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COMP 482
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Assignment 3 – *System Implementation & Evaluation*

FINAL REPORT

1. Final Implementation.

In this section, I will be providing walkthrough of the final implementation of the

Earth Café self-serve ordering system.

The initial screen of the system presents the customers with two options, as shown

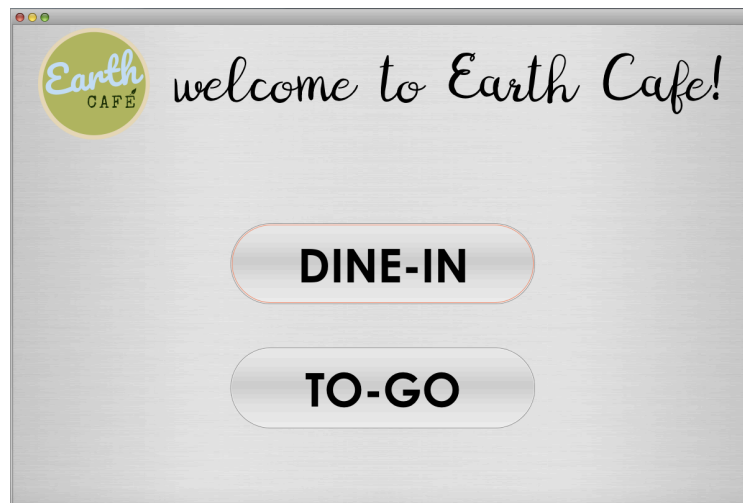below in Figure 1. The customer must decide whether they want their order to be "Dine-

In" or "To-Go".

Figure 1: Initial Screen

Once this selection is made, the customer will be taken to the "Earth Café Menu"

screen displayed below.

Figure 2: Unfilled Ordering Screen

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On this screen, the customer will be able to fill out their order, by toggling the

spinners beside each menu item to increase or decrease the quantities.

Figure 3: Filled Ordering Screen

As you can see above in Figure 3, the **Receipt** button is disabled. This button is

only enabled once the user enters a name for their order using the **Name** field on the top-

right. In Figure 4, you will see that since the name "Tristan" has been inputted, the

Receipt button is now enabled.

Figure 4: Name Inputted

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When the customer clicks on the **Total** button, all of the values in the bottom panel will be filled with the appropriate amount. This includes the total cost of the order, as well as the total calories that are in the order.

Figure 5: Order Total Displayed

The customer can now click the **Receipt** button to print the order receipt that will be displayed on the right-hand side of the screen, as shown below.

Figure 6: Order Receipt Displayed

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If the customer wishes to pay for their order using the self-serve machine, they can click the **Payment** button. The following window will pop up on the screen, where they will be able to input their payment information.

Figure 6: Payment Window

Once the customer inputs their payment information, the **Place Order** button will be enabled, allowing the customer to place their order. Without inputting their payment information, this button will not be enabled.

Figure 7: Place Order Button Revealed

When the customer clicks on the **Place Order** button, their order will be placed, and they will be taken to the "Thank You" page displayed below. They can then click **Exit** to return to the initial screen shown in Figure 1, so the self-serve system is ready for the next customer.
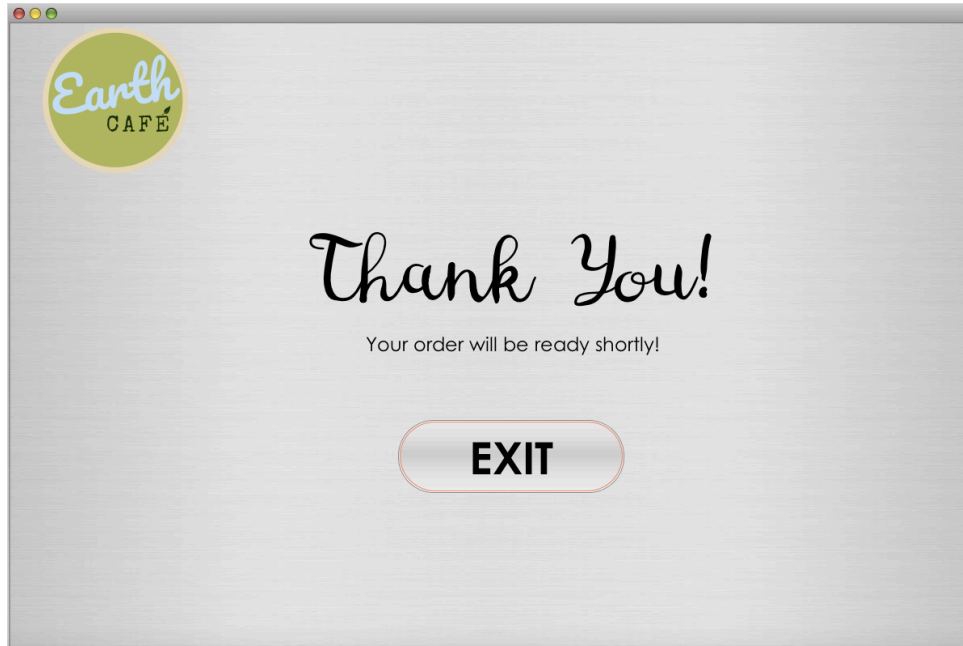
Figure 7: Order Placed

If the customer does not wish to pay for their order at the self-serve machine, they can simply print their receipt using the **Receipt** button, and click the **Cancel** button to return to the initial screen. The customer can then bring their receipt to the "Express Payment Line", where an Earth Café employee will accept their payment and place their order.

Also, if a customer changes his or her mind, they can click the same **Cancel** button to return the initial screen.

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Figure 7: Cancelled Order

2. Heuristic Evaluation.

After evaluating the system, I have concluded that it has been implemented

efficiently and effectively. Although the system performs as it should, there are minor

discrepancies that will be outlined in this section. I have used Nielsen's heuristics to

categorically evaluate features of the system.

Firstly, I evaluated the **Aesthetic and Minimalistic Design**. Once the customer

surpasses the initial screen by selecting "Dine-In" or "To-Go", they will be introduced to

the "Earth Café Menu" screen. The primary issue with this screen is that it may be

somewhat overwhelming to the new customers. The customers might be confused about

where to begin in the ordering process, as there is so much going on with this screen.

However, this issue can easily be resolved by attached a small plaque to each ordering

system, which will include a set of instructions that the customer should follow. The

severity of this problem is about a 4/10. It is not too serious, as there was a simple

solution to the issue. Nevertheless, the system could have been improved by creating a

separate page for each menu category, so as to reduce the clutter on the screen.

When I was evaluating the **Flexibility and Efficiency of Use**, I detected a

problem that could be an annoyance to several customers. Every time a customer wants

to place an order, they must manually input their credit or debit card information. This

step could frustrate many customers, because credit/debit card numbers are quite long,

and this could potentially hold up the line. For this reason, I would rate the severity of

this problem as a 7/10. In order to avoid this issue, I would suggest implementing a

credit/debit card scanner. This will allow the customer to automatically input their

credit/debit card information by simply scanning their card.

Another issue I detected when evaluating the **User Control and Freedom**, is the

fact users are unable to edit or delete their payment information once it has been inputted.

This affects the customer's ability to backtrack in the event that they make a mistake. I

would say the severity of this problem is around an 8/10, as this occurrence could

potentially cause stress for the users.

Despite the aforementioned list of problems, the overall system does a great job of

mirroring real world concepts. The system follows the basic procedure for placing a food

order that is used by most real world restaurants. This makes it easy for most if not all

customers to quickly adapt to the system, as they will quickly develop a familiarity with

the system. In addition, the system provides the user with high visibility of their system

status. The customer is always aware of which part of the process they are performing,

because any changes made to the system will result in a visible output. With the

consistent design and the clear, step-by-step instructions that will be included with the

system, Earth Café customers will be able to navigate through the system ease.

3. Design Rationale.

In this section, I will be expanding on the specific design decisions that have been

made, as well as the overall quality of the system. Every page was designed with an

intended purpose, where each page has different design requirements.

The purpose of the initial page was to select the type of order – "Dine-In" or "To-

Go". This page was designed with simplicity in mind, because the customer should be

aware that there are only two options that they can choose between. Both option buttons

are very large and prominent at the centre of the screen, indicating to customers that this

is the first step of the ordering process. This initial screen is also consistent with the

standard self-serve ordering system for most restaurants. This is the general format of

systems used in restaurants such as McDonald's or Wendy's.

The second page, which is the "Menu" page, was designed to provide the users

with visibility of their status, as well as to remain consistent with platform conventions.

Visibility was provided by ensuring that all user actions resulted in a detectable change to

the system. For example, when the customer increases the quantity of a specific menu

item by toggling the spinner, this change will be reflected in the number displayed beside

the spinner. In addition to the order quantities, the customer will be able to see all of the

order details on this page. This includes the total cost, tax, total calorie count, and the

order receipt. By displaying these values, the customer is aware that they are one step

closer to fulfilling their order. This is because the customer will already be familiar with

these values, as they consistent with the standard convention of a typical ordering system. Also, all of the components of this page are grouped together according to specific categories. All of the menu items take up the majority of the screen, in the centre, as this is where the customer will be focusing more of their time. The menu items are further subcategorized into different types of meals or drinks. Below this, all of the order values, such as the order subtotal, tax, calorie count, will be displayed. On the very bottom of the screen, all of the action buttons are placed together. Each of the buttons is placed in the order in which it should be executed. For example, the **Total** button should be executed before the **Receipt** button, and the **Payment** and **Place Order** buttons should be executed last. This design aspect is used to help new and returning customers easily proceed through the steps required to fulfill an order, as it acts a guideline that they can follow.

When the customer places their order by clicking the **Place Order** button, the last page pops up. This is the "Thank You" page, and its purpose is to indicate to the customer that their order has been successfully placed, thus enforcing visibility of the system's status.

Overall, the system has been designed successfully, as customers are effectively able to accomplish the task at hand, which is fulfilling their order at Earth Café. The system is well-designed because it follows the standard conventions with which customer should already be familiar. The customer can follow the typical steps required for any self-serve ordering system, and they will be able to easily navigate through the Earth Café system. However, if the customer is not already familiar with these typical steps, there will be a set of instructions assembled to every system to guide the customer. The

consistency, the visibility of status, and the simplicity are all factors that contribute to the overall successfulness of this system design.

On the other hand, there are aspects of the design that could be improved in the future. For example, the "Menu Page" could be less cluttered. With the current implementation, new customers may be somewhat overwhelmed by having all of the menu options displayed on a single page. This could be combatted by creating a separate page for each menu category, such as the "Breakfast" and "Lunch" category. We would also be able to increase the font size on each page, making the system easier to use for customers who have trouble reading small fonts.

I believe that this system will work well for the identified users and tasks because it is able to accommodate to most, if not all, of their needs. The system can handle orders that are "Dine-In" or "To-Go", which is the initial decision that will be made by all customers. Also, the system caters to customers that are environmentally friendly, because customers are not required to print their receipts. They can bypass this step by memorizing their order number, thus reducing the amount of paper consumed by the system. Furthermore, the system informs customers of the total calorie count for their order, which will appeal to the numerous health-conscious customers who are looking to control their calorie intake. Finally, the system accepts various forms of payments, from credit and debit card to cash. Customers can pay directly at the self-serve system using a credit or debit card, or they can print their receipt and bring it to the "Express Payment Line", where they can pay for their order using cash. Evidently, the system is able to efficiently handle a wide range of user requests, proving that it will work well for the identified user base.

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LINK TO VIDEO PRESENTATION:

https://youtu.be/YOlO4sO5-9Q