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. If we keep throwing away 1/3 of the produced food, we'll need 2 planets to feed 10 billion people in 2050. Reusing and recycling food waste is only a portion of the answer. It's the prevention that we need most to achieve a sustainable food future. 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. Given these examples as references, you can explore more such datasets to broaden your horizon and come up with a sustainable solution for this problem by incorporating AI.

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

Create Awareness

People should be made aware about the fact that food waste and other waste has to be dumped separately in order to reuse the generated waste in the best possible manner.

Researching

A research should be carried out for collecting data of the areas where the food waste is dumped in landfills and it goes directly to waste.

Collection

Create a bridge between houses, restaurants and industries for collection of food waste and supplying it directly to factories for processing.

Processing

The collected waste is segregated as organic and inorganic and processed to form compost and electricity which can be used for plants and multipurpose respectively.
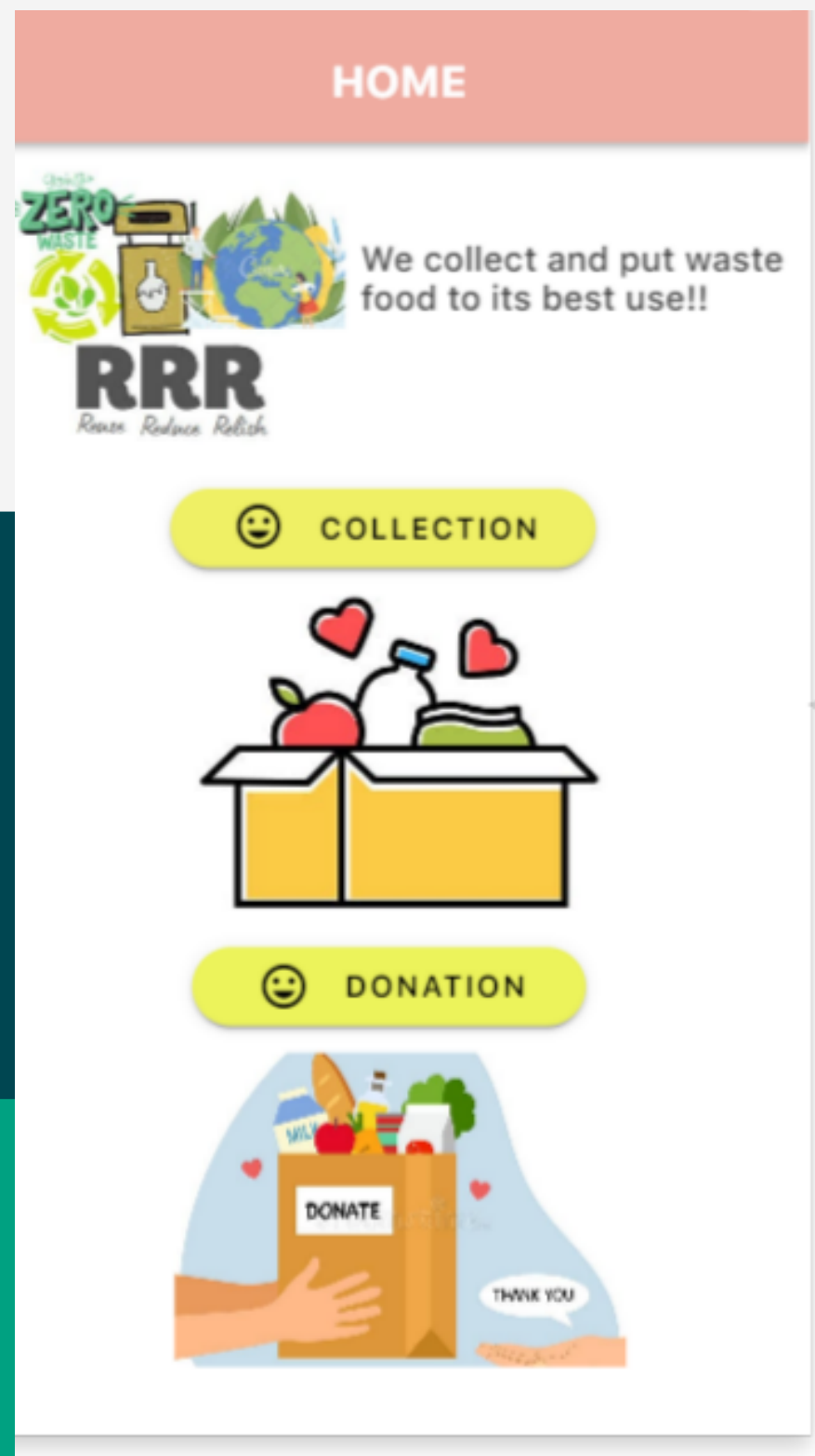
Solution

We have created an app named "RRR" which stands for Reuse, Reduce and Relish. It's purpose is pretty simple. It can be installed on an individual's smart phone, this acts as the bridge between factories and customers. This app aims to make use of the food waste generated in the most effecient manner. Also the data collected from the app can be used to predict the consumpsion pattern or future sales which in turn can be utilised for adequate production of food using ML model in the future.
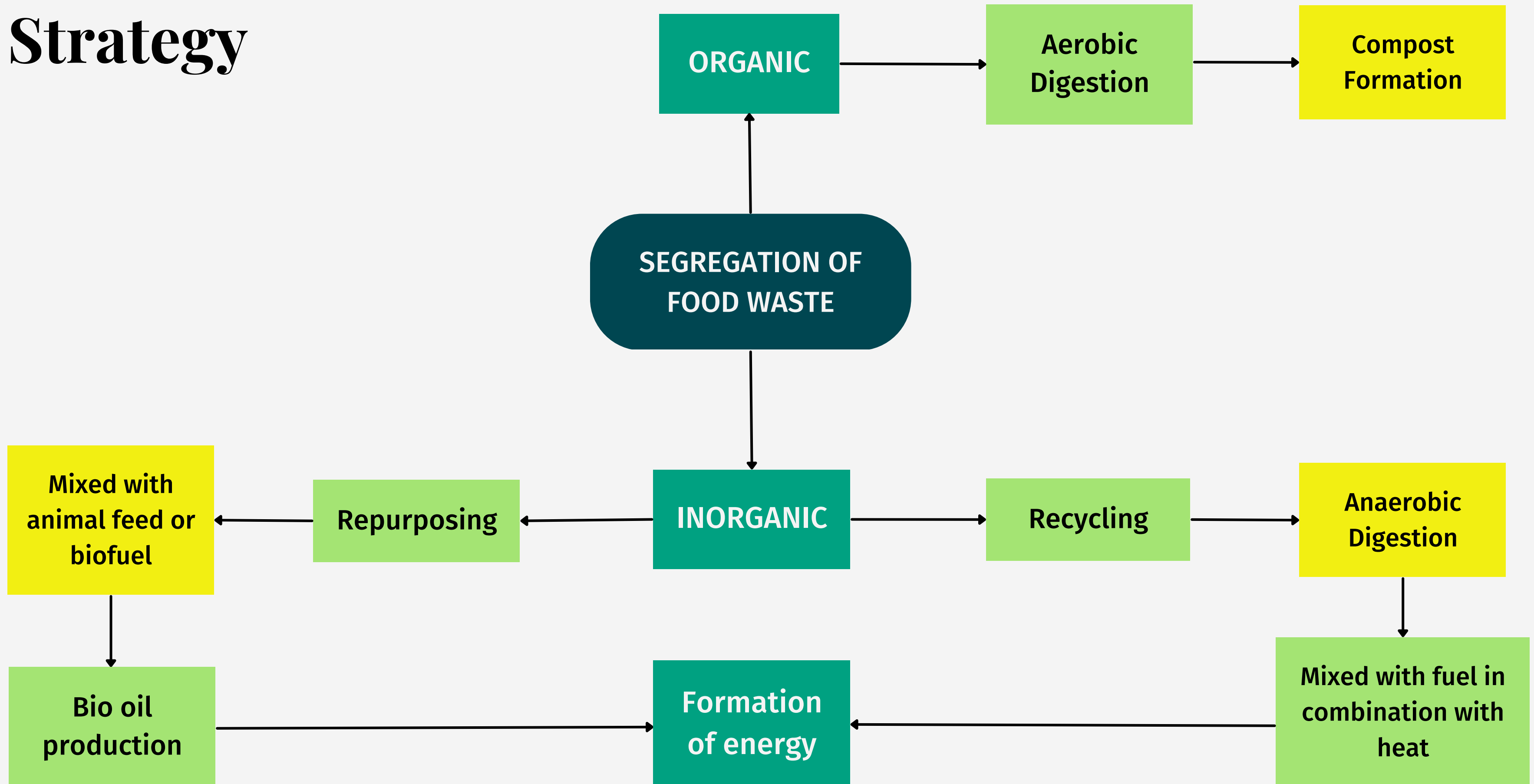
App Model

Segregation Strategy

SEGREGATION OF FOOD WASTE

ORGANIC → **Aerobic Digestion** → **Compost Formation**

INORGANIC

Repurposing ← **INORGANIC** → **Recycling** → **Anaerobic Digestion**

Mixed with animal feed or biofuel

Bio oil production → **Formation of energy** ← **Mixed with fuel in combination with heat**

Future Scope

Compost for plants

- Minimize Compaction.
- Improve drainage of soil.
- Useful for aeration of soil.
- Increases the nutrient holding capacity.
- Carbon-rich and nitrogen-rich helps in better yield.

Energy as electricity

- More fat, oil, grese products gives more biogas and hence more energy.
- 100 tonnes of waste can power 800-1400 homes.

Thankyou!

Github Link:

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

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