SCSV 2113

HUMAN COMPUTER INTERACTION

(Session 2020/2021 Semester 2)

School of Computing
Universiti Teknologi Malaysia

P4 – PROTOTYPING

TOTAL PRO FOOD DELIVERY SYSTEM

(Section 01)

GROUP 02 (GROUP 0.0)

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INTRODUCTION

The common process of remodeling and redesigning a system after a thorough inspection is one of the initiatives in helping the developers to further enhance their system's capabilities as well as to replace the system management in scenarios that concerns the users or the developers themselves where they need to manually troubleshoot issues within the system. Furthermore, this process also will be known as a new type of challenge which is technical challenge where improvising the later model by developing new process design and socio-cultural challenge which is the reactions of the people using the system in terms of organizational effects (Reijers and Mansar,2005).

Our group has discovered some usability issues regarding the impact of our system's interface interactions and design flaws on the Total Pro Food Delivery System application about its internal processes and the user's experience. This activity is expected for our group to handle and examine the current design of our system to effectively complete its tasks and the overall satisfaction acquired from the user or the expert team's feedback. Our group will be identifying the key points of the Nielsen's heuristics evaluation to try and redefine the system. Our group work aims to redesign our poorly built system to a much more suitable and pleasurable business environment for the users (de Lera and Mor, 2007).

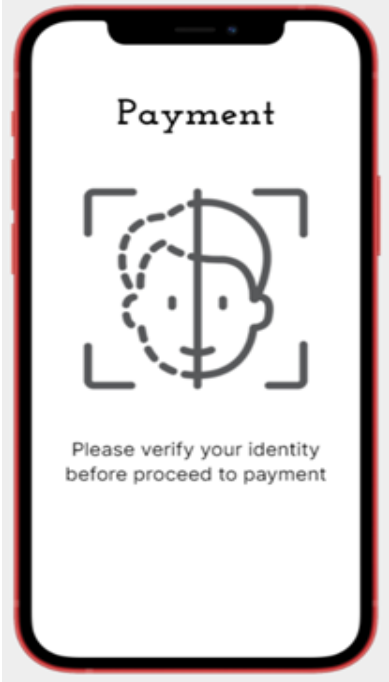
PROBLEMS

TASK 1

Expert's Critics		
Prototype image	Problem/ Identified Issue	Heuristics Violated
	There are no undo buttons for users to make changes to their personal information. There should also be a back button for users, just in case they have to make an emergency leave.	H3: User control and freedom S3: Major issue
	After pressing the button "Done" there is no feedback to notify the user that the process is complete. This may leave the user confused whether his account has been successfully registered or not.	H1: Visibility of system status S2: Minor issue

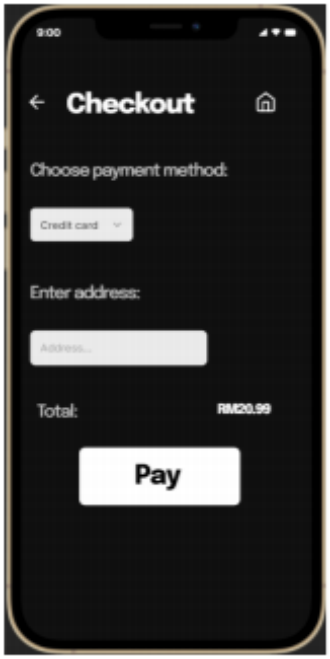
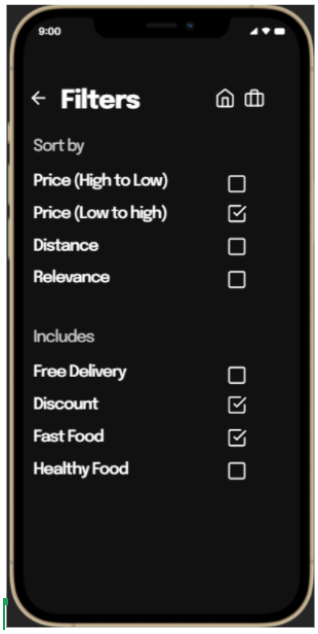
	There is no file option to choose which the users can submit the identification card in photo type.	H3: User control and freedom S3: Major issue
	There is no skip button that allows the user to skip this step temporarily if he does not wish to scan his identity card. The user is forced to upload a copy of the photo of his identity card if he wants to proceed to the next step.	H3: User control and freedom S4: Catastrophic issue

	The app should ask for permission before detecting the user's location. The system should respect and protect the user's privacy by always asking for permission to access his location.	H5: Error prevention S4: Catastrophic issue

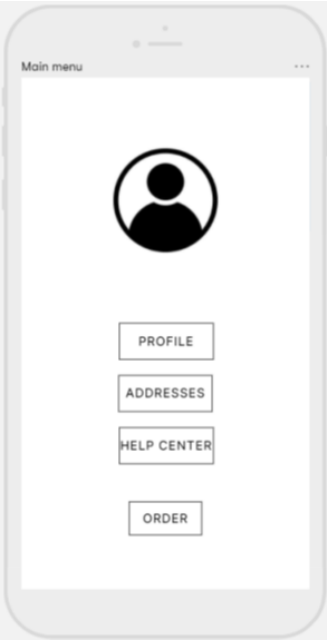
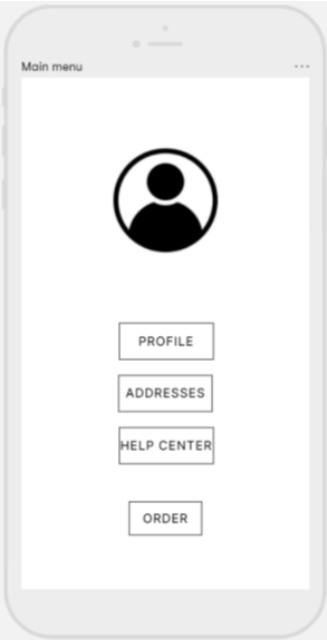
 	There is no undo or back button for the payment page and verification of identification page which just directs the user to face verification.	H3: User control and freedom S4: Catastrophic issue

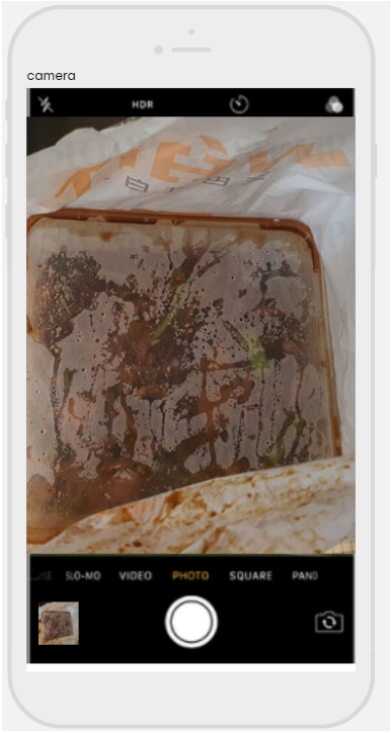
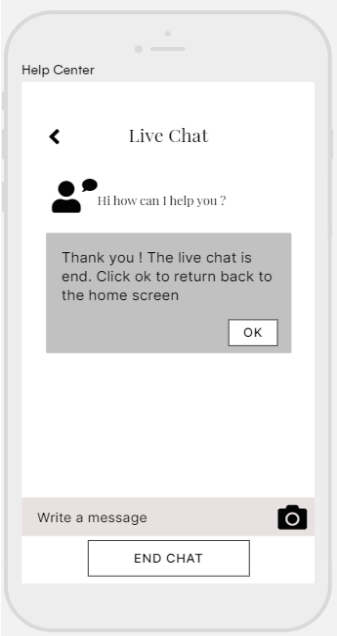
TASK 2

Expert's Critics		
Prototype image	Problem/ Identified Issue	Heuristics Violated
	The text "Tap 'search' for more is wrongly placed. The phrase should be placed near the search icon. This problem can get users confused as they do not know which one to click and if they are different.	H8: Aesthetic and minimalist design S1: Cosmetic issue
	The blue frame is too big and does not fit well to the screen. Besides that, the homepage background colour is different from the login page and also the help services page. Other than that, the colors chosen for the page are not suitable or do not match each other.	H8 : Aesthetic and minimalist design S1: Cosmetic issue

	The user should not have to insert their address multiple times. The application should easily integrate the user's address or give an option for users to deliver to another address.	H7: Flexibility and efficiency of use S3: Major issue
	There are only a few options in the filters section. People might not get their chosen restaurant or menu when there are too few filters to choose from.	H7: Flexibility and efficiency of use S2: Minor issue

TASK 3

Expert's Critics		
Prototype image	Problem/ Identified Issue	Heuristics Violated
	Our TotalProFood Delivery prototype **failed to maintain a consistent design**. From our prototype, we found that the "**Order" button has a different size** compared to other buttons.	H4: Consistency and standards S1: cosmetic issue
	There is no exit button to enable users to quit the app if they accidentally enter the app.	H3: User control and freedom S4: Catastrophic issue

	In our prototype, if the users **click the camera button, our application will directly access the user's phone camera** without any permission or confirmation message.	H5: Error prevention S4: Catastrophic issue
	There is no confirmation message before ending the live chat. Users will be confused when they touch the "END CHAT" unconsciously.	H5: Error prevention S3: Major issue

SOLUTIONS

TASK 1

Problems	Heuristic Violation	Solution
Lack of undo button or back button in the interface of registration.	H3: User control and freedom	The undo buttons should be placed at the end of each textbox which let the user undo all information entered in that particular textbox. If the user wishes to make small changes in the textbox, he could just click on it and edit using backspace from the keyboard. Next, the back button needs to be added at the top left corner of the interface which enables the user to exit the current page and go back to the previous page (the main page) if he accidentally tapped on the registration button but does not wish to register as a new member.
After pressing the button "Done" there is no feedback to notify the user that the process is complete.	H1: Visibility of system status	A message window with the message stating "Successfully Registered" should be popping out after the "Done" button is pressed and the status of all textboxes is detected as filled by the system. If the textboxes are not fully filled in (empty box detected), a message window with the message stating "Registration Failed. Please fill in all the information required." will be popped out.

There is no file option to choose which the users can submit the identification card in photo type.	H3: User control and freedom	An option of selecting a photo file should be implemented inside. As identification cards are very important and personal data, many users will wish to label the identification card to avoid the improper use of the application.
There is no skip button that allows the user to skip this step temporarily if he does not wish to scan his identity card.	H3: User control and freedom	The skip button has to be included at the right top corner that allows the user to skip the step of identity verification temporarily. The user is still allowed to view the menu in the app without verifying his identity, but once he proceeds to payment, he will be asked to verify his identity by default.
The app should ask for permission before detecting the user's location.	H5: Error prevention	A confirmation message window that asks for the user's permission to access his location should be included. The system can only access the user's location once the permission is given by the user, otherwise location access is prohibited.

There is no undo or back button for the payment and verification of identification page which just directs the user to face verification .	H3: User control and freedom	The undo button should be placed as users may need to make some changes.

TASK 2

Problems	Heuristic Violation	Solution
The text “Tap ‘search’ for more is wrongly placed.	H8: Aesthetic and minimalist design	The phrase “tap search for more" will be removed from the screen so the page does not look too cluttered
The blue frame is too big and does not fit well to the screen and the homepage background colour is different from other pages	H8 : Aesthetic and minimalist design	The background should be changed to white to match all the other pages, the big blue frame will be removed. The color choice should always match one another so that users feel comfortable and happy when looking at the design.
The user should not have to insert their address multiple times.	H7: Flexibility and efficiency of use	Based on the problem found, the application should put a new icon or symbol on the page of the menu choosing for the user to ensure their address is always right or to put a different address. This way they would not have to put in their address every time they want to checkout. For this page, the application should only ask which address the user preferred because some users have saved many addresses on their apps.

There are only a few options in the filters section.	H7: Flexibility and efficiency of use	Adding a few more options such as customizable price range, cuisines, restaurant popularity and more.

TASK 3

Problems	Heuristic Violation	Solution
“Order” button has a different size compared to other buttons.	H4: Consistency and standards	Based on the principle of consistency and standards, the design of an interface should all rely on well-established conventions. Thus, every element in an interface must have the same size and form to make the design look more professional and appealing. Users like a clean and consistent interface design, and a design that deviates from the standard will irritate users. For that reason, it is suggested to adopt a standard and consistent button design in our application.
Lack of exit button to enable users to quit the app.	H3: User control and freedom	Based on the principle of user control and freedom, there should always be an emergency exit for users. Therefore, an exit button should be placed below the order button.
Did not ask permission when accessing the user camera.	H5: Error prevention	According to the principle of error prevention, a great design always pays attention to avoid problems initially. Either eliminate the error-prone conditions or provide users with the

		option to approve the operation before submitting it. Therefore, having a confirmation message or permission is essential to prevent errors. In addition, accessing user's private images without their permission is an invasion of their privacy. When accessing personal information such as a user's camera or photo gallery, the system should always prompt the user for permission.
No confirmation message before ending the live chat.	H5: Error prevention	A confirmation message that asks the user when they click the "End Chat" button should be included.

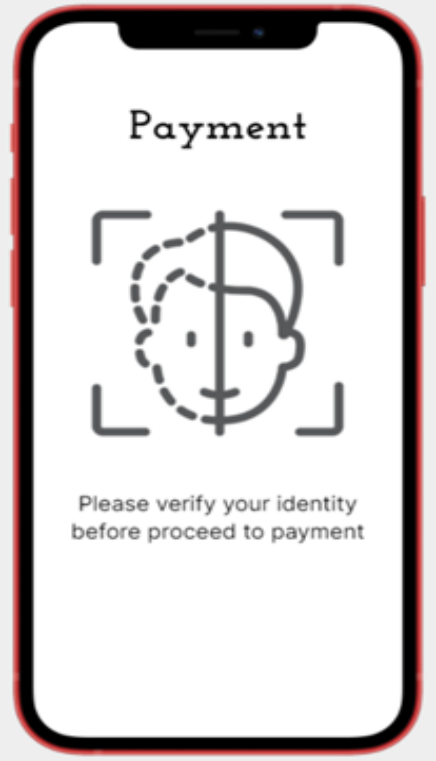
REDESIGN PROTOTYPE

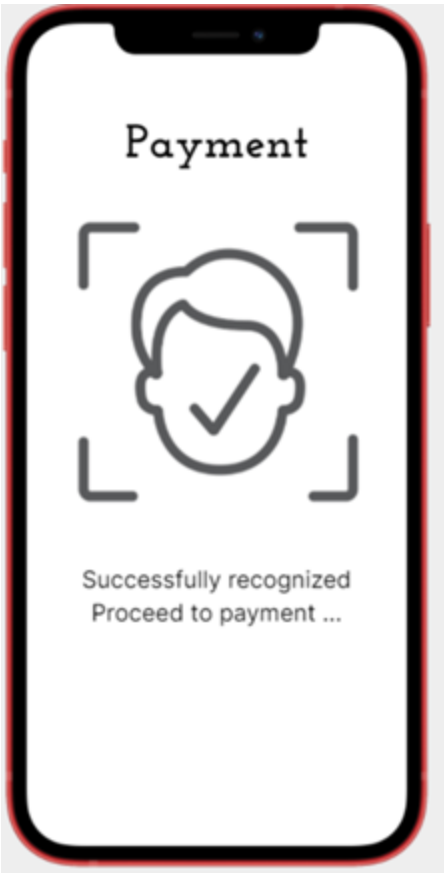
TASK 1

Before redesign prototype:

	This is the interface of the login phase. The user is required to choose either login or sign up as a new member if he does not own an account in this app. He can choose to sign up as a member via his Google account or Facebook. He also can sign up with the form provided.
	This is the interface of the sign up form. The user is required to enter his personal information including the user id, password, mobile number and email.

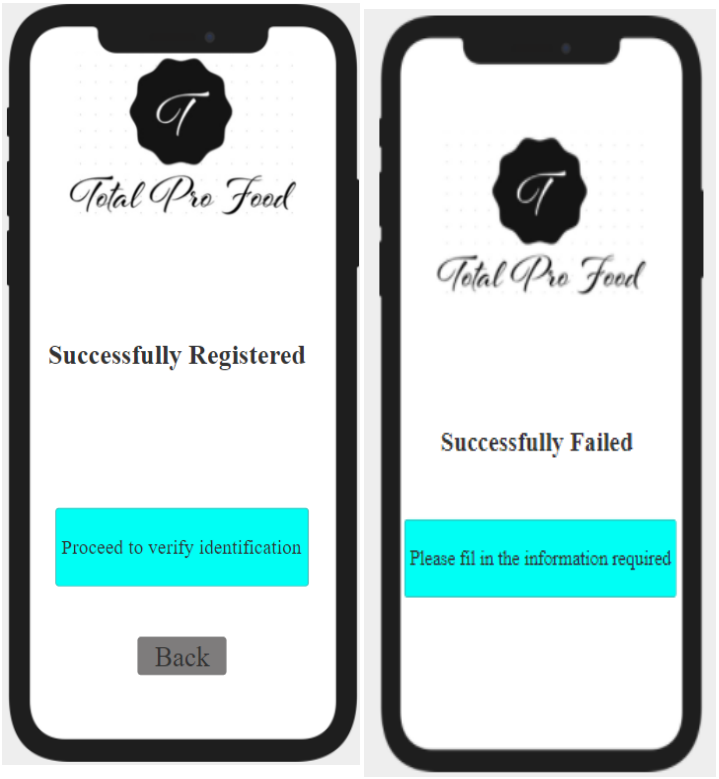
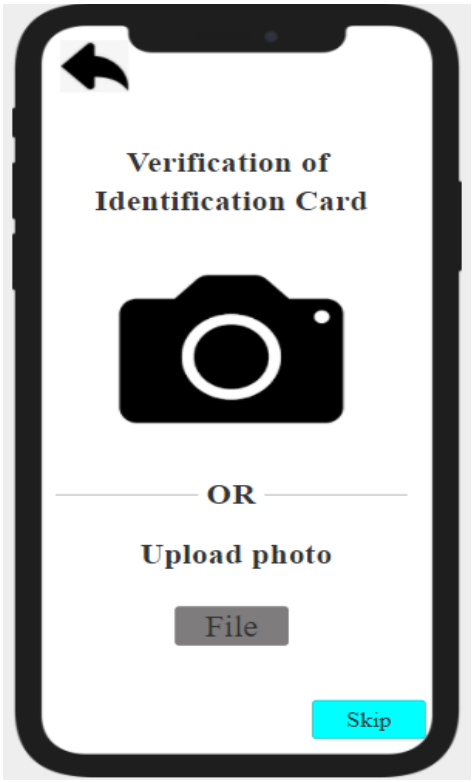
	This is the interface of verification of user's identification. After the user has signed up via Google/Facebook account or the form, he is required to scan his identity card for verification purposes.
	This is the interface of verification of user's identification. After the user has scanned his identity card, he is required to scan his face using the front-face camera to further verify his identity.

	This is the interface of detecting the user's location. After the user has logged in or successfully signed up as a new member, he will be directed to this interface to detect his location for delivery purposes.
	This is the interface of payment, which will be shown after the user chooses to check out. The user is required to scan his face for verification purposes before he can proceed to the payment via online banking, e-wallet, credit card, etc.

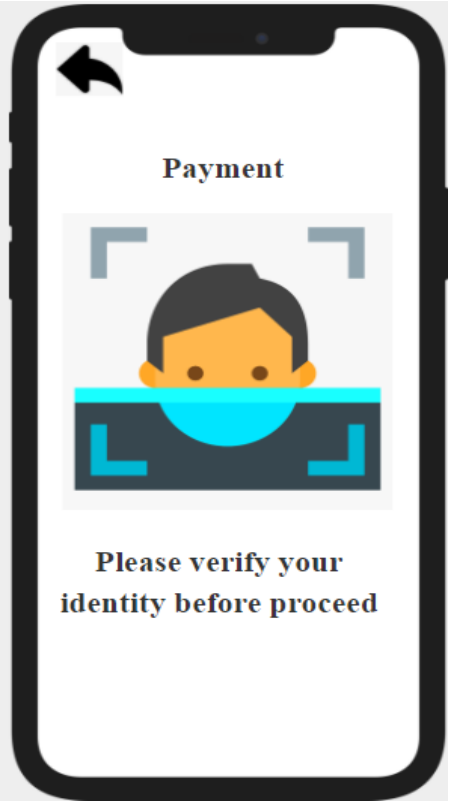
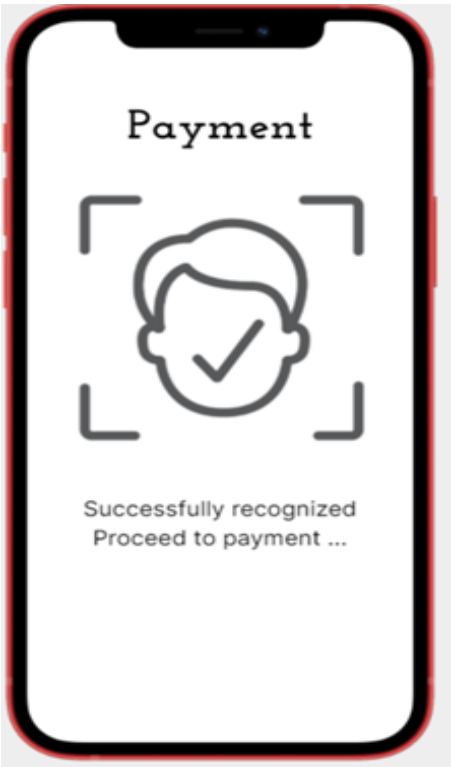
	This is the interface of payment in recognizing the user identity. After the user has scanned his face, the system will automatically recognize his identity and will only proceed to payment once it is successfully recognized. This feature enhances the security as fake identities can be prevented from placing the order successfully.

After redesign prototype:

Prototype	Explanation
	This is the interface of the login phase. The user is required to choose either login or sign up as a new member if he does not own an account in this app. He can choose to sign up as a member via his Google account or Facebook. He also can sign up with the form provided.
	After pressing the sign up method, users can choose to press the "Back" button to choose to sign up via Google account or Facebook account.

	After pressing the button "Done" there will be a popping message "Successfully registered" to notify the users that they have completed. If the textboxes are not fully filled in (empty box detected), a pop up message stating "Registration Failed. Please fill in all the information required."A button to proceed to face recognition as a back button is implemented in case users enter the wrong information.
	This is the interface of verification of user's identification. The user is required to scan his identity card or upload the photo of the identification card for verification purposes. There is also a skip button which users can skip the identification card verification if the user does not wish to share his/her identification details. A back button is implemented to allow the user to return to the previous page.

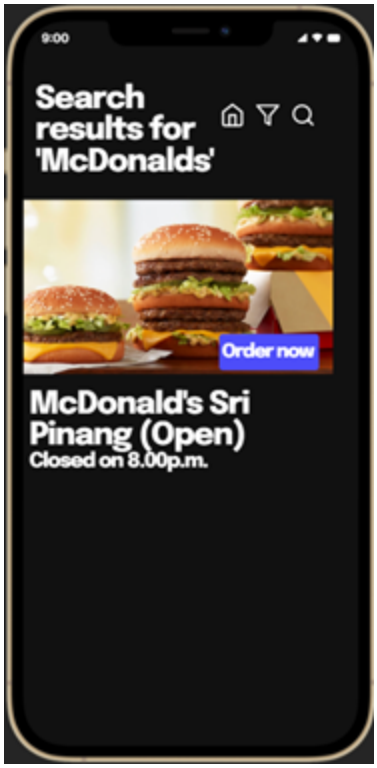
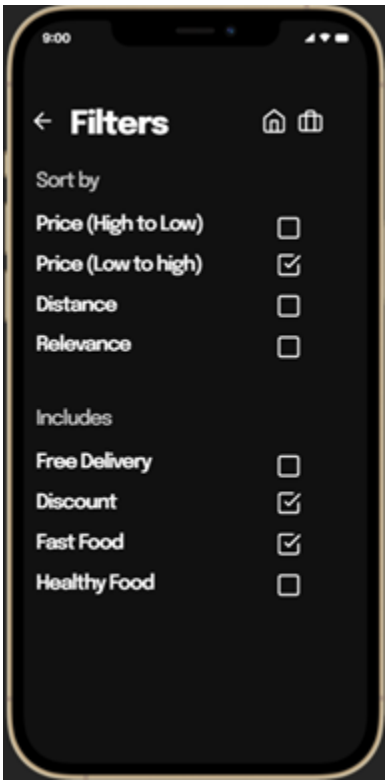
	This is the interface of verification of user's identification. After the user has scanned his identity card, he is required to scan his face using the front-face camera to further verify his identity. The new undo button is added in case the user uploads the wrong file or photo.
	As mentioned by the critics that the interface does not ask for permission before detecting the user's location, thus we had added the permission checking for the users. The users can choose to allow the application to detect the user's live location by pressing "Allow" and reject by pressing "No".

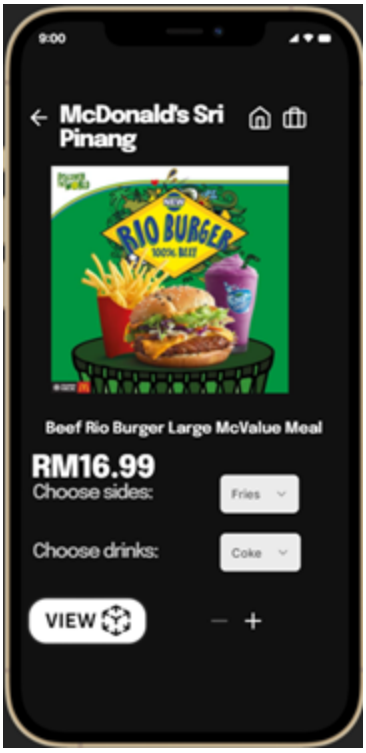
	This is the interface of payment, which will be shown after the user chooses to check out. The user is required to scan his face for verification purposes before he can proceed to the payment via online banking, e-wallet, credit card, etc. A back button is added as users may need to make some add on or change the payment method.
	This is the interface of payment in recognizing the user identity. After the user has scanned his face, the system will automatically recognize his identity and will only proceed to payment once it is successfully recognized. This feature enhances the security as fake identities can be prevented from placing the order successfully.

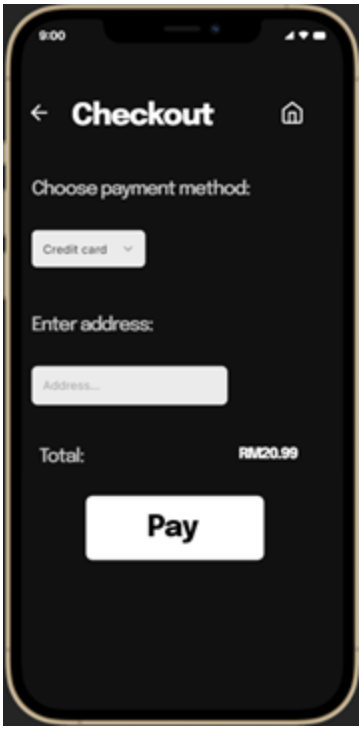
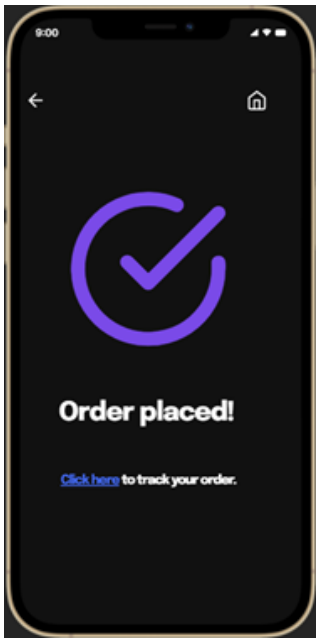
TASK 2

Before redesign prototype:

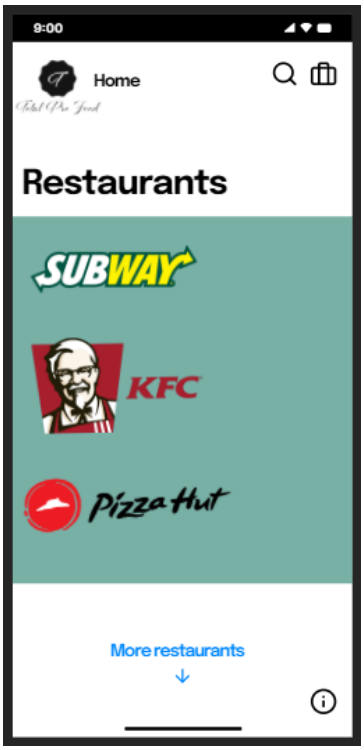
	Interface when users first launch the application. Users can choose to login with their created Total Pro Food account with username. Also, users can login into Total Pro Food by using their Facebook or Google account. This is to ensure users' first experience much easier.
	Home interface of Total Pro Food apps. Restaurant picks will be randomized every single day. Clutter-free, simple and easy to navigate home interface. More restaurants can be found by clicking at the search button at the top right of the home page. Placed at the left of the search button is the cart button. Click to see added items before check out.

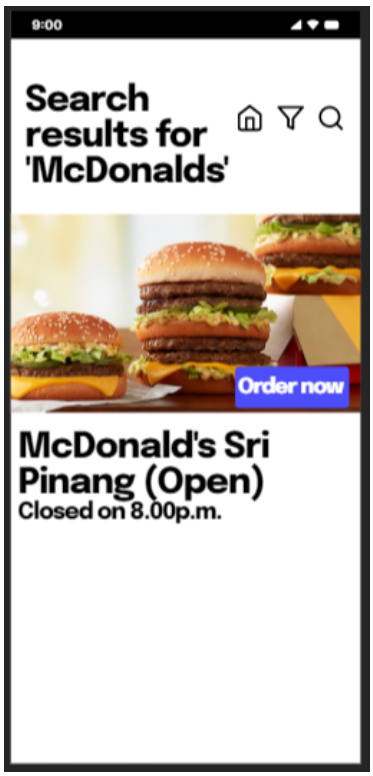
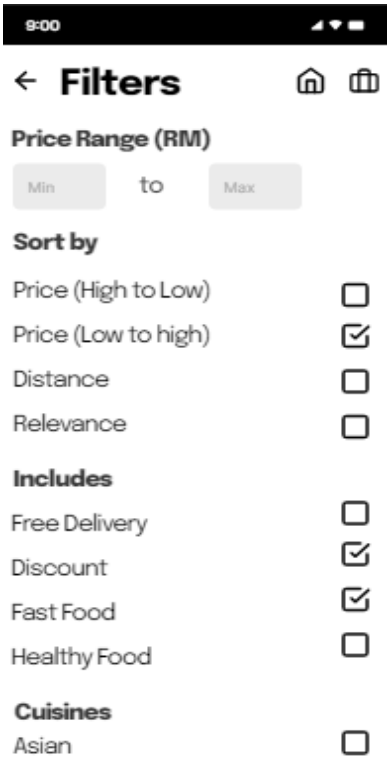
	Search results page. Nearby restaurants will be displayed. If there are other nearby restaurants, they will also be displayed and can be chosen as the users' wish. The filter icon is used for easier browsing.
	Filters feature helps users to find their desired food characteristics. This is handy especially if the users cannot make up their decision on what to eat.

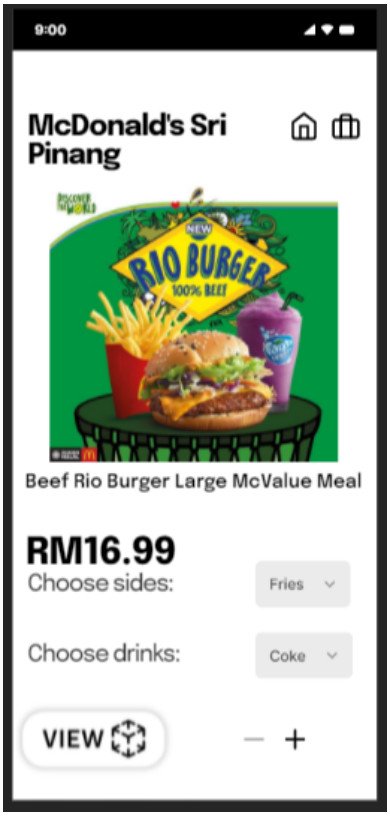
	Food selection menu interface. Users are able to customize and change the quantity of their order. To see the real-life portion and ingredients, users may click at the "View AR" logo. The apps will then use the phone's camera to display the food in the form of Augmented Reality. With that being said, users are now aware of their meal size and ingredients of their meal.
	Cart interface. Users can edit their order, see extra fees if any, check their order total or even store in the cart for future order. Users can proceed to the checkout page to make payment for their order.

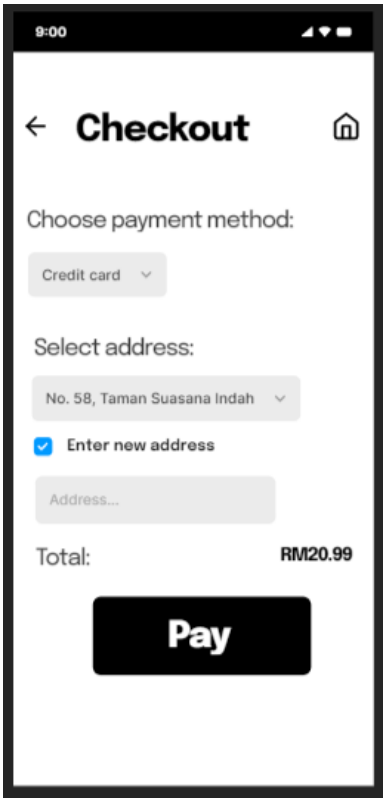
	Checkout interface. Users are able to choose their desired payment methods such as online banking and credit or debit card. Users also must enter their valid address for the delivery to take place. Click pay to secure order.
	Orders confirmed will display as per shown. Users can track their order to budget their time.

After redesign prototype:

Prototype	Explanation
	Interface when users first launch the application. Users can choose to login with their created Total Pro Food account with username. Also, users can login into Total Pro Food by using their Facebook or Google account. This is to ensure users' first experience much easier.
	We have reviewed and used the solution stated before to redesign our application page. First of all, we removed the blue box on top of the screen because it is too big and does not match with other colors. Secondly, we made some adjustments to the phrase "Tap for more" and added an arrow as a symbol on the bottom of the page. Thus, users will not be confused with the search symbol and the phrases. Other than that, the background color matches the other pages and we add a green box in the middle or as a section of restaurants to be picked.

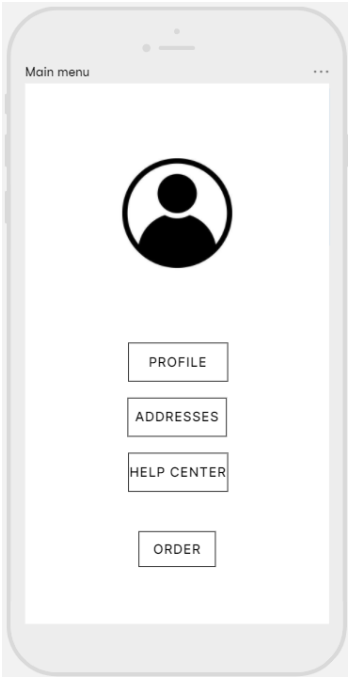
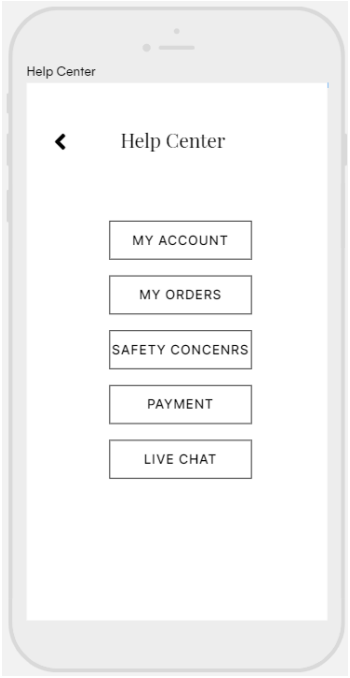
	Search results page. Nearby restaurants will be displayed. If there are other nearby restaurants, they will also be displayed and can be chosen as the users' wish. The filter icon is used for easier browsing.
	Obvious changes first, the background color has been changed from black to white to match other pages. After that, we added a few more options on the filters when choosing restaurants or food menus. For example, users can now choose their preferred price range for the food they want so they don't overspend. Next as can be seen on the bottom of the page, there are options for cuisines for users to choose their favourite food according to mood for the day.

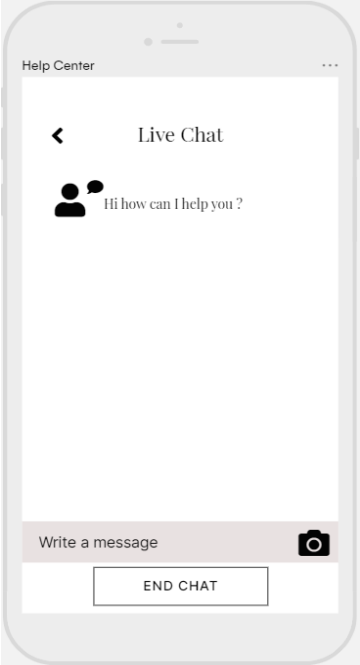
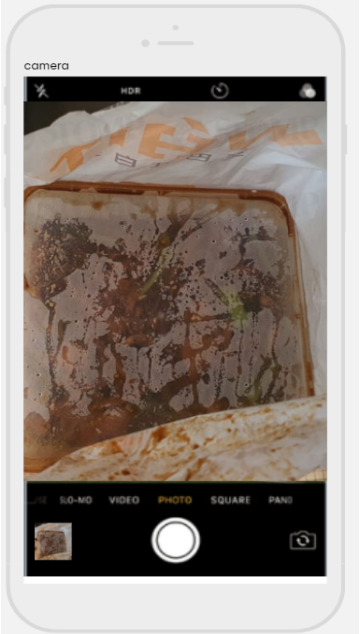
	Food selection menu interface. Users are able to customize and change the quantity of their order. To see the real-life portion and ingredients, users may click at the "View AR" logo. The apps will then use the phone's camera to display the food in the form of Augmented Reality. With that being said, users are now aware of their meal size and ingredients of their meal.
	Checkout interface. Users are able to choose their desired payment methods such as online banking and credit or debit card. Users also must enter their valid address for the delivery to take place. Click pay to secure order.

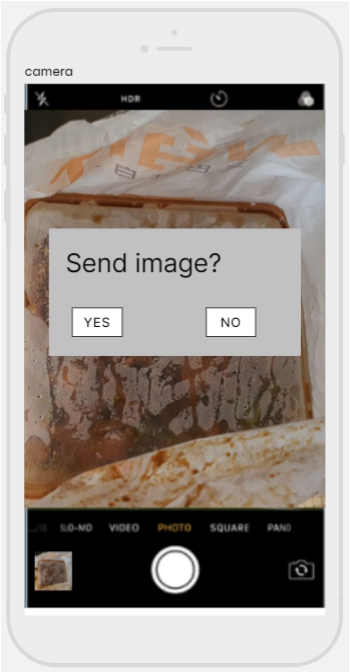
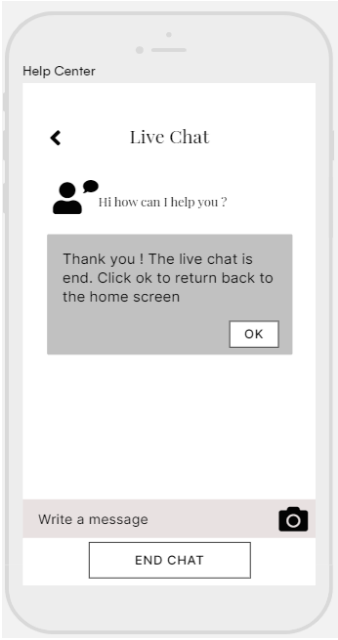
	First of all, the background color matches the other pages. As you can see on the prototype picture shown on the left, we have redesigned some of the items in the page. We decided not to redesign the choosing payment option as users can easily understand the concept. Before a user proceeds to do payment for their order, they first have to choose a payment method and choose or make sure they have the right address. The select address options will display all the users stored address, However, when a user forgets to store any address before they can click on the "Enter new address" button a box will pop out so the user can use their new address.
	Orders confirmed will display as per shown. Users can track their order to budget their time. We redesign or recolor the pages to look more friendly.

TASK 3

Before redesign prototype:

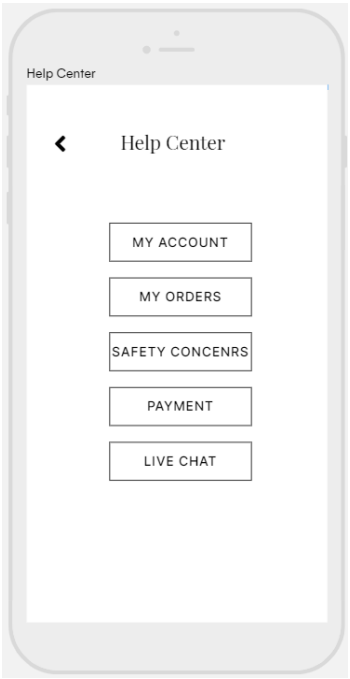
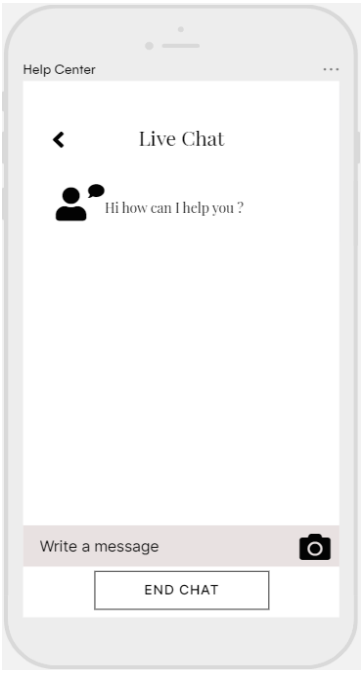
1.  	This is the interface of the main menu. Users can update their profile and address here. Since the user in task 3 encountered some problems, he can click the “HELP CENTER” button to find help services.
2.  	This is the interface of the help center. The users can select the type of help needed according to their problem encountered. If the user has no idea, he/she can click the “Live Chat” button to communicate directly with the customer service’s staff.

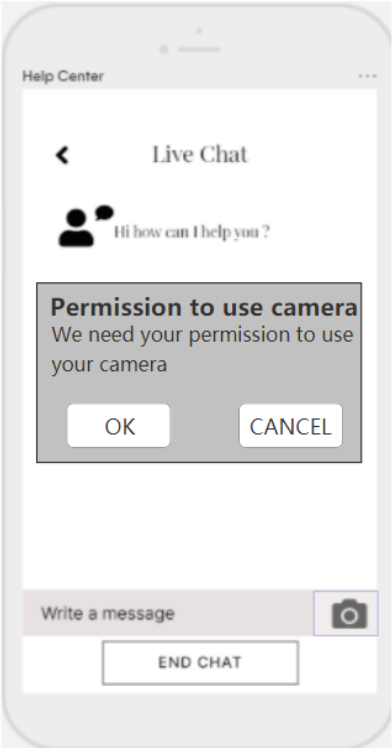
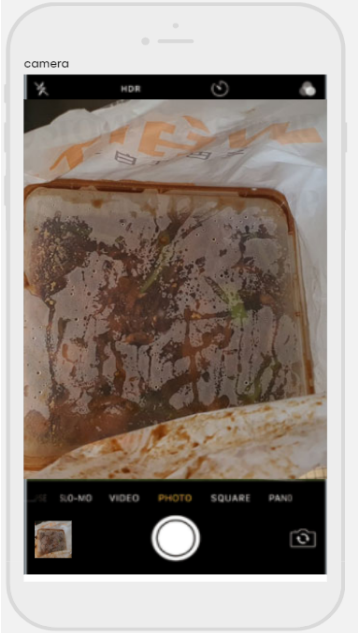
3.  	In the live chat interface, the user can communicate with the staff by sending messages. The user can also take a photo by clicking the camera button. If the problem has been settled, the user can click the "END CHAT" button.
4.  	After clicking the camera in the live chat interface, the system will link to the phone's camera for the user to capture the image of food.

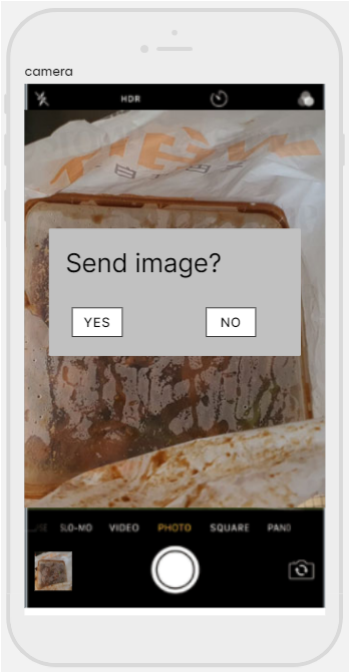
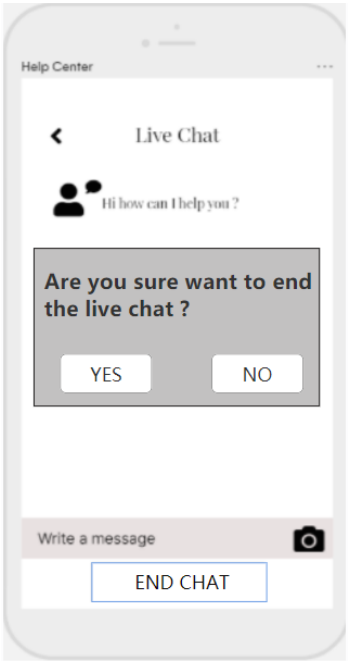
5. 	After taking an image, the confirmation message will pop up to get the permission from the user to send the image.
6. 	The "Thank You" message will pop up after the user clicks the "END CHAT" button. Then, the user can click the "OK" button to return back to the main menu phase.

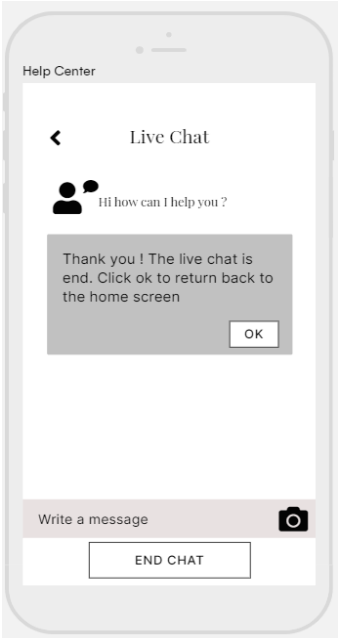
After redesign prototype:

Prototype	Explanation
	Interface when users first launch the application. Users can choose to login with their created Total Pro Food account with username. Also, users can login into Total Pro Food by using their Facebook or Google account. This is to ensure users' first experience much easier.
	This is the interface of the help center. The users can select the type of help needed according to their problem encountered. If the user has no idea, he/she can click the "Live Chat" button to communicate directly with the customer service's staff.

	This is the interface of the help center. The users can select the type of help needed according to their problem encountered. If the user has no idea, he/she can click the “Live Chat” button to communicate directly with the customer service’s staff.
	In the live chat interface, the user can communicate with the staff by sending messages. The user can also take a photo by clicking the camera button. If the problem has been settled, the user can click the “END CHAT” button.

	After clicking the camera in the live chat interface, the system will ask permission to use the camera before opening the camera.
	After the user agrees to the app to use the camera, the system will link to the phone's camera for the user to capture the image of food.

	After taking an image, the confirmation message will pop up to get the permission from the user to send the image.
	After the users have solved their problems, they can end the live chat by clicking the "END CHAT" button and a confirmation message will pop up to get the decision from the user.

	The "Thank You" message will pop up after the user confirms they want to end the live chat. Then, the user can click the "OK" button to return back to the main menu phase.

REFERENCE

Reijers, H. A., & Mansar, S. L. (2005). Best practices in business process redesign: an overview and qualitative evaluation of successful redesign heuristics. Omega, 33(4), 283-306.

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