QUID

Quality User Interface for Dining

In collaboration with
Owens Food Court at Virginia Tech

Group 6

Shalini Rama

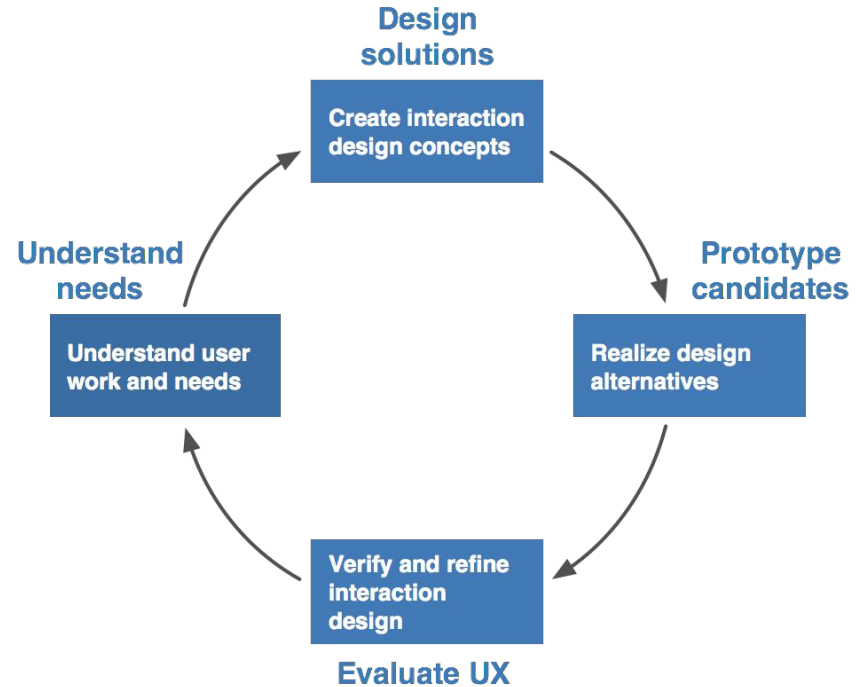**Sulakna Karunaratna**

Abdulmajid Badahdah
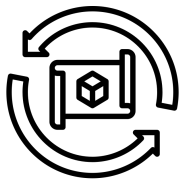
Alex Noll

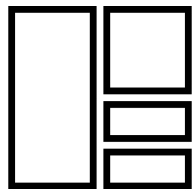**Akinwale Okunola**

Ajit Gopal

Overall Process

1. What is QUID?
2. QUID Key Users and Personas
3. Design Process and Prototypes
4. Evaluation Plan
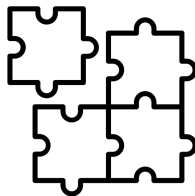5. Evaluation Analysis and Results
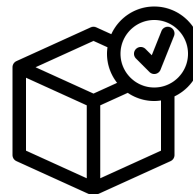6. Reflections and Lessons Learned

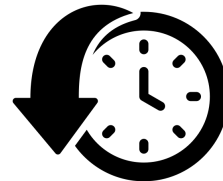# What is QUID?

Redesigned
POS interface

Simple layout

Consistent
buttons

Show
Available
items only

Reduce
processing
time

Key Users and Personas

quid

Jack
Cashier

Age: 18 years old

Sex: Male

BIOGRAPHY

Jack is freshman undergraduate student in his first semester at Virginia Tech and is a newly hired cashier at Owens Food Court.

Jack decided to get a job at Owens to make supplementary tuition money throughout school. Jack has never held a job before, and has no prior experience with POS systems, but is very tech savvy. However, his fresh perspective brings a new way of looking at how interactions with the POS could be improved

Goal: To reduce number of voided transactions and provide smooth experience to navigate and add orders.

Deryk
Chief Cashier Officer

Age: 42 years old

Sex: Male

BIOGRAPHY

Deryk has an immense experience working with different kind of POS systems at places like CVS, Walmart and Target. He has been working as the Chief Cashier Officer (CCO) at Owen's Dining Hall, Virginia Tech for 8 years.

Deryk is not only an effective leader but also a warm and social personality who thrives on building strong connections with his team

Goal : To update menus temporarily.
Reduce any redundant voids from cashiers log .
Refunding authorization.

Design Evolution Phases

Phase 1

Phase 2

Phase 3

Current Interface
Breakdown

Alpha Prototype
Development

Final Design for
Evaluation

Current Interface Breakdown

This phase aimed to comprehensively understand the existing interface design, identify key pain points through analysis and user feedback, and formulate effective solutions to address the identified issues.

Problems Identified through analysis:

- Physical Layout
- Complex Checkout Process
- Refund Process Complexity

Additional Input from Cashiers:

- Complexity in Finding and Voiding Items
- Menu & Availability Parity
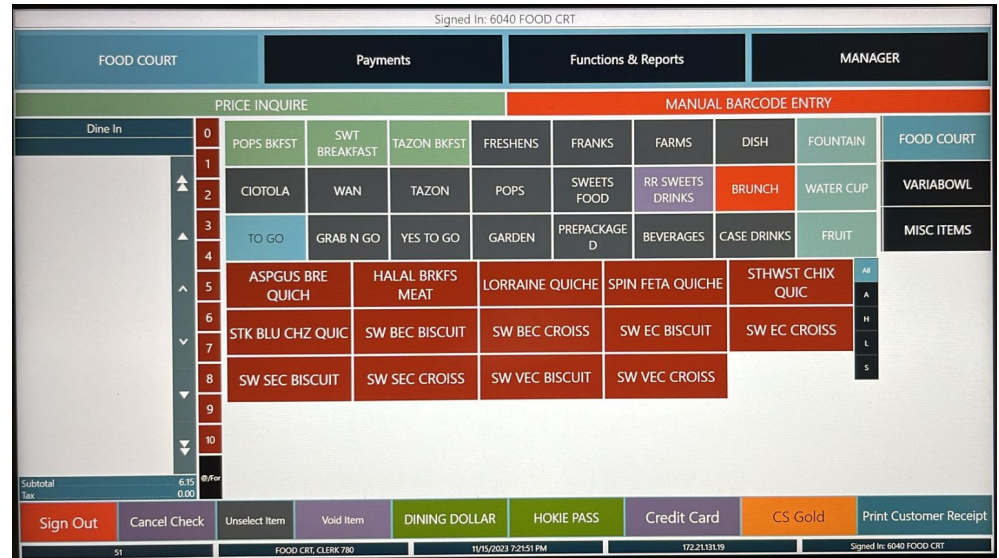
Current Interface Breakdown

Solutions to tackle the problems

User-Friendly Design

- Clutter free layout
- Organised layout

Activate/Deactivate available Items

- Provide an option to add/remove food item temporarily
- Reduces accident tap

Simple Payments and Refund Process

- Single click for frequently used payment mode

Alpha Prototype Design

The aim of this phase is to create initial prototypes for visualizing user flow while enhancing user experience and functionality through iterative design.

Creating Initial Prototypes

- Develop a simple version on a whiteboard to understand user flow.

Enhancing user experience

- Standardizing button labels for easier navigation.

Revisit User Flow

- Adopt user-centric interaction

Beta Prototype

Stage 1 - Refining the Final Design for Enhanced Usability

Stage 2 - Integrating Visual Appeal and Create Working Prototypes

Designs - Home

QUIb
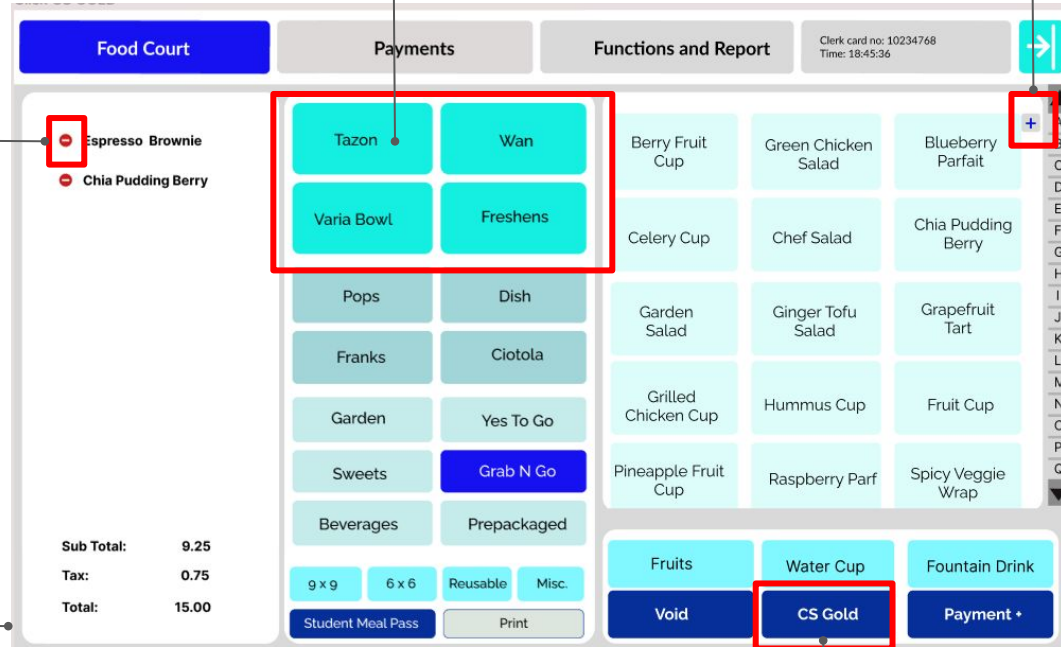
Grouping and color coding based on frequency

Menu Updation

Remove wrongly added items

Easy Item Navigation

Organized Interface

Easy access to the most frequent payment method

| Food Court | Payments | Functions and Report | Clerk card no: 10234768 Time: 18:45:36 |

- Espresso Brownie
- Chia Pudding Berry

Tazon	Wan
Varia Bowl	Freshens
Pops	Dish
Franks	Ciotola
Garden	Yes To Go
Sweets	Grab N Go
Beverages	Prepackaged

| 9 x 9 | 6 x 6 | Reusable | Misc. |
| Student Meal Pass | Print |

Berry Fruit Cup	Green Chicken Salad	Blueberry Parfait
Celery Cup	Chef Salad	Chia Pudding Berry
Garden Salad	Ginger Tofu Salad	Grapefruit Tart
Grilled Chicken Cup	Hummus Cup	Fruit Cup
Pineapple Fruit Cup	Raspberry Parf	Spicy Veggie Wrap

| Fruits | Water Cup | Fountain Drink |
| Void | CS Gold | Payment + |

Sub Total: 9.25
Tax: 0.75
Total: 15.00

Designs - Voiding Process
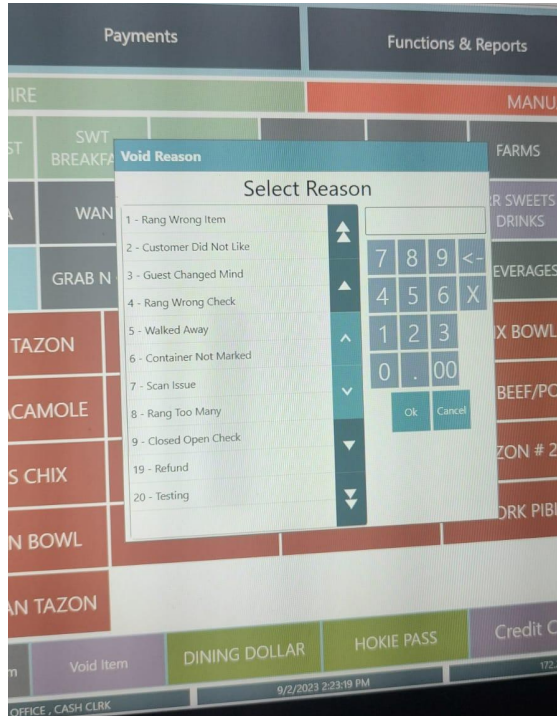
Current Design
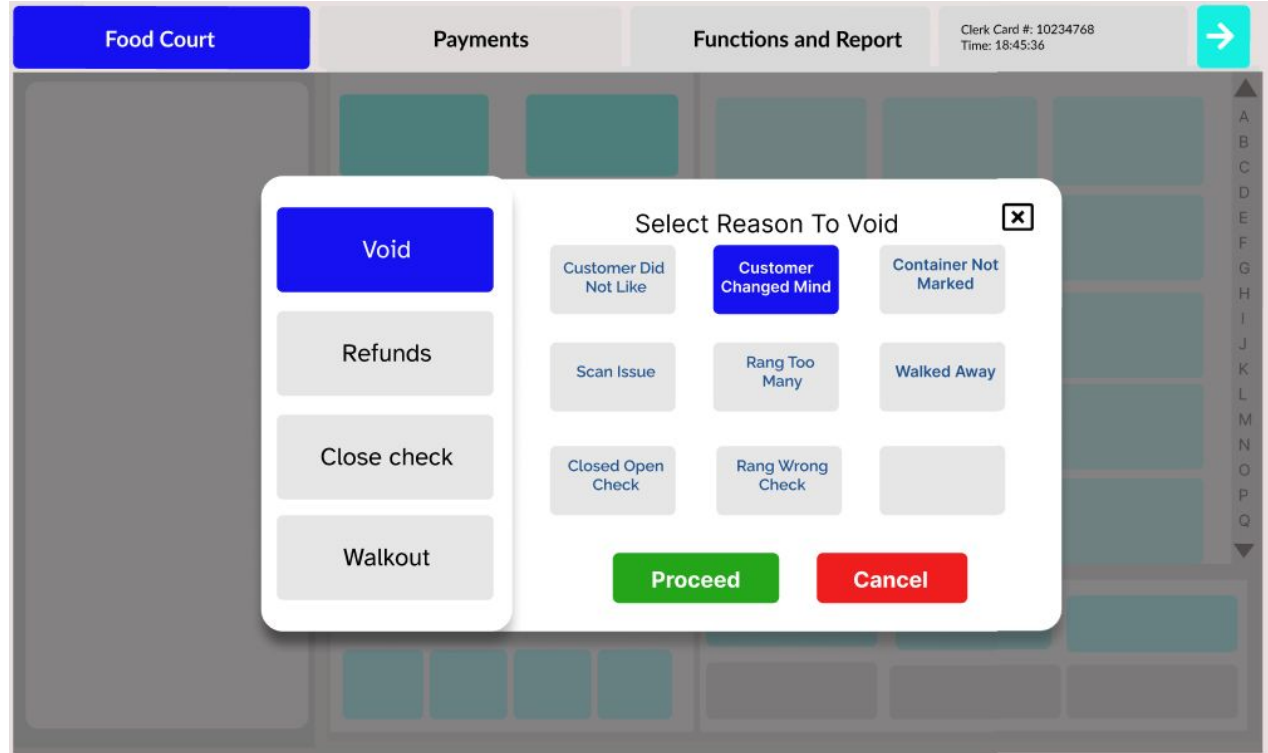
Proposed design

Designs - Payment Methods

| Food Court | Payments | Functions and Report | Clerk Card #: 10234768
Time: 18:45:36 | → |

Choose Payment Method:

| Meal Plan | Dining Dollars | Credit Card |

All payment modes together

Designs - Refund Process

13
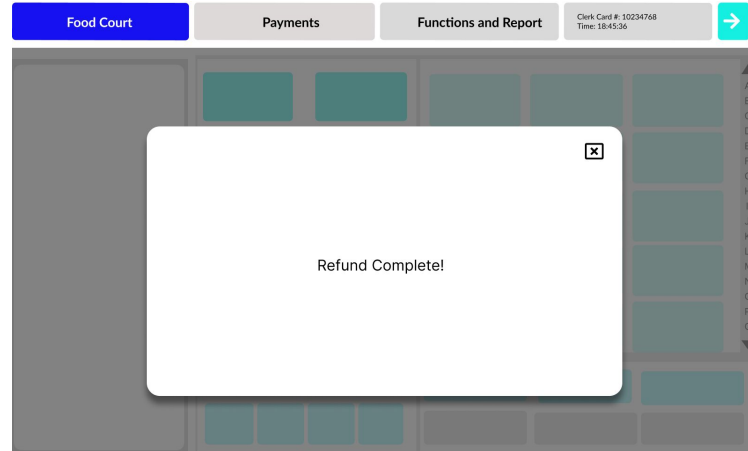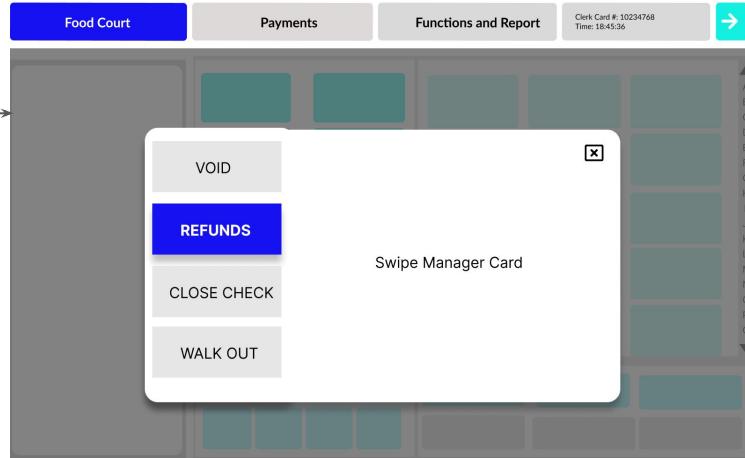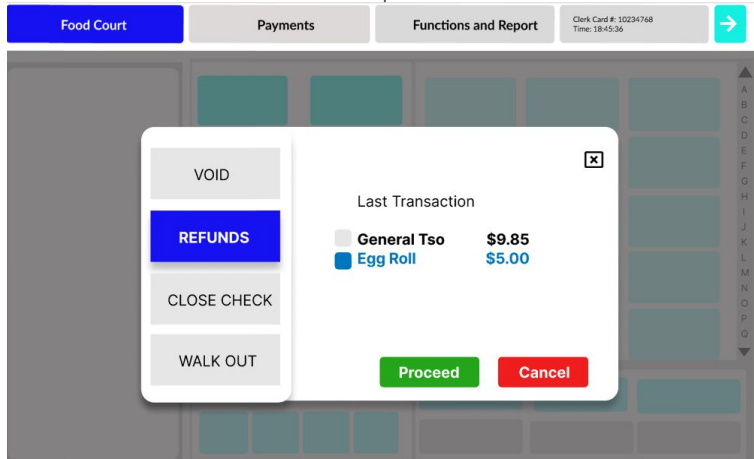
Evaluation Plan

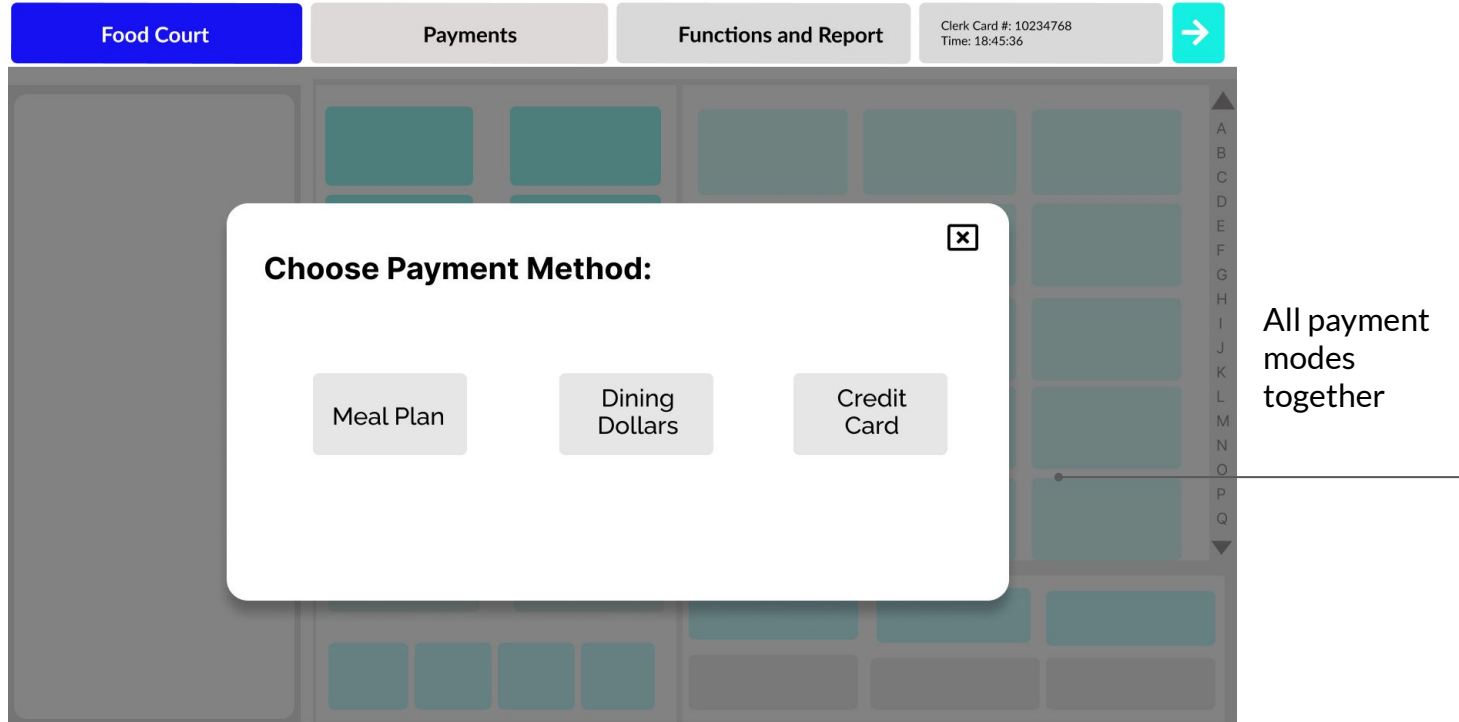1. Select Benchmark Tasks

2. Give the user food details to place orders and act as their customer; scenario-wise step by step.

3. Think aloud to be practiced in every scenario/tasks

4. Record audio to further analyze

5. Once done with the evaluation- observe SUS first
   https://mixality.de/sus-analysis-toolkit/

6. Then, ask follow-up questions on your observations.

7. Conduct user feedback analysis

8. Create Cost-Importance table

9. Calculate SUS score

Evaluation-Tasks
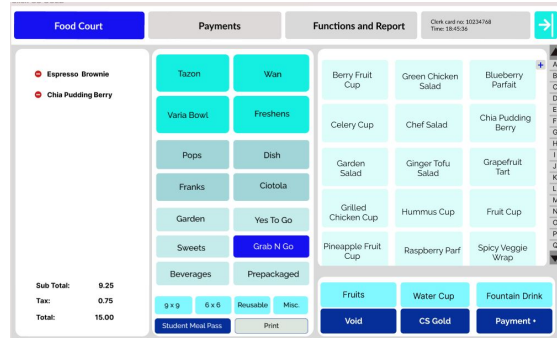
Adding/Searching item
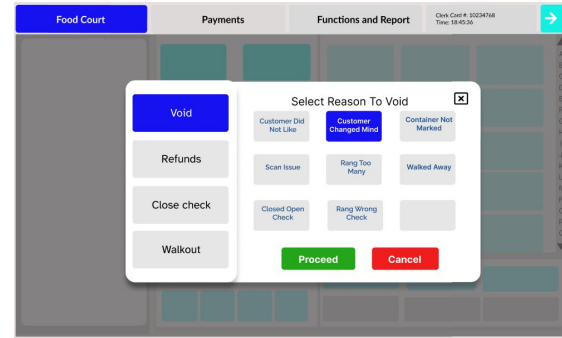
Voiding
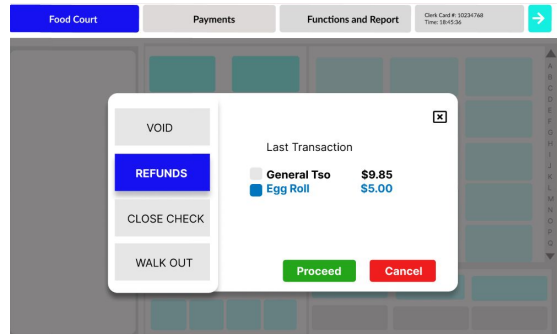
Refunding
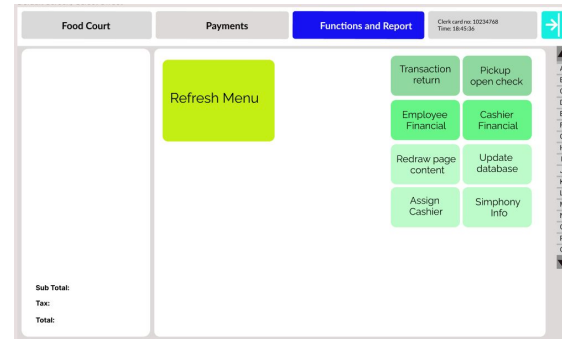
Update Item Availability

Evaluation Team Roles and Participants

Facilitators

- Ajit, Alex, Sulakna

Executor

- Shalini, Majid, Akinwale

Participants

- Periwinkle
- Gift
- Daniel
- Calvin
- Mr. Doy

■ = Cashier   ■ = Manager

Evaluation- Findings-SUS

78.1

SUS Calculation											
Participant	q1	q2	q3	q4	q5	q6	q7	q8	q9	q10	SUS Score
p1	3	2	4	3	4	2	4	1	4	3	70
p2	5	1	5	1	5	1	5	1	4	1	97.5
p3	4	4	4	4	2	2	3	3	4	3	52.5
p4	5	2	5	1	4	1	5	2	5	1	92.5
											78.1

List of UX Problems

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Users went to functions and reports to process a refund

Users went to payments + to process a refund

User thought refunds didn't make sense in void button, since that button should lead to voids

Users clicked immediately on "login" when trying to login - did not "do the L"

Users did not understand that menu refresh button was also to change item availability

User did not click the "+" sign to add item availability back again

User thought "+" sign to add items back was too small for how important it is

User wanted to be able to add item the same way they removed it (Functions and Reports)

Add CS Gold to payment + window

User confused "meal plan" button on payment+ with student meal plan which is CS gold

User confused why student meal plan is kept separate from employee meal plan and other payment methods

Button Labels out of order and misspelled at times

User was confused by the grey color of some buttons because unavailable items get greyed out

User thought clerk card # button was useless and too small to read

Cost Importance Chart

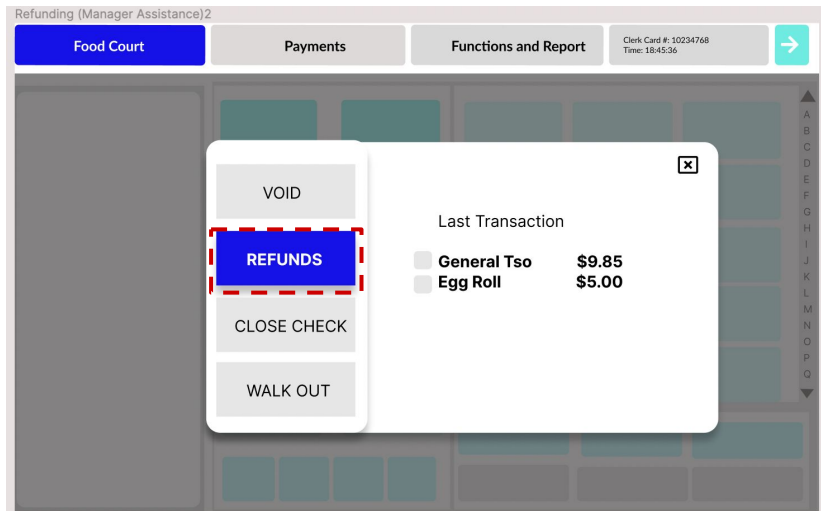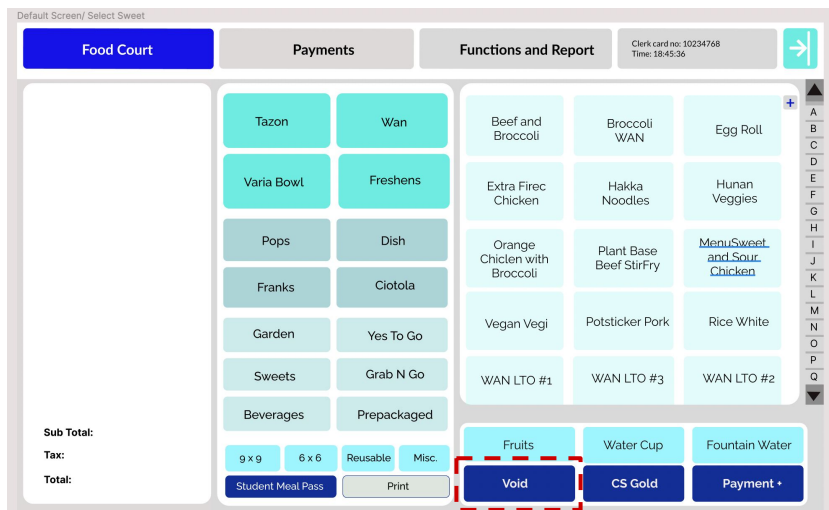| Problem	Importance	Solutions	Cost	Priority Ratio	Priority Rank	Cumulative Cost	Resolution
User thought refunds didn't make sense in void button, since that button should lead to voids	M	Either add a separate button just for refunds, or detach refunds from void, or relabel button to be voids + refunds	0.5	M	1	0.5	Implement in current version
Button Labels out of order and misspelled at times	M	Fix all button typos, fix alphabetical order sorting	3	M	2	3.5	Implement in current version
Users did not understand that menu refresh button was also to change item availability	3	Relabel existing button to "Available food items"	0.5	6000	3	4	Implement in current version
User confused "meal plan" button on payment+ with student meal plan which is CS gold	3	Rename button to student meal pass	0.5	6000	4	4.5	Implement in current version
Users went to functions and reports to process a refund	5	Add refund button to functions and reports	1	5000	5	5.5	Implement in current version
Users clicked immediately on "login" when trying to login - did not "do the L"	5	Have step numbers labeled according to their required order	1	5000	6	6.5	Implement in current version
User did not click the "+" sign to add item availability back again	2	Increase size of button and add new label "Activate Items"	1	2000	7	7.5	Implement in current version
Add CS Gold to payment + window	1	Add this option to payments +?	0.5	2000	8	8	Implement in current version
Line of affordability = 8 Person Hours							
User thought clerk card # button was too small to read	1	Increase size of button text or change contents of button	0.5	2000	9	8.5	Wait until next version
User wanted to be able to add item the same way they removed it (Functions and Reports)	1	Add to functions and reports as well	1	1000	10	9.5	Wait until next version
User was confused by the grey color of some buttons because unavilable items get greyed out	1	Change button color for those grey items which are still available/only use grey to indicate unavailable	1.5	666.6666667	11	11	Wait until next version

Cost Importance Chart

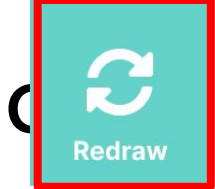| Problem	Importance	Solutions	Cost	Priority Ratio	Priority Rank	Cumulative Cost	Resolution
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Users did not understand that menu refresh button was also to change item availability	3	Relabel existing button to "Available food items"	0.5	6000	3	4	Implement in current version

Cost Importance Chart - Void Problem

UX Problem: Users thought **refunds** didn't make sense in void button, since that button should lead to voids

Solution: Either **add a separate button just for refunds**, or **detach refunds from void**, or **relabel button to be "Voids + Refunds"**
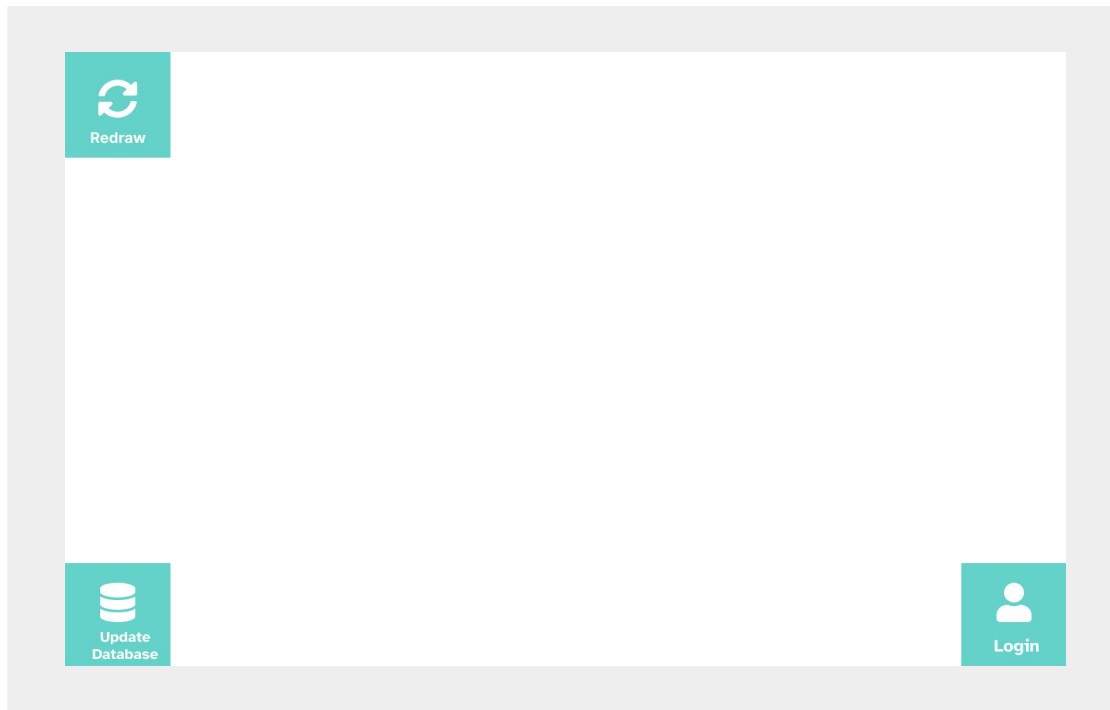
Cost Importance Chart

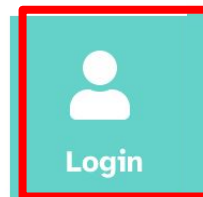| Problem	Importance	Solutions	Cost	Priority Ratio	Priority Rank	Cumulative Cost	Resolution
User confused "meal plan" button on payment+ with student meal plan which is CS gold	3	Rename button to student meal pass	0.5	6000	4	4.5	Implement in current version
Users went to functions and reports to process a refund	5	Add refund button to functions and reports	1	5000	5	5.5	Implement in current version
Users clicked immediately on "login" when trying to login - did not "do the L"	5	Have step numbers labeled according to their required order	1	5000	6	6.5	Implement in current version

UX Problem: Users skipped "**doing the L**" and **immediately pressed login**

Solution: **Add step number** callouts to ensure users can interpret the process flow
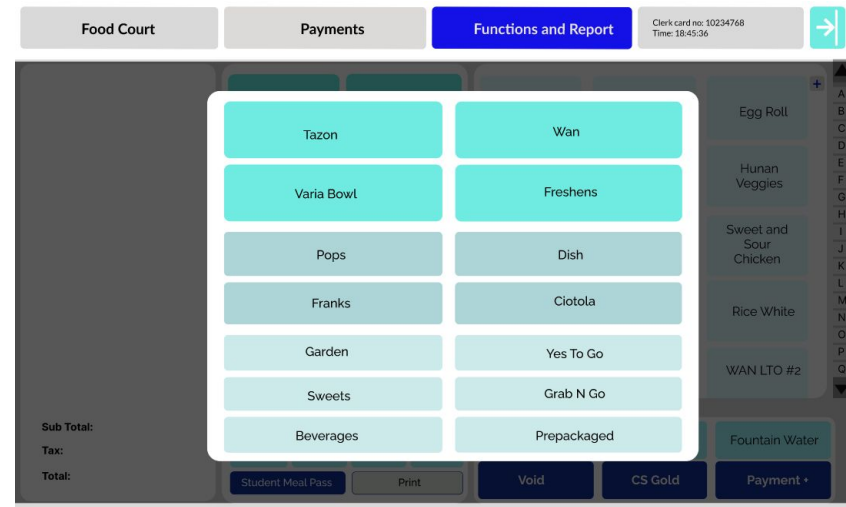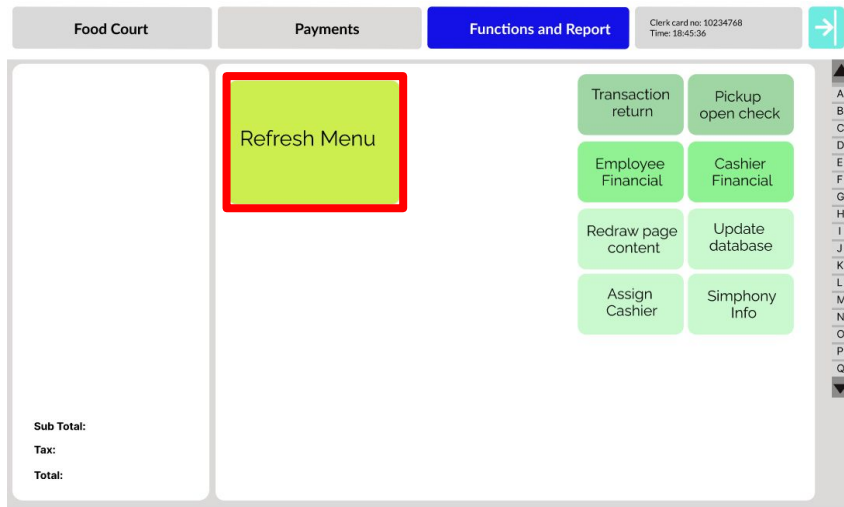
Cost Importance Chart

Problem	Importance	Solutions	Cost	Priority Ratio	Priority Rank	Cumulative Cost	Resolution
User did not click the "+" sign to add item availability back again	2	Increase size of button and add new label "Activate Items"	1	2000	7	7.5	Implement in current version
Add CS Gold to payment + window	1	Add this option to payments +?	0.5	2000	8	8	Implement in current version
Line of Affordability = 8 Person Hours							
User thought clerk card # button was too small to read	1	Increase size of button text or change contents of button	0.5	2000	9	8.5	Wait until next version

Cost Importance Chart - Menu Updating

UX Problem: Users didn't know that **item availability** was altered through the "**Refresh Menu**" Button

Solution: Relabel button to "**Item Availability**"

Cost Importance Chart

Problem	Importance	Solutions	Cost	Priority Ratio	Priority Rank	Cumulative Cost	Resolution
User wanted to be able to add item the same way they removed it (Functions and Reports)	1	Add to functions and reports as well	1	1000	10	9.5	Wait until next version
User was confused by the grey color of some buttons because unavailable items get greyed out	1	Change button color for those grey items which are still available/only use grey to indicate unavailable items	1.5	666.6666667	11	11	Wait until next version

Evaluation - Reflection

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Lessons Learned:
- Getting users to actually think-aloud not so easy

- Designer mental model ≠ User mental model

- Higher ranking officials are hard to get ahold of, but have valuable feedback

What Worked:
- Users interacted pretty seamlessly

- Users found new design more usable

- Interviewed Manager (Mr. Doy) appreciated the suggestions and is willing to consider these change in future

User Testimony/User Feedback

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"I like the colors"

"I really like the larger buttons with the full item titles"

"Everything was pretty cool!"

"Payments+ button is very intuitive"

"For someone who is using the current system to migrate to the new system, I don't see any problems, in fact - I think it will make my life easier"

"I like that it goes left-to-right instead of top-down"

"I think it's very cool that you highlight which shop is active, a nice Quality of Life improvement"

= Cashier Feedback

= Manager Feedback

Thank You!

Any Questions?