lightwait

Technical Design Document

March 7, 2014

Adrian Hernandez

Patrick Leopard II

Luke Oglesbee

Alec Siems

Ryan Sligh

Joe St. Angelo

Table of Contents

About *lightwait*

Product

lightwait is a ordering solution for SMU Dining at Mac's Place. It allows the customers of Mac's Place to order through a mobile app or through a local kiosk in Mac's Place. Mobile customers will be able to view an estimation amount of time until their order is ready. Mac's Place chefs will view a digital queue of orders, bumping orders from the queue as they are finished. Administrators of Mac's Place will have access to all the information from the digital orders, giving them access to valuable analytics.

Team

We are Jimmy and the Dragons, and we believe that we can make the Mac's Place experience more enjoyable for everyone. We want to make a product that is comfortable, consistent, and highly usable for all. Here is our team:

Adrian Hernandez - Database Management

Patrick Leopard II - Primary iOS Developer

Luke Oglesbee - Web Development and Secondary iOS Developer

Ryan Sligh - Web Development

Joe St. Angelo - Supreme GUI Developer

Alec Siems - Middleware Development

Software Requirements

Customer

Place order

- **Description** - The customer would log onto either their phone or the iPad kiosk at Mac's Place with their SMU ID and password. They will see what is on the menu and choose a base, bread, cheese, toppings, and whether or not they want fries. The order would then be sent to the order queue for the chef's to view.
- **Testing** - We will use the app on various phones to order various different meals with different combinations of ingredients. We will then see if the order data was saved.

- **Data Model** - The type of base, bread, cheese, toppings, whether you want fries or not, the time the order was placed, and whether an order is currently being made will be saved in the order entity.

View orders status

- **Description** - After placing an order on your phone, a customer will be able to view an order's status. This status could include the estimated time until completion or their current spot in the order queue.
- **Testing** - After the order is placed we will check to see if an estimated time until completion is displayed on the phone app. We will also check whether this number is within a reasonable range of time for the specific order to be completed.
- **Data Model** - An estimated time until completion will be displayed based on the number of orders ahead of a particular order and previous order data.

Chef

View order queue

- **Description** - A chef will be able to view the queue of orders. The grill at Mac's Place, will have a monitor showing a few orders at a time. They will also be able to scroll through the different pages of orders.
- **Testing** - Write a script to generate random orders periodically. Ensure the user can change pages with a high volume and high frequency of orders.
- **Data Model** - Orders will be arranged by the order entities' timePlaced variable.

Bump orders (any spot in queue)

- **Description** - Once an order is finished being prepared, the chef will be able to bump the order off the queue which will also alert the customer that their order is ready. This will move all the orders up in the queue.
- **Testing** - Using the order-generating script, ensure the bumping the first order and bumping the nth order works under a high volume and a high frequency of orders.
- **Data Model** - When an order is bumped off the order queue, the timeCompleted and isActive variables will be saved in the order entity.

Change availability of ingredients

- **Description** - If Mac's place runs out of a specific ingredient, the chef is able to mark that ingredient as unavailable, thus taking the option off the menu for users (however it is not deleted from the menu). If more ingredients are obtained or found, then an ingredient can also be marked available again.
- **Testing** - Ensure that the order-generating script handles ingredients that are out of stock. Make sure the order queue does not allow orders with out-of-stock items
- **Data Model** - The availability of specific ingredients will be saved in the corresponding ingredient entity.

Administrator

Our goal is that this system will eventually be implemented in Mac's Place. We have plans to meet with SMU Dining Services in the near future. We reached out to dining services as early as Feb 20, and they wish to meet with our team the week after spring break.

Because we have not yet met with SMU Dining, we have not had a chance to get their input on *lightwait's* features which particularly affects the administrative side of the product. We have made a set of features to propose to SMU Dining. If SMU Dining would like to use our product, they will choose the fundamental features, but we will move forward with the following list of features if SMU Dining decides not to use our product.

- **Create/edit menu**
  - **Description** - The administration will be able to create and edit menus that the customers use to order from.
  - **Testing** - We will test to see if the menu is viewable by users and if any ingredients later added to that menu are viewable.
  - **Data Model** - The various ingredients' entities' data will be saved.
- **Analyze order data**
  - **Description** - The administration will have analytical data for many different aspects of ordering. They will be able to view peak order times, times until orders are completed being made, use of ingredients over time, and more.
  - **Testing** - We will test to see if we can see all the proper analytical data that we need.
  - **Data Model** - Analytical data will be obtained from the ingredients' entities' information through a particular time period.
- **Manage personnel profiles**
  - **Description** - The administration will be able to manage personnel profiles of their employees. They will be able to create, edit, and delete these accounts that employees will use to log into the system.
  - **Testing** - We will test whether or not new employee accounts created can log on, whether they are still there after they have been deleted, and whether the information contained within them is changed when an account is edited.
  - **Data Model** - The various user entity data such as fName, lName, UserID, pword, email, and phone_no will be saved.
- **Promotions**
  - **Description** - The administration will be able to make promotions and put them onto the app. Customers would be able to view these promotions from their phone or the iPad kiosk at Mac's Place.
  - **Testing** - We will test whether or not the promotion is actually viewable as well as whether or not new promotions can be seen and that old promotions are not visible.

    - **Data Model** -
- **Surveys/feedback**
    - **Description** - The administration will also be able to make surveys where customers can give their feedback and general comments about Mac's Place. These surveys will be viewable by remote customers on their phones.
    - **Testing** - We will test and find out if information entered into these surveys is viewable and whether or not the data was saved, and is not overwritten by later feedback.
    - **Data Model** -

Task Analysis

User Profiles

Name	***Shunxing Su***	***Loic Ferdinandi***	***Mary Mikule***	***Alex Hibbard***	***Jonathan Byrd***
Age	*21*	*20*	*20*	*19*	*24*
Mac's Experience	*4-7 times per week*	*Once a week*	*0-1 times per week*	*5 times a week*	*None*
Online Ordering Experience	*Never*	*2 times a month*	*Never*	*1 per semester*	*Above Average*
Residence Hall	*Morrison-McGinnis*	*Moore*	*Off Campus*	*Smith*	*Off Campus*
Education Level	*Undergraduate student*	*Undergraduate student*	*Undergraduate student*	*Undergraduate student*	*Bachelors*
Technological Savviness	*Average*	*Above Average*	*Below Average*	*Average*	*Above Average*
Occupation	*Finance Student*	*Markets and Culture Student*	*English and Anthropology Student*	*Finance Student*	*Burger King Cook*

Alex Hibbard - see user profiles

Loic Ferdinand - see user profiles

Shunxing Su is an international student at SMU from China and a finance major. He had not been to the United States before his freshman year at SMU. He was the captain of his basketball team at his high school and is an extremely friendly fellow. He visits Mac's Place very often and mostly gets items from the grill, and he adds chinese hot sauce to most everything he eats. He

values functionality over how something looks, and he also offers a different perspective on the product based on cultural differences.

Mary Mikule is an SMU student from the great state of Texas. She is an English and Anthropology major who also is a very good artist. She visited Mac's Place very often while she lived on campus, but now only occasionally makes visits. She likes simple user interfaces because because she does not like to wrestle with technical problems.

Interviews

Customer

Have you ever ordered food on your phone? If so, from where? How was that experience?

Loic: Yes, pretty boring because they put you on hold a lot, with lame music.

Shunxing No

Mary No

If you were on hold on the phone, in a queue, would you rather know your exact place in the queue or an estimated time until it was your turn? Why?

Loic: Rather know time because you know how long it will take.

Shunxing Yes, that might be helpful.

Mary Estimated time; that information would be more useful.

What features would you want in a mobile ordering system? (As in an iPhone/Android app). Suggestions:

Loic: Saved/Favorite orders, Recent orders, Popular orders, store location search, list of contact information, custom orders, Promotions and sales, and facebook events,plenty of pictures of the food, and a full online menu

Shunxing: Order history

Mary: Saved orders, nutritional info

When at Mac's Place, if the line is backed up, do you wait by the grill? Or do you sit down until you are called?

Loic: Wait by the grill.

Shunxing: Wait at the grill until I get called.

Mary: I wait by the grill, I can't usually hear the name called if I'm in the sitting part.

Have you ever used the kiosk system at Buccee's? How did you like that experience?

Loic: I've never been to Buccee's.

Shunxing No

Mary: No

If you had to choose between having more ingredients on one screen or having pictures, which would you choose? Why?

Loic: I rather there be more pictures, because it gets you excited about the food you are about to order.
Shunxing: I prefer pictureshow

Mary: I rather have more ingredients listed at once, you can use your imagination for what they look like

Beyond specific ingredients, would other information would you like to send along with your order?

Loic: How to prepare food (medium rare, sunny side up eggs).

Shuxing: How well the food is cooked.

Mary: No

Do you ever have any special requests at Mac's Place

Loic: No
Shunxing: No

Mary: No

Chef

Have you used a monitor system in the food industry for cooking or bagging?

Alex: Yes, at Chick-Fil-A

Jonathan: Yeah, Burger King.

Describe to me how your bagging monitor system works.

Alex: Monitor where orders pop up as they come. Has all the items in order. Hit bump and it will finish the order.

Jonathan: When a cashier person takes an order, the order appears on the screen. Most of the orders that are put in will only list if they want extra ingredients than our regular items.

...what visual components are present?

Alex: Flashing colors that correspond to time, green for good, red for bad. Text is in black. Nothing complicated, very easy

Jonathan: When an order is added, it starts on a blue background with white text. Pretty easy on the eyes. As the time goes on, a flashing clock icon will appear to let us know that it's been about 5 minutes since the order was put in.

...what can you do with them?

Alex: Move across the screen to see newer orders. Recall a bumped order. Bump later orders.

Jonathan: I can see a basic list of all the orders, and remove orders when they are completed.

...what is the interface like (button, touchpad, etc.)?

Alex: Keypad underneath the screen with numbers, bump button, and arrows

Jonathan: Touch screen. Pretty fancy.

...what annoys you about it?

Alex: Looks old, not very up to date. Should have brighter colors and a different font. Would make the flags (special order indicators) stand out more. Dual screen to see past orders maybe.

Jonathan: Eh. Not a whole lot. It works so I can't really complain, although if it had more things I could do with it, that'd be cool. Things like organize the order of the orders, or be a little more visually appealing.

...what do you like about it?

Alex: Simple, straightforward, not complicated, anyone could do it. Gets the job done fast.

Jonathan: Like I said, it works. It's pretty simple.

How do you fix your mistakes in your system?
Alex: Hit the back button

Jonathan: I don't make mistakes. But seriously, there's a button to go back.

How do you handle different types of orders? Do some orders take precedence over others?
Alex: Orders that have been there long take precedence. Easier orders go first when convenient

Jonathan: Older orders will be first in the line. Some of our very common items, like the Whopper, we already have a ton of pre-made, so they sometimes take precedence.

If you had one hundred orders waiting, how many orders would you chose to work on at one time?
Alex: 6-8, depends on how hard the orders are to fulfill

Jonathan: I like a challenge. I'd take 10 on. Mainly just to prove that I could.

Object-Action Analysis

Customer

Object→ Action↓	**Order**	**Saved Order**	Ingredient **Order**	**Grab 'n Go Menu**	**Account**
Edit	**X**	**X**			
Create	**X**	**X**			
Submit	**X**	**X**			
Save	**X**				
Add			**X**		

Remove		**X**	**X**		
View				**X**	
Log in/ Log out					**X**

***Objects are in bold, and attributes are normal.**

Walk-In Kiosk

Object→ Action↓	**Order**	Ingredient **Order**
Edit	**X**	
Create	**X**	
Submit	**X**	
Add		**X**
Remove		**X**

Chef

Object→ Action↓	**Order**	**Ingredient**	**Queue Window**	**Account**
Bump	**X**			
Recall	**X**			
Mark Availability		**X**		
Prev Page			**X**	
Next Page			**X**	
Log in/ Log out				**X**

Remote Customer

Objects

- Order
- Menu

- Order status
- Ingredient

Actions

- View menu
- Select menu item
- Deselect menu item
- Create order
- Submit order
- View order status
- Special requests
- Create Account
- View previous orders/favorites

Walk-In Kiosk

Objects

- Order
- Ingredient

Actions

- Create order
- Edit order
- Submit order
- Create order
- Submit order
- Add ingredient
- Remove ingredient
- Special requests

Chef

Objects

- Order
- Ingredients
- Account
- Queue window

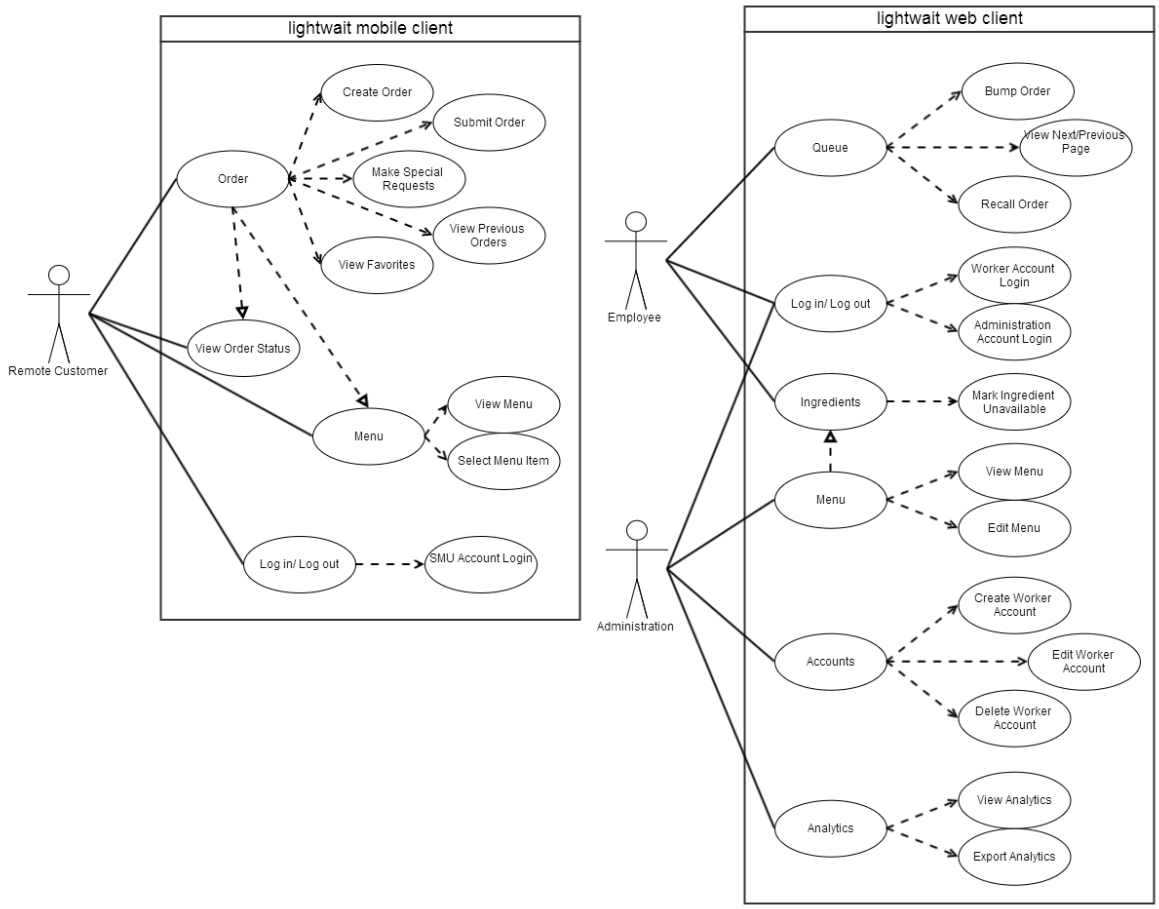
Actions

- Bump order
- Recall order

- Mark ingredient availability
- Next page/previous page
- Log In/Log out

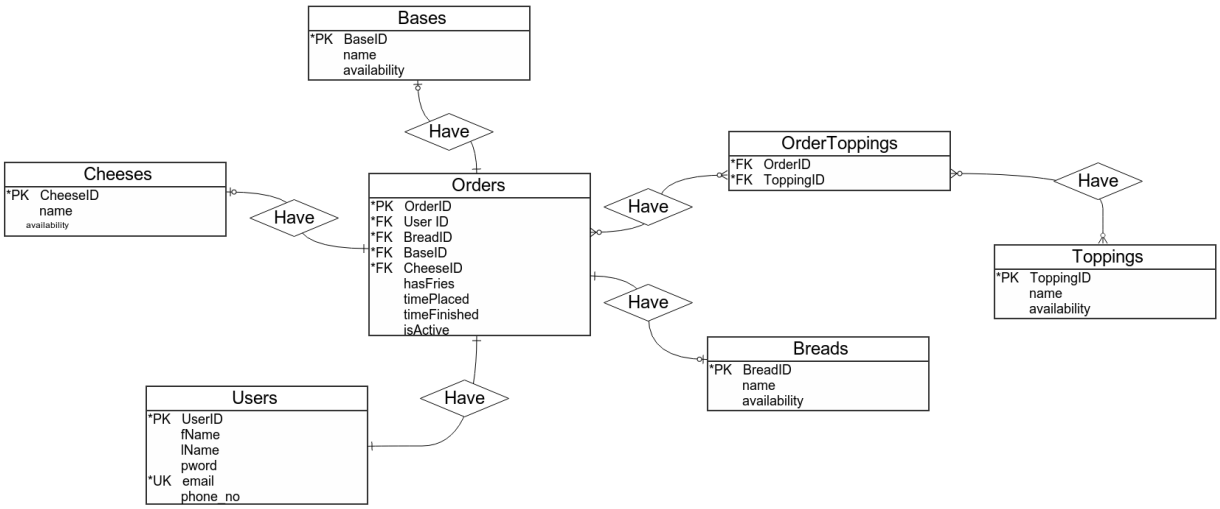
Use Case Diagram

This use case diagram illustrates the processes by which customers, employees, and administration interact with *lightwait*. Remote customers can log in and out, place orders, and view the status of said orders. Employees can log in and out, manipulate the order queue. and mark the availability of ingredients. The administration can log in and out, edit menus, create worker accounts and view analytics.



Use case diagram of remote customers, employees, and administration.

Database Model



Database Model

Users

- **UserID** is an INT that is a PRIMARY KEY and is set by SMU IDs for customers, and AUTO_INCREMENTED for administration and employees. This is used to log in and identify a user.
- **fName** is a VARCHAR(30) and NOT NULL. It is the user's first name.
- **lName** is a VARCHAR(30) and NOT NULL. It is the user's first name.
- **pword** is a VARCHAR(100) and NOT NULL. It contains the hash of the user's password.
- **email** is a VARCHAR(100) that is a UNIQUE KEY and NOT NULL. It is the user's email address.
- **phone_no** is an INT. It is the user's phone number.

Orders

- **OrderID** is an INT that is a PRIMARY KEY and AUTO_INCREMENTED. It is a specific order submitted by a user.
- **UserID** is an INT and a FOREIGN KEY to UserID in the Users table. It relates an order to a specific user.
- **BreadID** is an INT and a FOREIGN KEY to BreadID in the Breads table. It relates the type of bread a user wants to an order.
- **BaseID** is an INT and a FOREIGN KEY to BaseID in the Bases table. It relates the base that a user wants to an order.
- **CheeseID** is an INT and a FOREIGN KEY to CheeseID in the Cheeses table. It relates the type of cheese a user wants to an order.
- **hasFries** is an INT and DEFAULTED TO 0.This determines whether or not an order has

fries. If it is set to 1 then the order contains fries.
- **timePlaced** is of datatype DATETIME formatted YY::MM::DD HH::MM::SS. It is the time an order was placed.
- **timeFinished** is of datatype DATETIME formatted YY::MM::DD HH::MM::SS. It is the time that an order is finished an ready for pickup. This, along with timePlaced will be used for Analytics.
- **isActive** is an INT and DEFAULTED TO 1 when the order is created, meaning that it is currently in the process of being made. It will be set to 0 when the order is complete to show that it is no longer active.

Breads

- **BreadID** is an INT and PRIMARY KEY. It determines which bread is on an order.
- **name** is a VARCHAR(30) that labels the types of breads for a sandwich.
- **availability** is an INT and DEFAULTED TO 1. It determines whether or not a type of bread is available. When set to 0, that means that there is no bread of that type.

Bases

- **BaseID** is an INT and PRIMARY KEY. It determines which base is on an order.
- **name** is a VARCHAR(30) that labels the types of bases for a sandwich.
- **availability** is an INT and DEFAULTED TO 1. It determines whether or not a type of base is available. When set to 0, that means that there is no base of that type.

Cheeses

- **CheeseID** is an INT and PRIMARY KEY. It determines which type of cheese is on an order.
- **name** is a VARCHAR(30) that labels the types of cheeses for a sandwich.
- **availability** is an INT and DEFAULTED TO 1. It determines whether or not a type of cheese is available. When set to 0, that means that there is no cheese of that type.

Order Toppings

- **OrderID** is an INT and FOREIGN KEY. It relates the many possible topping options to an order.
- **ToppingID** is an INT and FOREIGN KEY. It works with OrderID to relate the many possible topping options to an order.

Toppings

- **ToppingID** is an INT and PRIMARY KEY. It determines which toppings will be on an order.
- **name** is a VARCHAR(30) that labels the various toppings for a sandwich.
- **availability** is an INT and DEFAULTED TO 1. It determines whether or not a type of topping is available. When set to 0, that means that there is no topping of that type.

Paper Prototypes

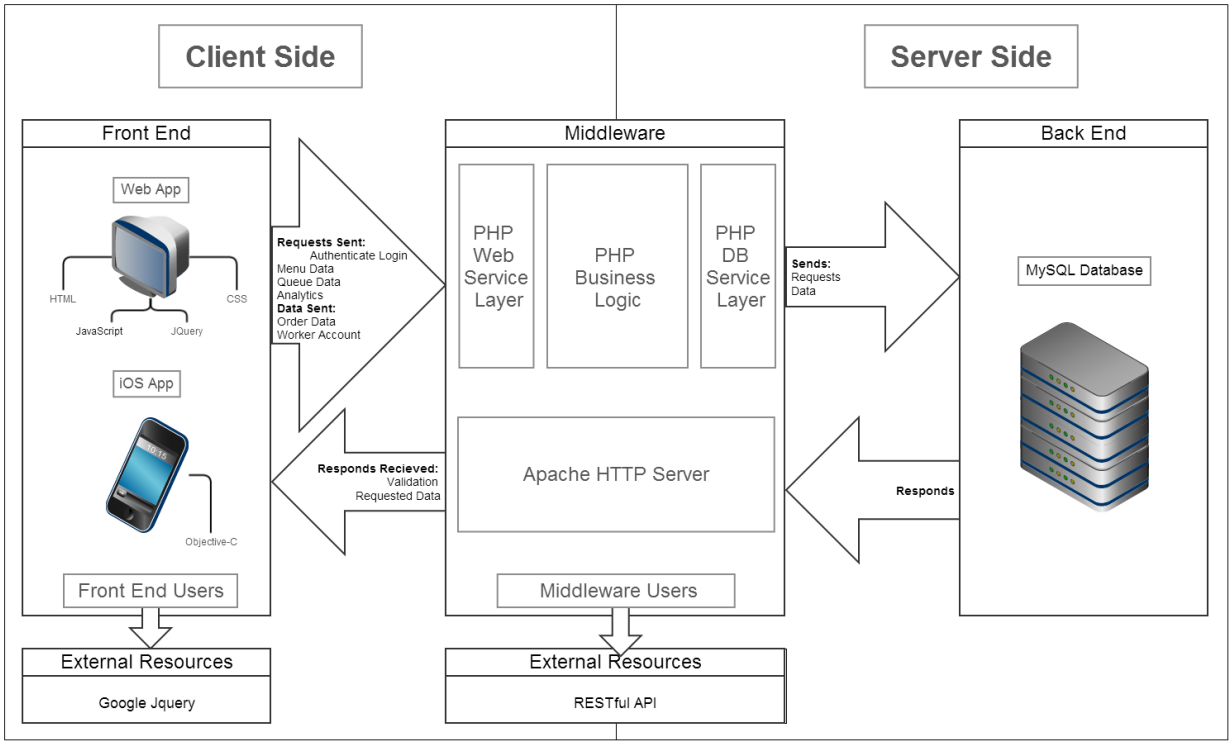
For our paper prototypes we chose the NinjaMock application. Here are links to the two paper prototypes:

Customer http://ninjamock.com/s/npynoi

Chef http://ninjamock.com/s/bzaafi

The PDF versions of the paper prototypes are also available in our GitHub repository.

Software Architecture



The software architecture documenting the relationship between the client side and server side.

Usability Report

User Profiles

Alex Hibbard is a second year finance student at SMU. He has lived in Smith residence hall across Bishop Boulevard from Mac's Place for his entire college career and frequents Mac's place at least 5 times a week. Alex worked at Chick-Fil-A last summer and is familiar with Chick-Fil-A's bagging monitor system (something similar to our Chef monitor). Alex spends roughly 15 hours a week on the internet, but he only orders food online once a semester. Alex is very exploratory in his approach to technology, and will play with things until he understands them. He values an interface that is easy to use and quickly identifies inconsistencies or elements of an interface that are not intuitive.

Loic Ferdinandi is a sophomore markets and culture major at SMU. He has been a busser, server and interned for a restaurant company and his father runs a chain of restaurants, so he has a lot of knowledge about food business. He visited Mac's Place at least once a day while he lived in Cockrell-Macintosh, but not nearly as much now because he lives in Moore. He is also an excellent artist who values a simple and visually appealing user interface. He is even designing a simple user interface for a small video game.

Chris Raley teaches the Graphical User Interfaces course at SMU and works at Samsung as a UI innovation member. In addition to being professor at SMU, Professor Raley was also an SMU student. When he lived on campus freshman to junior year, he would eat at Mac's Place three times a day. Professor Raley spends approximately 20 hours a week on the internet, and hardly ever orders food online. Professor Raley has a deep understanding of user interfaces through his experience in the field which allows him to suggest improvements that are not immediately apparent.

Karoline Skatteboe is an international student at SMU from Norway who is majoring in Computer Science. She is also on the SMU track team as a distance runner, so she eats a lot to keep up her active lifestyle. While she lived on campus, she visited Mac's Place often. Her computer science studies give her insight into effective user interface design, and since she isn't from the US, she gives us a different perspective.

Gloria Haynes is a second year pre-med student attending Abilene Christian University, in Abilene, Texas. Since she is not an SMU student, she brings a different viewpoint to the test. Though she has only been to Mac's Place once, she is familiar with the current ordering system at Mac's Place. Gloria spends 10-20 hours a week on the Internet, and rarely orders food online. Coming from a one-to-one technological school at ACU, she is very comfortable with technology, and is not afraid to try new things on the computer.

Testing

Hello, we are Jimmy and the Dragons, and we would like for you to help us test the design of a web and mobile application that we are developing. As you are probably aware, we are still in the planning phase, so nothing you see is permanent. During the test, please let us know if there is something that you like or you don't like. We will be monitoring your actions to see how well we did in making the interfaces intuitive. We may not be able to answer questions you have about the interface during the test, but afterwards we will be happy to.

We would first like to ask you some questions.

First, are you familiar with the on-campus dining service Mac's Place? **Answers in user profile**
How often have you ordered food there? **Answers in user profile**
How many hours do you spend on the internet on a weekly basis? **Answers in user profile**
How often do you order food online on a weekly basis? **Answers in user profile**

Great, thanks! For starters, we want you to put yourself into the shoes of someone ordering food from Mac's Place. This part of our application will be on a mobile device, so the actions you can perform are clicking on buttons and swiping across screens.

When you open the application, this is the first page that you see. For now, I'd like you to just make some observations about what you see/ What do you believe this page will do? Does it look appealing enough to hold your interest? Any general comments you'd like to add?

Alex	"What is the 'Grab n Go' menu item? Custom order makes sense, saved order makes sense. The picture of the burger doesn't make sense. Add the Mac's place logo to the top."
Loic	"I don't know what mac place icon does. If I touch the picture of the burger, it will probably pull up a slide show. Grab n go is a quick order menu for non cooked items. I can make something not on the menu with the Custom menu. Saved order button lets you see previous orders . The layout is nice and simple. Mac's place icon should be in center."
Chris	"Capability to make a custom order, use some default menu items, have a previous order reordered. Grab 'n Go is intriguing"
Karoline	"You should have not have picture of food, but maybe of Mac's Place. It sets unrealistic expectations. I think the Grab and go button is for if you are alread at Mac's Place. You view your order history with saved orders."
Gloria	"There should be a background." *Explained the concept of a wireframe.* "It let

	you order food from Mac's Place and save orders from Mac's Place." Yes it does

Awesome. Now I'm going to present to you with a series of scenarios that I'd like you to perform as a customer of our product.

Let's get started! First off, I'd like you to view the Grab 'n Go menu.

Alex	"I can pick a pizza, sandwich, or sides. Can you order form here? Will the Mac's Place people bag this up for you?"
Loic	"I press the grab n go button."
Chris	Success
Karoline	She clicks the Grab 'n Go button, but didn't know it was a menu
Gloria	Success

After seeing the menu, you decide that you would rather have a burger. So go and create a custom burger instead. As this is only a prototype, only the top item in each category is clickable.

Alex	Immediate response
Loic	Clicks the back button and then the custom order
Chris	Did not understand the question at first, but then got it.
Karoline	Presses the back button, then the customer order button. "I like the dots at the bottom that show how many pages there are. It is logical that meat is first and then bread and then cheese. It should show that you selected multiple ingredients in a category".
Gloria	Success

(Once user gets to the cheese category) So at this point, you change your mind about which type of bread you want. Please go back and change it to something else, and then continue onwards.

Alex	He clicked the arrow,expecting to go back one page, but it sent him to the

	beginning of the order form. This was an error in the prototype and should have taken him to the previous page
Loic	“I don’t know if you can pick more than one meat (we need to specify that). I assume if you choose an item, it will go to next page. I think the progress dots need to be numbered. I kinda looks like it could be an indicator of how many pages of meat choices there are.”
Chris	Tapped button dot, then thought to swipe, then clicked the back arrow
Karoline	She didn’t like that the back button took you to the beginning.
Gloria	Success

So, you review the order and see that that is in fact what you want, so go ahead and place the order.

Alex	Immediate response
Loic	“Make the ingredient categories boldface so you can differentiate between ingredients and categories. I like the format of final page. I like that it tells yo the estimated time till your order is finished.”
Chris	Success
Karoline	“I think it is good that edit takes you to beginning. The confirmation page didn list the fries I ordered. I press the order button to send it to Mac’s place.”
Gloria	Success

You are so pleased with what you will get, that you decide to save your order for future orderings.

Alex	Immediate response
Loic	Pressed saved order. “Being able to name your saved order is awesome.”
Chris	Success
Karoline	“You should call it something else instead of saved order. It makes you think order didn't go through. I like being able to name orders.”
Gloria	Success

So now, it's been a few days, and boy! You sure have a hankering for that burger again! Reorder that same burger!

Alex	Immediate response
Loic	"I click saved orders, then click on the burger I want."
Chris	Success, easy
Karoline	"I go to saved orders and select hot and spicy. You should have an option to go directly back to saved orders so can go through and see what your saved orders are real quick. I like that it doesn't give you the option to save it again. Can you add things to saved orders without ordering it?"
Gloria	Immediately clicked saved orders

Alright, that was great! Now we are going to switch gears into being the chef. You will be dealing with orders sent in by customers through the mobile application. You won't have to deal with the actual food, only with theoretically completing the orders. Let us begin! Like you did with the customer, I'd like you to just make some observations about what you see. What do you believe this page will do? Any general comments you'd like to add?

Alex	"It's very straightforward. It's a good size. Good number of order per age. Simple."
Loic	"It is very simple in a good way, but the numbered meat on the top right confuses the me."
Chris	"How will orders be identified? it looks good. Should there be an in progress notification?"
Karoline	She correctly assumes it is a queue. "You should highlight by types of meat since meat is the main thing a chef would care about. You possibly need a header for the top right to label what it does."
Gloria	"Put the orders in order. It looks good"

So as a chef, you arrive at your post and see that some orders have been input. Navigate to the next page to see how many orders there are.

Alex	Immediate response
Loic	“I click on the right arrow.”
Chris	Success
Karoline	She had no problem “There are 10 orders.”
Gloria	Clicked next arrow. “There have been 10 orders”

Great! With that knowledge, at a quick glance, you can begin cooking the appropriate amount of meat for all the orders. Head on back to the first page.

Alex	Performed the action before I asked him to
Loic	“I click on the left arrow.”
Chris	Success
Karoline	Immediate
Gloria	Clicked previous arrow

You see that one of the orders is simply a piece of chicken for a salad and some french fries. Because you’re such a good chef, both of those things have been cooked completely, so you bump the order out of the queue.

Alex	Immediate response
Loic	“I press done button on the finished orders.”
Chris	Success, after being reminded of chicken for salad. Suggested that there be a screen for quick summary. Also liked the idea of color coding the orders. “What happens if the order is detailed and has a lot of ingredients? How would this fit in the order pane?”
Karoline	Press done button.
Gloria	Clicked done

After bumping that order you put 8 burger patties on the grill. While that is happening, you decide to see if any new orders have come in.

Alex	Performed the action before I asked him to
Loic	“I look through both pages of orders.”
Chris	Success
Karoline	“There are no new orders.”
Gloria	Clicked next arrow. “No new orders”

Lucky for you, there are no new orders. So you keep preparing the current orders. Eventually, the burger patties are done, and you complete order number 1. Go ahead and bump it off.

Alex	Immediate response
Loic	“I press done enthusiastically.“
Chris	Success
Karoline	Bumped it off quickly.
Gloria	Success

So from here, do you think there are any new orders?

Alex	“No, the arrow is not lit up”
Loic	“No”
Chris	“No, because the arrow is not highlighted anymore”
Karoline	“No, because you can’t go to next page because the color of the arrow changed. It needs to indicate what page number you are on.”
Gloria	“Can’t tell from this screen”

Thank you so much! Now, do you have any questions or comments that you’d like to share with us?

Alex	He was worried about spacing if there were a lot of toppings.

	“Show a quick view of all the different patties to be made”
Loic	“The Iphone app is pretty well laid out. The save features seem useful. You should put bullet points next to ingredients in confirmation page so you can te what are categories and what are ingredients.”
Chris	“If the summary was there, it would be much better for the chef” “What would happen if one chef puts eight patties on and the other chef doesn’t know?” → The check can look over → Chefs can communicate directly → Screen should not be touched as much “What would happen if there was an influx of orders?” “Investigate the ordering process”
Karoline	“I think it is good."
Gloria	“Factoring in times to cook would be better. Having the amount of meat would be helpful”

Problems

Element	Type	Severity	Description
Grab ‘n Go button	Ease of use	Medium	The purpose of the “Grab ‘n Go” button is somewhat ambiguous at this point. On exploration user find it is menu, but can users order food from this menu?
Toppings	Missing Functionality/ Ease of Use	Medium	While other order pages proceed as soon as you select an item, customers can select multiple toppings. There needs to be some action to finalize the list of toppings and proceed with the order.
Meat Page, Cheese Page	Missing Functionality	Bug	No functionality to order extra meat or extra cheese
Next page action	Ease of Use	Minor	Should the order process proceed to the next page as soon as an item is selected? If so, how do we handle a user going forward after they have gone backward? If not, how does the user proceed to the next page (swipe, arrow button) and how do we make that action apparent?
Back	Prototype	Minor	The paper prototype had a bug that took user back

Button	bug		to the first order screen on hitting the back button. It should have taken the user back only one page in the order process. Should we include a back button or have it only be a swipe? How do we make a swipe action apparent?
Saved Order	Program Bug	Medium	Can you edit a saved order without remaking and/or saving?
Chef Screen	Ease of Use	Medium	There should be a way for the chef to break down the orders into the pieces of food he or she needs to cook on the grill.
Queue Window	Ease of Use	Minor	There should be some time of indication to tell the chef what order window they are on.
Order View	Ease of Use	Bug	What happens if there are too many toppings to fit in the order view without scrolling?
Chef	Missing Functionality	Task Failure	Where's the functionality to mark an ingredient out of stock?

Possible Solutions

Here are some possible solutions to the problems brought to light during testing, listed by the order of the problem's severity.

Customer

Order double meat or double cheese

→ For each meat and cheese, have a single and a double button
→ Add quantity buttons to meat and cheese

Best action to traverse the order pages

→ Swipe and let user figure it out
→ Add next page and prev page

"Grab 'n Go" button ambiguous

→ Change "Grab 'n Go" to "Grab 'n Go Menu" and "Order" to "Grill Order"
→ Put the "Grab 'n Go" button lower

How to proceed from the topping page

→ Put a done button at the bottom of the page
→ Remove the automatic

Edit a saved order

→ Pop-up asking the user if they want to edit this order, or duplicate.

Chef

Cannot change availability of ingredients

→ Add a link at the top of the page called “Change Availability.” Here, chefs will be able to see a list of all ingredients and mark them as available or unavailable.

Chef screen skim functionality

→ Add a pane showing the number of each meat patty type to be made
→ Color-code orders by their type of meat

Ingredient overflow

→ Ensure formatting allows the maximum number of ingredients to be shown in the static order pane. Maybe push toppings out horizontally.

Current queue window number

→ Add the current queue window number in between the navigation arrows.

Conclusion & Future Steps

The *lightwait* team has thoughtfully planned the features that have been proposed in this document. We are very familiar with the problems of the current ordering system at Mac’s Place which will help us find the most applicable solution. In addition, many users have been polled about their experiences at Mac’s Place to know that our perspective is accurate

As stated before, these features are subject to change due to the fact that our meeting with SMU Dining Services has been postponed. When we meet with SMU Dining after spring break, we will know it with an even higher sense of clarity what our product should actually do and how it can best fit the needs of everyone involved. Particularly, we will know what SMU Dining wants on the administrative side of our product.

Lexicon

Administrator - One who is involved with the administration of Mac's Place.

Base - Hamburger, grilled cheese, chicken breast, chicken strips, black-bean burger, etc.

Chef - One who cooks food at Mac's Place.

Customer - One who order food from Mac's Place either through the mobile app or the local kiosk.

Order - A group of ingredients selected by the customer and fulfilled by the chef at the Mac's place grill.

Order Queue - A list of all in-progress orders, between the time of customer ordering and chef bumping.

Bump - Removing an order from the order queue once the order has been completed.

Ordering - The process where the customer selecting ingredients.

Ordered - The customer submits his or her order.

Remote - When customers order using the mobile app

Walk-in - When customers order through the local kiosk in Mac's Place

Queue Window - The section of the order queue, that the chef can see on his or her monitor at any given time instant