HCI Course Project Presentation

Team incrEDIBLES

- Sumanasa Somu - 2017A7PS0114H (Computer Science)
- Satwick Manepalli - 2017A7PS0156H (Computer Science)
- Abhishek Roy - 2017A3PS0358H (EEE)
- Rahul J S N S - 2017A7PS0262H (Computer Science)

Mobile Application for Food delivery

BITS Eats!

A food delivery android application for the eateries on the campus which has an interface for customers ordering food, and for students who are willing to deliver the food and earn some money

Proposed Project Plan

- Requirement Definitions
  - Food Ordering
    - New Order
    - Order History
    - Order Status
    - Restaurant profiles
  - Food Delivery
    - Orders
    - Location
  - Outlet end
    - Menu updations
    - List of orders

- Data Collection
  - Outlet details
  - Menu
  - Images
- Mobile App Prototyping
  - Working model
- Reconnaissance Phase
  - Ease
  - Comfort
  - Intuitiveness

- UI / UX Design
  - Interaction Design
  - Interface Design
- Mobile Application Testing
- Identifying and fixing problems

User Study

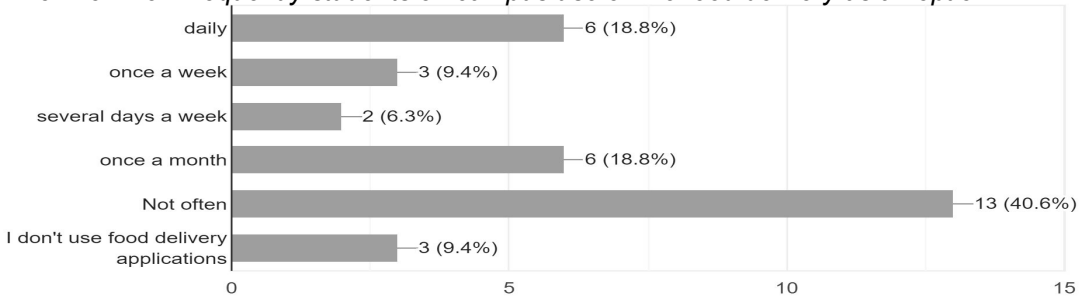
- Self administered questionnaire (Google Forms)

- Understanding the user's preferences.
- Understanding the user's purchasing habits,behavior and their tendencies.
- Identifying and deal with the challenges/difficulties the user faces.

Usage Frequency

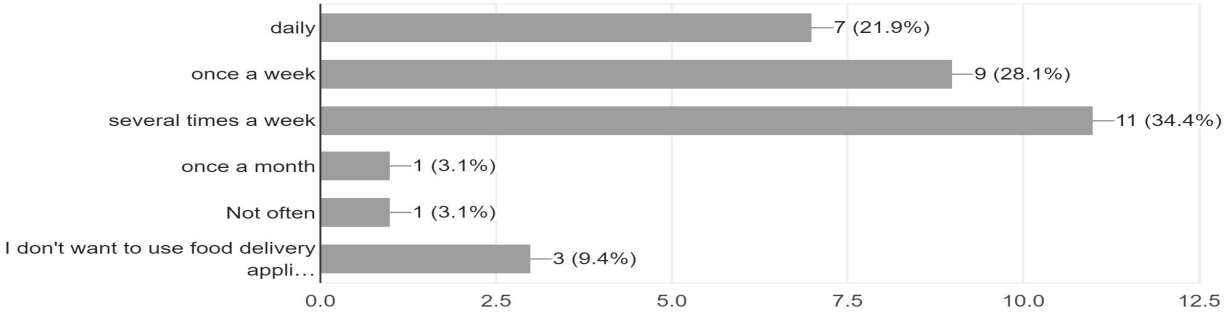
How often do you use food delivery applications to order food from food eateries on campus?

➔ *To know how frequently students on campus use online food delivery as an option*



How many times do you think you'd order if you had a food delivery application for shops working on campus?

➔ *To understand the impact of the application we develop on the students on campus*



Interests

What unique thing would you like to see in an "on-campus" food delivery application to make it useful in the context of our campus?

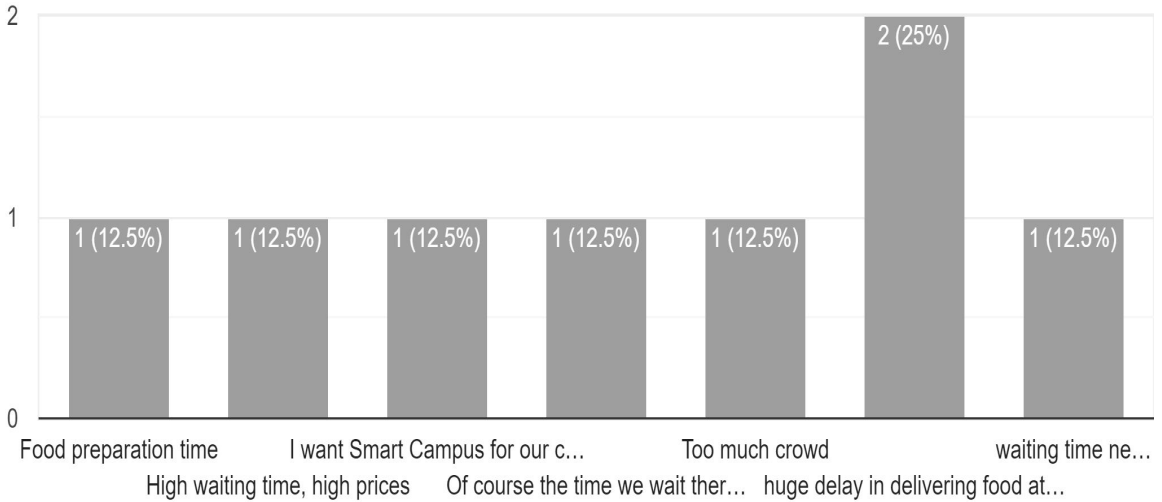
To know specific features that interests the students.

- Availability/Non-availability of the food
- room delivery
- Ability to add food trucks that come in during fests

Problems Faced

Please tell us one major problem you faced while ordering at the food eateries on campus.

➔ To understand the major problems faced and coming up with probable solutions and to overcome them in the application whenever possible

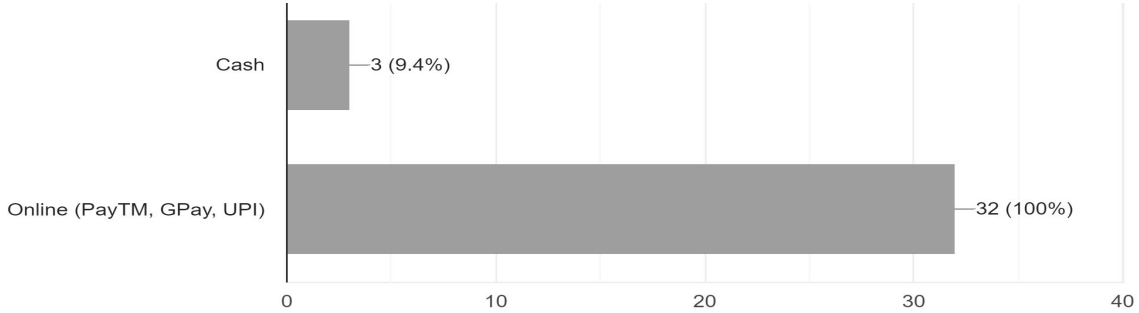


- Waiting time
- Service

Payment Mode Preference

Which payment mode do you prefer while ordering online?

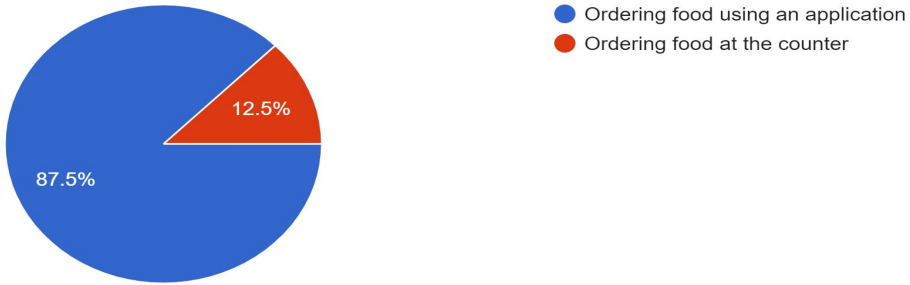
➔ *To understand what percentage of people prefer cash or online payment methods and To decide upon the payment mode.*



Demand

Which one do you prefer in case of self Pick Up?

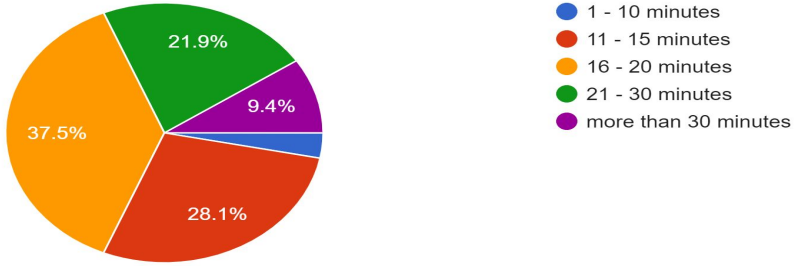
➔ *To know the demand for a mobile application for the food eateries on campus.*



Waiting time and Food Preference

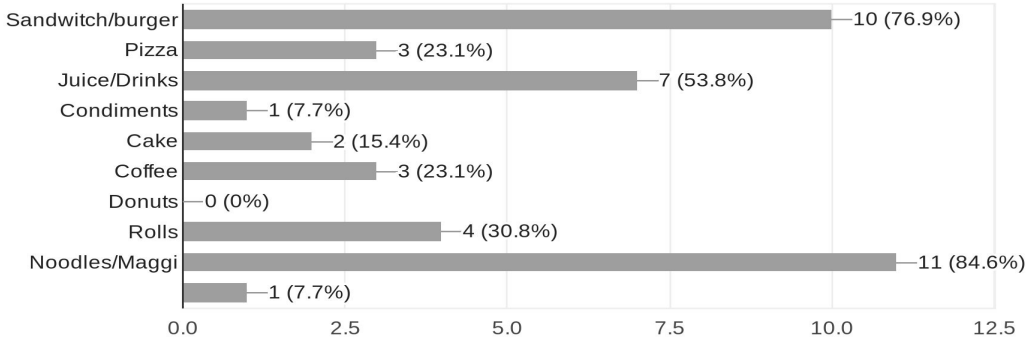
How long do you generally wait at food eateries on campus

To know the average waiting time at the eateries on campus.



What type of food do you order most often?

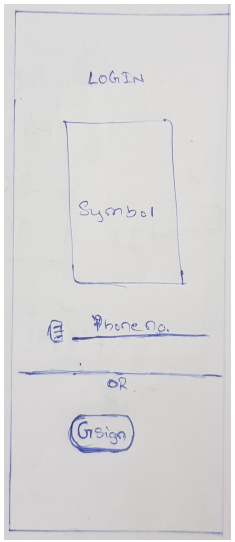
To know the top 4 Items the students prefer so that we can include them in the Home page of the application for usage study later.

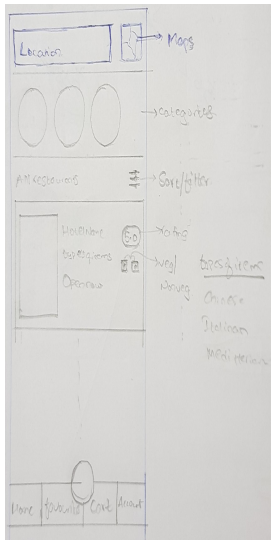


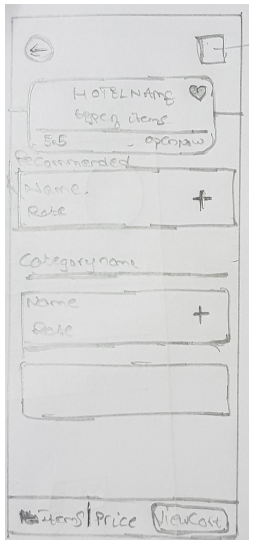
STAGE - 1

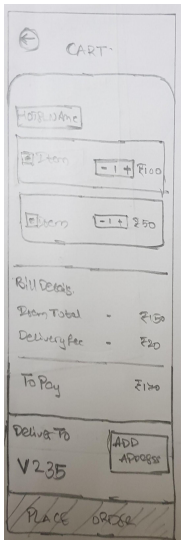
Design Sketches

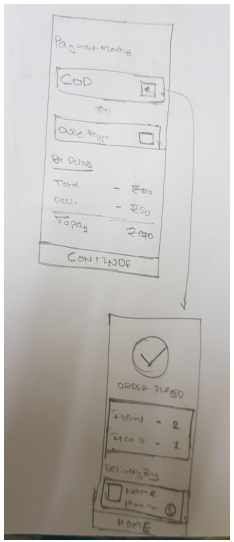
Design Sketches

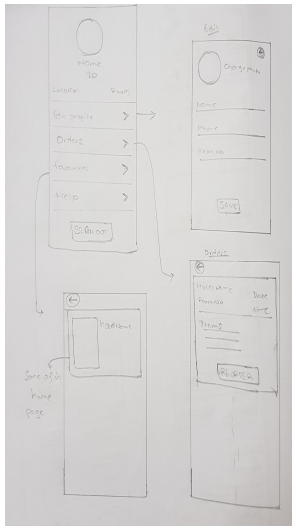


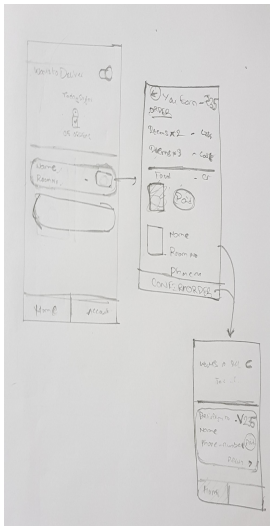












STAGE - 2

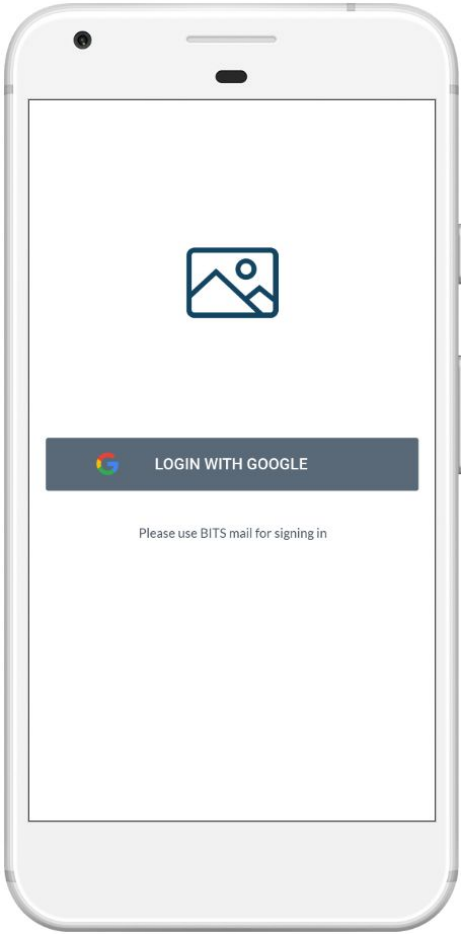
Primary Prototype - Screens

- *Food ordering*

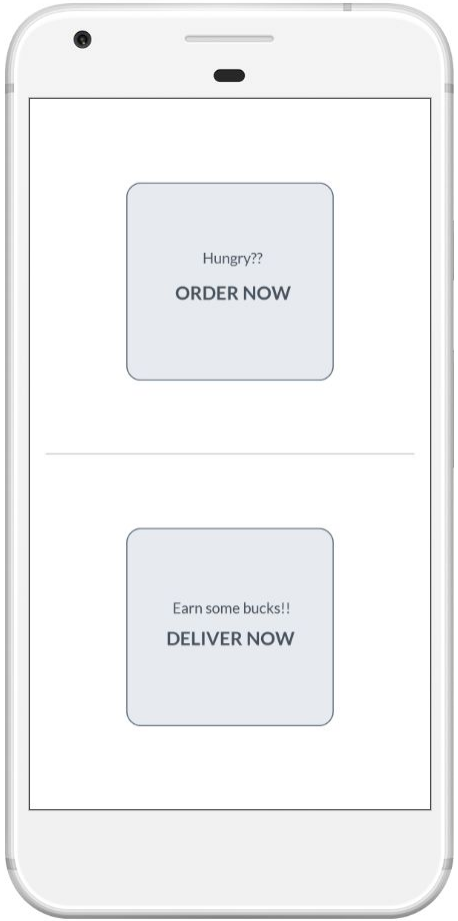
and

- *Food delivery*

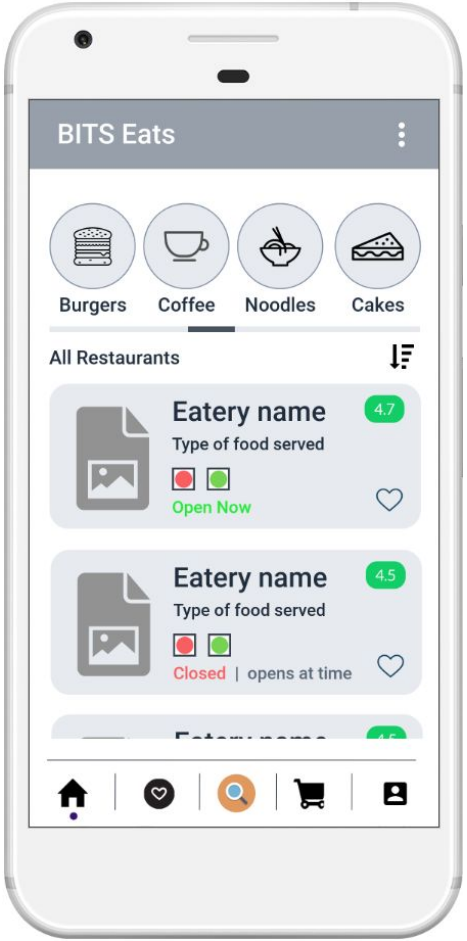
Login Screen



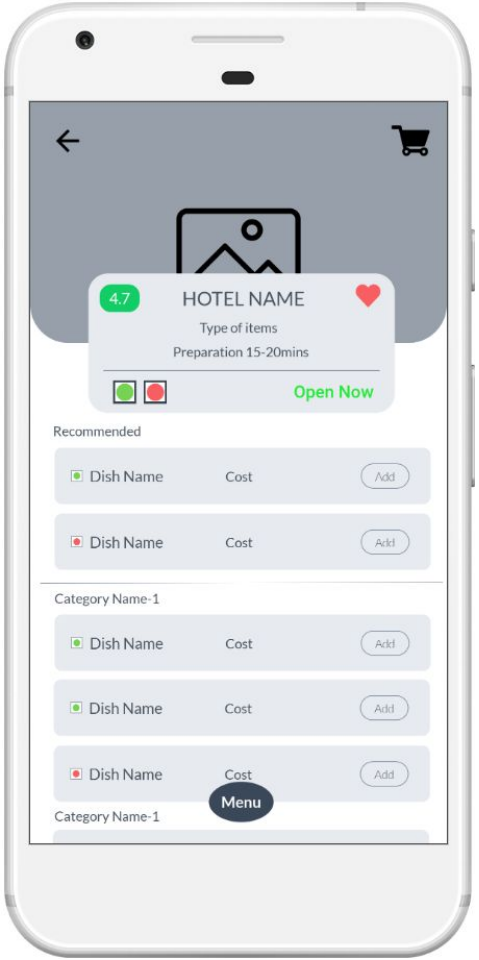
Mode



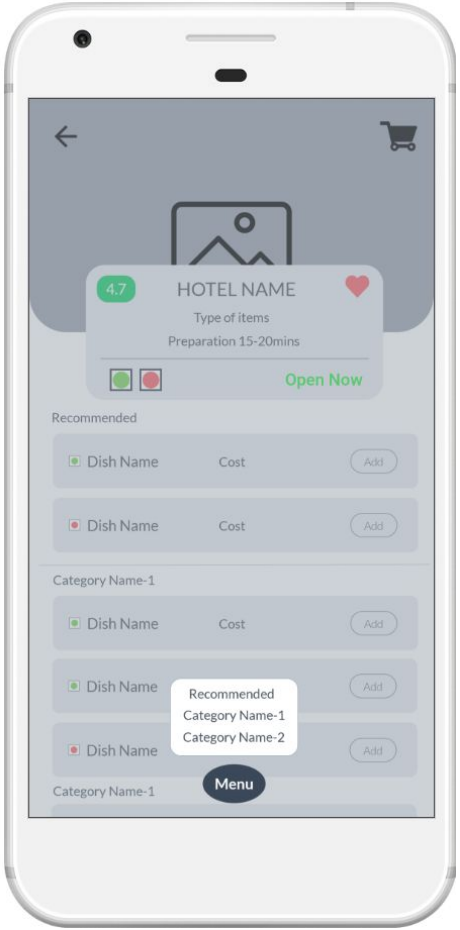
Home Page



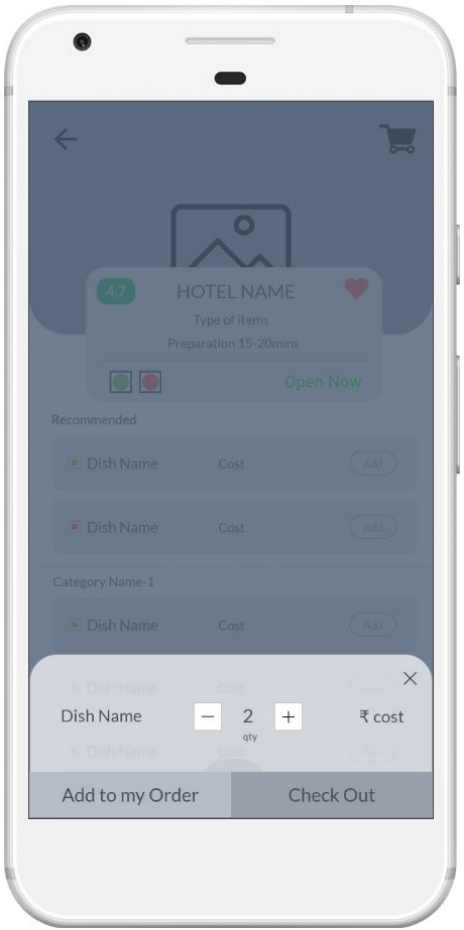
Menu Page



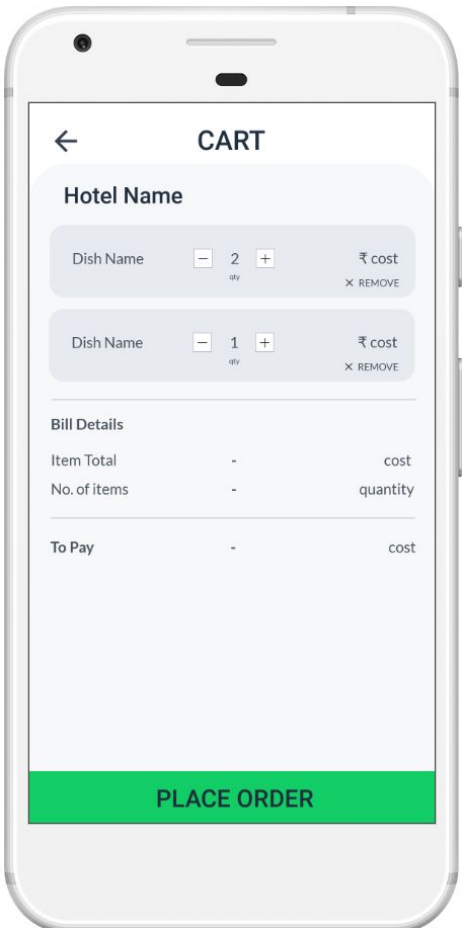
Floating Button



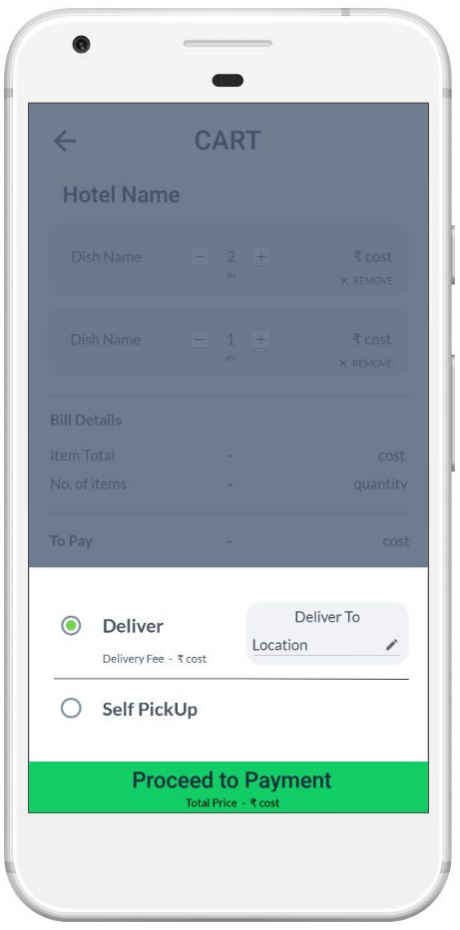
Quantity



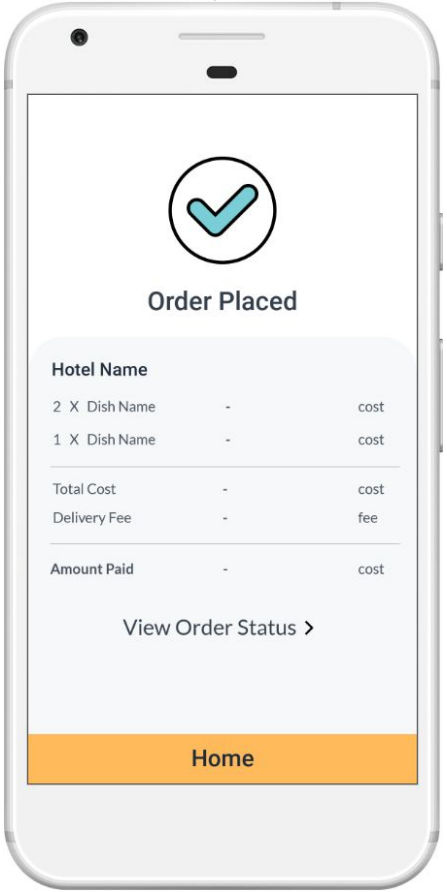
Cart



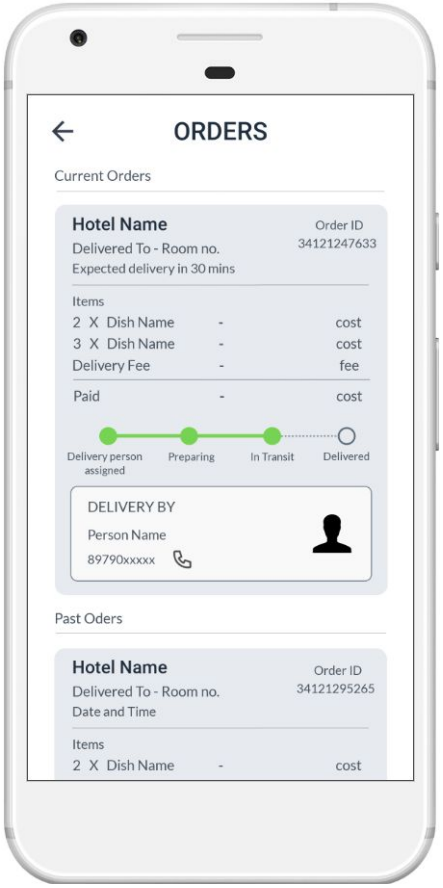
Deliver or self pick up



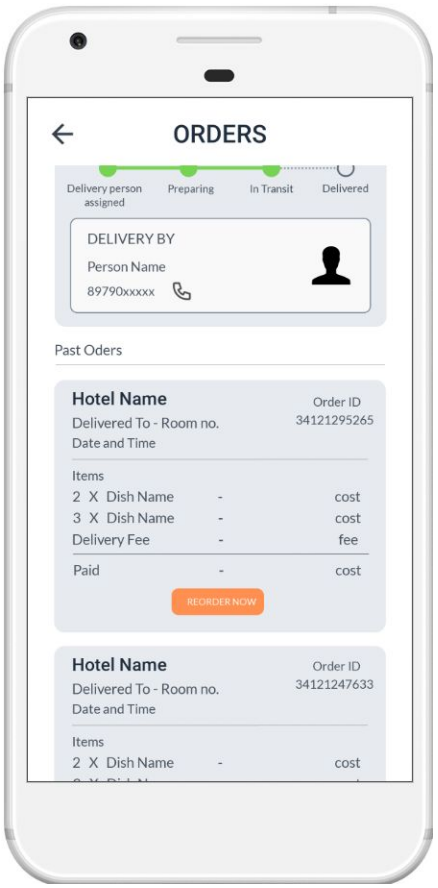
Post payment



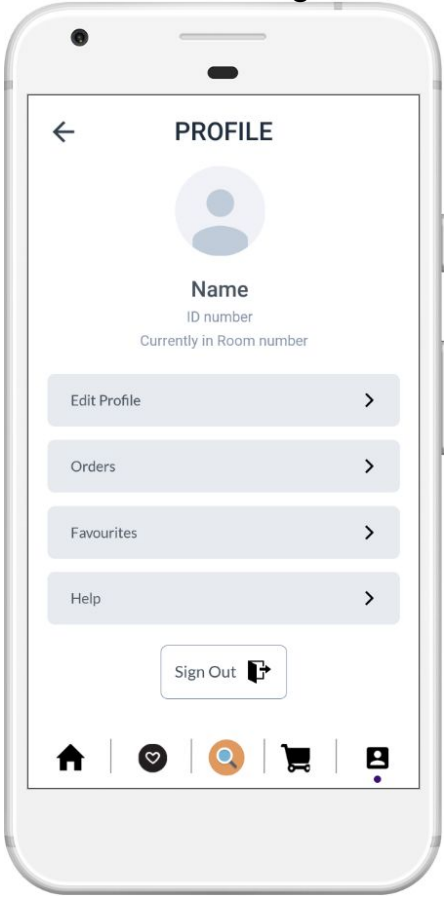
Orders Page



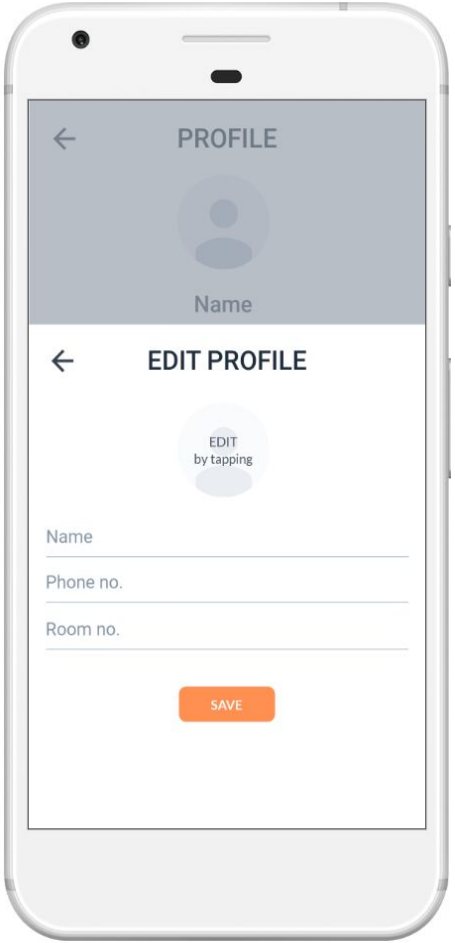
Orders Page



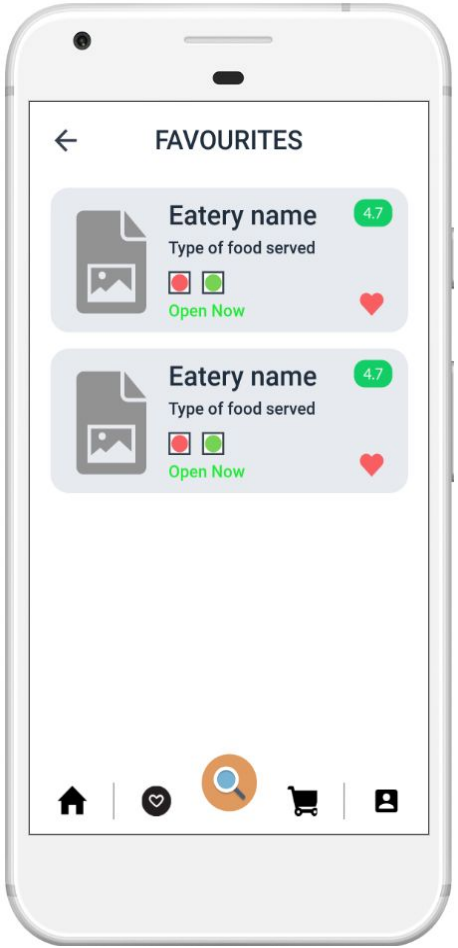
Profile Page



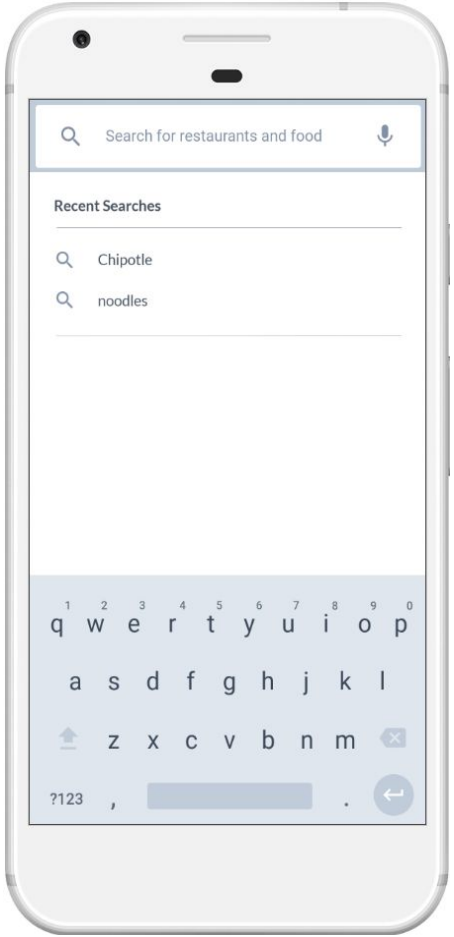
Edit Profile



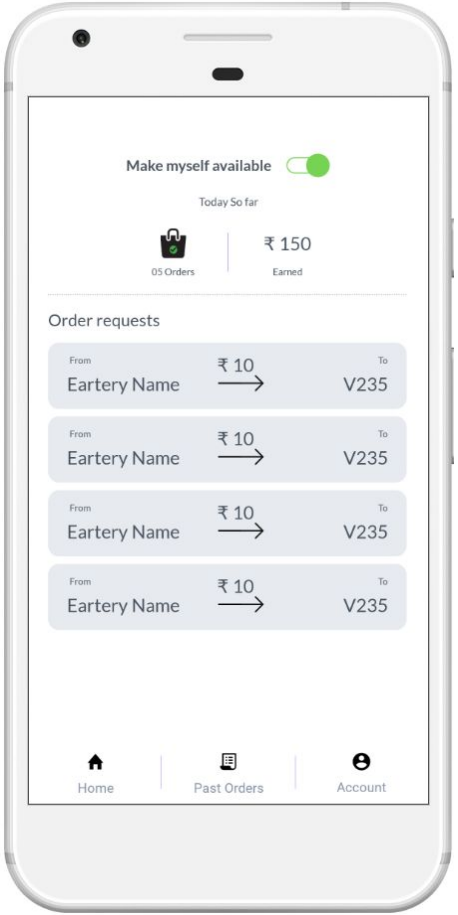
Favourites



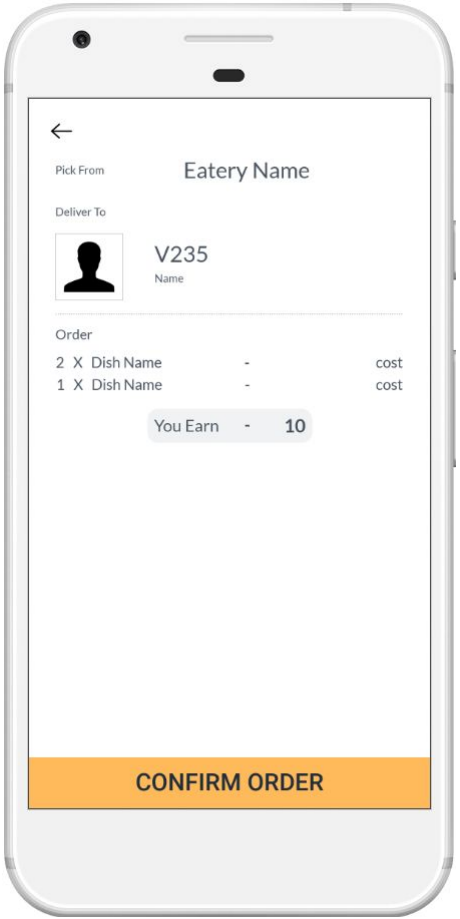
Search



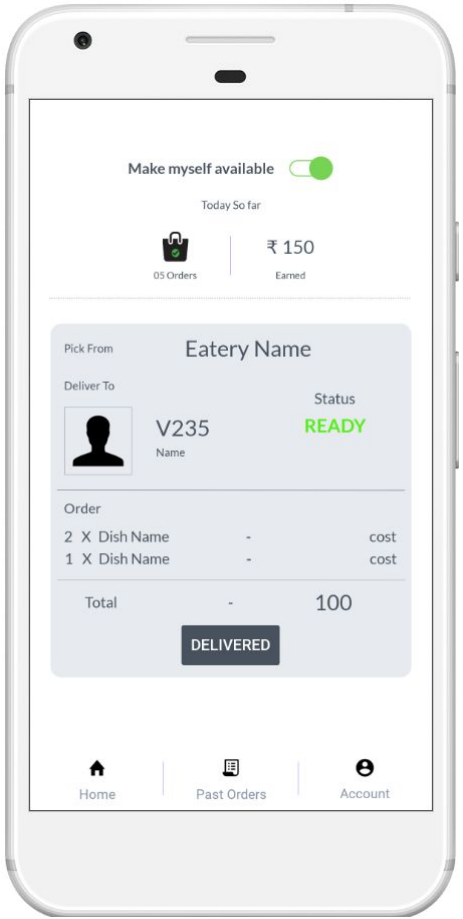
Home



Order request details

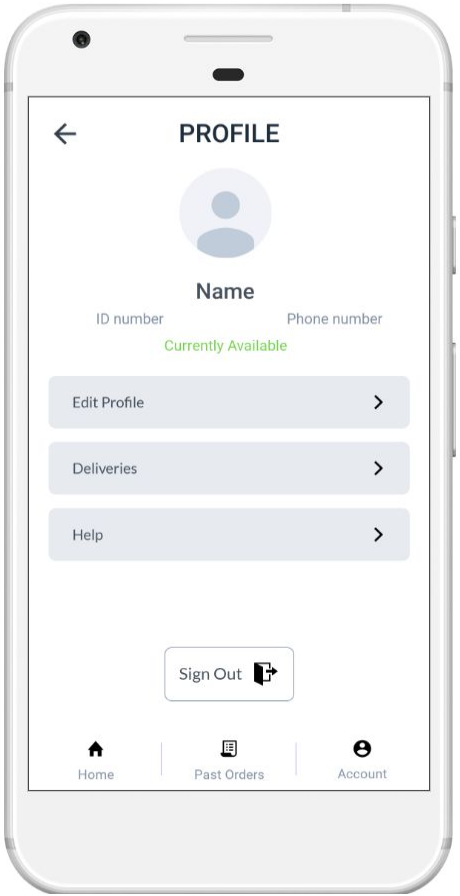


Status and details



Deliveries

Profile page



Qualitative Usability Testing

- In-depth Interview
- Results are descriptive
- Convenience Sampling

- In terms of **intuitiveness**, how do you think the app fares? Any way to improve?
    To get user feedback on improving how naturally the app leads users from one process of ordering to the next.

- Would you **use this app** to order food once it comes out?
    This will gauge if the app has the ability to generate user loyalty. How many percentage of people feel like they would come back after using for the first time and then again?

- Do you think it would be more **convenient to order food from the app rather than going to the shop itself**? How do you think your life on campus would change if this comes to fruition?
    This will validate the necessity of the app on campus, and will sort of ensure that the app will be used a lot.

- Which feature did you feel most **uncomfortable** to use?
    Simple question to help us improve our most negative features to be able to ensure a bug free experience.

- Did any part of our app **stand out** in your session?

  This helped us know if we added any features that were not necessarily positive, but might be seen as flagship features and peculiarities of the app. We can use this question to control this feature as we see fit.

- Which process of ordering the food- surfing restaurants, surfing menus, ordering, adding to cart, payment, etc would **you like to change** and to what?

  Simple user feedback question

- If you committed any **errors** while ordering, were you be able to **correct** them? After which point does this become impossible? Should we do something about it?

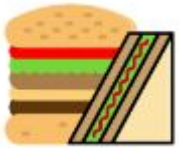
  We wanted to ensure we did enough to handle slips and mistakes. How well we did, depends on user feedback.

Response analysis will be discussed along with the changes in prototype

LOGO - Choice

> 85%

~12%



~3%

Sampling - 34

1. 29 members
2. 4 members
3. 1 member

Quantitative Usability Testing

- Measures ~ Stable
- Convenience Sampling

TASK 1 - To order Veg Fried Maggi from Yummpy's (**Minimum Clicks - 10**)

- Login using BITS Mail.
- Choose food-outlet -> Yummpy's.
- Add Vegetable Fried Maggi to cart.
- Remove any Item already present in the cart.
- Select payment mode - online (skip payment)
- Check Order Status.

TASK 2 - To Confirm delivery from Yummpy's to V235 (Veg Fried Maggi)
(**Minimum Clicks - 6**)

- Check how much he/she earns
- Food preparation Status

- Number of time a **back button** was pressed(Number of times errors committed)
- Number of times the user asked for **help** due to being lost
- Number of times the user asked what an **icon means**
- Ratio of **minimum clicks to the number of user clicks**:
  (Metric = minimum clicks / number of user clicks)
- How would you **rate our app** on a scale of 1 to 5 stars? Please rate solely in terms of design

Measure	User 1	User 2	User 3	User 4	User 5	User 6	User 7	User 8	User 9	User 10
Back Button + Switch button (Total)	2	1	0	2	3	0	4	2	0	0
Help	0	0	0	0	0	0	0	0	0	0
Icon Meaning	0	1	0	1	0	1	0	0	1	0
Clicks by users	12,8	11,8	11,6	10,8	14,6	10,7	12,10	12,8	10,6	10,6
1-(Min no.of.clicks / no.of.clicks) Error Score	0.20	0.157	0.058	0.11	0.20	0.058	0.27	0.20	0	0
Rating	4.0	3.8	4.0	4.3	4.5	4.2	4.2	4.0	4.5	4.2

Response analysis will be discussed along with the changes in prototype

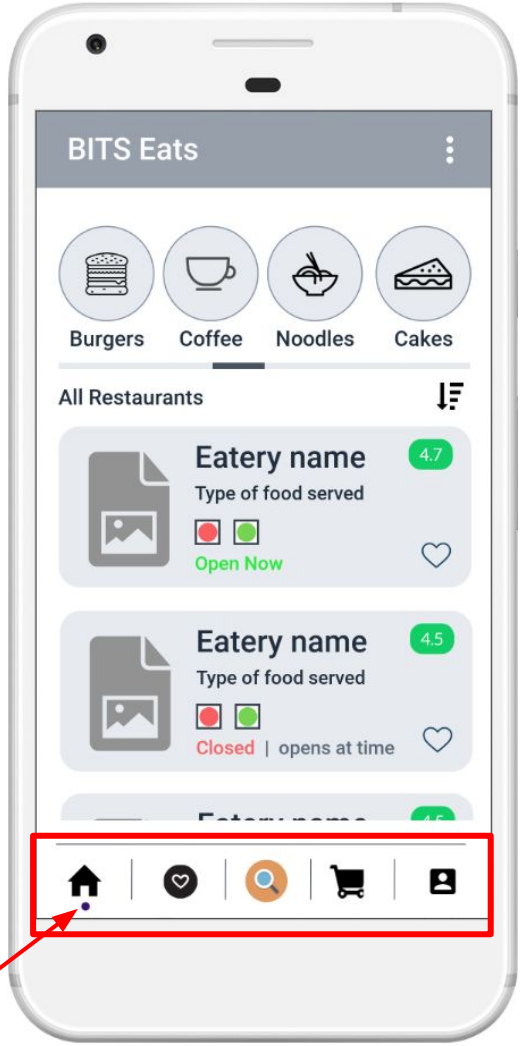
STAGE - 3

Final Prototype

Corrections and Development based on the usability testing

LIST of Corrections Made:

- Current Screen Indicator at bottom navigation - ‘Dot’ to ‘color variation of Icon’
- Order Status - ‘Single Line indication’ to ‘map or path indicator’
- Consistency across the application - ‘+’ to ‘ADD’
- Ordering Multiple Items Difficulty - Added ‘Add to my Order’ button
- Handling Slips
    - ‘Remove’ button in cart
    - ‘Switch’ button to switch between modes
- ‘Switch button change from ‘3 Dots’ to ‘circular switch arrows’ symbol
- Easy access to cart from Menu Page - added ‘cart’ icon at the top
- Re-order option from previous Orders
- MAP feature



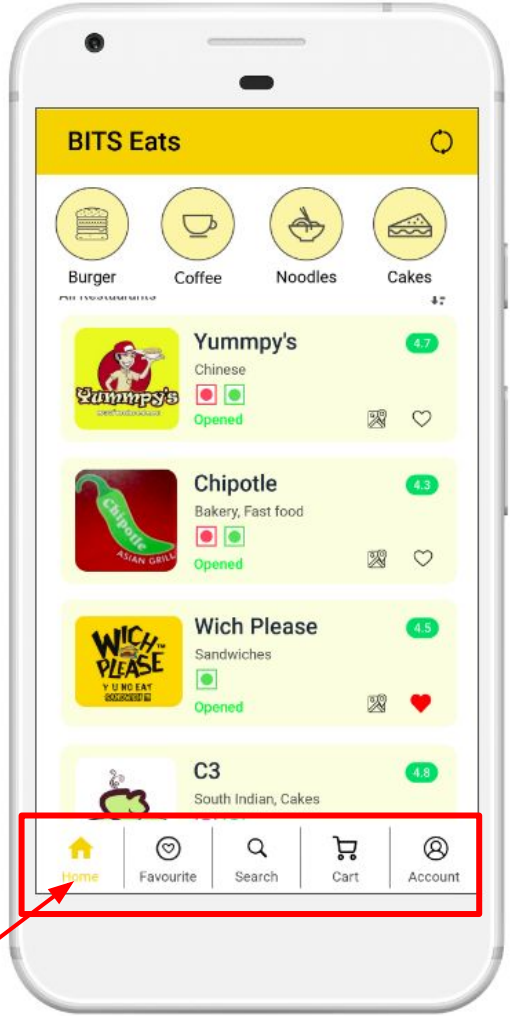
Indication -> Color change AND Page titles

Before:

The ‘dot’ marked under the symbols at the bottom navigation indicates the current page.

Problem:

Users found it difficult to locate the dot to know the current page. Hence differentiating it more with a color change helps them know the current page with ease.



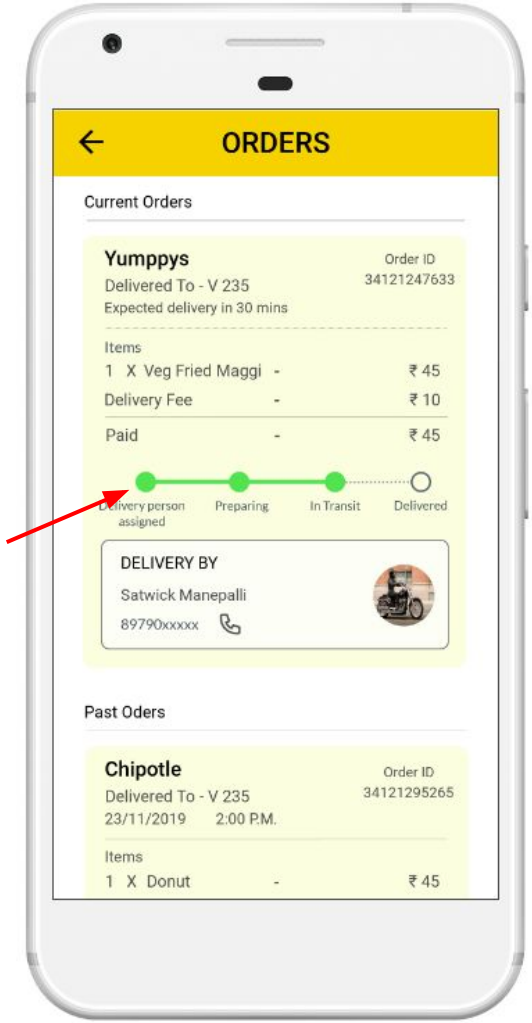
Status description -> Progress Bar

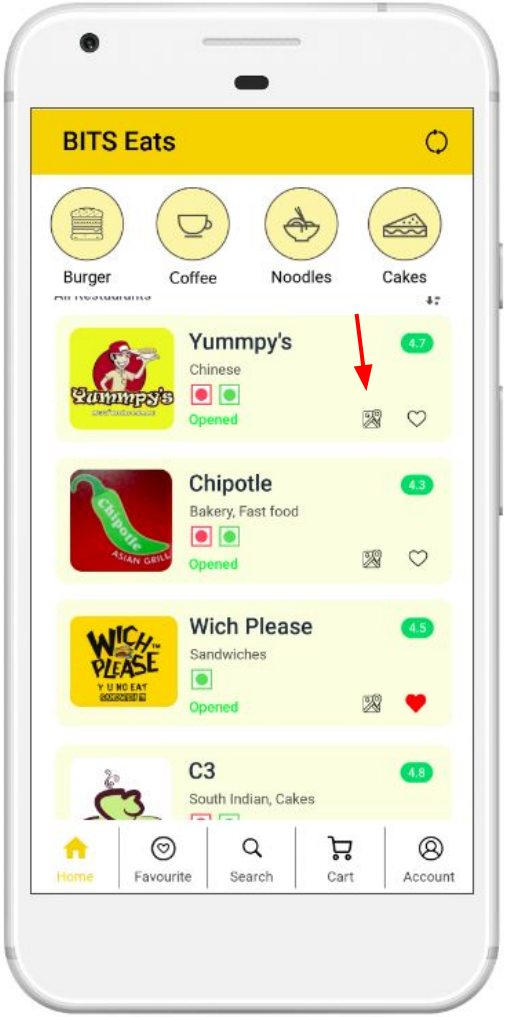
Before:

Status: *Your food is being prepared*

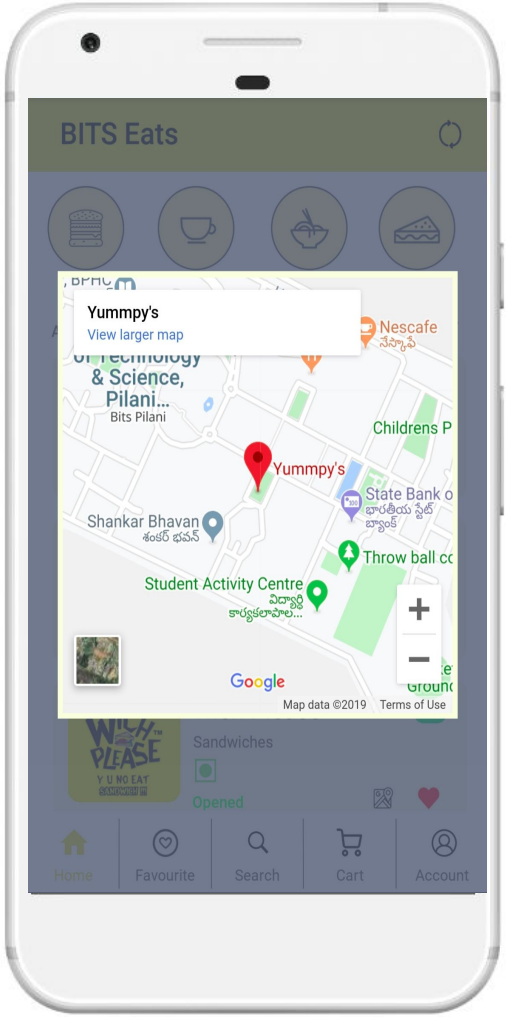
Problem:

The users could not understand what are the processes yet to be finished for the item to be delivered. Hence, showing the progress bar or a thorough map helps them understand the order status.




BITS Eats
Burger
Coffee
Noodles
Cakes
Yummpy's
Chinese
4.7
Opened
Chipotle
Bakery, Fast food
4.3
Opened
Wich Please
Sandwiches
4.5
Opened
C3
South Indian, Cakes
4.8
Home
Favourite
Search
Cart
Account

MAP Feature


BITS Eats
Yummpy's
View larger map
Nescafe
& Science,
Pilani...
Bits Pilani
Childrens P
Yummpy's
State Bank o
Shankar Bhavan
Throw ball cc
Student Activity Centre
Google
Map data ©2019
Terms of Use
Sandwiches
Opened
Home
Favourite
Search
Cart
Account

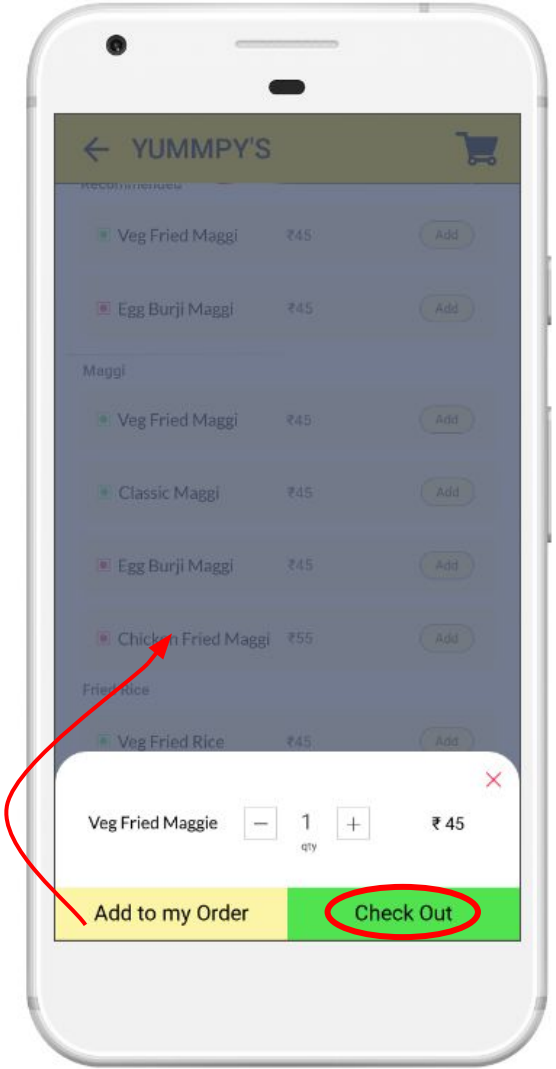
'+' -> 'Add'

Before:

'+' symbol was used to add an item to cart.

Problem:

When asked if they remember any misleading or inconsistent use of symbols, some of the users pointed out that '+' symbol was used both for adding an item to a cart as well as to increase the quantity. In order to maintain ***consistency***, since the '+' symbol would also indicate increasing quantity, it is better is to use 'Add' to provide the functionality to add an item to the cart.



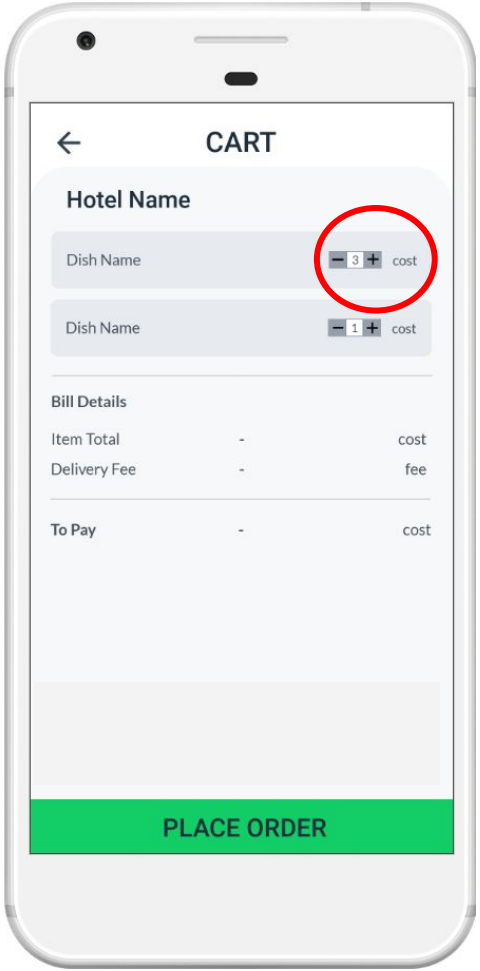
Place Order -> Check-Out AND Add to my order

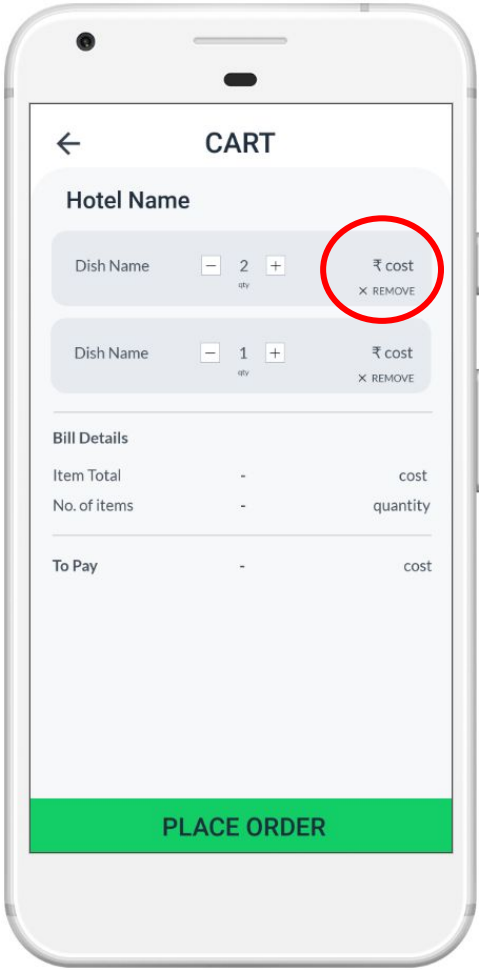
Before:

Initially only one button 'Place Order' was used.

Problem:

Users suggested that while handling orders with more than one item, being able to simply add to cart and getting back to menu page would be better instead of navigating back from cart each time. Hence we introduced a button 'Add to my order'. On clicking Add to my Order, the user can **continue adding dishes** to this order. On clicking Check-Out the Cart will be displayed leading him to the payment section. Also, by giving the option to choose from these two, we can **reduce the no.of steps.**





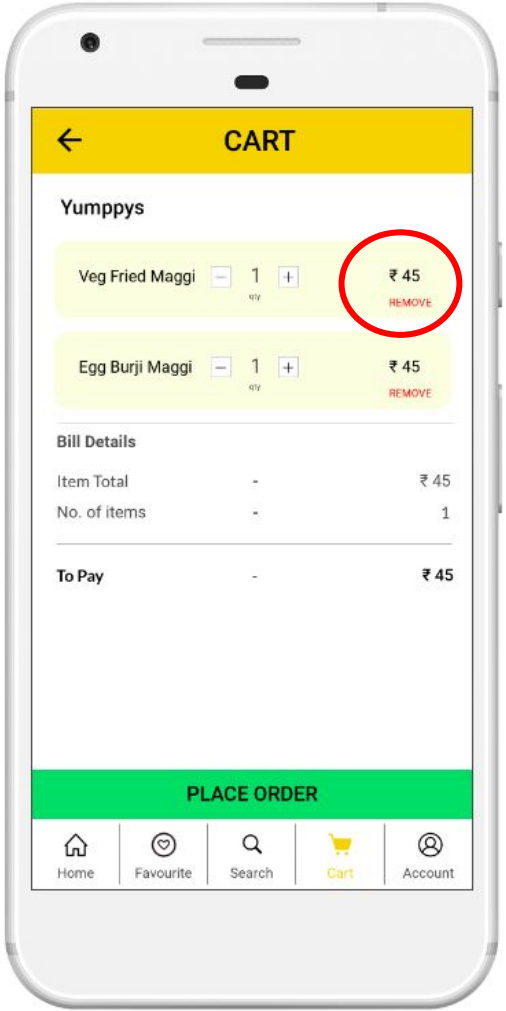
Qty=0 -> Remove Button

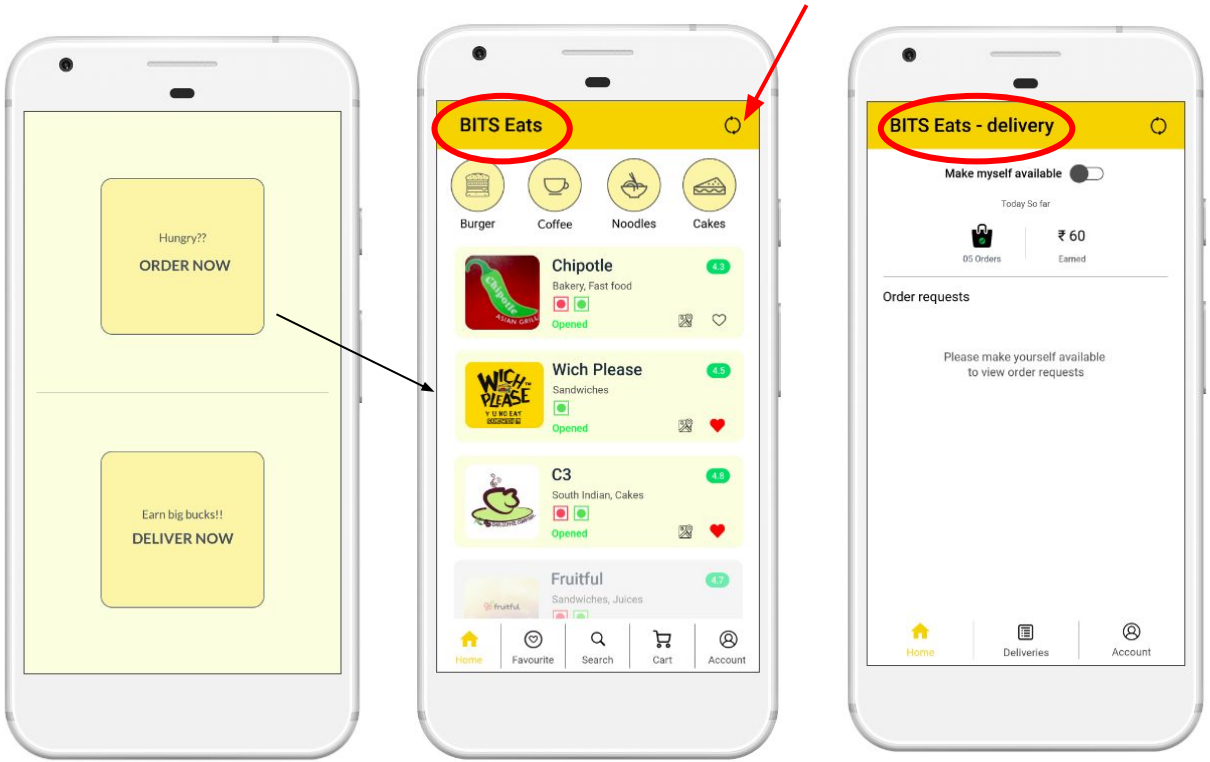
<u>Before:</u>

Quantity had to be made 0 in order to remove an item from cart.

<u>Problem:</u>

Users found it difficult to click on the '+' and '-' buttons because of minute gap between the buttons. Having a separate Remove option and separating the '+' and '-' button solved this issue.





Switching between Modes

Before:

The icon for switch was 3 Vertical dots and was unclear as to what it does.

Problem:

Users wanted to switch between the modes at times and had to relaunch the app. This issue was solved by having a switch button. Changing the icon to the present one made it more intuitive.

HCI principles

- **Mental Modelling**
  - Having Icons similar to real world entities and meanings
  - **Eg.** Cart Symbol, Search, Burger, noodles icons

- **Accessibility**
  - Intuitive understanding of the application is a reflection of principle of accessibility.
  - **Eg.** Order Status, etc

- **Efficiency**
  - Have made sure to reduce the no.of steps and implementing minimalistic design
  - **Eg.** Access to cart from the Menu page for ease and minimum no.of steps.

- **Consistency and standards**
  - The meaning of each symbol is same throughout the application
  - **Eg.** ‘+’ for increasing quantity and ‘Add’ option to add to cart

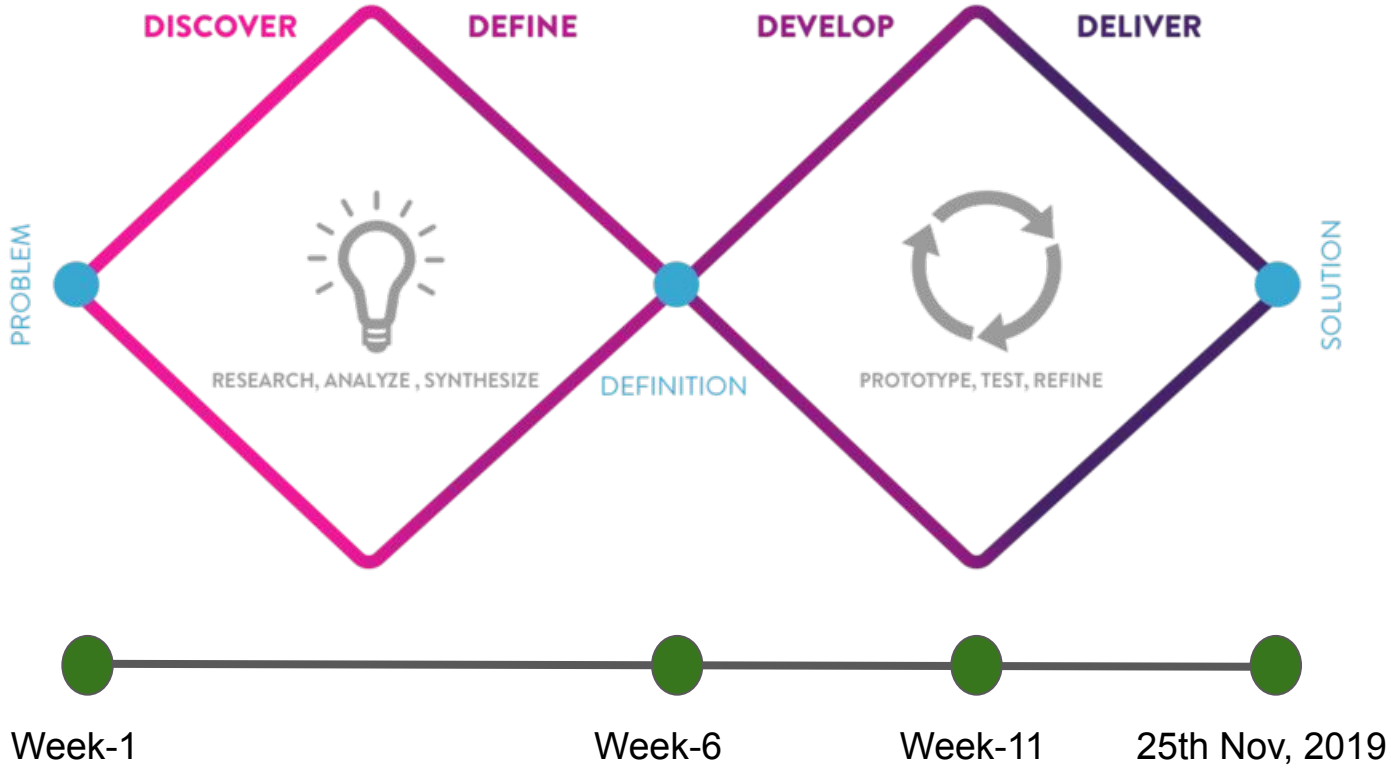
- **Recognition vs. recall**
  - With the use of icons and easy interface, users do not need to memorise any part.
  - **Eg.** Changing Switch Icon, Cart Symbols, Add symbols etc.

- **Memorability**
  - The steps to complete a task are completely logical and doesn't require memorization.
  - **Eg.** Detailed text on buttons, etc

- **Error prevention**
  - Provision of removing dishes from cart, back buttons etc.
  - **Eg.** Switching between Modes
  - **Eg.** Back buttons
  - **Eg.** Removing item from cart

Progress and Timeline

Double Diamond



Sample Video

- LOGIN
- Marking favorite
- Ordering an Item
- Removing an item from Cart
- View Order Status
- Re-order from previous orders (add to cart)
- Profile Details
- SWITCH TO DELIVERY MODE
- Make available for delivery
- Accept an order
- Mark delivered
- Past Deliveries
- Profile Details
- SIGN OUT

YUMMPY'S

4.7

Yummpy's

Chinese

Preparation 15-20mins

Opened

Recommended

Veg Fried Maggi	₹45	Add
Egg Burji Maggi	₹45	Add

Maggi

Veg Fried Maggi	₹45	Add
Classic Maggi	₹45	Add

Scroll to Top

At the end of the day…...

We expected to be able to obtain the technical and theoretical know how to create any application that require human computer interaction. The end goal was to develop a fundamental understanding of concepts that would be useful in designing not just screen based apps, but also gesture based and voice based systems.

We had an aim to deliver at least the detailed front end part of our course project. In addition, we tried our best to integrate what we learnt in form of sharing ideas to be pursued later on after completion of the course in the field of new modes of HCI.

We’ve reached our end goal !!

THANK YOU!

Team - incrEDIBLES