Design & Evaluation Report

FIT3063 - Human-Computer Interaction

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Date:

07/10/2016

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Description of The System

Monash Veggie Eatery (MoVE) is an international chain of restaurants that serves vegetarian and vegan cuisine. It has branches in Australia, Malaysia and South Africa. The System we are implementing aims to improve the efficiency of the business operations using technology like the computer, web and mobile devices. The business operations are handling orders and delivery and managing reservations.

The System consists of 5 parts:
1. Web Application for Customer
2. Web Application for Manager
3. Tablet Application for Waiting Staff
4. Mobile Application for Casual Delivery Staff
5. Mobile Application for Customer

Web Application for Customer

Desktop

The Customer Desktop Website allows users to access the MoVE site to perform multiple actions. They can access the website to place an order online, make a table reservation and even check out the latest menu item. All these features provide convenience to the users, which they can easily get food delivered to their door step with one click and avoid long queue at the restaurant.

Mobile

The Customer Mobile Web Application allow users to access the Company's web site to multiple services anywhere and anytime through the user's mobile device. The services include "Dine-in", "Delivery", and "Give Feedback". "Dine-in" service allow users to make and manage reservation, and request multiple dining service like call for bill payment and dining attendant. "Delivery" service allow users to order food via delivery services. Lastly, users are also able to provide feedback for the food being served.

Web Application for Manager

The Web Application provides a customized solution to help managers do their tasks. Its functions include view and manage orders, generate bills, assign tasks to other staff and manage accounts. The application also allows managers to reset account password for customers.

Tablet Application for Waiting Staff

The tablet application for the waiting staff allows the waiting staff to take in-house orders via the application. This application lets each waiting staff knows which table would like to make an order, payment or call the waiter by different blinking lights on the table layout shown on the tablet. The waiting staff is able to add or edit a remark for each item ordered by the customers as well as managing items from the orders of their assigned tables. This application also allows the waiting staff to generate the bill for a table.

Mobile Application for Casual Delivery Staff

The mobile application for the casual delivery staff allows the delivery staff to keep track of their deliveries and allow them to access any required information regarding the delivery they are making or have to make in the future. The services the application offers are GPS, "Trip", "Manager", "My Account", "Settings", "Help", "Quit" and a map of the city in which the delivery is taking place which is a part of the GPS. The GPS gives the delivery staff the directions to the location where the food has to be delivered to. Trip option allows the delivery staff to check which trip he is currently on, able to access the required information about any trip being performed or needs to be performed, end the current trip and start a new trip. Manager option allows the delivery staff to contact the managers at the restaurant if needed. My account option allows the staff to check their trip history and change their password. Settings allows the staff to edit the settings to their liking for e.g change language. This is a complete application offering all required functionality for a delivery staff member.

Current And Previous Task

Bazil Muzaffar Kotriwala
Stage A - Worked on Customer Desktop Screens
Stage B - Working on Casual Delivery Staff Mobile Application

Wong Xun Guo
Stage A - Worked on Manager Desktop Application
Stage B - Worked on Tablet App for Waiting Staff

Sham Ying Ying
Stage A - Worked on Tablet App for Waiting Staff
Stage B - Worked on Customer Desktop Screens

Ng Kah Hoe
Stage A - Worked on Casual Delivery Staff Mobile Application
Stage B - Worked on Customer Mobile Web Application

Tee Kai Yoong
Stage A - Worked on Mobile Web Application for Customer
Stage B - Worked on Web Application for Manager

Prototypes Evolutions

Web Application (Mobile) for Customers

Previously in the low level prototype, that is CM06, home address and delivery address only include 2 fields which are "address line 1" and "address line 2". In order to survive hash situation when the web application is actually being used by real users, some innovative evolutionary growth must take place. In the high level prototype, multiple fields are being added which are "country", "state", "city", and "postcode". This will prevent user from entering the whole address into a field which might have a high tendency to cause data inaccuracy and inconsistency. The purpose of separating address field is to make sure the data being entered by the user is being stored consistently and accurately for business intelligence purposes.

Previously in the low level prototype, CM06, this page is a complete page without scrollbar because there are lesser fields. In the high level prototype, as more fields are added, more things have to be shown on that page and hence a scrollbar is added. Scrollbar is added instead of separating "home address" section and "delivering address" section into another page is because they are both being grouped under registration addresses which is know as page 2 in the web application.

The "call" button in the low level prototype is being changed to "call attendant" as "call" might allow the user to missunderstood the button function as phone call. "Call" alone

also did not specify who the call is directed to, this this case users will not know or understand the function of the "call" button.

Round icons are being used to represent table in the low level prototype, CM14. In the high level prototype, CM16, It is being changed to rectable icon for consistency purposes as other applications are using rectangle icons to represent table.

The reservation part in the low prototype, CM13 till CM17, is not being grouped and does not include page number to show user which section of the whole reservation process the user is currently at. In the high prototype, CM16 till CM20, it is being grouped into 4 pages where first page is the normal details of the reservation process, second page for any extra needs information, third page for date and time availability, and fourth page for reservation details confirmation.

Previously in the low level prototype, CM12, user is able to create account if the user is unable to retrieve the user's account when the user's forgets the user's account password or lost the account. In the high level prototype, this privilege is removed as user might create redundant account. For example if a user forgets the password, and enter an incorrect email address to retrieve the account, an error would definitely occur. Hence a revamped to removed this privilege is done in the high level prototype.

A confirmation popup is added before user proceed to payment to make sure that all the details entered for the reservation is correct. A confirmation popup is added when user wants to cancel an order to ensure that the "cancel order" button is not accidently clicked. When user wants to send message to the restaurant for an order, a confirmation popup is added to tell user that the message has been sent after the message is being sent, this satisfy Shneiderman golden rule of design dialogs to yield closure.

Tablet Application for Waiting Staff

The table layout page has only one changes which is that in the low fidelity prototype, the Legend 'call' has now been changed to 'calling' to avoid the staff from misunderstanding other than the staff being called to the table.

The make order screen 'W04' in the low fidelity prototype had been adjusted to suit the table size more. The button 'Remove' has been changed to 'Remove Item', as this will reduce confusion for the staff.

Besides that, the buttons 'Submit' and 'Remove Item' are disabled and greyed out if no items have been added to the order list. This would help reduce any errors done by the

staff as they will not be able to remove any item or submit the order list into the system if the order is empty.

In every screen, the position of buttons such as the 'Cancel' and 'Submit' button or the 'Yes' and 'No' button has also been swapped to be more consistent with most application or system where buttons with the similar actions to 'Yes' and 'No' buttons are that the 'Yes' button would come first then the 'No' button.

In the Manage Order screen, the 'Edit remark' button has been removed from the low fidelity prototype as it is a duplicate button since once a remark has been added to an item, the 'Add Remarks' button would become a 'Edit Remarks' button. This way if the staff would like to make changes to the remarks immediately they would be able to do so instead of having to submit the order first then into the Manage Order screen to edit the remarks made.

In the Add Remarks screen, the 'Delete' button has been removed as it is unnecessary since there already is a 'Cancel' button. And if the staff would like to just remove whatever they have typed into the text field, they can use the backspace on the keyboard to delete partially instead of the whole text and having to retype again if necessary.

In the Payment screen, the breadcrumbs have been changed so that it follows the naming of the menu. This would prevent the staff from being confused as to where they currently are. The bill has been updated so that it would be displayed in a table form. By doing so, it will help customers check their bill with ease before paying.

Every breadcrumbs in the application has been updated to show where it started from which would be the Home page followed by which table and so on. This way new staff can easily track where they came from.

For every pop up box which appears on each screen, the background would be greyed out and everything would also be disabled except the anything from pop up message box. This is to help prevent the staff from making any mistakes such as accidentally pressing on anything on the background.

Web Application (Desktop) for Customers

In the previous low fidelity prototype, the Customer Desktop page appears to be a dry and boring since not many graphics is used. For example, in the returning search result for online order, CD5 uses a table format to list out the food. Instead, in the high fidelity

prototype, we use image to represent the food. The colourful graphic is more likely to attract the user's attention and the likelihood of them ordering the food is higher.

Besides, in the previous low fidelity prototype, the home page is missing. The homepage is a very important element in a website because it is where a user will first land on the page and it gives a very deep impression to the user. Therefore, in the high fidelity prototype, we have created a homepage to the website that features the latest promotion or new menu item in the restaurant. Again, the graphic will attracts the user's attention, because human likes pictures and color more than long boring text.

For making a table reservation page in low fidelity prototype, CD9, the screen looks too cramped with all of the sectioned form. Therefore, in order to maintain a cleaner looking website, I have separated the sections out into different pages.

I have also added a food detail page in the high fidelity prototype in order to provide more information to the user about their food. The health concern among the citizen is getting higher, more people are watching out what they are consuming. Therefore, it is a good initiative to allow the user to know what are the ingredients and nutrition facts of the food on the menu. Other than that, the users can also check against the allergy they have.

Mobile Application for Casual Delivery Staff

In the previous low fidelity prototypes, there was a 'help' button in the footer which has now been removed from all screens in the high fidelity prototype. The 'help' button was not needed as it was redundant because a 'help' option is already available as a part of the menu in the application once the staff member is logged in. However, when the staff has not yet logged in, a "Contact Us" option is given to the user instead of the "help" button. This almost serves the same purpose as the 'help' button, however, contact us is more suited as the only two problems a staff member could have is that either his login credentials are not working and the reset password option is not working for him, hence, a contact email address is given to the user if needed.

Also, previously in the low fidelity prototypes, we assumed that once the user presses any option button on the menu for e.g "Quit", "Help", a larger sized button for that same option will appear on the right which would make it easier for the user to press it. This idea was acquired by the android OS which uses this method in the contact list while searching for contacts through letters A-Z. However, it has not been implemented in the high fidelity prototype simply due to the fact that the menu buttons are big enough to easily be pressed by the user without making a mistake as opposed to previously thought that the buttons would be smaller on screen while constructing the low fidelity

prototype. The reason android OS uses it is due to the fact that the letters A-Z are small. However, this is not the case in our high fidelity prototypes.

There are some pages which were not put in the low fidelity prototype, however, these have been added to the high fidelity prototype such as the About us page, changing setting page and some extra help functionality pages.

Web Application for Manager

The high-fidelity prototype of this part of the system mostly follows the low-fidelity prototype that was submitted in Assignment Stage A. The changes which are made are mostly minor and includes things like rearrangement of elements on the screen.

The location of the logo on the screen has remained on the top-left corner. The text label of the logout button has been replaced by an icon and is now located beside the currently logged-in manager's account information box to make use of the relatively empty horizontal space. A help button has also been added and it is located on top of the logout button. The background colour of the header section has been changed from white to dark green.

On the navigational side of things, the drop-down accounts navigation item on the navigation bar has been changed to a normal navigation item. This was done to make the navigation items look consistent as the three other navigation items i.e. Orders, Tables and Staff, are not using drop-downs.

On the Orders page, only the current status of each orders are shown in the table, instead of all the status options listed as in previous prototypes. In order to still support the change of status, a button labelled "Change status" has been added and is located on the rightmost column of the table together with the "Send message" button. In-house orders and online orders now have their own list of status options and screens has been changed to reflect those changes. When the manager clicks on the "Change status" button, the system will automatically show the correct list of options, by checking the type of that order (whether it is an in-house order or online order). The number of digits of the Order ID has been changed to be consistent with prototypes of other parts of the system. A dialog box has been added which appears after the manager hit the "Send" button, notifying the manager that the message has been successfully sent.

On the Tables page, the status of each table is now encoded in colours of different hue. The legend has been relocated from the right of the screen to right under the navigation bar. This is done so that the layout of the tables make full use of the horizontal space. A

dialog box has been added which appears after the manager clicks on the "Generate" button for generating bill, saying that the bill has been generated successfully.

On the Staff page, when assigning waiting staff to tables, the table which is selected is now represented by a button enclosed in a rectangle, as opposed to a shaded button like in the low-fidelity prototype.

When the "Accounts" navigation button is clicked on, the manager will be directed to a new page. This new page has two buttons, one labelled "Customer" and one labelled"Staff". On the forms for creating new staff record and modifying staff record, a text has been added to let users know that the asterisk beside field labels indicate that those fields are mandatory.

There are also some changes to the arrangement of primary and secondary buttons and they are now more consistent than before.

Guidelines Developments

We developed our guidelines based on our previous knowledge on human computer interaction and research on internet about the human behaviour when they are using the web application on different platforms.

Our design guidelines are set in order to reduce mistake and provide the user a good experience with our site. All the group members came to a discussion and agreed on the design guidelines.

When we are all designing our prototype, we stick to the design guidelines as closely as possible. We also shared our work with each other so that we can view and comment on each other work. We do this in order to improve our design because our own design might suit us but it might not be suitable for other person. Therefore, we commented on each other work to make sure our design is suitable for the diverse users.

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