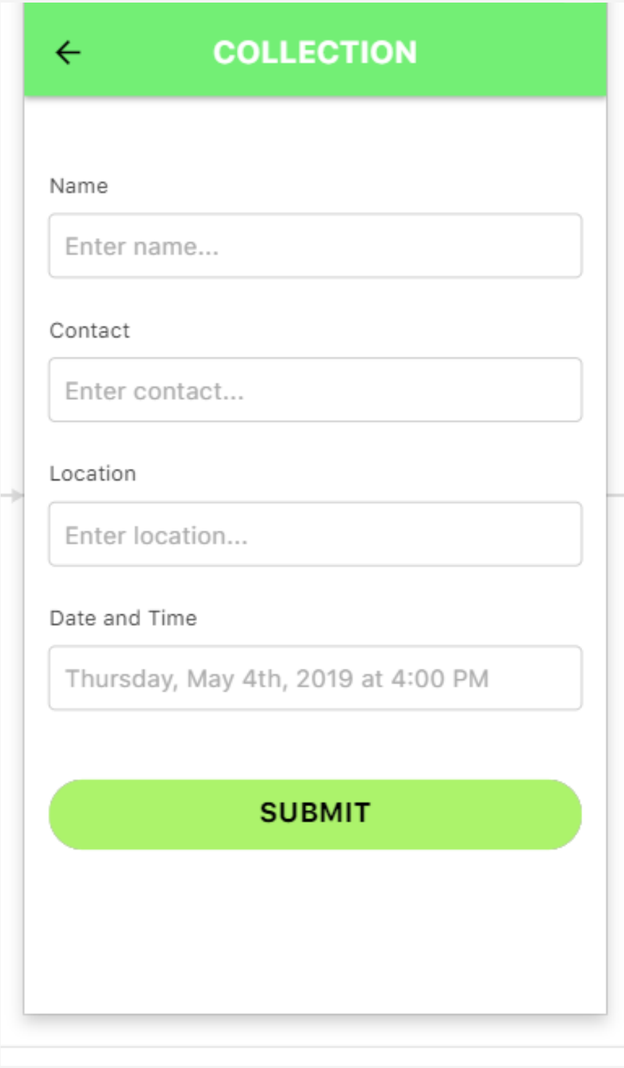
With the help of the trained model we could predict the future surplus values in order to control the production and utilize the excess amount.

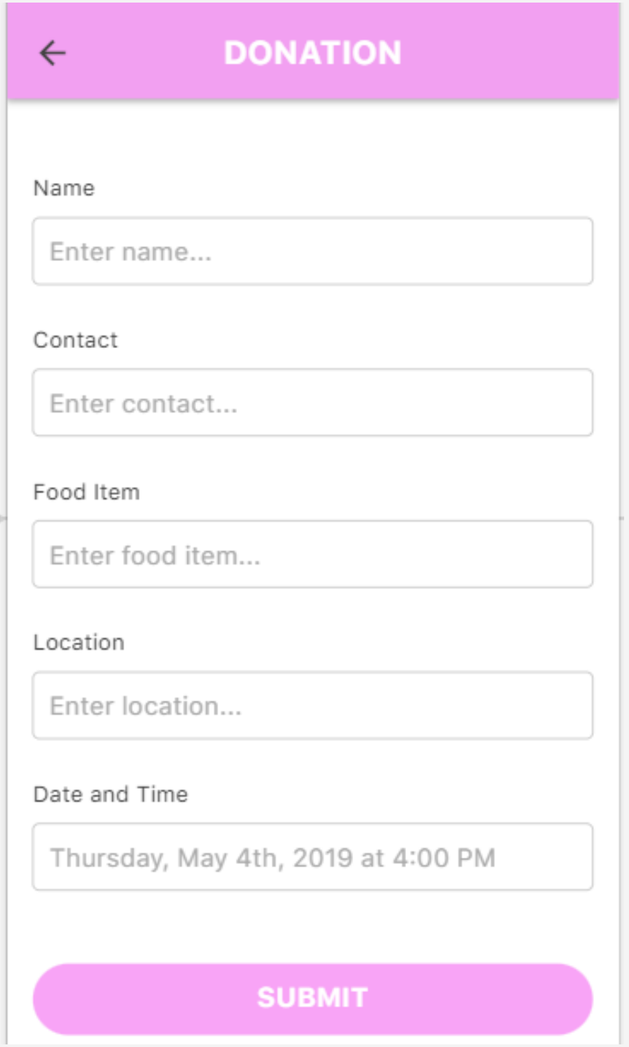
Solution

- We have created an app prototype named "RRR" which stands for Reuse, Reduce and Relish. It can be installed on an individual's smart phone, this acts as the bridge between factories and customers for the collection and donation of food waste.
- The food waste collected through the app can directly be transported to the factories for composting and electricity generation.
- Now the data collected from the app will be used to predict the amount of surplus with the help of ML model.
- The prediction of surplus will help us to channelise it to the needy group of people and hence reduce food wastage.

App Prototype







Features of Dataset

- The dataset is taken from this link: https://insights-engine.refed.org/food-waste-monitor?view=overview&year=2019 .
- The dataset has 11 columns which are year, sector, food type, supply, surplus, wastage, uneaten food, anaerobic digestion, composted, landfill and wasted meals.
- Also it consists of 2900 records.
- This is a collection of data from 2010 to 2019.
- Dataset: https://drive.google.com/file/d/1Qa37-gzeFyEgfHpxTkkPfpeKJByQqhcM/view?usp=sharing

Working of the ML Model

- Our model aims to predict the surplus amount of food.
- In this project we have used Linear Regression to train our model.
- We have taken X : food type, ton_surplus, ton_waste, ton_uneaten, ton_anaerobically_digested, ton_composted, ton_landfilled and
  Y: surplus
- Accuracy of the model : 0.997

Future Scope and Targeted Audience

Future Scope

- We will use the data from the app to train the model for more accurate predictions of the real world.
- The compost generated can be supplied to farmers and energy liberated can be utilised as electricity.

Targeted Audience

- It focuses on the individuals in specific sectors.
- Most significantly, it will aid those in need.

Thankyou!

Github Link:

https://github.com/shikshanayan/Hackoverflow-Surplus_food_production

Team members:
Shiksha Nayan
Simran Nayan
Ishita Khatri