



AIPOS
restaurant management system.

INTRODUCTION

Mobile point of sale (POS) system, a recent service enhancement innovation, have upgraded to produce faster payment processing as well as allow customers to find and review restaurants from their mobile devices. Bluff Kup Cafe and Thai Kitchen has also used a POS app as a primary tool to take orders for more than two years. However, there are some features which are not fit with the restaurant, and they also, decrease the speed of the application. This can disrupt the restaurant operations because when the restaurant is busy, the app can be stuck. This report aims to explain the processes to improve some new features for the current POS application by dividing into five steps and provide recommends for the application developers to create a more efficient POS app for restaurants in Melbourne.

Nattapad Salasawadi
nattapads@gmail.com

- I Empathize
- II Define
- III Ideate
- IV Prototype
- V Test



ABOUT **BLUFF KUP Cafe & Thai Kitchen**

Bluff Kup Cafe & Thai Kitchen is a 50-seat Thai restaurant which is located in Black Rock, Australia. The opening hour is 5.30 pm. to 10.30 pm., and it is closed on Monday. The restaurant's main objective is to serve delicious Thai food with reasonable prices, and fast and friendly service. The average cost is \$16 per meal which is cheap in comparison to other restaurants in the same area. This restaurant is chosen because the POS application which have been currently used by waitresses is not proper for the business, and almost of the waitresses are local teenagers who had knowledge about Thai cuisine before working in this restaurant. Therefore, the POS app is expected to be a tool which may assist the staff to upsell some menus and to be able to provide proper suggestions for customers.

FB: www.facebook.com/bluffkup

Melbourne

St Kilda

Brighton

Moorabbin

Sandringham

Black Rock



STUFF AT BLUFF KUP Cafe & Thai Kitchen



The restaurant consists of three main groups of workers. In order to ensure that these workers who are involved with the POS application can be facilitated efficiently by the new app, The responsibilities of each roles are required to be explained.

MANAGER

Mr Tunnop Annupongongart is an owner and a manager of the restaurant. His responsibilities are to prepare any kinds of beverage for front staff to serve, to take takeaway orders and to collect payments. He normally start working at 2.30 pm. to clean the dining area and set tables.

KITCHEN STAFF

There are three kitchen staff in normal nights except Friday night and Saturday night when there are four staff in the kitchen. Thai students in Melbourne are usually hired because, in the kitchen, staff should be able to cook Thai meals and communicate well with the chefs who are Thai people.

FRONT STAFF

Normally, there are two front staff including the manager and another worker. However, in busy nights such as Friday night and Saturday night, one more front staff is normally assigned to the shifts. Additionally, local teenagers are preferred to be hired as front staff because they can communicate with customers in English properly.



HOW DO THEY WORK?

<Manager

Preparing drinks, passing meal from the kitchen to front staff, taking take-away orders and bookings, and collecting payments

Kitchen staff>

Preparing and cooking food for customers, washing dishes and cleaning the kitchen

<FRONT Staff#1

Greeting customer, waiting customers to take orders and ensuring that meals on the counter are served to customers

<FRONT Staff#1

Filling water for customers, inducing customers to buy another drink and serving meals for customers

FRONT Staff#2>

Cleaning tables and taking dishes to the kitchen for washing

<FRONT Staff#2

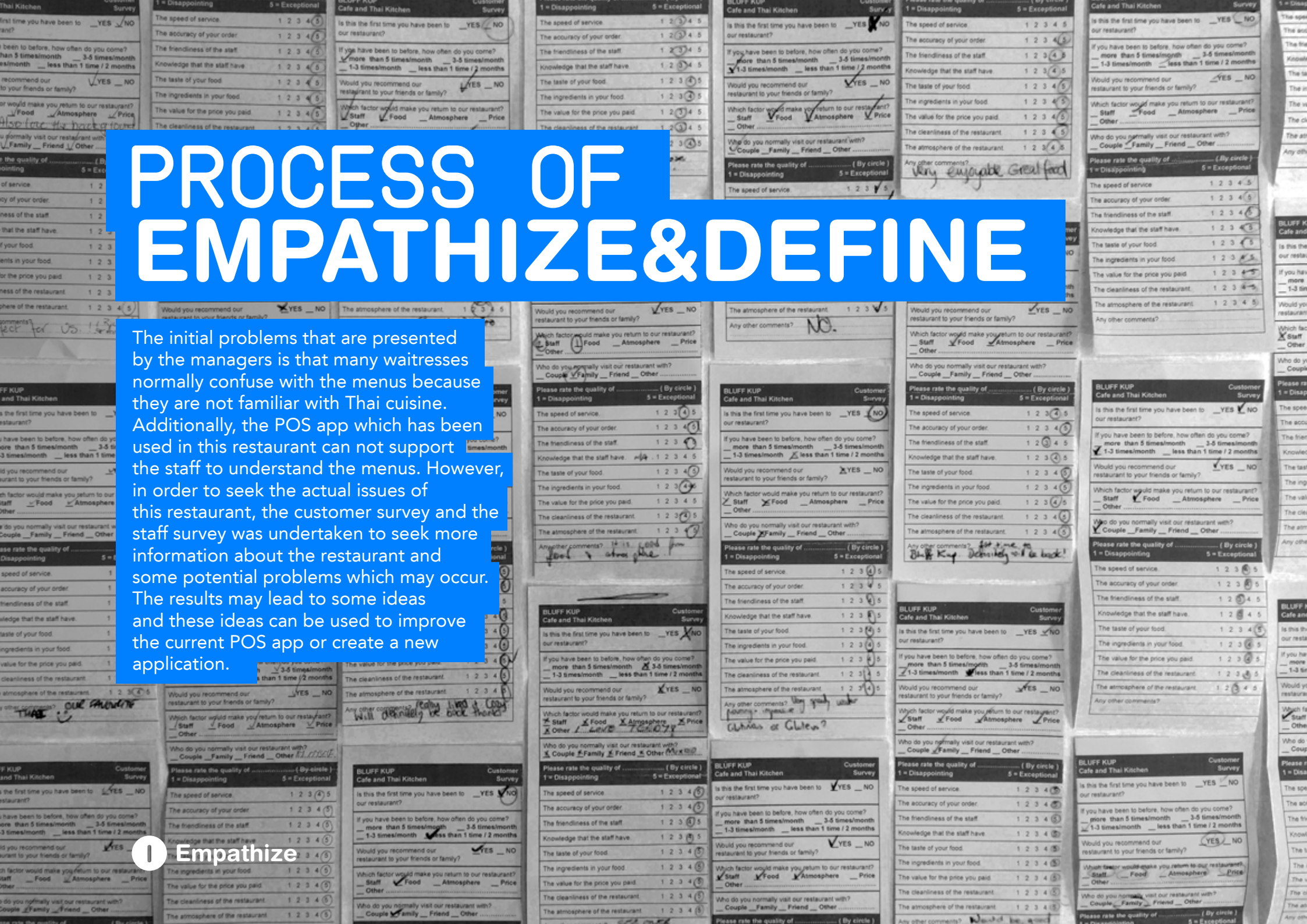
Taking orders and recommending menus for customers



PROCESS OF EMPATHIZE & DEFINE

The initial problems that are presented by the managers is that many waitresses normally confuse with the menus because they are not familiar with Thai cuisine. Additionally, the POS app which has been used in this restaurant can not support the staff to understand the menus. However, in order to seek the actual issues of this restaurant, the customer survey and the staff survey was undertaken to seek more information about the restaurant and some potential problems which may occur. The results may lead to some ideas and these ideas can be used to improve the current POS app or create a new application.

1 Empathize



USER RESEARCH CUSTOMER SURVEY

Bluff Kup Cafe and Thai Kitchen is open almost every day a week except Monday. Customer survey was conducted from 18 April 2016 to 24 April 2016. The aim of the survey was to indicate types of customer, a key factor of the restaurant that make customer return, levels of customer satisfaction in various areas and general comments about the restaurant.

The survey was simple, with 15 questions. Most of the questions are closed questions because customers are more likely to participate in the survey if they are not required to spend more time to write the answers.



1 Empathize

CUSTOMER SURVEY

Is this the first time you have been to our restaurant? YES NO

If you have been to before, how often do you come?

- more than 5 times/month
- 3-5 times/month
- 1-3 times/month
- less than 1 time / 2 months

Would you recommend our restaurant to your friends? YES NO

Which factor would make you return to our restaurant?

- Staff Food Atmosphere
- Price Other

Who do you normally visit our restaurant with?

- Couple Family Friend
- Other

Please rate the quality of
1: Disappointing 2 3 4 5: Exceptional

- The speed of service
- The accuracy of your order
- The friendliness of the staff
- Knowledge that the staff have
- The taste of your food
- The ingredients in your food
- The value for the price you paid
- The cleanliness of the restaurant
- The cleanliness of the restaurant

Any other comments





STUFF SURVEY

What do you think about the working environment of this restaurant?
.....

What is the good point of this restaurant?
.....

What is the major problem in this restaurant?
.....

How does the current POS application help you?
.....

Do you have any problem with the current POS application?
.....

Do you have any suggestions for us to improve the current POS application?
.....

Application Rating
1:Strongly disagree 5:Strongly agree

It is easy to use this application _____

It is fast to order through this application _____

All order is accuracy _____

There are a few problems with the app _____

If there is a problem, it's easy to fix _____

This app is an effective POS app _____

Any other comments

USER RESEARCH STAFF SURVEY

At Bluff Kup Cafe and Thai Kitchen, unlike many Thai restaurants in Melbourne, local people are allowed to work as front staff, while kitchen staff are Thai people who are studying in Melbourne. Staff survey only focused on front staff who use mainly the POS application.

The survey was simple, with 13 questions. Six of them were open questions which examined how the current app affects their jobs, and indicated problems of the app. There are also six questions that indicated levels of staff satisfaction in the POS app.



USER RESEARCH CUSTOMER SURVEY RESULTS

FIRST TIME VISIT
20.0%

RECOMMEND TO THEIR
FRIENDS OF FAMILY
100.0%

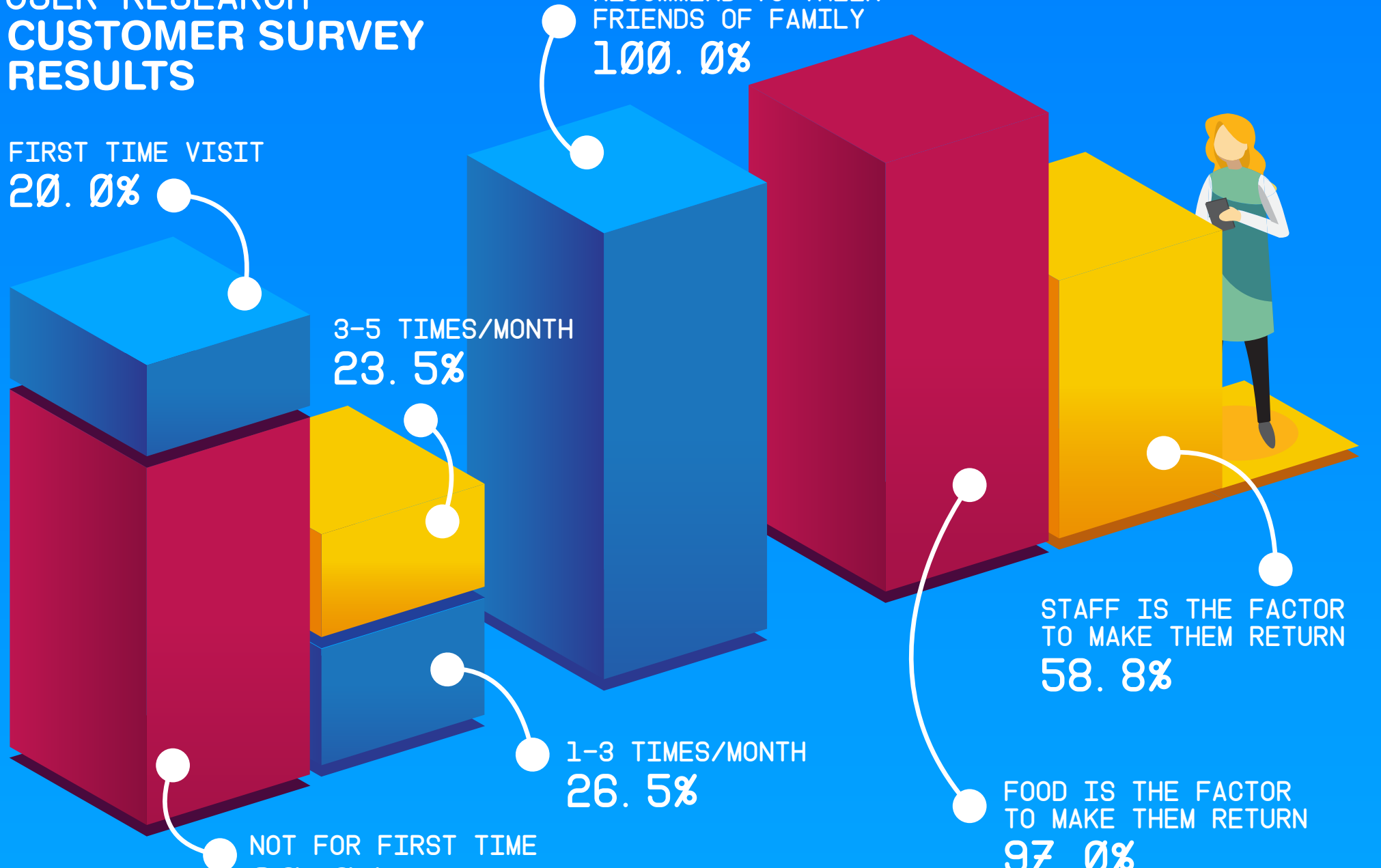
3-5 TIMES/MONTH
23.5%

1-3 TIMES/MONTH
26.5%

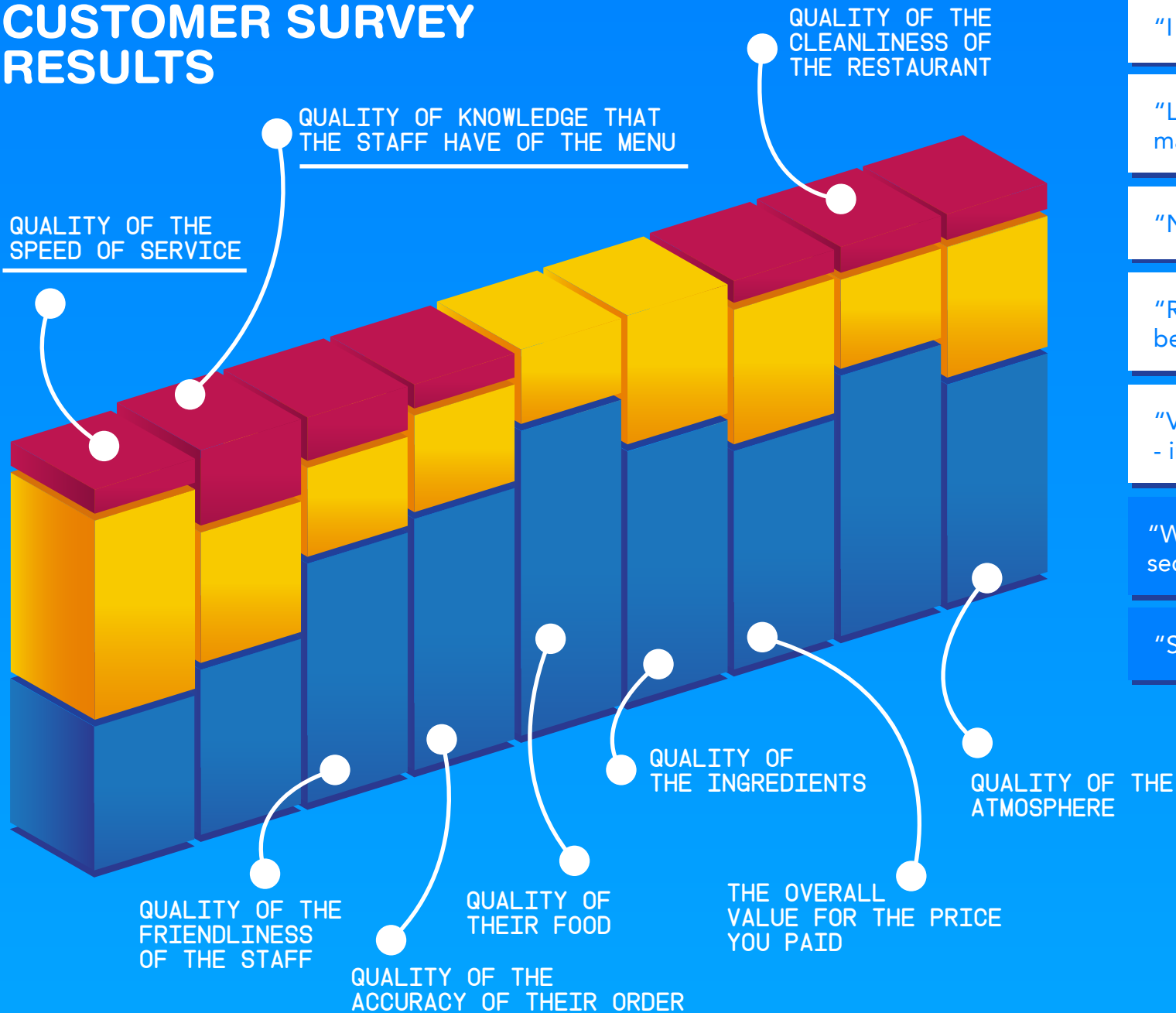
NOT FOR FIRST TIME
80.0%

STAFF IS THE FACTOR
TO MAKE THEM RETURN
58.8%

FOOD IS THE FACTOR
TO MAKE THEM RETURN
97.0%



USER RESEARCH CUSTOMER SURVEY RESULTS



ANY OTHER COMMENTS

"I love Teddy." (manager)

"Lovely staff, welcome you manager, great."

"Nice + close to home."

"Really liked it. cozy. will definitely be back."

"Very speed water pouring - impressive."

"Would be good to have additional section that is changed regularly."

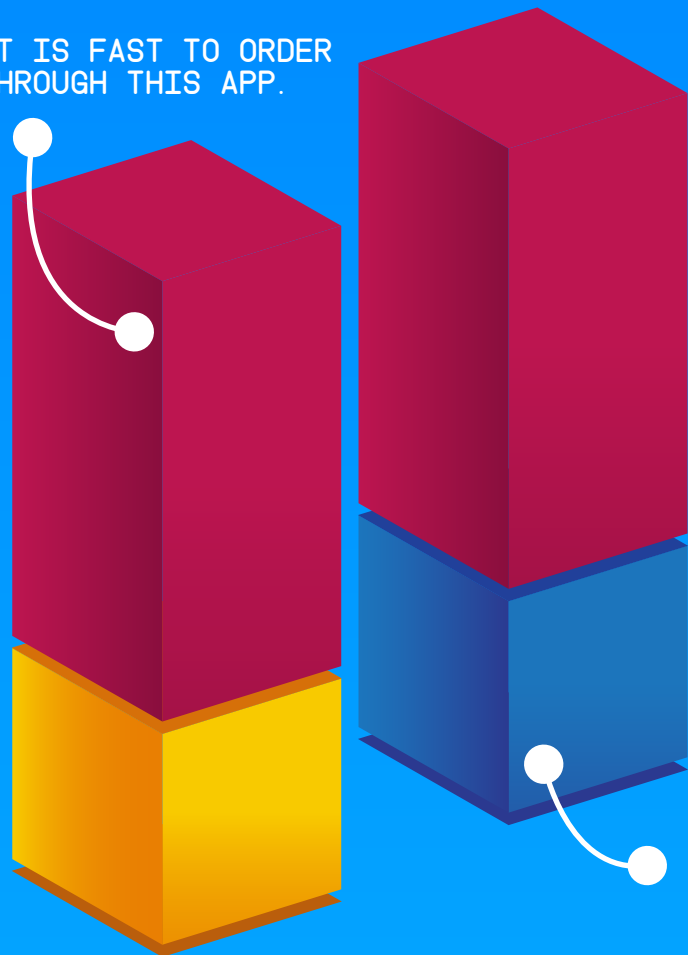
"Sometimes too noisy"



USER RESEARCH STAFF SURVEY RESULTS

The aim of conducting staff survey was to further indicate some problems regarding the current POS app. Real experiences of staff who usually use the app to take orders from customers seem important for improving the app.

IT IS FAST TO ORDER THROUGH THIS APP.

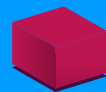


HOW DOES THE CURRENT POS APPLICATION HELP YOU?

"Makes easy to find all meals/drinks and is much quicker and more reliable than pen & paper"

"The new one is better, easier to navigate as you do not have to scroll because it is now all in one screen - very efficient!"

<APPLICATION RATING



SO SO



STRONGLY AGREE



AGREE

IF THERE IS A PROBLEM, IT IS EASY TO FIX?

DO YOU HAVE ANY PROBLEM WITH THE CURRENT POS APPLICATION?

"Sometimes it can be a bit slow"

"Should include all ingredients and an indicator as to how spicy"

DO YOU HAVE ANY SUGGESTIONS FOR US TO IMPROVE THE APP

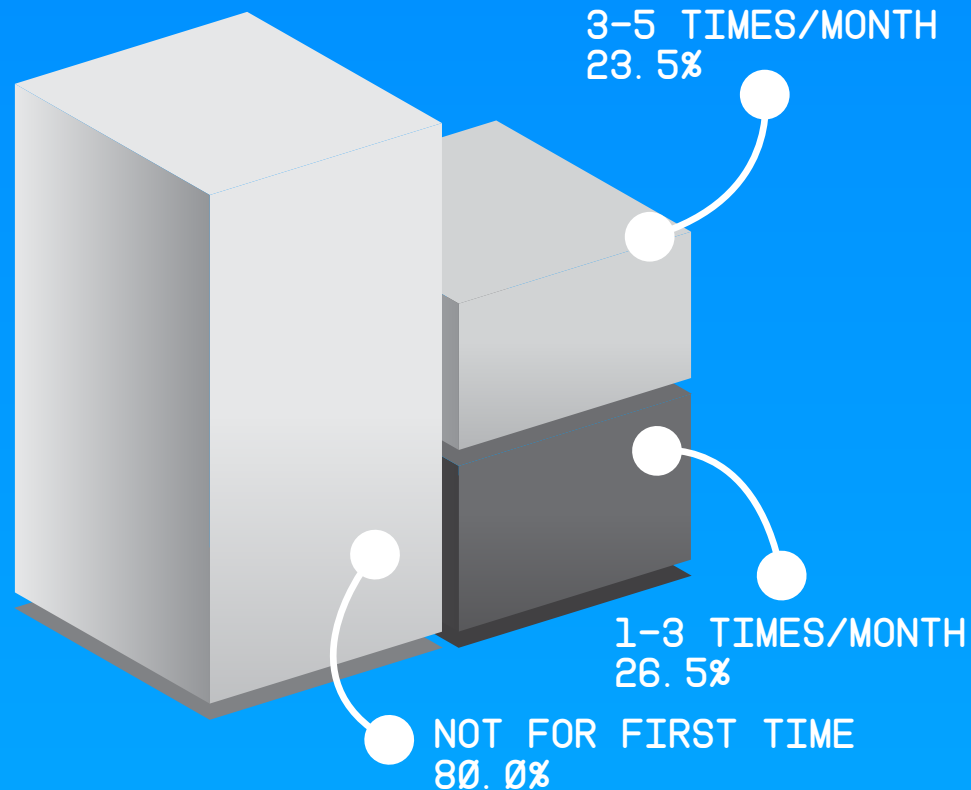
"Pictures of all dishes to show customers upon"

USER RESEARCH

WHAT DOES THIS MEAN?

It is obvious that the main problem of the current POS app is the speed to take an order. The app may include too many features which may not be used in restaurants in Melbourne, and some features are hard to access, so some staff may not recognise. In addition, almost the restaurant's customers are likely to live nearby and they return to the restaurant again because of food and staff.

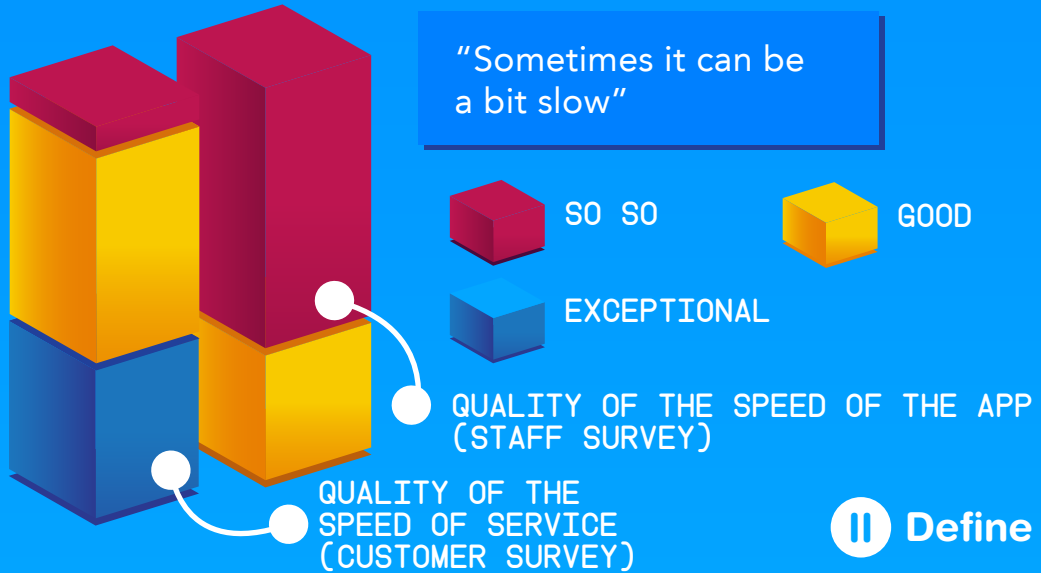
1 Majority of the restaurant's customers are regular customers, unlike restaurants in the city.



2 Friendliness and interaction between staff and customers are also important. Many customers return again because they know the manager and like the foods.

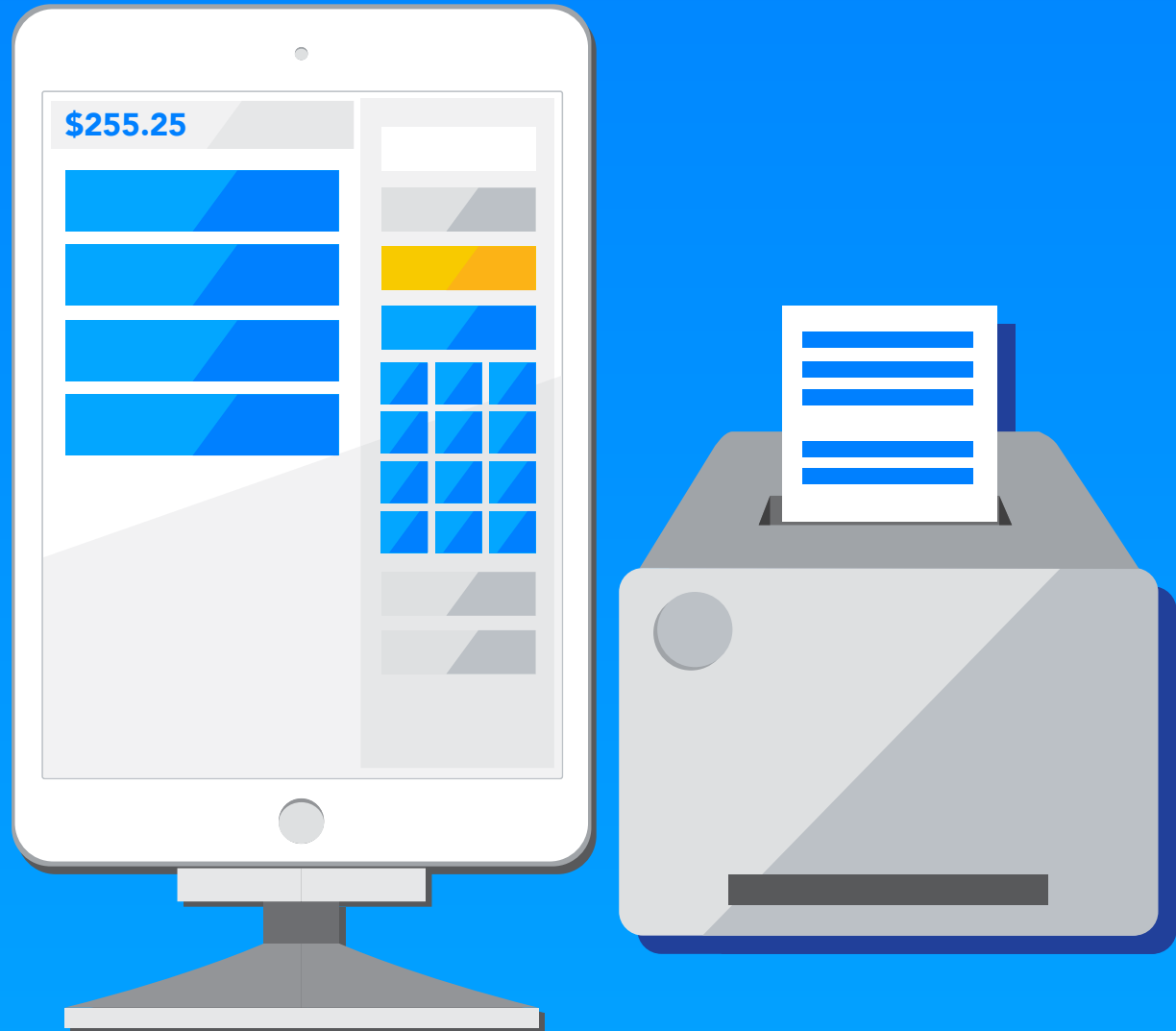


3 Speed of a POS application seems important. Speed is not only about how long an app can send an order to a kitchen, but it is also about how fast staff can interact with the app.



WHAT IS POS APPLICATION?

The successful restaurants understand the important role of customer service on their profit margin. Therefore, mobile point of sale (POS) system, a recent service enhancement innovation, have upgraded to produce faster payment processing as well as allow customers to find and review restaurants from their mobile devices (Restaurant News, 2013). The most significant of this system is allowing servers to place orders and process payments at each table in the restaurant. Consequently, customers no longer have to wait to use a POS terminal and save their time to walk all over the restaurant. Furthermore, due to the lightweight, convenient size, tablets are used to incorporate with the mobile POS system for quick-service eateries (Arnold, 2015). Ragland (2015) also explains that restaurant owners spend less time and money on training new employees when they use a tablet POS system. The devices lead to a positive effect on customers' satisfaction and loyalty as well as likely help restaurants boosting sales.



POS APPLICATION MAIN FEATURES

The POS includes 6 basic features that very helpful for small,medium or large businesses: table layout, e-menu, payment, wireless ordering, booking and reporting tools (Dudhwewala, 2014).

1. Table Layout

Creating the restaurant's table layout on the POS's screen to help users control easily live table timers and order status to turn tables more efficiently.

2. E-Menu

Providing a various mouthwatering visuals of cuisines so be more convenient to customers enabling every options with single touch.

3. Payment

Supporting card payment by screen touching, also accept split payment as well as partial payment.

4. Wireless order

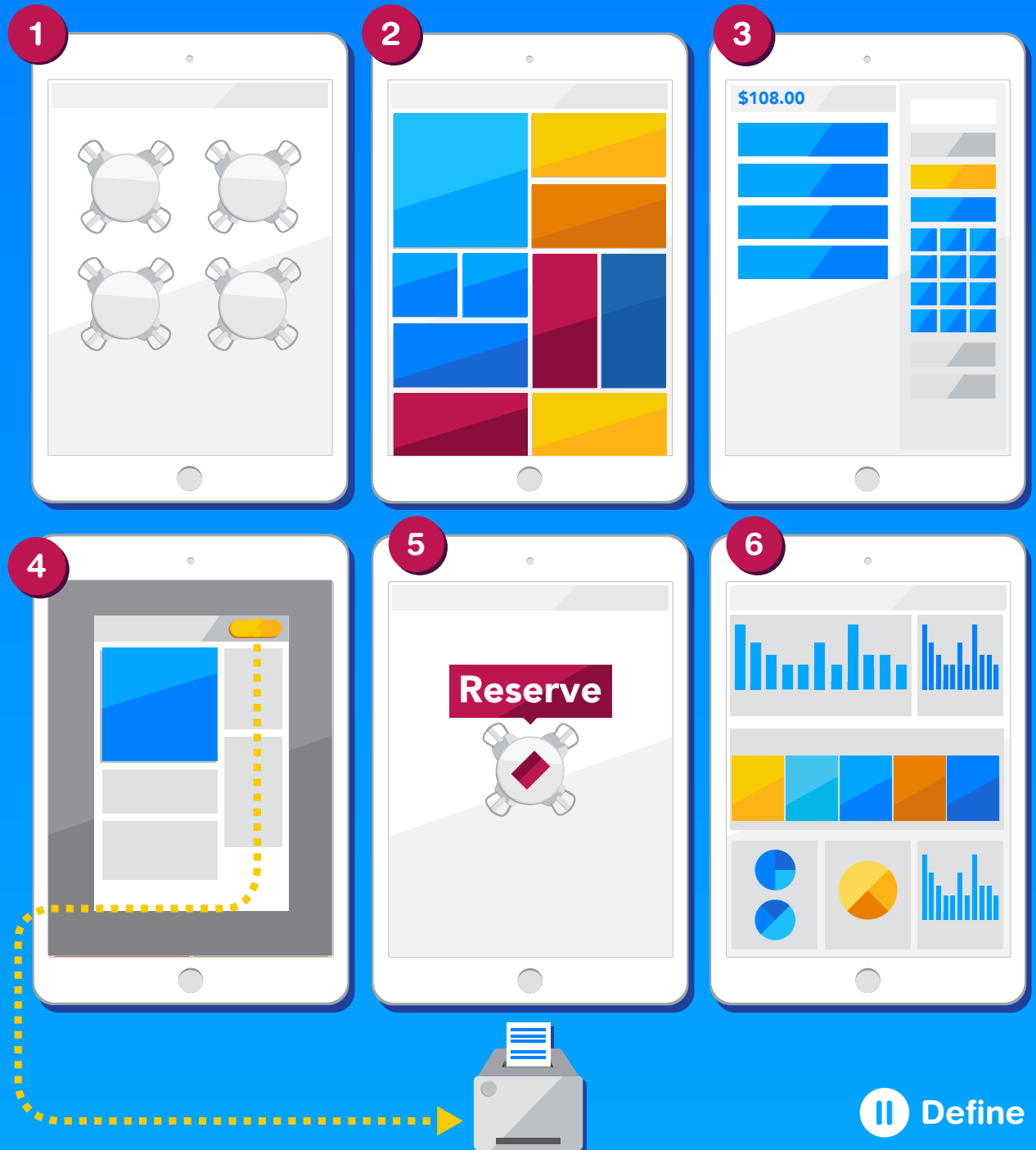
Eliminating the need to hand-write orders by help servers to take orders at tableside and send that information to the kitchen from the familiar touch-screen interface.

5. Booking

Supporting customers save time by reserving tables as well as pre-ordering meals before they get in.

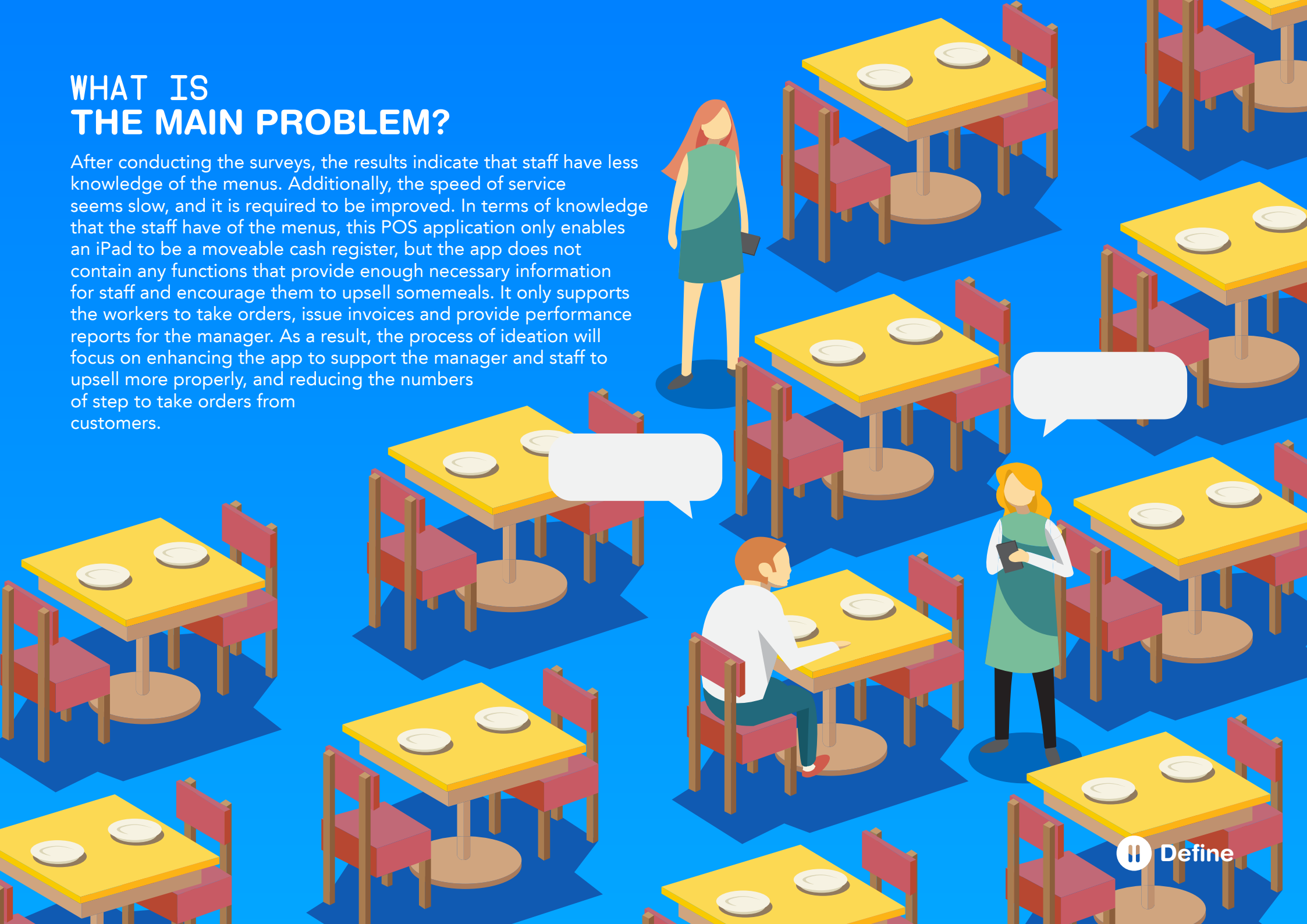
6. Reporting

Assisting managers to track on business performance such as better understand buyer behaviour, worst and best selling items all in real time.



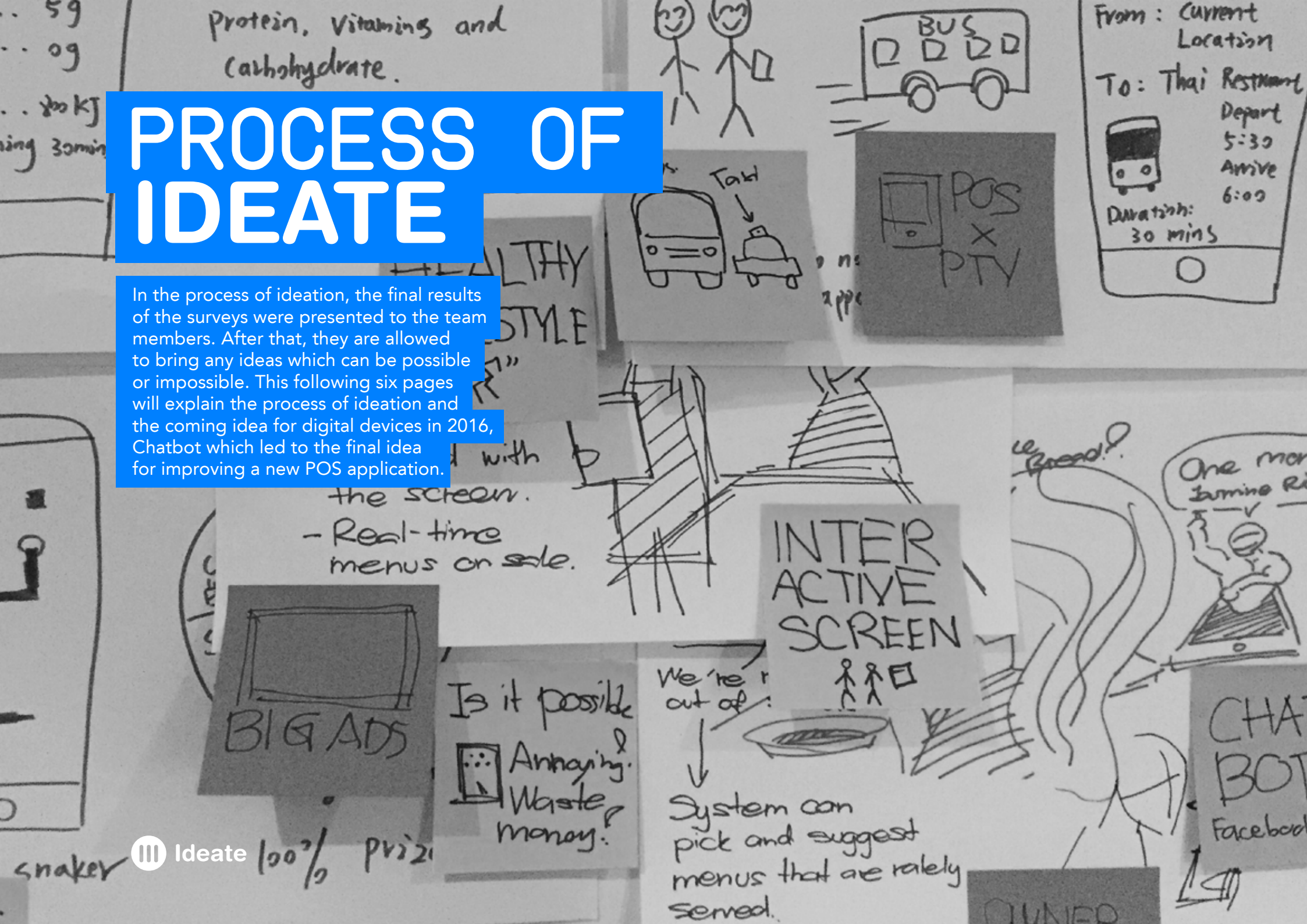
WHAT IS THE MAIN PROBLEM?

After conducting the surveys, the results indicate that staff have less knowledge of the menus. Additionally, the speed of service seems slow, and it is required to be improved. In terms of knowledge that the staff have of the menus, this POS application only enables an iPad to be a moveable cash register, but the app does not contain any functions that provide enough necessary information for staff and encourage them to upsell some meals. It only supports the workers to take orders, issue invoices and provide performance reports for the manager. As a result, the process of ideation will focus on enhancing the app to support the manager and staff to upsell more properly, and reducing the numbers of step to take orders from customers.



PROCESS OF IDEATE

In the process of ideation, the final results of the surveys were presented to the team members. After that, they are allowed to bring any ideas which can be possible or impossible. This following six pages will explain the process of ideation and the coming idea for digital devices in 2016, Chatbot which led to the final idea for improving a new POS application.

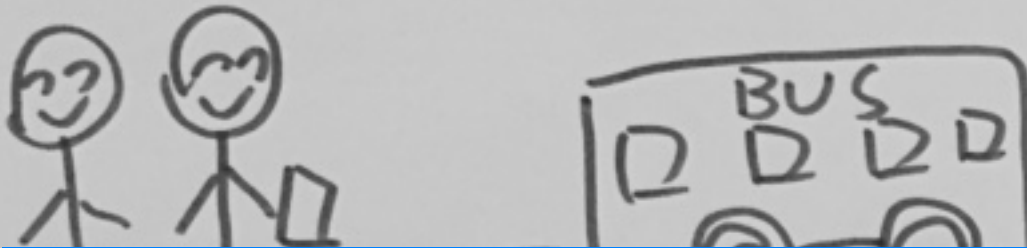


Ideate

100% prize

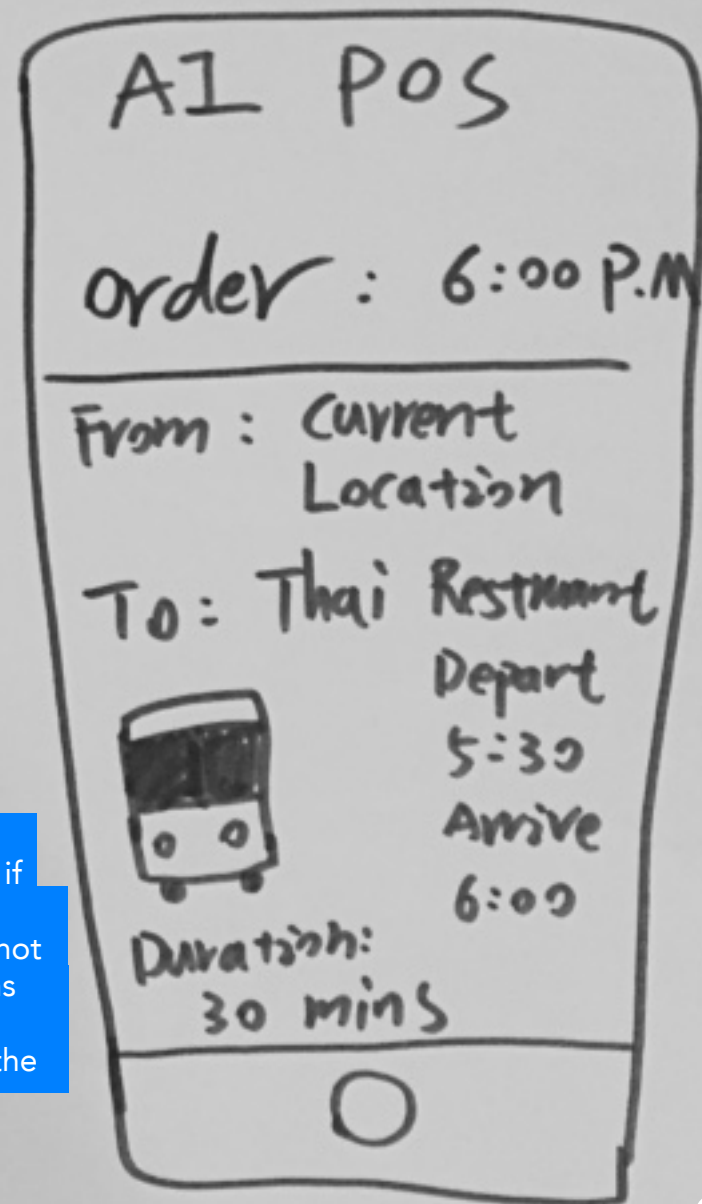
IDEA #01 RESTAURANT X PTV

relate the app to PTV
customers can arrive on
time.

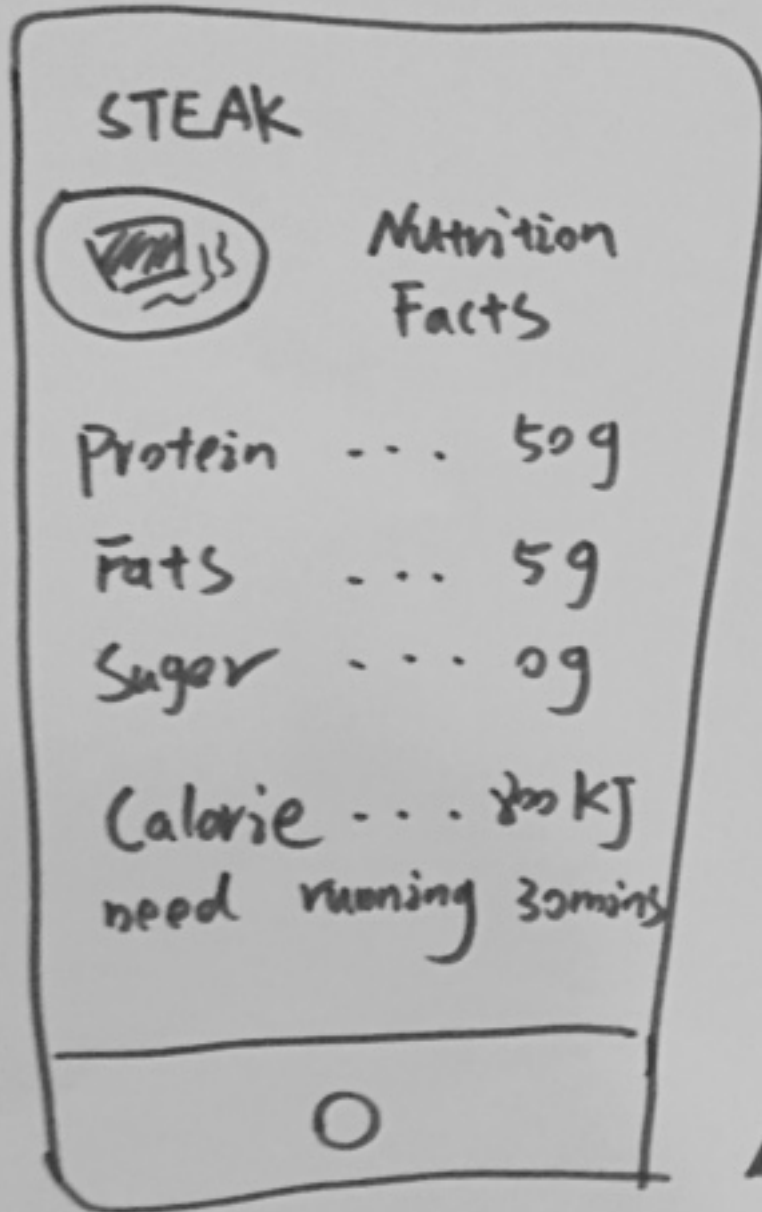


Some customers live far away from the restaurant, however, they want to have a meal in the Thai restaurant, usually, they need to book a seat first, but sometimes when they after booking they find they can not get there on time by public transport like train or bus. And if they check the PTV first but the restaurant may have no seat at that time. The application can relate the booking system to the PTV, when customers choose an arrival time, the system can research on the PTV and then give the plan to the customers, if the booking time cannot suitable for the transport time, the system will recommend another time for the customer, to make sure that customers will not waste time for waiting for a seat or on the transport. Although this idea seems not to relate to the addressed issues, this idea may help new customers or regular customer to reach their bookings on time because the location of the restaurant is not near any train station, and public buses are only public transportation that customers can take to come to this restaurant.

the break appointment.



IDEA #02 HEALTHY POS APP



Nutrition facts of the dishes.

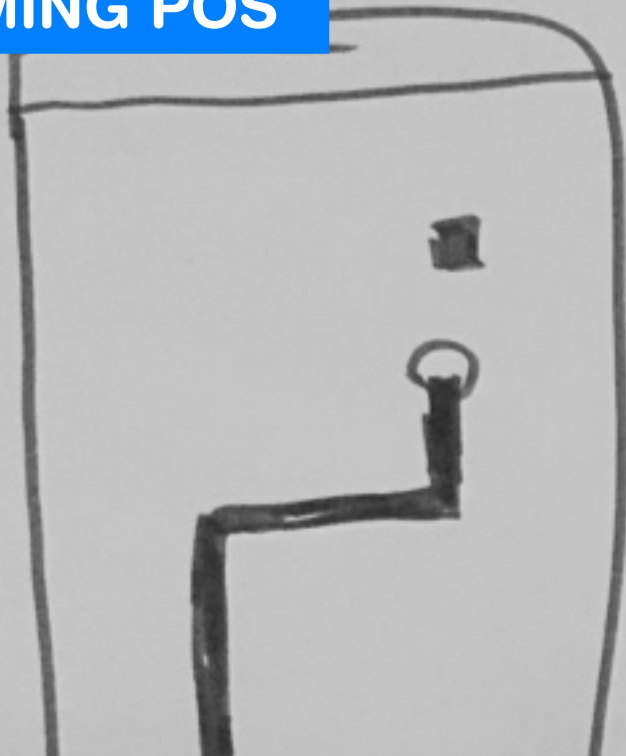
Suggest customer to order a balanced diet include protein, vitamins and

Carbohydrate

The application can classify all the dishes for three parts: protein, vitamins and carbohydrate, it also shows the nutrition facts of the dishes like calorie and transfers this calorie to the sports time. When customers order a dish like fried chicken, the waiter can tell them the fried chicken only have protein and fats, it is important to keep a balanced diet, then suggest them to order a vegetable salad.

Another station is when customers order chips for their staple food, the waiter can tell them one serving chips need to run one hour to cost the calorie, but if change it to the wholemeal bread, it only requires 30 minutes. This function can help restaurant sell more popular food and more dishes.

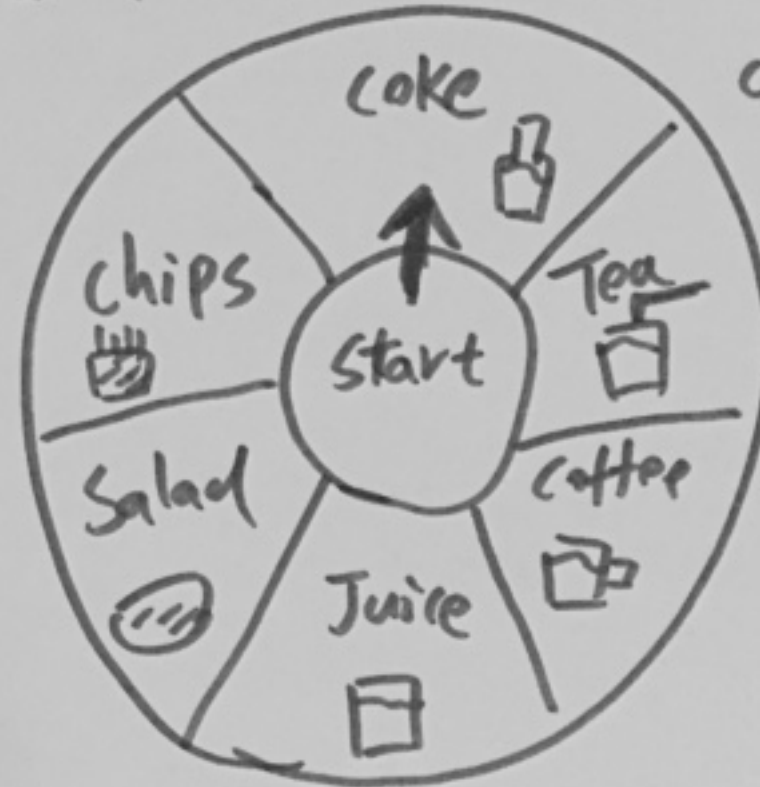
IDEA #03 GAMING POS



The most attract thing for the customers is free food, it can make them happy. The restaurant can put a game in the application to offer customers to get a free snack or a free drink. The game can be a lottery turntable, when customers finish their order, they can open the application, and enrol in their table's number and get a qualification to draw a lottery, each table will only have one chance, and it is 100% win the prize. Also, it can be a retro sneaker, when customers finish the game, they can have a random prize, even they get a low mark.

Retro sneaker

A game for customers to win a free snack or a free drink.

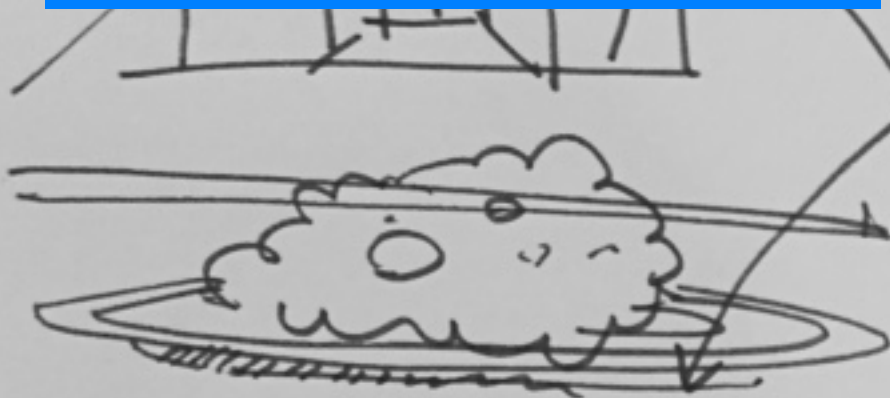


Lottery turn table

100% prize!!!

IDEA #04 ATTRACTIVE POS

The restaurant will create a short video advertisement for a dish needed to upsell in a specific day. Those videos advertisement will be showed in one big screen which will be hung on in front- window in order to attract people who are passing by the restaurant. Additionally, the screen links with the POS system so it automatically updates and presents a particular dish needed to sell more in term of volume.



- Linked with the screen.
- Real-time menus on sale.

Big LCD
SCREEN

for
advertising.

What is that
menu

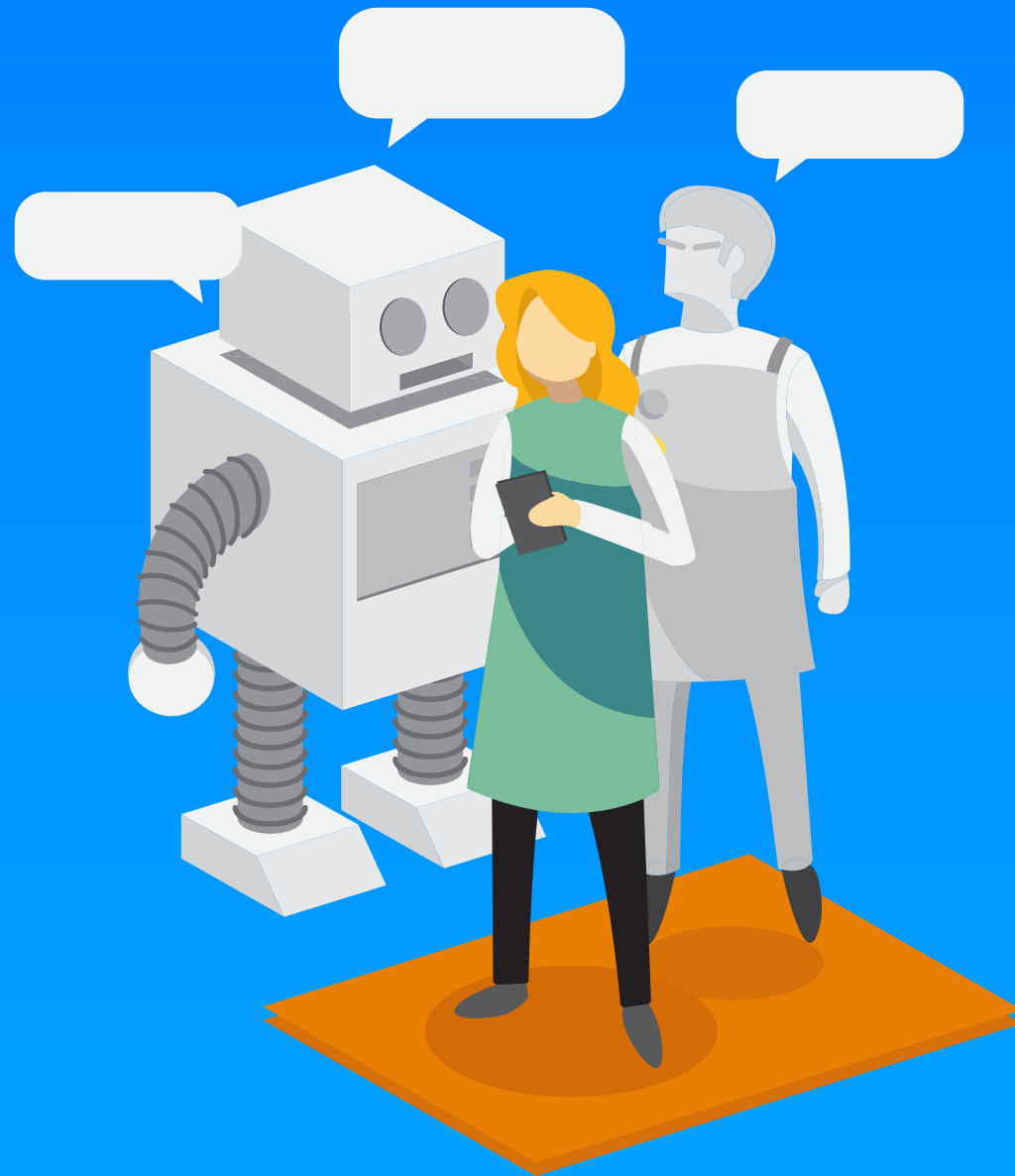
Any suggested
menus?



ADDITIONAL INSPIRATION NO.1

During the process of ideation, there was news that many leading IT companies, such as Microsoft, Facebook and many social networking sites released an artificial intelligence (AI) programme which is called "Chatbot". This sort of programme is enabled to communicate with people and some AI programme also can learn to communicate by imitating some patterns of actual human communications on social networks.

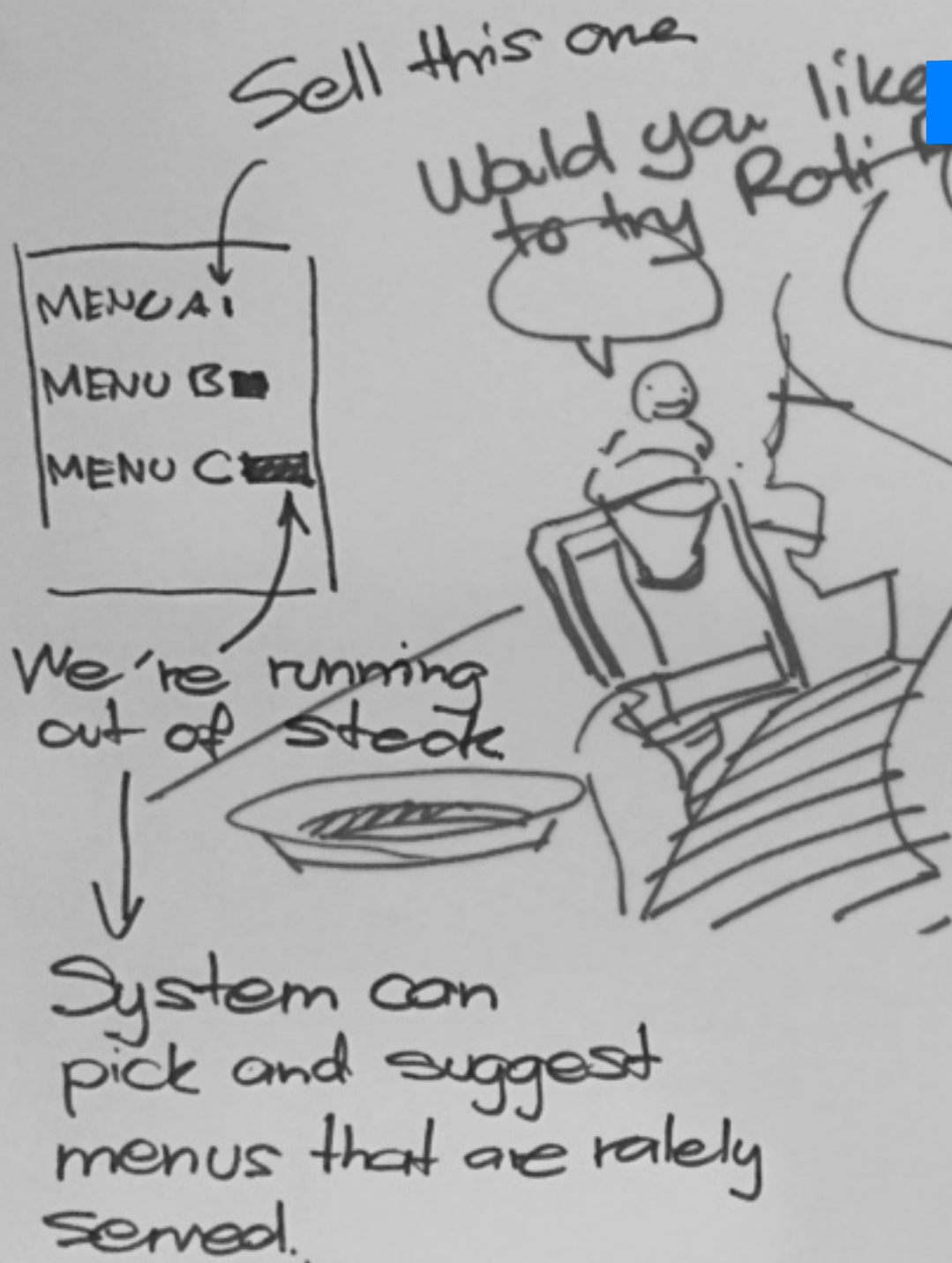
According to Desaulniers (2016), Many people in the technology sector think that chatbots are the next big form of communication, and this prevalence is already larger than people might expect. Investors around Silicon Valley suggest that bots are going to be a big part of the future, they will make chatbots in the next few years that fit more naturally. There are some cafes and fast food restaurants which are currently using digital applications with AI, for example, Taco, a Mexican fast food restaurant is trying to add its ordering options with integration with AI which calls a 'TacoBot' into their work app, it's currently being tested, but this AI is being expected to enable users to communicate directly with the AI such as placing orders and paying the bills through the application.



IDEA #05 - THE FINAL IDEA ARTIFICIAL INTELLIGENCE POS

The idea of the integration between AI and POS comes from the manager's concern on how to reduce the waste of some specific food ingredients which only able to consume in short period such as one or two days. Based on that target, the restaurant realizes an obvious solution is finding how to sell more dishes which contain those short shelf life ingredients. AI can recognise the sale of every meal and suggest some meals which are rarely served for waitresses to upsell them.

An application will include various useful functions to help staffs upsell some meals that are rarely served without a requirement of typical Thai food knowledge. In more detail, this app provides several helpful techniques in ordering management including table layout, E-menu, cash and card payment, wireless order, booking service as well as weekly report. Therefore, restaurant manager is less concern about how to reduce cost from short-term food ingredients and front staff are no more worry about meal suggestion for customers even they have little knowledge about Thai food.



PROCESS OF PROTOTYPE&TEST

This part will explain the process of making prototypes of a POS app. The first prototype was produced to test the key aspects of the new approaches by paper because this way can make a prototype fast. Consequently, the prototype can be evaluated by the actual waitresses as fast as possible. This, in turn, can seek some errors or some elements which are not proper with a busy environment of restaurants. Furthermore, the second prototype was made by a prototype making software named Pixate Studio. This programme enables its users to simply create user interfaces for mobile applications and test an application on a real mobile device. Android OS, in addition, is the system which the application will be run on because Android tablets are significantly cheaper than Apple tablets which are being currently used in the restaurant. Moreover, both prototypes will focus only main features including table layout, wireless ordering, payment, customer relationship management and upselling feature.

Usability Testing

To do: Pin in to access table layout screen.

Task questions: 1. When you see this screen for the first time, did you understand that the app require a PIN to access?
2. Is the size of the number button easy to tap?

To do: There a group of 3 customers coming to have dinner. Let's choose a table for them.

Task questions: 1. Is the size of the table easy to tap?
2. Would you like to add shortcuts to some features? If you would, which features would you like to have a shortcut for on this screen?

To do: Order one satay chicken.

Task questions: 1. Are the menu lists easy to see and to tap?
2. Is the "order" button is attractive and easy to tap?
3. Are the category lists easy to see and to tap?

To do: Finish this transaction and collect the payment.

Task questions: 1. Do you think that the system should ask staff to give an exact amount of received money all the time?
2. What do you think about these screens?

To do: There is a group of 3 regular customers coming to have dinner. Choose a table for them, find their contact number and suggest them some menus.

Task questions: 1. What do you think about the CRM feature?

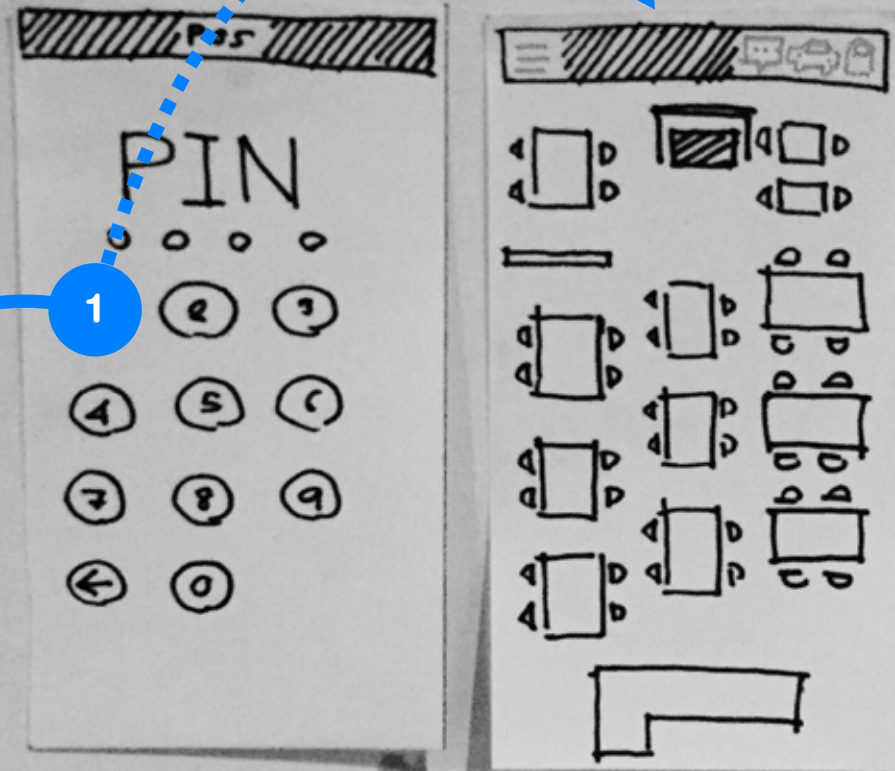
To do: There is a notification appearing randomly on an occupied table. Tap and upsell some menus to the customers.

Task questions: 1. What do you think about the upsell feature?

USABILITY TESTING PROTOTYPE #01

The observation was undertaken in order to indicate some feedbacks about the first prototype to seek some improvements for the next prototype. The initial prototype is a paper-made prototype because it is easy and quick to make, and four restaurant waitresses were allowed to participate in testing the prototype. Every participants were provided with the paper-made prototype and was asked to do six different tasks which mainly focus on the key features of the new POS application on the prototype. After a participant was asked to do each task, the observer made notes about responses and interactions between the participant and the prototype. After that, the participant was asked additional questions in order to evaluate the prototype. The results can indicate some problems of the prototype and, in turn, can be adapted to improve the next prototype.

USABILITY TESTING PROTOTYPE #01 IDENTIFICATION



All of participants knew that they should enter their PIN to access to the next page.

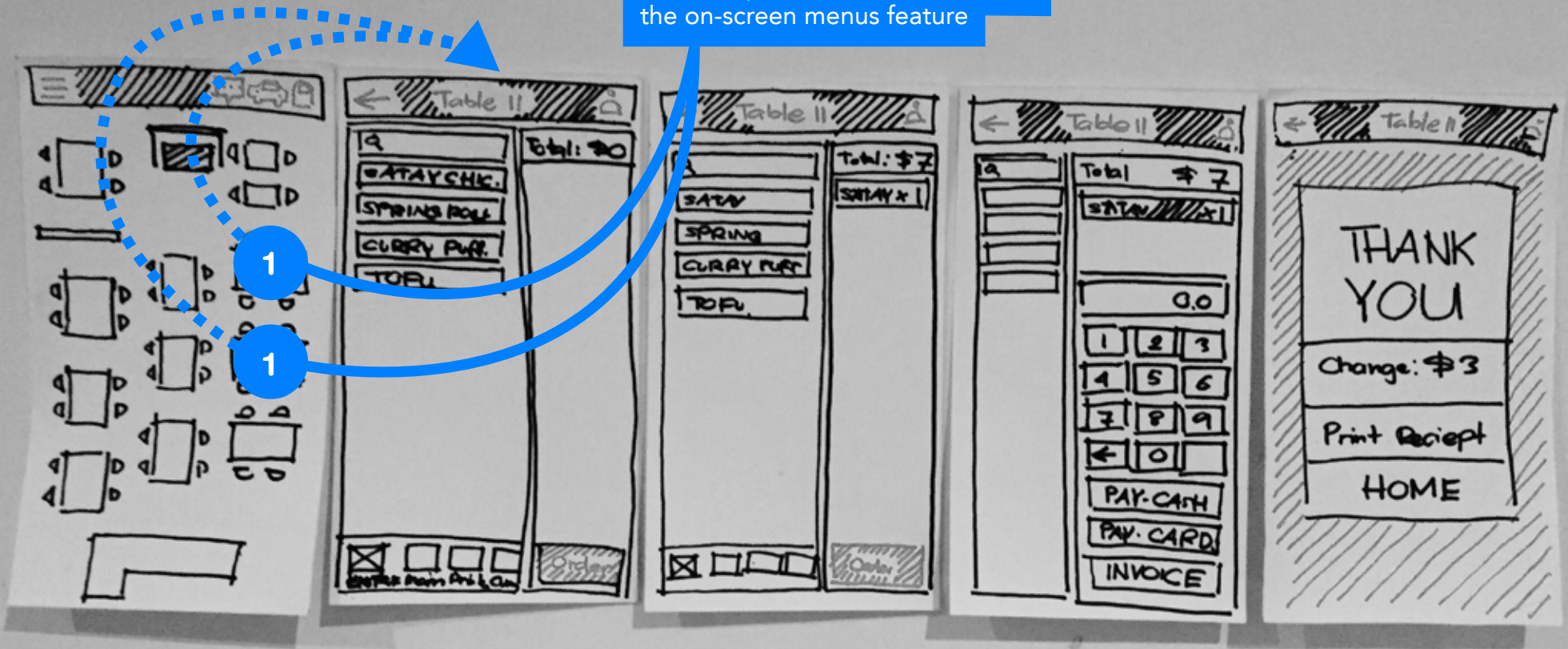
To do: Pin in to access table layout screen.

Q1. When you see this screen for the first time, did you understand that the app require a PIN to access? **All of participants understood.**

Q2. Is the size of the number button easy to tap? **All of participants say that the size of the number button is easy to tap.**

USABILITY TESTING PROTOTYPE #01 TABLE LAYOUT

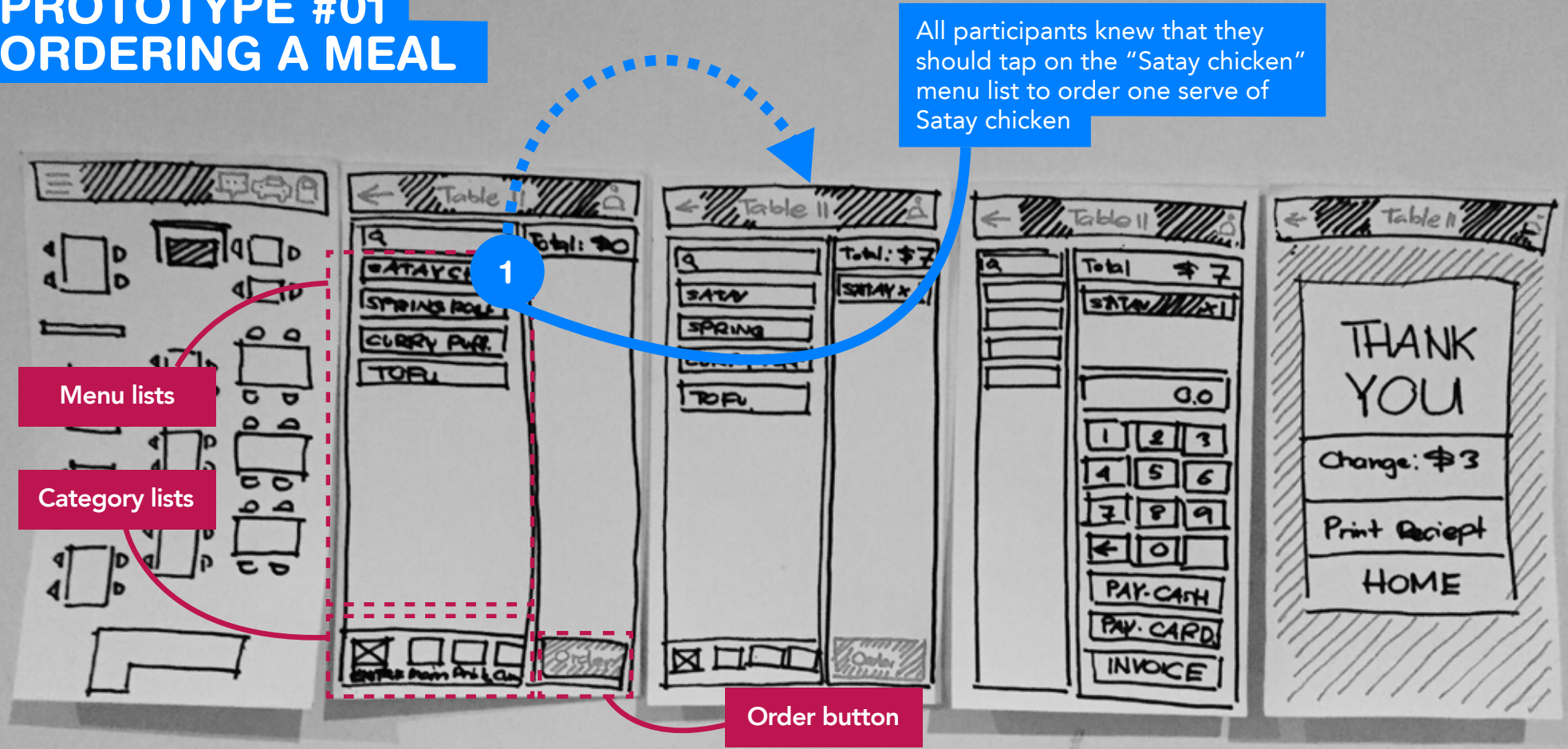
All participants knew that they should tap on a table icon to enter the on-screen menus feature



To do: There a group of 3 customers coming to have dinner. Let's choose a table for them.

- Q1. Is the size of the table easy to tap? All of participants say that the size of the table is easy to tap.
- Q2. Would you like to add shortcuts to some features? If you would, which features would you like to have a shortcut for on this screen? Two of four participants suggest that there should be a reservation shortcut and a active-activities shortcut on the layout screen.

USABILITY TESTING PROTOTYPE #01 ORDERING A MEAL



To do: Order one satay chicken.

Q1. Are the menu lists easy to see and to tap? Three of four participants say that the menu lists are too small.

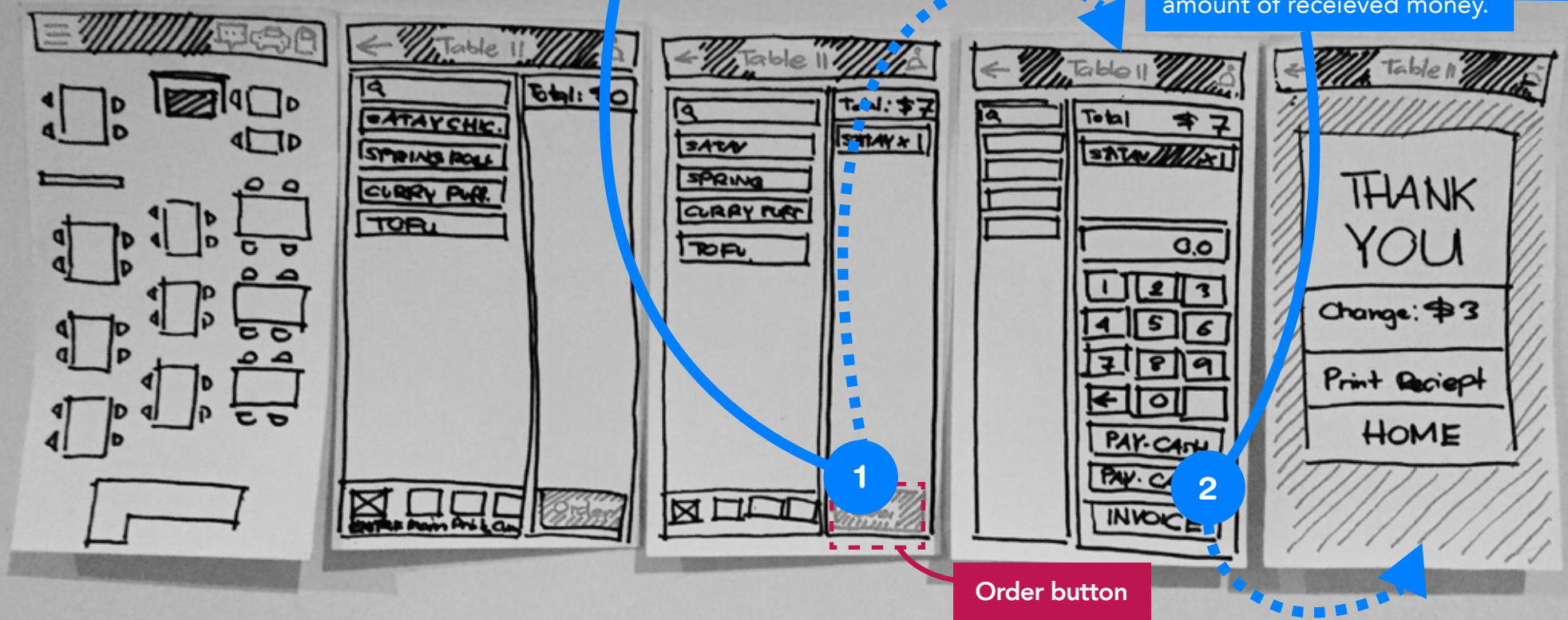
Q2. Is the "order" button is attractive and easy to tap? All of participants say that the "order" button is attractive and easy to tap.

Q3. Are the category lists easy to see and to tap? All of participants say that the category lists are too small and short.

USABILITY TESTING PROTOTYPE #01 PAYMENT

All participants knew that they should tap on the "Satay chicken" menu list to order one serve of Satay chicken

All participants preferred to choose "pay by card" button because they are not required to input an amount of received money.



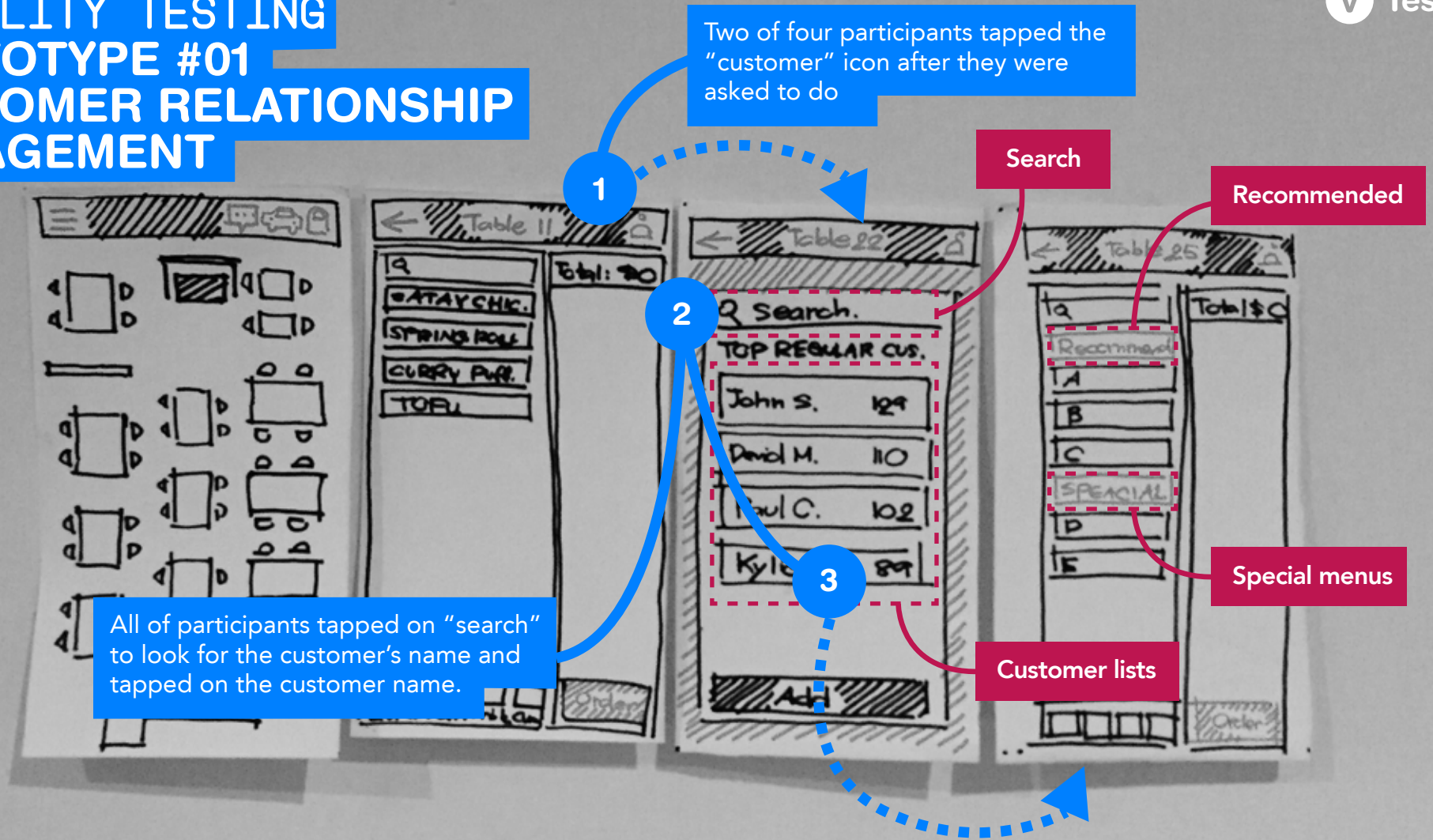
To do: Finish this transaction and collect the payment.

Q1. Do you think that the system should ask staff to give an exact amount of received money all the time?

Three of four participants say that it is inconvenient to input an amount of received money when customers pay by cash.

Q2. What do you think about these screens? All of participants say that a two-column layout is convenient and easy to use.

USABILITY TESTING PROTOTYPE #01 CUSTOMER RELATIONSHIP MANAGEMENT

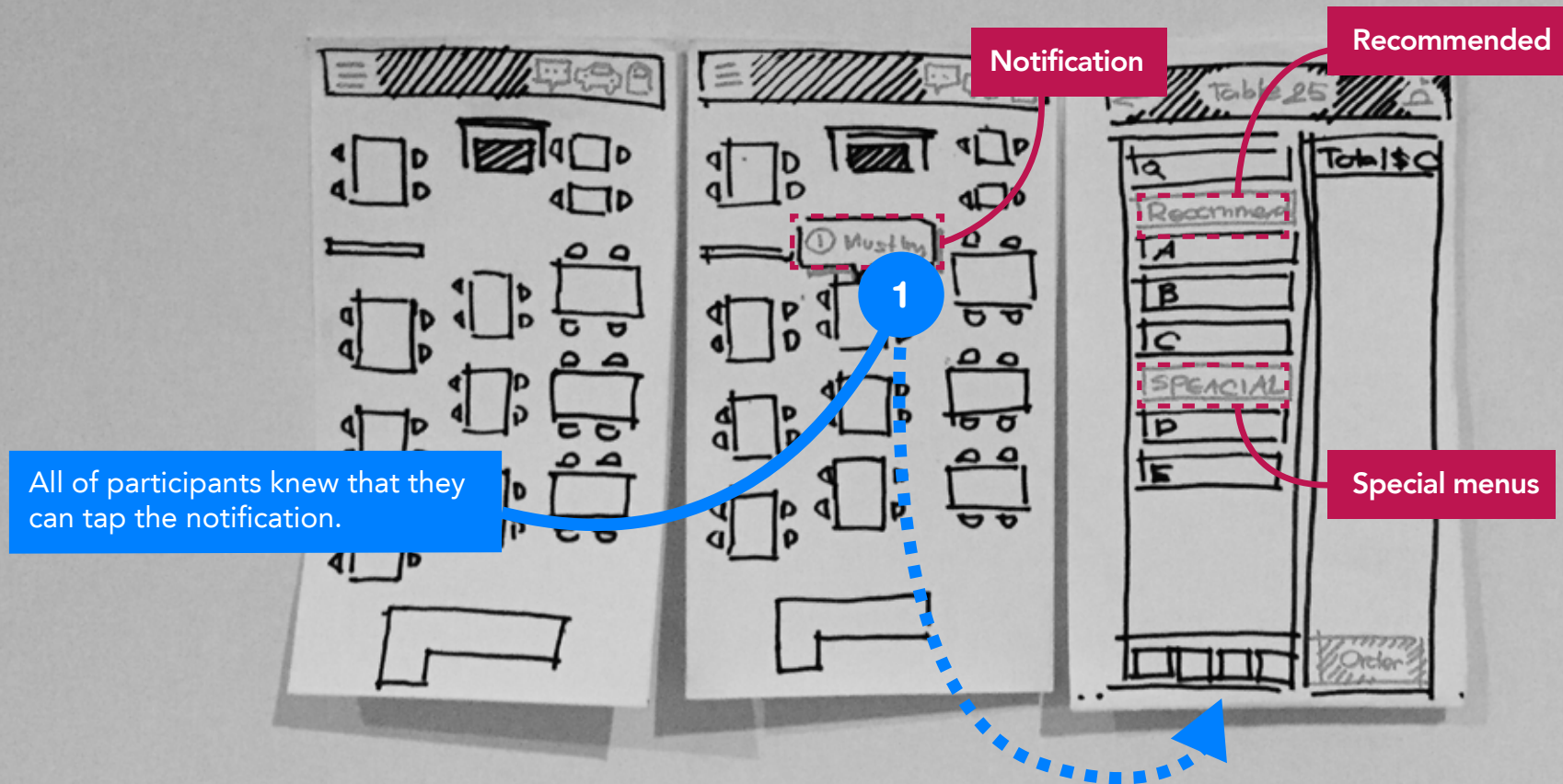


To do: There is a group of 3 regular customers coming to have dinner. Choose a table for them, find their contact number and suggest them some menus.

Q1. What do you think about the CRM feature?

All participants say that this feature is useful, and they can use this feature to suggest and upsell easily menus to regular customers.

USABILITY TESTING PROTOTYPE #01 AI NOTIFICATION



To do: There is a notification appearing randomly on an occupied table. Tap and upsell some menus to the customers.

Q1. What do you think about the upsell feature?

Two of four participants say that the notification may interrupt their works and may not work in practice, especially when the restaurant is busy. Additionally, one of four participants say that customers may not be interested in suggested menus.

GUIDE NO. 1 SIZE OF ELEMENTS

In order to improve the second prototype, there are some guides that can be used. The first guide which can be adopted to determine the size of any elements and buttons of the application is Google Material guides. According to Google (2014), material design is well-known as a design language and guidelines developed by Google. It uses liberally grid-based layouts, responsive animations and transitions, padding, and depth effects such as lighting and shadows to support mobile-application designers and developers. Besides, this design language now only supports for Android users with a consistent experience across all platform, applications and device sizes from web to mobile products.

TOOLBAR: 56DP

SUBTITLE: 48DP

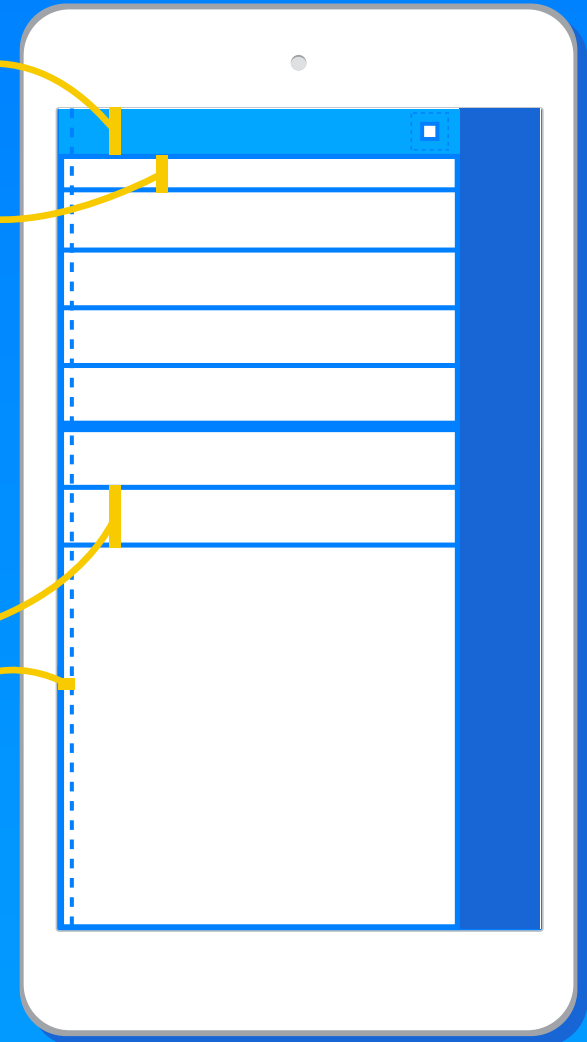


TOUCH TARGET HEIGHT: 48DP

BUTTON HEIGHT: 36DP

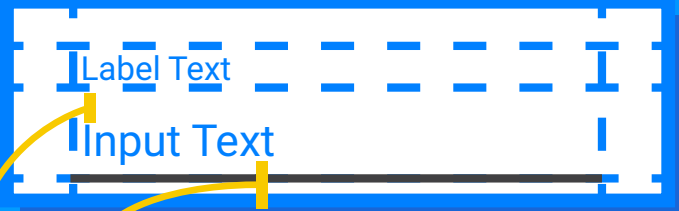
LIST ITEM: 72DP

SCREEN EDGE LEFT
AND RIGHT MARGINS: 16DP



PADDING ABOVE LABEL
TEXT: 16DP

LABEL HEIGHT: 72DP

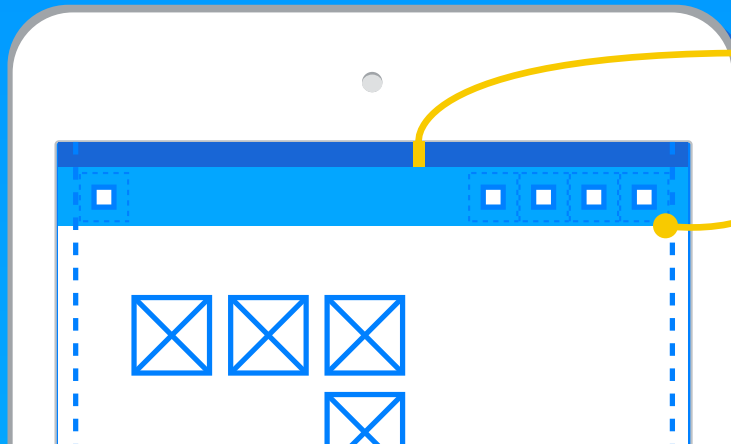


PADDING BELOW INPUT TEXT
(INCLUDING DIVIDER): 16DP

PADDING BETWEEN LABEL
AND INPUT TEXT: 8DP

STATUS BAR: 24DP

TOUCH TARGET: 48DP
ICON: 24DP



GUIDE NO. 2 GAME DESIGN

In order to deliver proper user experience design, some approaches of game design were adapted. Antonio (2016) observes his daughter's behaviour and find out that are directly applicable for game designing, and support him solve some issues of the game. There are four main aspects of making a game based on the observation including illusion of choice, attention focus, player focus and identifying emotions.

Illusion of choice

Game designers often need to limit the player's choice towards a specific direction without it feeling forced, by giving the player naturally limiting options, they will feel in control and enjoy the guidance.

4. Identifying emotions

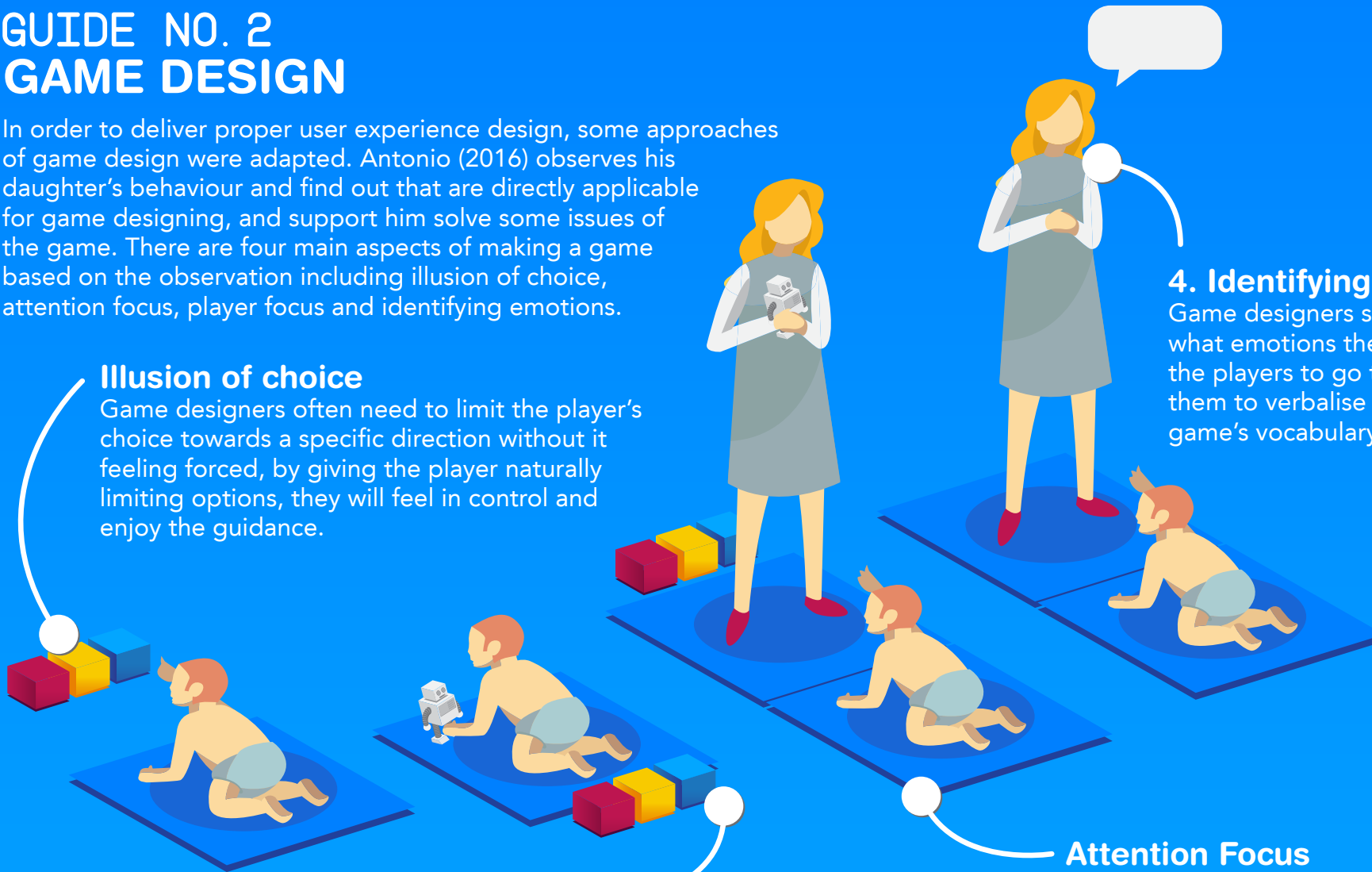
Game designers should understand what emotions the game is allowing the players to go through, and allow them to verbalise them using the game's vocabulary.

Player Focus

Games should not give too much information to the players and the designers should try to organically expand a set of knowledge in a way that is interesting but without becoming too limiting.

Attention Focus

If designers decide to suddenly take player control just because he wants to show him something he considers more important, they should do that in a natural way that does not break the experience.

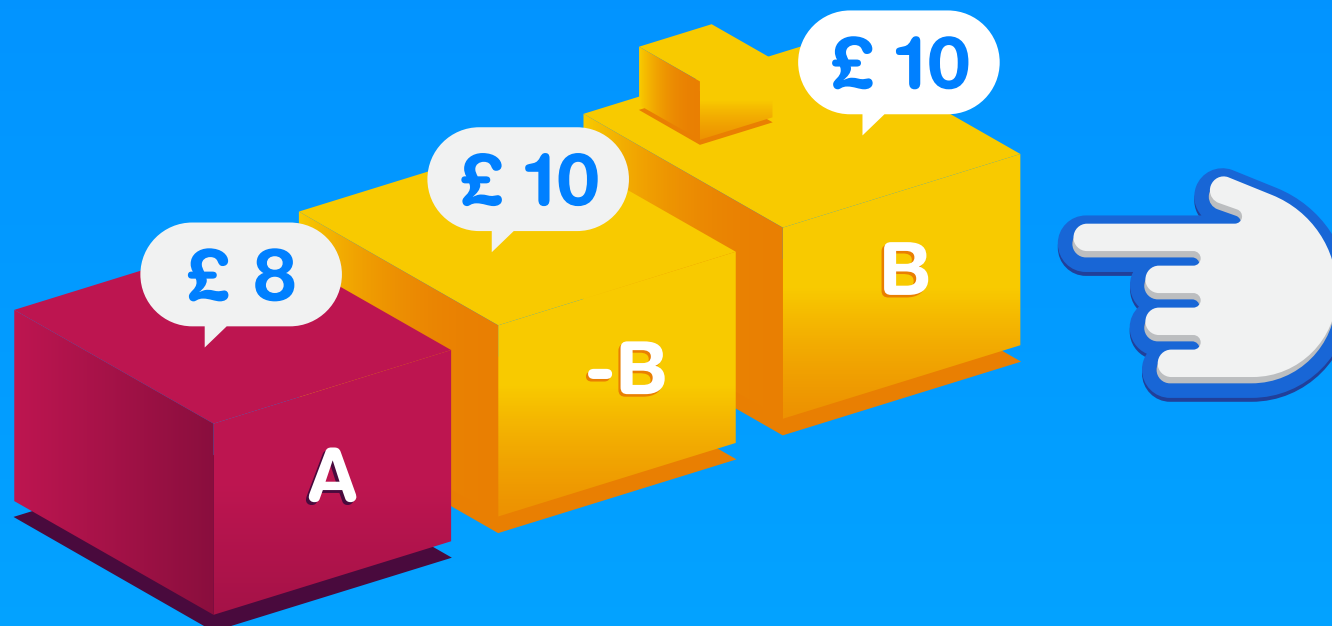


GUIDE NO. 3

SHAPING CUSTOMERS' DECISION

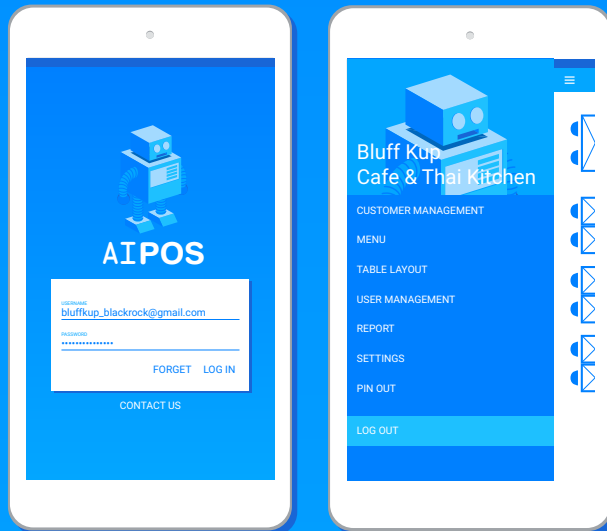
Ariely (2009) demonstrates and give various examples of a great effect of relativity on consumer behaviour. The key point is that Ariely emphasises about the relativity is the way that we make choices. For instance, the real example from Economist magazine is referred in his book. There were three options for the reader to subscribe. The first option contains only online subscription for \$59 and another option is a print subscription for \$125. However, the other option includes both online and print subscription for \$125. Obviously, the last option looks like the best choice for buyers because it looks cheaper when we compare with the second option. Furthermore, the 1st one has nothing to compare with so it gets push to the side. Consequently, buyers think they

make a good buying decision but there is something to think about what sellers have done to 'manipulate' and 'nudge' buyer's' choice. Similarly, the restaurant can apply the relativity on meals' prices to let customers 'choose' (by themselves) the meals that restaurant wants to increase in sale. For example, the restaurant will offer three options for one typical dish and they actually want option B is the most chosen. In more detail, option A will cost only \$8 but it also is a smaller meal compare with option -B, costs \$10. The last one is B which is not only same size and price with -B but also give some extra value such as drinks or side dishes. Consequently, B is the most attractive option for customers and they are 'volunteer' to make their choices.

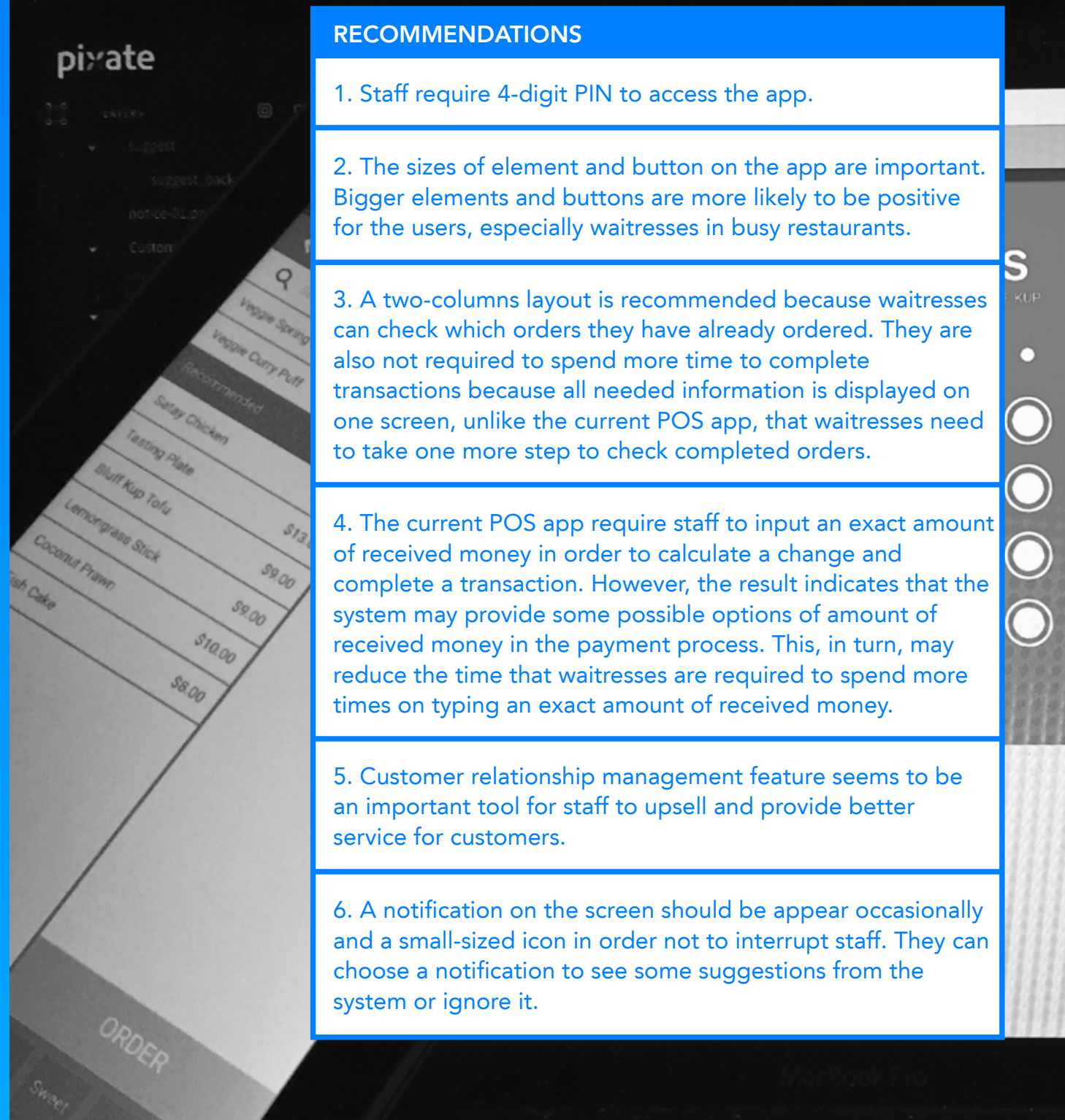


PROTOTYPE #02 AN INTERACTIVE PROTOTYPE

The second prototype was created by the simple prototype-making software named Pixate Studio. The software enables mobile application designers to create an interactive prototype and run it on any types of mobile device. Additionally, the results of the first prototype testing and additional guides can lead to some recommendations for improving the second prototype.



Visit the following links to see further videos
<https://vimeo.com/168147692>
<https://vimeo.com/168147792>



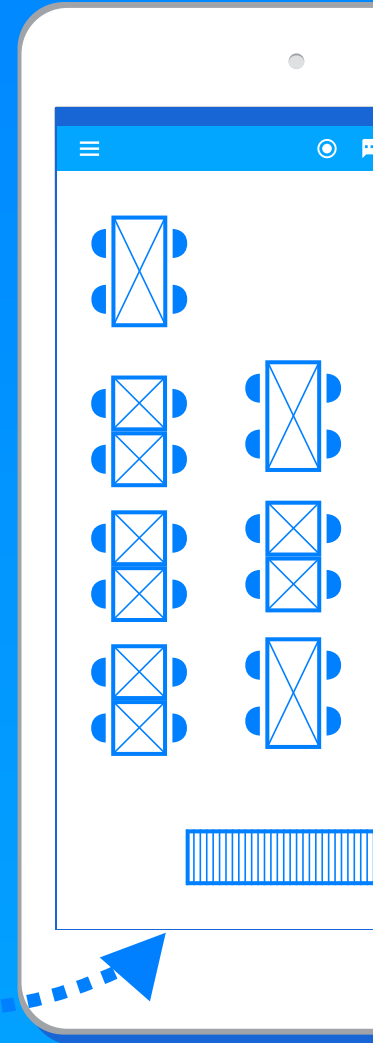
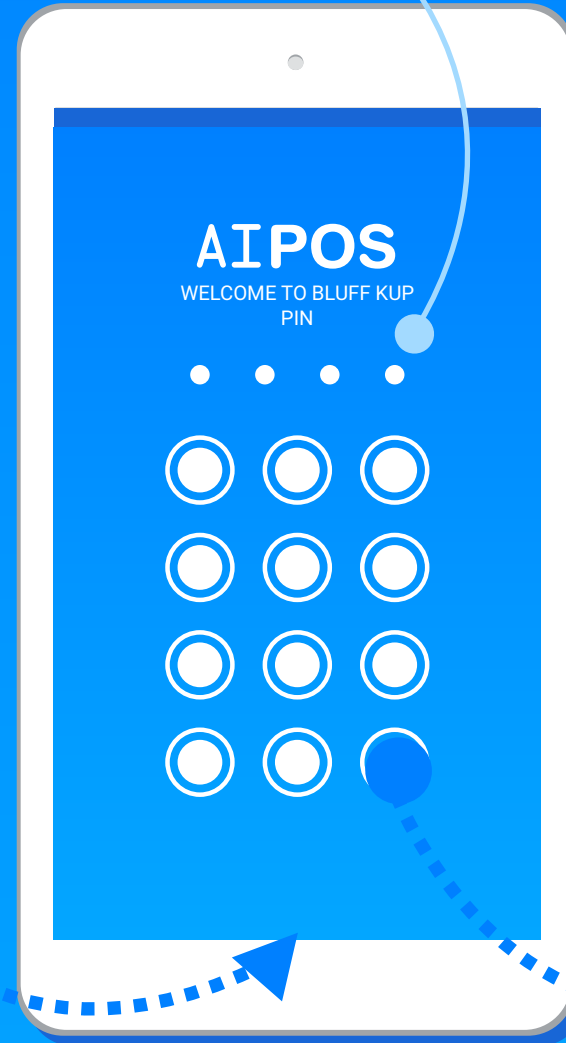
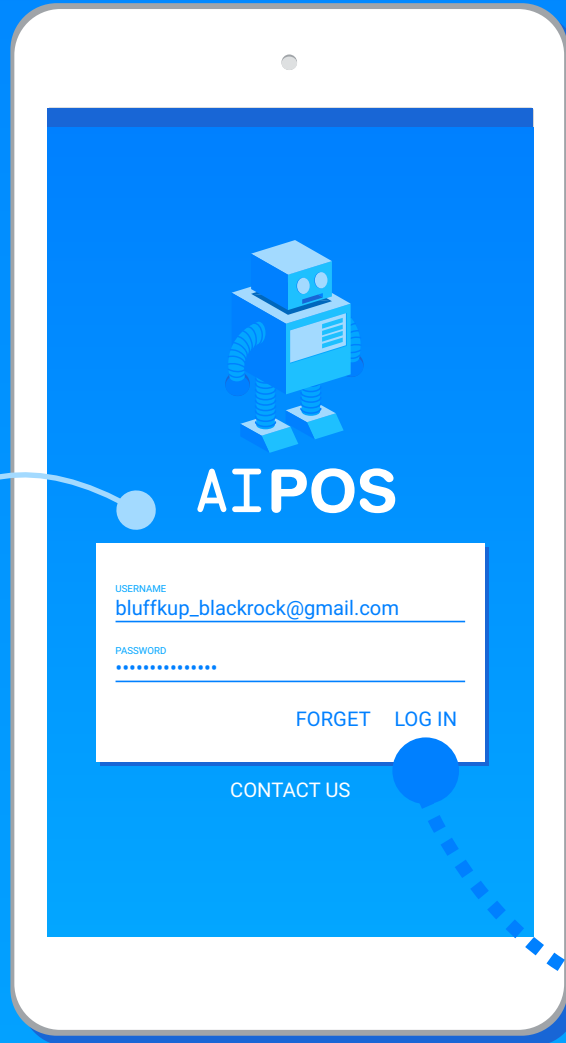
RECOMMENDATIONS

1. Staff require 4-digit PIN to access the app.
2. The sizes of element and button on the app are important. Bigger elements and buttons are more likely to be positive for the users, especially waitresses in busy restaurants.
3. A two-columns layout is recommended because waitresses can check which orders they have already ordered. They are also not required to spend more time to complete transactions because all needed information is displayed on one screen, unlike the current POS app, that waitresses need to take one more step to check completed orders.
4. The current POS app require staff to input an exact amount of received money in order to calculate a change and complete a transaction. However, the result indicates that the system may provide some possible options of amount of received money in the payment process. This, in turn, may reduce the time that waitresses are required to spend more times on typing an exact amount of received money.
5. Customer relationship management feature seems to be an important tool for staff to upsell and provide better service for customers.
6. A notification on the screen should be appear occasionally and a small-sized icon in order not to interrupt staff. They can choose a notification to see some suggestions from the system or ignore it.

PROTOTYPE #02 LOG IN AND PIN

4-digit PIN: after login, users are also required to give their own specific 4-digit pin and each user has a particular PIN.

Login: the screen shows two boxes which requires users filling in the username and password to login (only the manager need to do this task). The password is automatically saved and does not ask for next time login, the exception when users choose to log out.

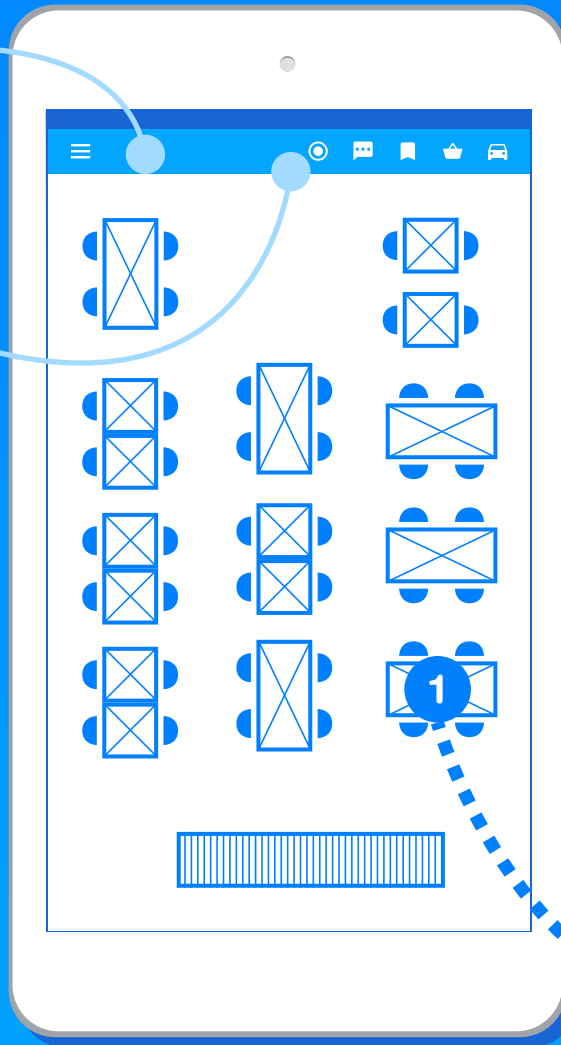


PROTOTYPE #02

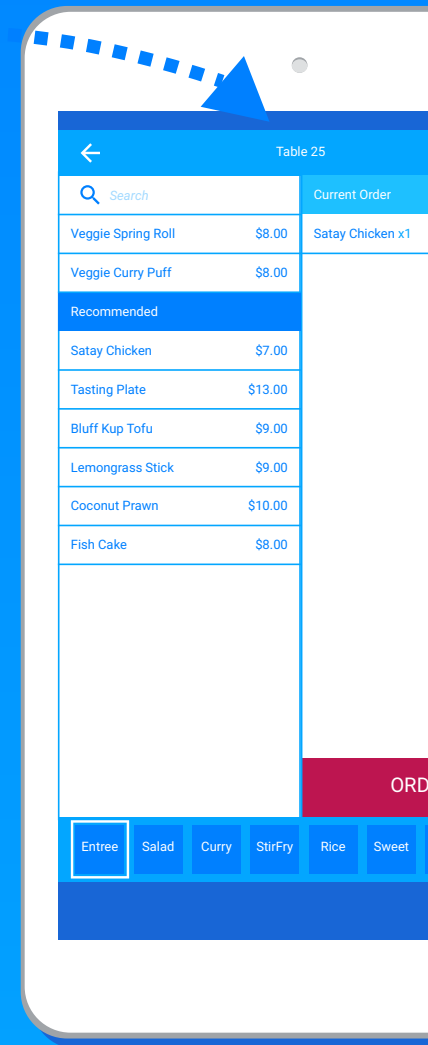
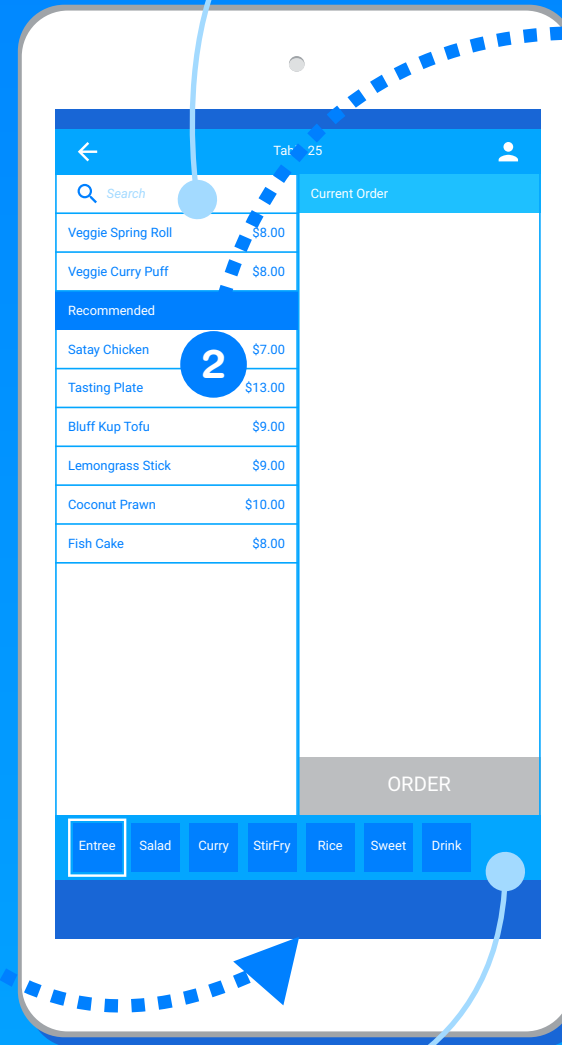
TABLE LAYOUT AND ON-SCREEN MENU

Table layout: simulation of table layouts on the screen can help users to manage tables easily and take order for a specific table.

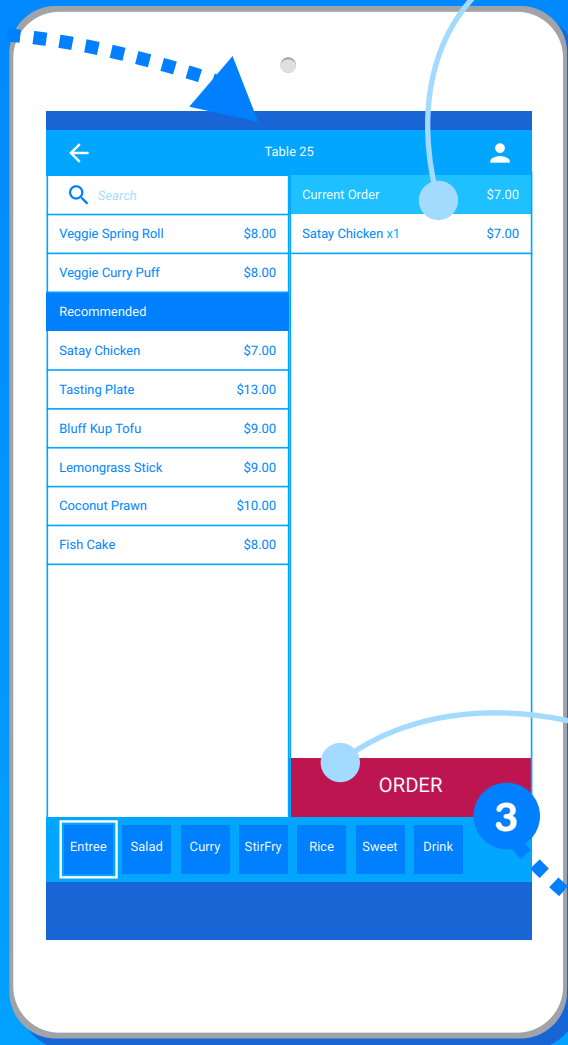
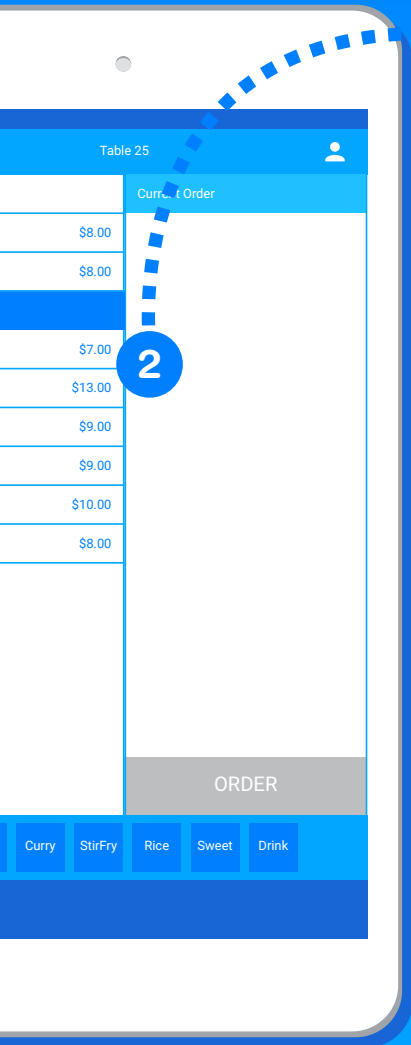
In the current app, there are only 3 functions on layout screen including take away, message to kitchen and open bill. However, with the new app, there are two more added functions: booking and delivery. Normally, staffs have to use another ios calendar app for booking, but problems, such as screen stuck and automatic shutting down. Therefore, The new app is upgraded with new attached booking function to provide the convenience in customer service.



The menu lists are shown on the left column and the top lists will be recommended menus that managers have recommended.

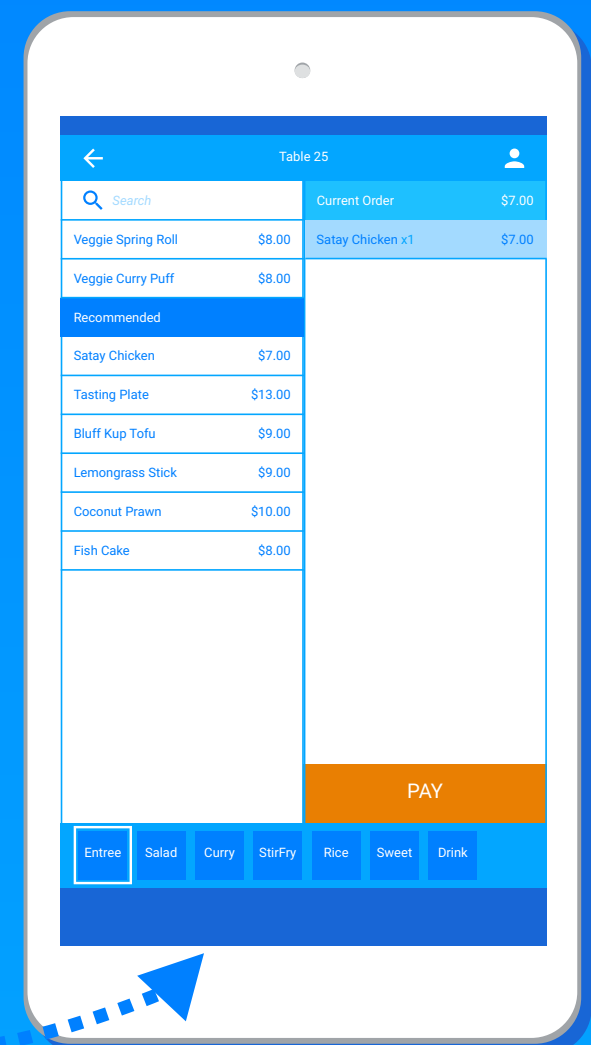


PROTOTYPE #02 ORDERING

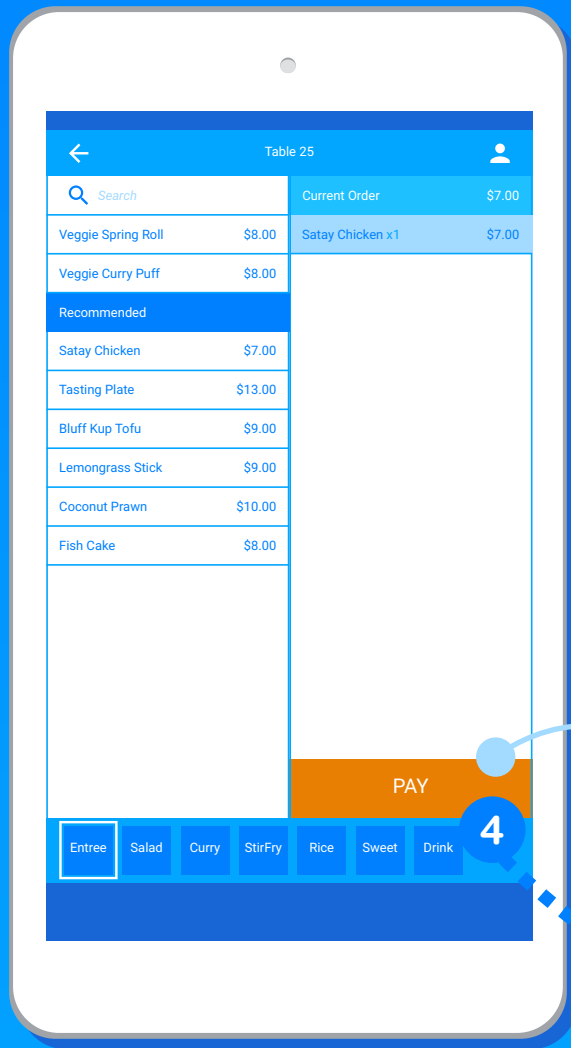


Two columns layout: whenever the table is picked, the screen is divided into two columns, one for menu categories and the other for chosen meals by customers. This function helps staffs server quickly without double checks for order. In other words, this function reduces the times that staffs need to touch the screen. For example, the current POS system requires 3 to 4 screen touchings because it has only one basic column showed on the screen before reaching to the specific dish for the order. But on this prototype, only 2 steps are required because of the convenience of two columns layout and it is really mean for the restaurant, especially during the peak hours.

The order button can be tap to send the order to the kitchen.

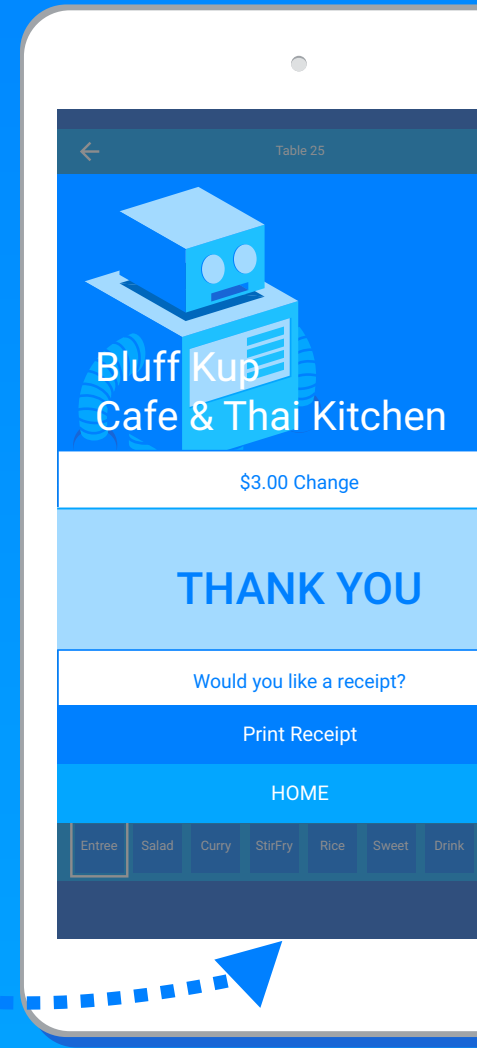
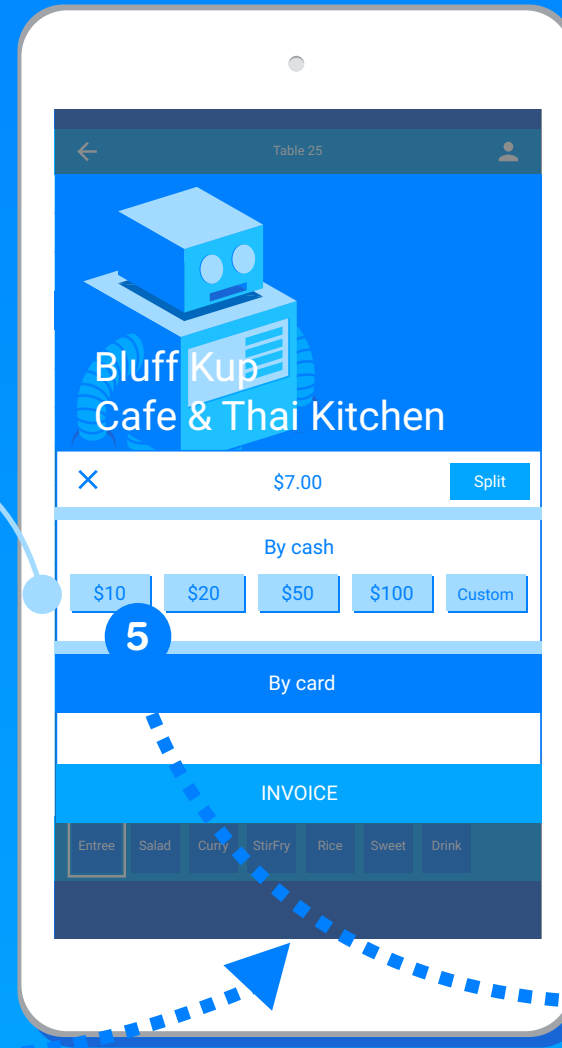


PROTOTYPE #02 PAYMENT

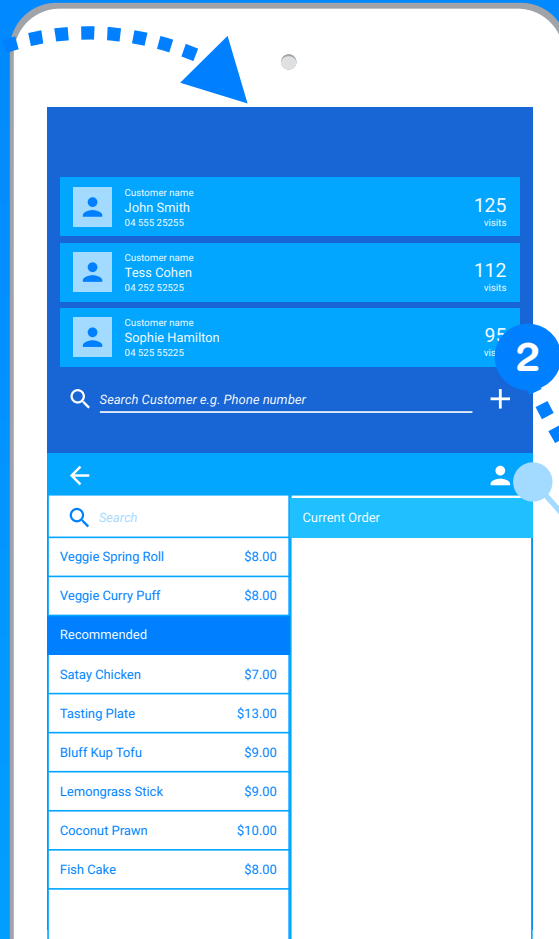
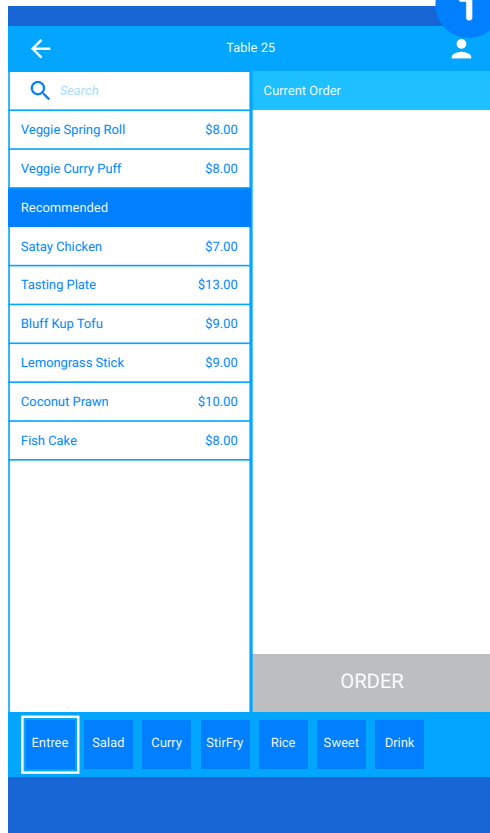


The system will provide some possible options of amount of received money if customers pay by cash. This can support staff to quickly complete transactions.

The order button will change to the pay button if all orders are sent to the kitchen.



PROTOTYPE #02 CUSTOMER RELATIONSHIP MANAGEMENT



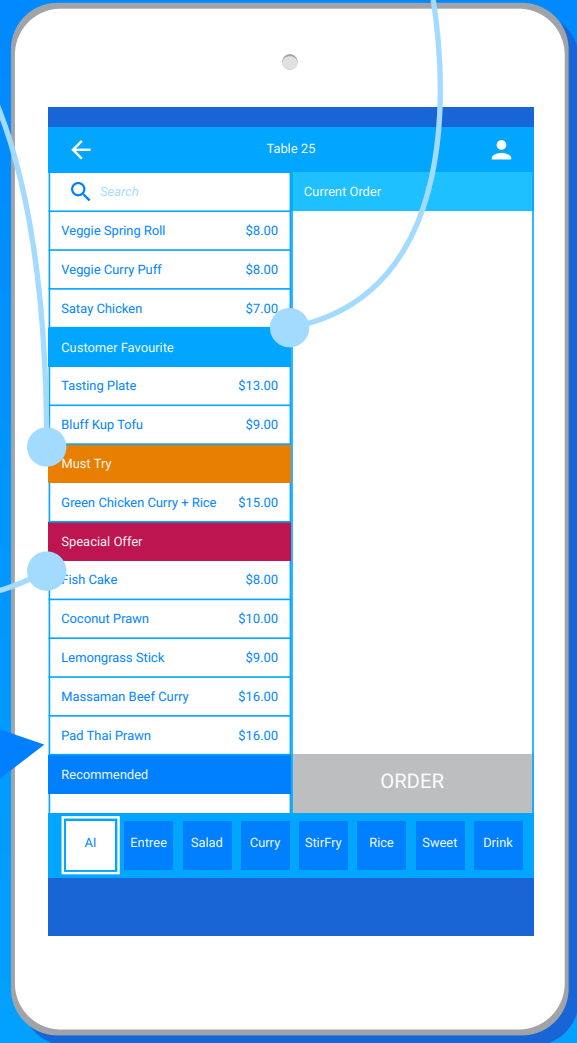
Must try: suggests some meals that customers never try (system randomly lists the suggestions).

+ GUIDE NO.3

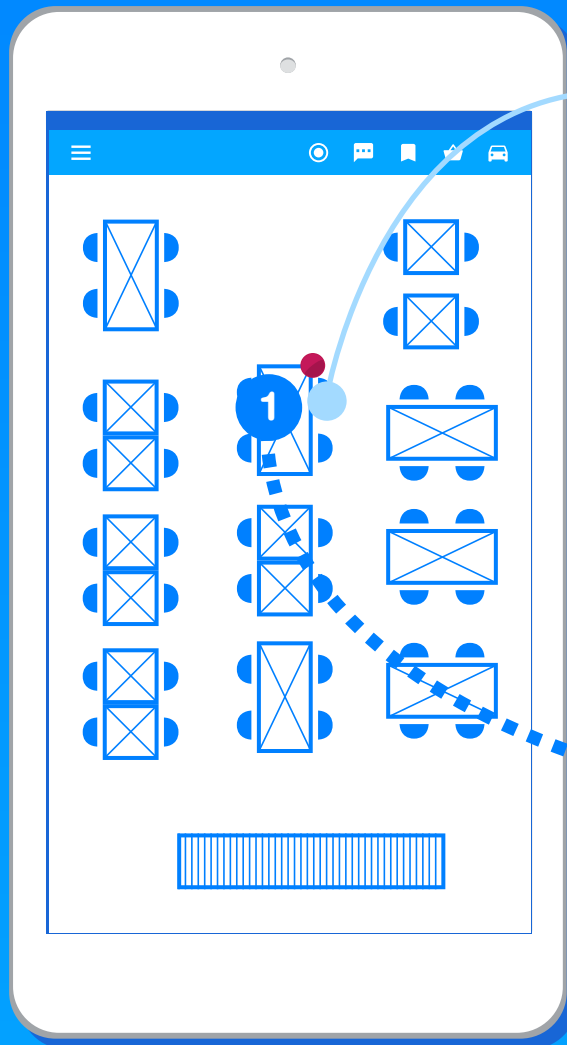
Special offer: contains those dishes are currently lower price than usual or special dishes have extra value (free drinks or side dishes) with same price.

Customer relationship management: there is also a button to help servers recognize customers by name or contact number. The app also leaves one box to take note new customers' information.

Customer favourite: lists all dishes which are usually ordered by regular customers (the system automatically records information of last orders).

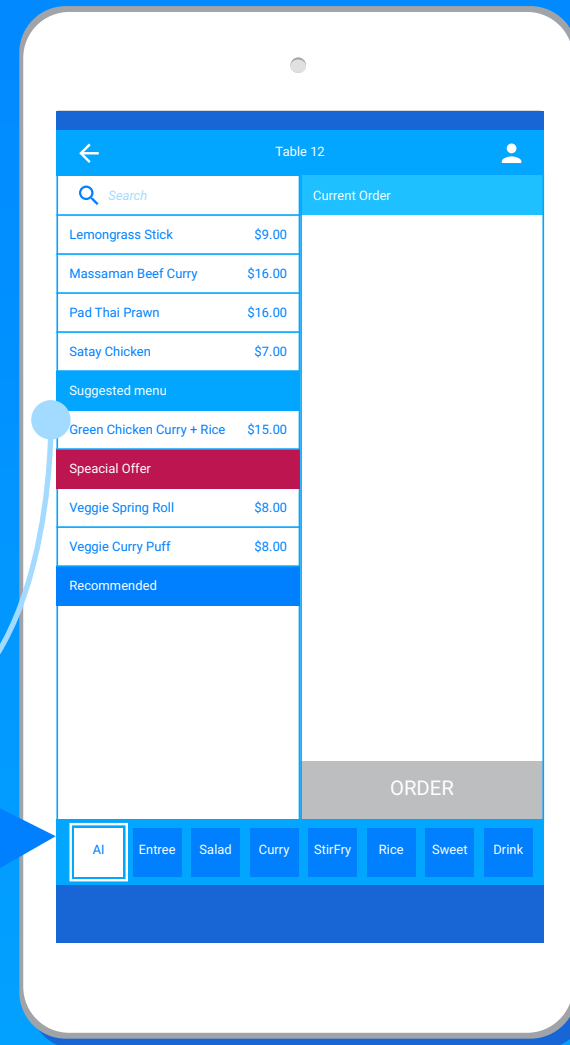


PROTOTYPE #02 AI NOTIFICATION



+ GUIDE NO.2

If there is no tap on the screen for more than five mins, a notification like Facebook will appear on the table which is already occupied to draw staff's attention to come and suggest some menus that are rarely served. That is the way that supports the restaurant to manipulate properly ingredients (short term period one) to reduce costs and upsell.



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