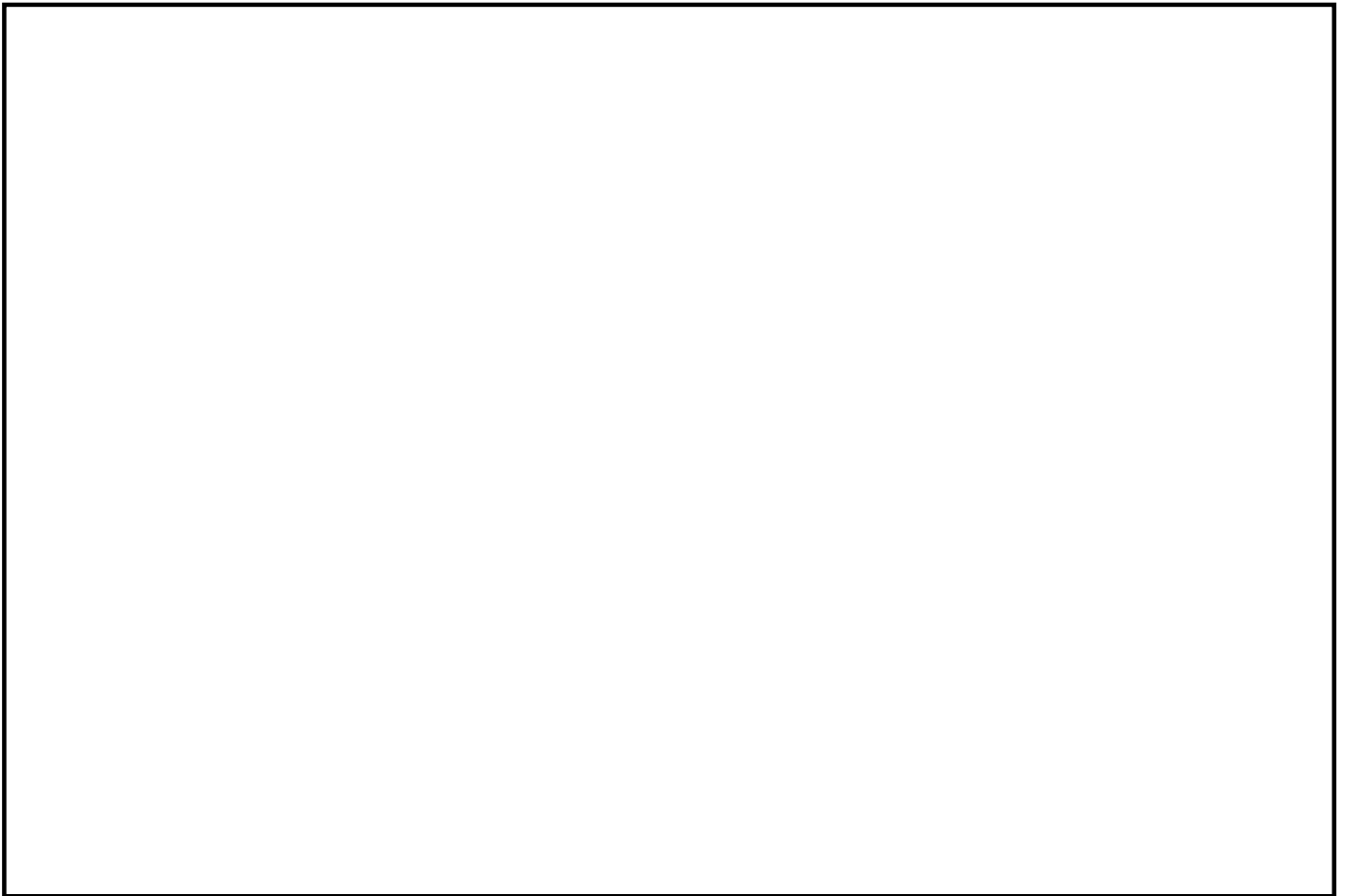


Fast-Food Kiosk

No waiting in the line anymore



CS5340 Assignment 2

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Elevator Pitch

As the IoT has been used widely in all aspects of people's life, the requirement of the automation service is growing intensively. People need faster, more convenient and accurate ordering method in the restaurants. Imagine that you can order, customize, and make payment just by clicking several buttons on a machine, and just spend half as the regular waiting time in a line. Our fast-food kiosk design will change the way people order in the restaurant, and will help the owner of the restaurant make more profit.

User Analysis

Fast-food kiosk helps to reduce wait time, make the ordering process more efficient, and improve the customer experience. It can potentially replace the cashier registers.

The kiosk is designed for users who want to save time and skip the lengthening lines in front of registers. It also creates a more comfortable platform for users who want to customize their meal. Although the kiosk includes advanced technology, it does not require any sophisticated skills, and will have a simple interface to help customers navigate the ordering process. People of all ages can be easily familiarized with the kiosk due to its widespread use in other venues, for example, airport check-in kiosks and subway ticket machines.

Task Analysis

User's Request	Kiosk's Response
Browse menu	Search for the database and display different types of food to its user (main courses, sides, desserts). It also provides filters to customers, for example, Halal and low-calories food. The kiosk will also promote featured products to customers.
Order food	Help its user to add or delete certain ingredients. Then, the kiosk stores the user's choice in cart and calculate the price. It can give more suggestions based on the user's choice.
Pay for its order	Retrieve user's selections, calculate the total price and generate the bill. The kiosk has an integrated payment system which lets its user to pay for the order.

Conceptual Model

Metaphors and analogies

- The menu page is organized as a physical menu.
- The ordered items are listed in the “shopping bag” page. The users know where to check the ordered items because they are familiar with the concept of “shopping bag”.

Concepts

- **Items**

Burger (with attributes: cheese, lettuce, onion, mushroom, and bread type)

Cola (with attributes: ice, diet)

Coffee (with attributes: sugar, milk, temperature)

Fried chicken (with attributes: grill, roast, hot or mild)

Payment (with attributes: credit card, cash, digit wallet)

Relationships:

Meal: If user orders a burger meal, it will come with cola, burger and fries.

Shopping cart: The shopping cart itself contains all the items user ordered. If a user clicks the shopping cart icon, the list of items will be shown on the screen.

Mappings

Menu: Each menu in the Kiosk system corresponds to a physical item in the real store.

Credit card payment: When user choose the credit card payment method, insert the credit card into the machine slot, the store's credit card terminal will ask user's credit card issuer whether this credit card is valid and has enough limit. If the credit card issuer send back an approval message, this transaction will be issued. In reality, people go to the counter and pay at the similar credit card machine.

Cash payment: There is a slot for cash on the front of the Kiosk machine which allows user to insert bills. Inside of the machine, there are a coin mechanism, a bill validator, and the control board to determine the value, count the value, and dispense the change back to the custom. If the customer goes to the counter and pay by cash, the bills or coins will be given to the cashier, and the cash register will pop the drawer for the money to put in. Then the register will calculate the amount of changes to dispense. At last, the cashier will hand the changes to the customer.

Functionality & User Scenarios

Order feature

Scenario 1:

Tiffany is a 28 years old ordering food on the kiosk. Her favorite combination is a burger, fries and coke. She clicks into the “Burgers” category on the kiosk, chooses the burger she wants; jumps to the “Snacks” page, adds a cheese fries into her shopping cart, and then go to the “Drinks” category and adds a Coke.

Scenario 2:

John is a 8 years old boy choosing what he wants to eat on a kiosk. A regular combo is too much for John to finish. He sees the kids meal’s picture on the menu. The yummy Mac and Cheese, fries and strawberry flavored yogurt looks very attractive to him. Hi clicks the picture and a kid’s combo is added to their order.

Scenario 3:

Andrew is a vegetarian. He steps into a fast food restaurant and wants to order some food he can eat. There are numerous food on the menu, but with the vegetarian label on the menu on veggie friendly dishes, it is easy for him to know what he can order.

Payment feature

Scenario 1:

Ted is a 30 years old ordering food on the kiosk in a fast food restaurant. He inserted his credit card into the card reader and paid for his order.

Scenario 2:

Connie is 50 years old ordering food on the kiosk. She paid with cash and gets changes from the machine.

Scenario 3:

Lee is a 20 years old college student. He carries his smart phone with him everywhere he goes. He orders food on the kiosk and makes payment with apple pay on his smart phone.

Promotion feature

Scenario 1:

Alex is a 25 years old software engineer works for a famous and busy IT company. She is always busy with her project so she has no idea what to eat. She clicks on the “Promotion” button on the homepage to see the recommendations from the shop and orders the combo from the promotion.

Scenario 2:

Chris is a 60 years old truck driver who’s quite forgetful. He ordered chicken nuggets and fries before making the payment. The promotion page before the payment page recommends him some drinks. He adds a diet coke into his cart.

Scenario 3:

Hailey is a 18 university student who uses the kiosk to buy herself some lunch. After she chooses her food, she sees the popular combo from the recommendation page before making the payment. She decides to buy another popular combo for her boyfriend. So Hailey adds the combo into the cart.

Machine settings feature

Scenario 1:

Jonathan decides to use the fast-food kiosk in sunny day. The light in the room is so sufficient and he can barely read the words on the screen. So he clicks on the setting button (which is quite bold) and increases the brightness of the screen to see everything clear.

Scenario 2:

Jay is a 80 years old closet maker and he cannot read words on screen with normal font size. When he uses the kiosk, he clicks the doozy setting button and enlarges the font size to start his order.

Scenario 3:

Jone is a 10 years old boy whose height is 5.0 ft. The physical design of the kiosk is friendly to children because the users can change the height of the machine. Jone adjusts the machine to his height and orders the food he wants.

Assumptions

- The design of the kiosk is based on the assumption that the users know how to use touch screen.
- The users understand the words on the screen.