Canapé

Mess Management System

PROJECT REPORT FOR THE COURSE

Energy and Environment (UEN002)

Submitted in partial fulfilment of the requirements for the award of the degree of

Bachelor of Engineering In Computer Engineering By

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Abstract

Canapé deals with the technological aspect in solving the problem of food wastage in college mess at individual level. The proposed concept can be implemented by universities and colleges in their mess to provoke students to save food and therefore save money. The solution basically involves an Android Application which handles the whole Mess Management in a concise manner.

Content

Introduction

Thousands of Kg of food waste is discarded at TIET Patiala campus every week. It can be estimated that tons of food waste is produced in our dining facility every year, a part of which enters the municipal solid waste stream (MSW), while the rest goes to local landfills. A very small percentage also goes to local poultry farmers to feed their animals. By allowing this food waste to leave our campus through either of these routes, we are also losing an important part of the organic waste stream, and its potential to add fertility to the soil in the campus garden.

Many students are neither conscious of the volume of waste that they accumulate individually in their college mess, nor aware of the cumulative impact that it has in the overall waste stream. Failure to sustainably dispose of food waste significantly increases our environmental footprint.

Through some campus programs we have tried to educate students on the importance of diverting food waste from municipal solid waste stream and farmer landfills, and build support for a future campus-wide program. Unfortunately, there is still a general lack of knowledge and understanding of the system among students and areas of the process that require improvement, so we have spent the semester addressing these issues and finding the possible solutions for them.

Narrowing down the earlier stated issues we have segregated the problems and solutions in specific key numbers. First of it being, the usual habit of students of not attending the mess for daily meals rather going outside after being prompted by friends about the food not being delicious. This not only causes the issue for the mess management to completely go haphazard with the lot of remaining food but also creates an impact on the student's budget.

Download Android Apps

User App: ***http://bit.ly/2FwiXbs***

Admin App: ***http://bit.ly/2K4Rxbp***

Approach

70-80% students of the college stay in the hostels and pay the mess fee on a monthly basis. As per the rules it is mandatory for hostellers to pay the mess fee. And that is for an obvious reason, to maintain a budget for the food preparation for hostellers at the management level.

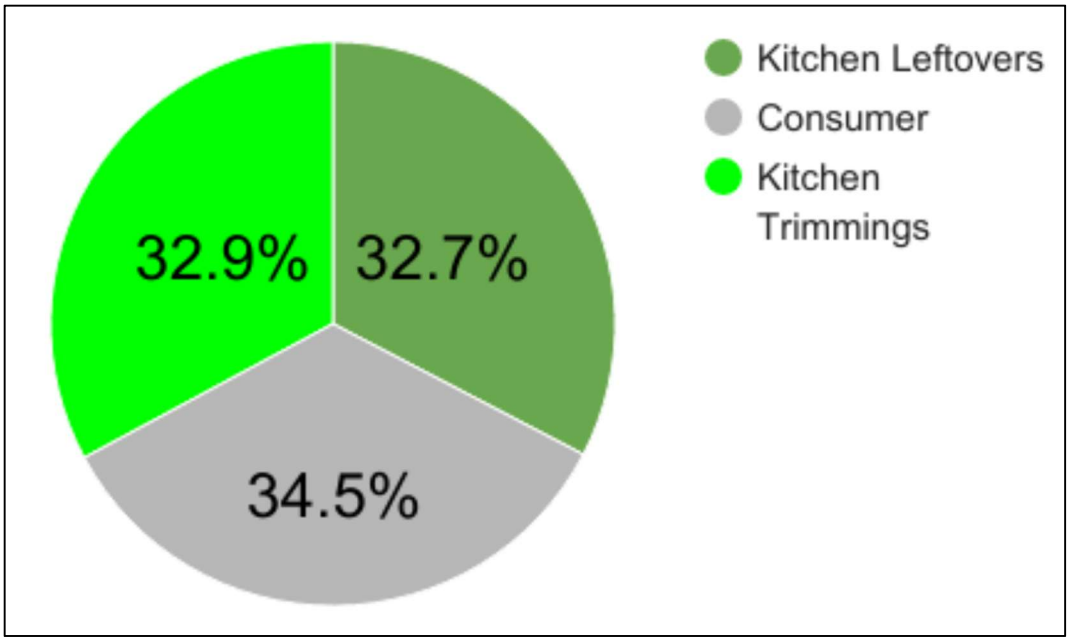
The areas which we want to target are “The students’ budget" and “The management for food preparation quantity” on daily basis. This approach wanders around the reverse psychology of the students skipping the food. If they skip the food, its negative impact is being created on their budget as well and if by any action that impact is catered, students will tend to perform it.

The key element of our solution is to replace the current mess card with RFID card. These RFID cards have to be scanned in a machine to get the plate for serving the meal in the mess. RFID cards serve with a great possibility of maintaining individual student record in a database which can be accessed by the mess management people.

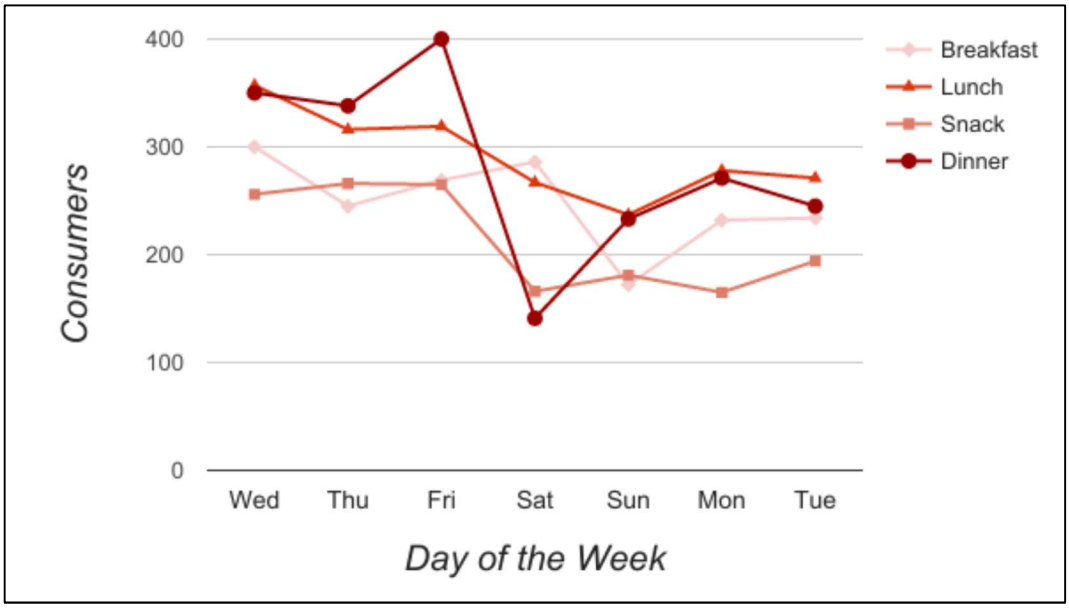
Not only this, but we have framed the usage of this RFID system along with one more problem which we have in hand and that is the impact on student’s budget by the habit of eating outside. So, to tackle this issue we need to have a platform where students can inform the mess management about their absence in the upcoming meal of the day. Upon marking himself/herself absent in the system, his/her mess card would be deactivated for that meal and a refund for that particular meal would be cumulated into his/her account which can be collected at the end of the month.

As an overall impact of this solution we would be saving the quantity of food being prepared and making the students to participate in this system through prompting them to save on their pocket money.

Wastage Statistics

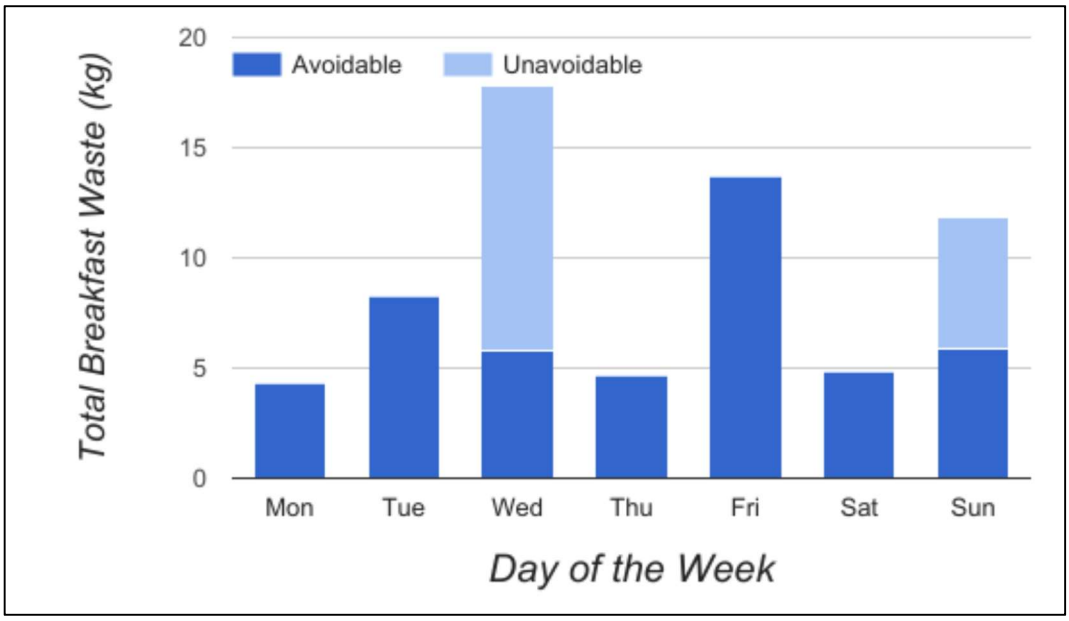


Contribution of different waste types to total waste

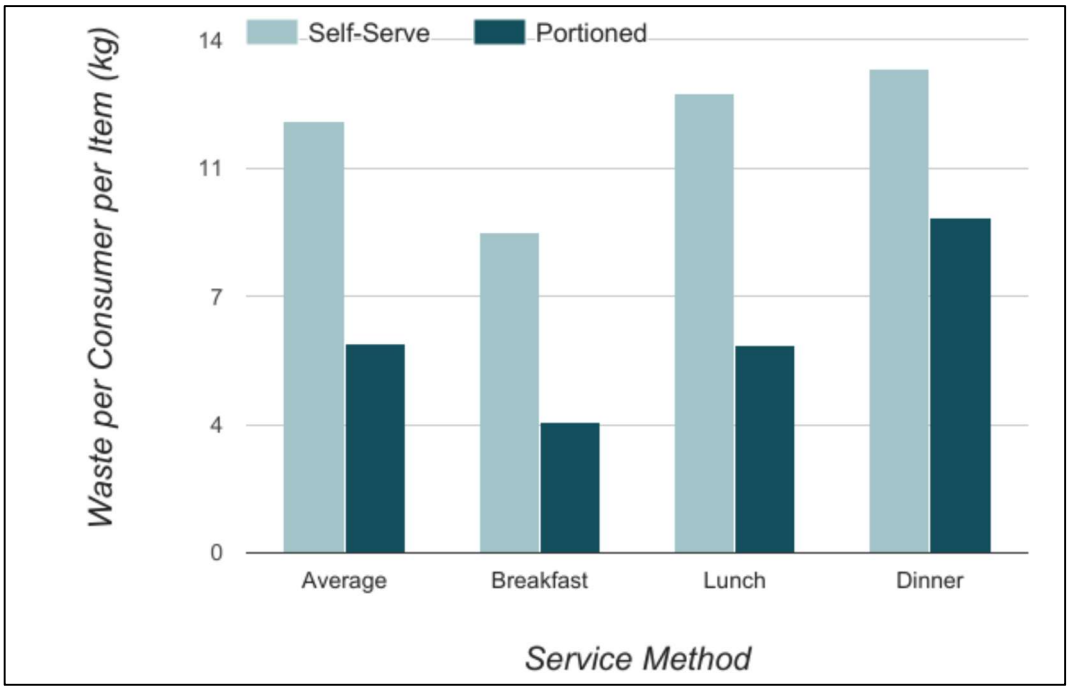


Attendance over one week in Hostel C mess

Wastage Statistics



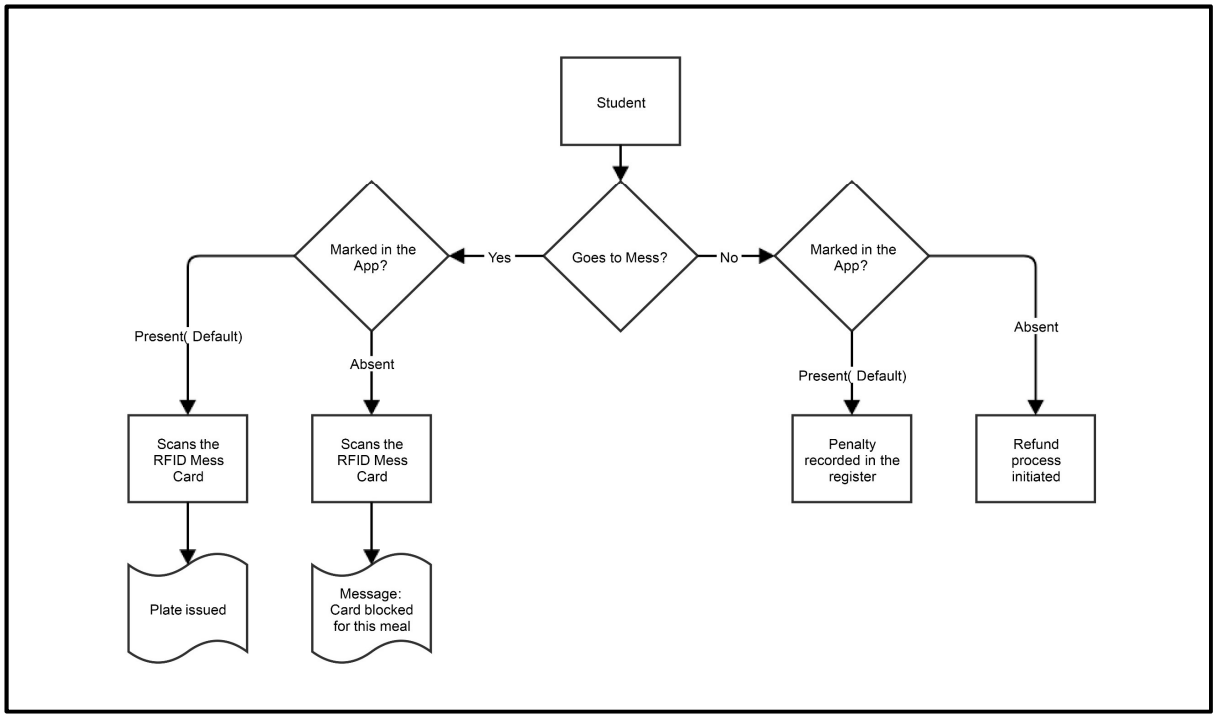
Avoidable waste in Hostel C mess



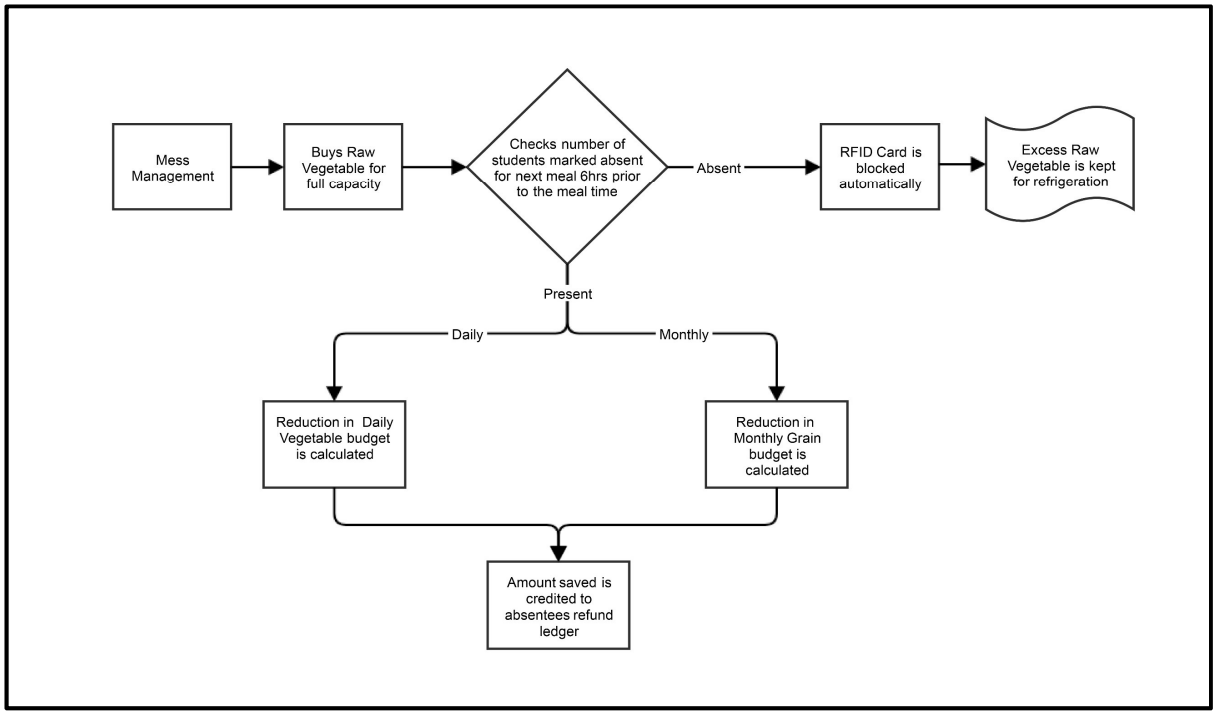
Avoidable consumer waste in Hostel C mess for self-serve and portioned items

A SWOT Analysis

Solution Overview

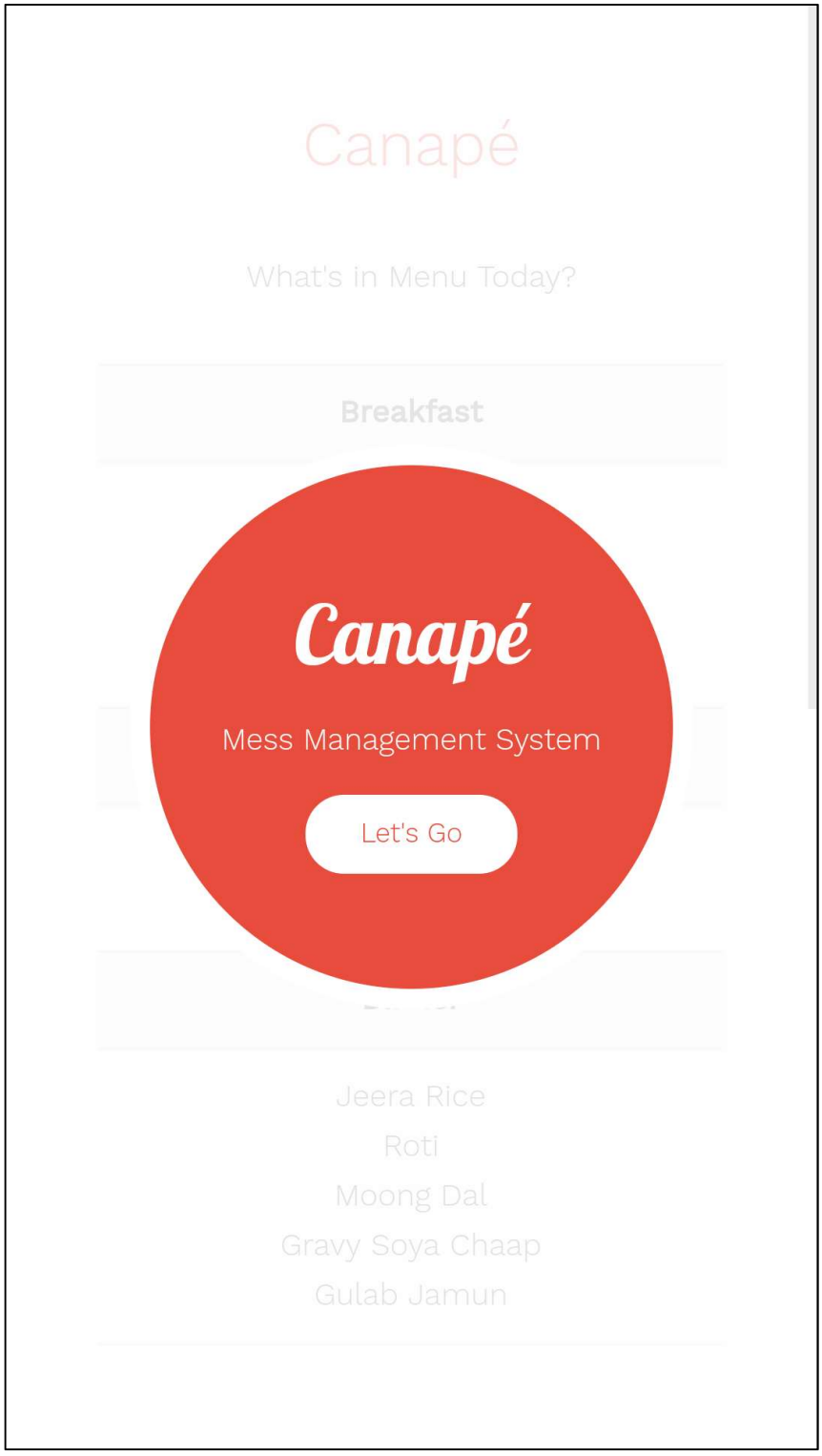


User Flow for Students



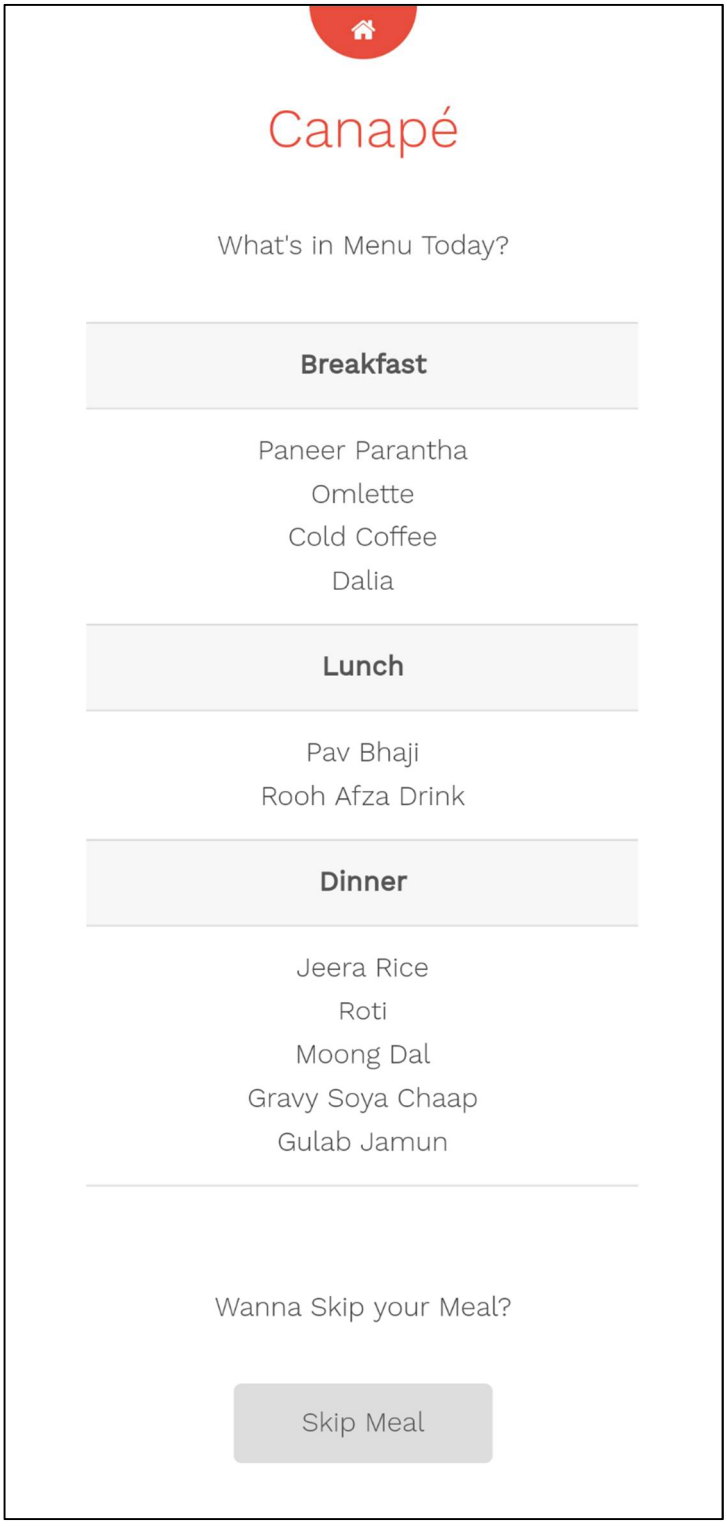
User Flow for Mess Management

User Side of Android App



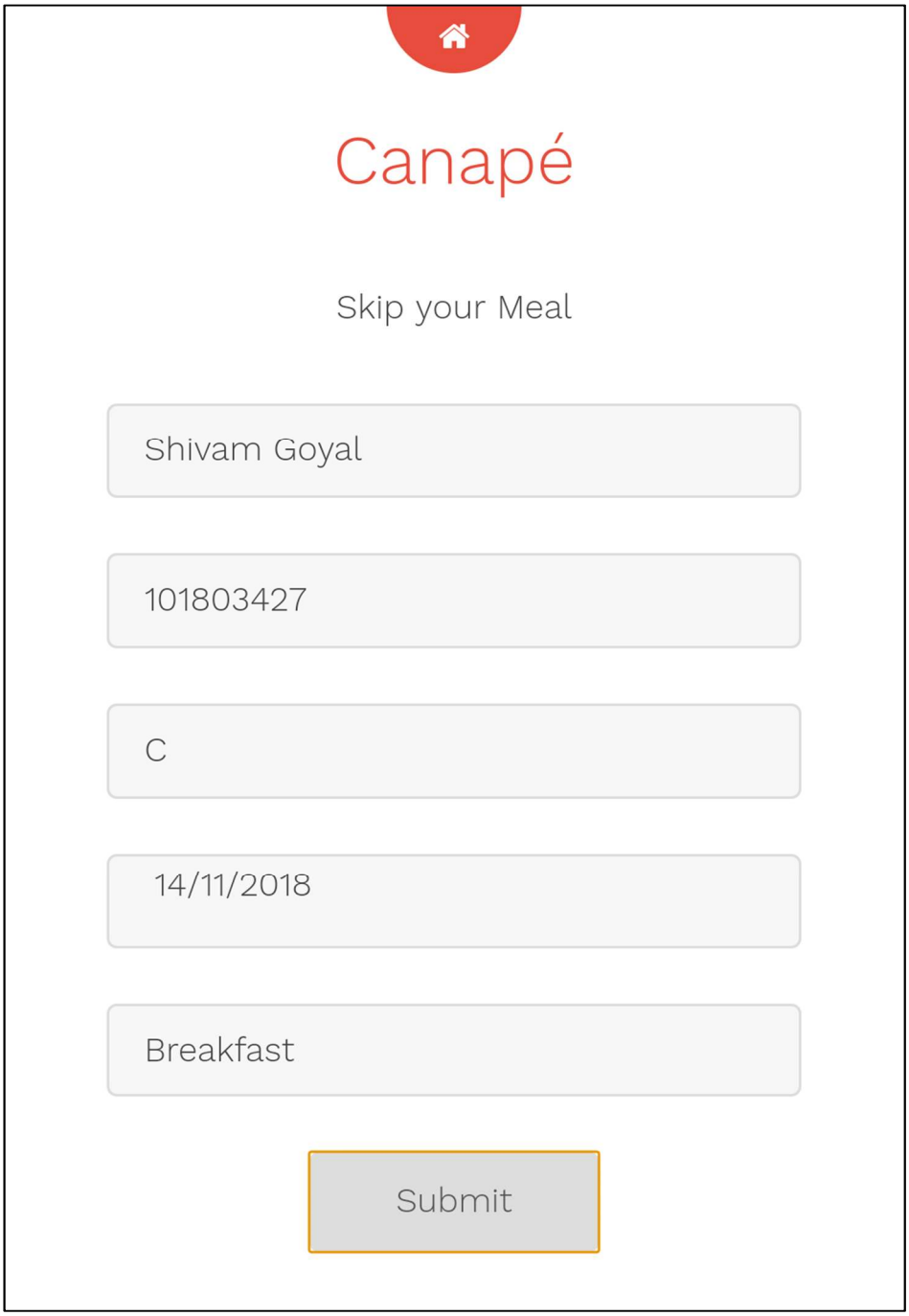
Splash Screen

User Side of Android App



Landing Activity

User Side of Android App

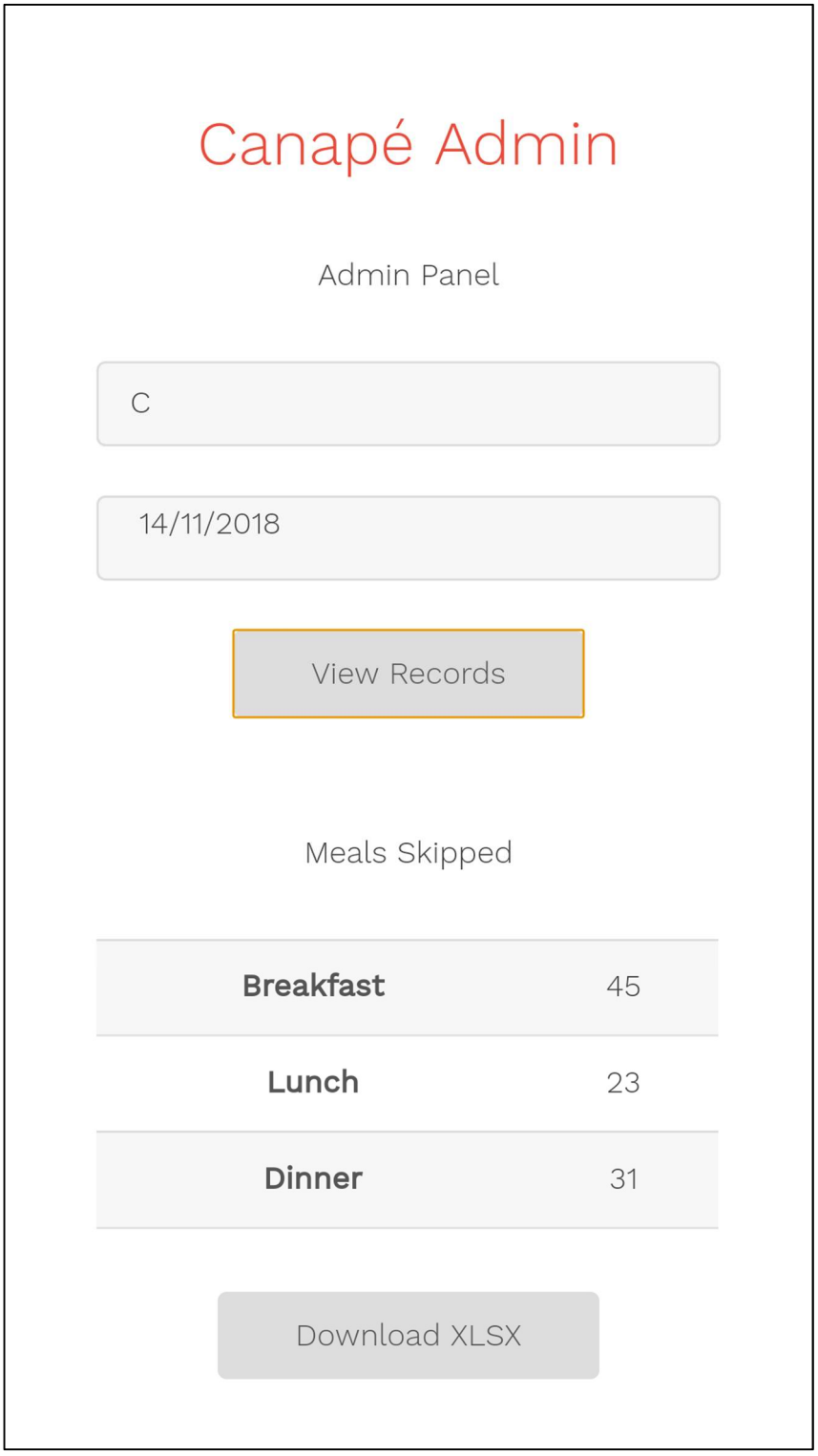


Details Fill Up

User Side of Android App

Thanks

Admin Side of Android App



Admin Panel

User Experience Goals & Functions

From the student's point of view the function has to be kept very simple and effective. The management end should also be very easy to access and follow, considering them to be layman and with minimal technology understanding.

For designing the User Experience, we divided the whole process into 2 phases.

Phase 1: Students marking themselves absent for the meals they are not going to attend. For this the requirement is a platform where students can log in and perform such action. It can be either the college online management system or any exclusive student app as well. To protect the mismanagement by students marking themselves absent everyday willingly to avoid mess food and get full refund, a criteria can be created, to fix the maximum number of absents allowed to be either ten per month or maybe fifty absents per semester.

Phase 2: Mess Management needs to have a person to see the number of absentees for the next meal and accordingly adjust the quantity of the food. If the quantity of the food is lessen, the overall production cost of the meal would decrease. This decrease in cost will act as the funds to be refunded to the students.

Analysis

This design can create an huge impact on the students, but with high dependency on the usage pattern. Also, there is a scope of observational study for the first month of this experiment. As an approach if a pilot study could be done before implementing this solution as a whole, it would give results which can help frame a better user experience.

Through our survey we turned to the dynamics of habit. Since the irrationality in the daily practise of eating food is one of the root causes of food wastage, it must be solved psychologically.

Reckwitz (2002: 249) defines a practice as "a routinised type of behaviour which consists of several elements, interconnected to one another: forms of bodily activities, "things" and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge".

Most of the students we spoke to, laughed at their own behaviour a number of times during our conversations, saying that they could not really explain why they did many of the things they did. They were simply referred to as bad habits that were hard to break. By repeatedly wasting food, the experience of this practice is embedded into our habitus. This further keeps reshaping us on how we act and think about food waste, and therefore also our experience of wasting food from then on.

We also observed arguments in the discussion which mostly varied somewhere around economic and financial parameters. It was also seen that people who were very conscious about expenditure on food were the ones who wasted the food most. All these observations created a psychology web to be studied in order to find out the appropriate solution, which later gave a prompt to go ahead for a solution based on two important parameters i.e. finance and habits.

According to our so far study based on observational methods, this solution for food waste management is expected to be very viable and the most appropriate approach.

Conclusion

This solution is not only using information alone to create behavioural change, but is also challenging the habits of the users. In our over research we found that wasting food is a highly subconscious practice, and so are the complex processes preceding it. Lack of knowledge also largely reduced people's ability to independently evaluate the importance of food wastage. So we have created other solutions as well in this matter. Those other solutions are meant to acknowledge the basic aspects of food wastage through visual mediums along with doing the promotional advert for this particular solution.

For consumers that are college students, there is also great potential for saving both time and money. Thus, as a summary we think that this invisible practice should be granted more time in the spotlight, both on a social, policy and research level.

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