DESIGN COMPITION 1 TEAM 4
REPORT

Pitch:

Can't afford food! Register with us and get access to free food all throughout the year Nationwide.

Problem Statement:

In most of the food chains and grocery stores, lots of food get wasted before it is being served or used. Most of the times, this unused or unserved food is thrown away. We came up with a system which will utilize this food and redistribute it among the needy and homeless people who usually live in food-insecure environment.

As per our design, the food chain/Grocery store manager can put leftover food in a "Free food vending Machine". He can manually enter the quantity and type of food being put in the machine from the input side of the machine. The needy people can access this food from output side of the machine.

The customer (needy people) can swipe an identity card which will be allotted to him/her by the Government after scrutinizing his/her financial condition. After swiping the Identity card, the customer will be granted access to the Vending Machine, where he can select the food he wants from the data entered by the Food chain/Grocery store manager. The quantity of food allotted to each person will be predetermined as per his age, sex and daily food requirement.

Using this system, we will be able to save the leftover food thrown away by the food chains and grocery stores and we can provide this food to the needy and homeless people.

Existing Solution:

1. EPA's food recovery challenge: As part of EPA's Food Recovery Challenge, organizations pledge to improve their sustainable food management practices and report their results. The FRC is part of EPA's Sustainable Materials Management Program (SMM). SMM seeks to reduce the environmental impact of materials through their entire life cycle. This includes how they are extracted, manufactured, distributed, used, reused, recycled, and disposed. Organizations are encouraged to follow the Food Recovery Hierarchy to prioritize their actions to prevent and divert wasted food. The Food Recovery Hierarchy prioritizes actions organizations can take to prevent and divert wasted food. Each tier of the Food Recovery Hierarchy focuses on different management strategies for your wasted food.

   Website: https://www.epa.gov/sustainable-management-food/food-recovery-challenge-frc

Proposed Solution:

A nonprofit organization which identifies the major food wastage currently occurring and tries to redistribute to people in need in a simple and cost effective way.

There are many ways by which food is being wasted.

- Food chains like Subway, McDonald, Dunkin Doughnuts and many more which produce food through the day based on prediction of incoming customers. but many times there are a lot of food which remain excess during the closing times of the restaurant. This is food just gets discarded away because the restaurant cannot give it away for free at the present. If they give it away for free then customers will wait until the store closes so that they can get free food and also food chains will undergo huge losses because of this. Hence the food is just discarded in dustbin in the end of the day.
- Food being Wasted at regular events like a party, wedding, and other celebrations. These food which are being wasted are not at fixed locations and also the quality of food at these locations might not be of proper standard. It is more difficult to find a way to redistribute food effectively from these places and also the food might be sub-standard.

Our problem solving for this exercise is focusing the first problem, which is the food being wasted from food chains.

Below is the process design of out solution:

- ➢ The food chains have regulations to follow on what food to be given out. A basic draft of the regulation is described below.
- ➢ There is a vending machine which every major food chain have to place in their restaurant which can be accessible to people who are registered with NGO as either Homeless or in need. The more detail description of who is eligible for benefiting from this system is described in regulations below.
- ➢ The registered person has to just go to these vending machines and select the food available for free at that moment and claim it by just going through a finger print system.

The detailed working of vending machine is described through an image. The buyer of vending machine here are the restaurant. Non-profit organization (government agency) are the sellers. Apart from the restaurant location, there are other centralized location where food is being collected from sparsely populated location to other locations which has higher demand for free food.
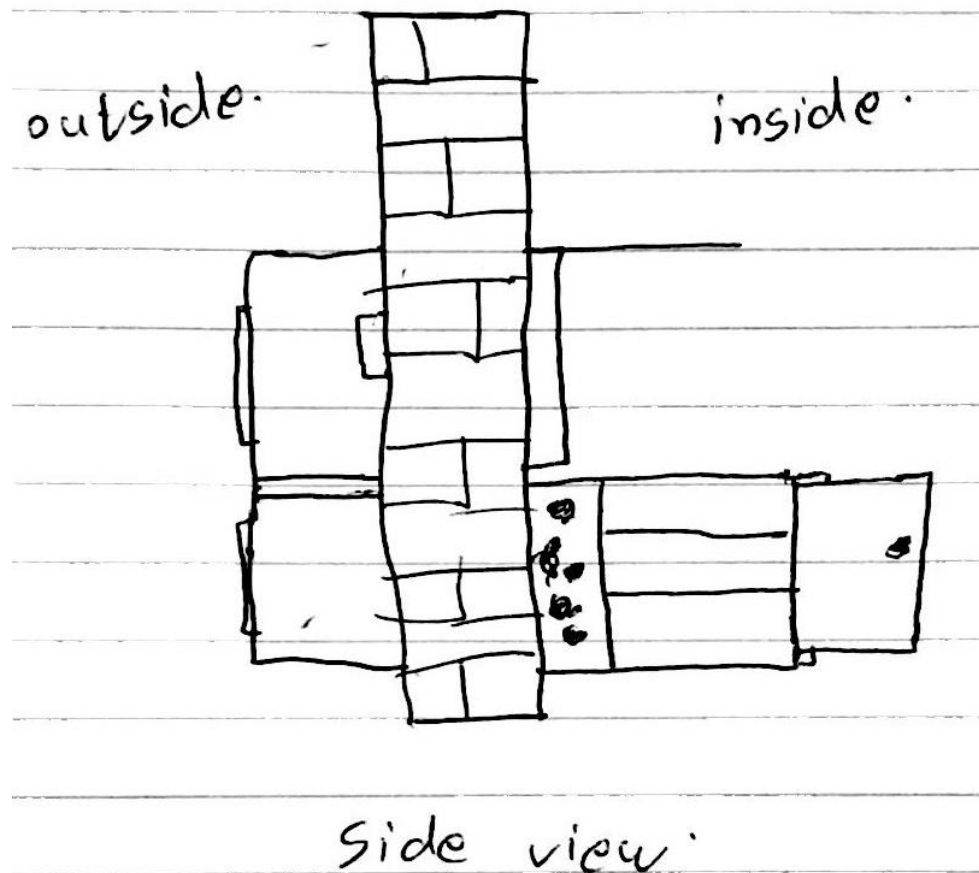
Regulations:

- ➢ Every restaurant identified as food chain shall install the vending machine mandatorily.
- ➢ The food kept in the vending machine shall follow a food regulation sheet compulsorily.
- ➢ People who are registered as homeless or who are in need based on the wage and family size can benefit from our organization.
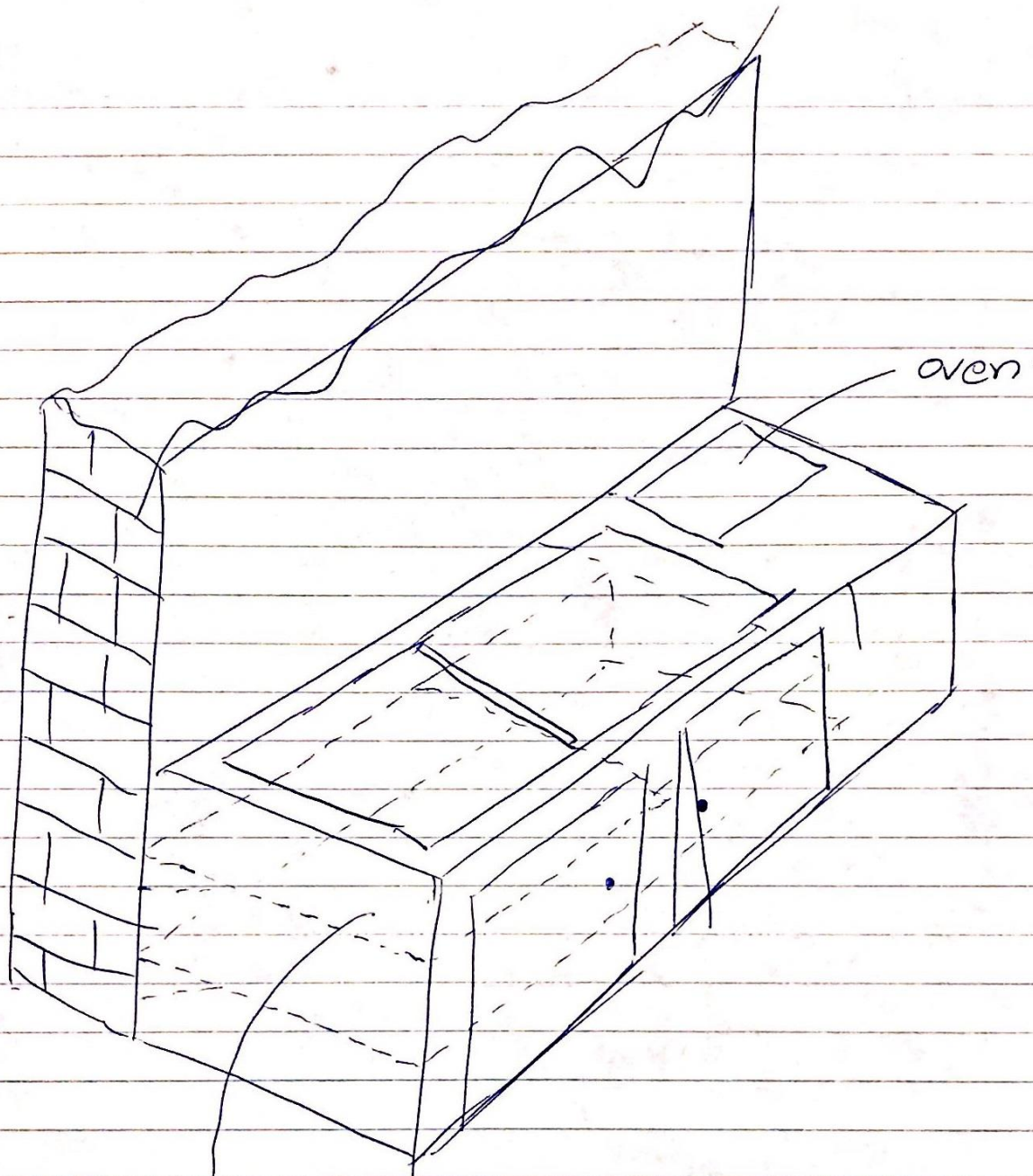- ➢ The amount of food each person can claim is fixed.

Free food vending machine design aspects:

Attributes
1) Store food at maintained temperature
2) Allow food loading from inside of restaurant
3) Check user identity
4) Display items available inside
5) Let user select the quantity and condition of food
6) Collect items chosen and release them out through collection box
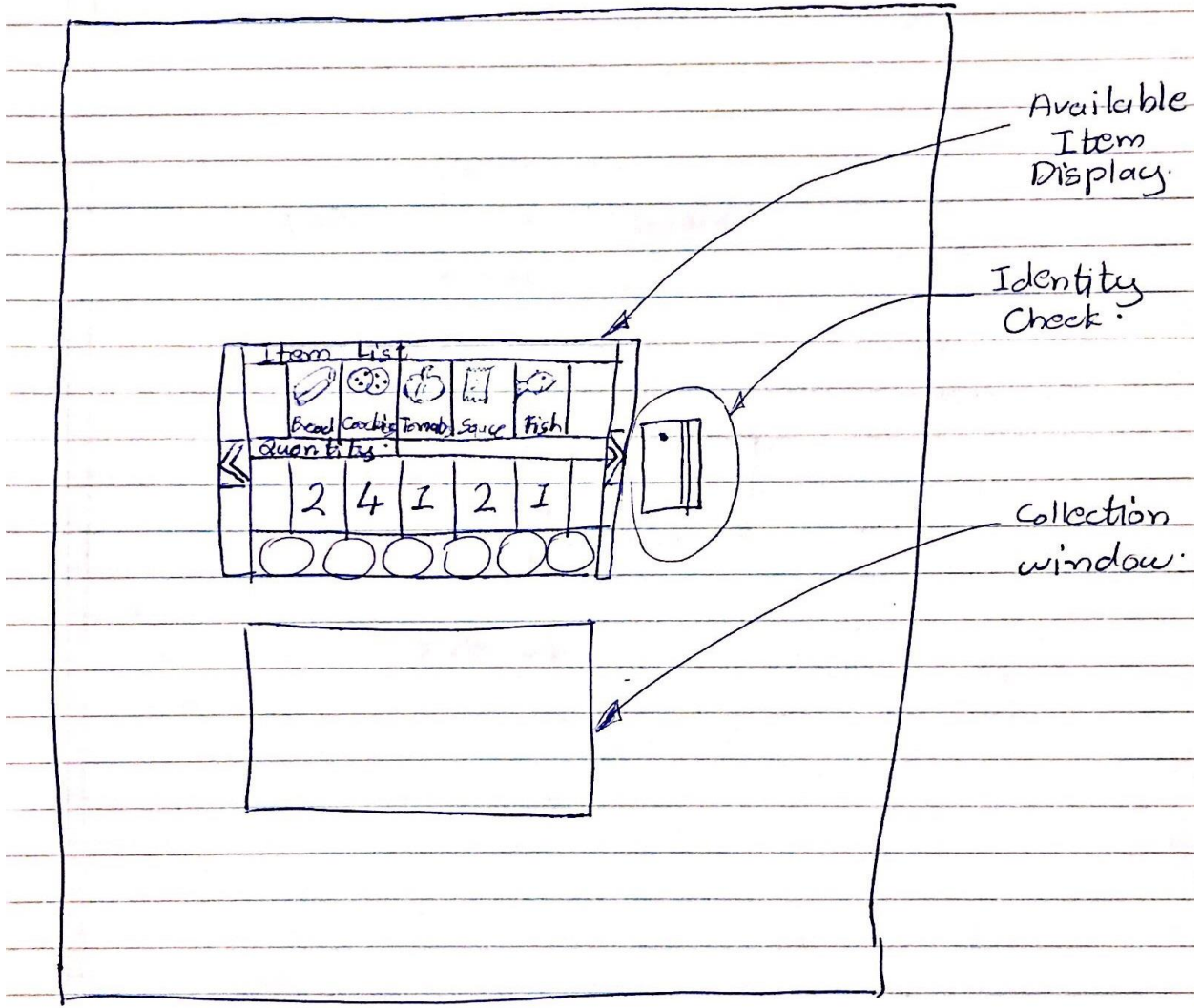
The product we are proposing is a storage cabinet installed in outside wall of restaurant. It will store different items in different compartments. Every compartment will have temperature maintained for item stored. There will be a screen outside to let user display select between available items. Following are some primitive sketches.

outside.   inside.

Side view.

oven.

compartments
for
different items.

Item List

Bread	Cookies	Tomato	Sauce	Fish

Quantity:

2	4	1	2	1

Available
Item
Display

Identity
Check:

Collection
window.

Front View