VANIER
CÉGEP/COLLEGE

Faculty of Science and Technology

420-436-VA | System Development

DELIVERABLE #5

Due Date:

Tuesday, November 5th 2024

Red Team

Amir-Georges

Douyon

Raeeba

Grechelle

Client: Georges AMO

Contact Name: Georges

SIGNATURES

We certify that this assignment is our own work.

I, **Amir-Georges**, certify that I have contributed to this deliverable, A

I, **Douyon**, certify that I have contributed to this deliverable, D

I, **Grechelle**, certify that I have contributed to this deliverable, G

I, **Raeeba**, certify that I have contributed to this deliverable, R

TABLE OF CONTENTS

SIGNATURES **0**
TABLE OF CONTENTS **2**
EXECUTIVE OVERVIEW **3**
NARRATIVE DESCRIPTION **3**
BUSINESS PROBLEM **5**
USABILITY GUIDELINES **6**
PROTOTYPE INTERFACES **7**
CLIENT COMMENTS **14**
APPENDIX 1 - REVISED USER STORIES AND TESTS **14**
NEW USER STORIES 14
MODIFIED USER STORIES 16
APPENDIX 2 - REVISED STORY MAP **20**

EXECUTIVE OVERVIEW

In this deliverable, we designed the user interface (UI) for our application following the work we did in previous deliverables to determine the flow of the application as well as examining the business problem of our client. Throughout the process of designing the UI, we consulted the client numerous times to make sure he approved of our design. A total of two (2) prototype interfaces were created and shown to the client: the first being hand-drawn, and the second being a digital mockup created using Figma. Minor changes were made to the design after the first version, notably the removal of the 'Super Admin/Admin' toggle button, due to its redundancy. We noted down some usability guidelines in order to make the design as user-friendly as possible. Additionally, we revisited our user stories and tests as well as our story map, as some changes had to be made to them. All changes have been documented and explained in this report.

NARRATIVE DESCRIPTION

The primary users of the system are the Super Admin and Admin. The system allows for only one Super Admin but can have multiple Admins. Both the Super Admin and Admin are required to log in using their email and password to access the system's features. After entering their credentials, they will receive a verification code sent to their registered email. If the code entered in the program matches the code sent via email, they will be granted access. In case of a forgotten password, users can click on the "Forgot my Password" button. The program will then ask the user for their email address, after which a password reset link will be sent to their email. Users can follow the link to create and confirm a new password, which updates the database with their new credentials.

The Super Admin is the main user with unrestricted access to all features of the application which includes the inventory system (updating, deleting, and modifying the inventory), the calculator, and admin user management (adding more Admins). Within the inventory system, the Super Admin can add and update materials and material information such as material name, width, height, stock, vendor details, and price. The Super Admin updates the inventory after every purchase and after every job completion. When modifying or deleting an item in the inventory, the program will prompt the Super Admin to confirm the changes. If an item is low or out of stock, the inventory system will notify the application by displaying these items in bold with a red border. An expandable table listing all of the low and out-of-stock items will be featured at the top of the Inventory page to group this category together.

The Admin users have restricted access to the application. They can view the inventory, but they cannot modify any information. Admins also have access to the calculator just like the Super Admin. In the Calculator, the users need to provide the length, height, and thickness of the wall as well as the spacing between the lumbers and the system will generate the number of materials based on these dimensions.

The Calculator is for informational and visual purposes only—it allows users to see how many materials they currently have on hand, but it will not purchase items nor send the calculated results via email. The Calculator will also display specific inventory items related to wall construction, limited to wool insulation and wood, showing the available stock for these materials. By integrating the inventory feature into the Calculator, the user experience is streamlined, making it more convenient by eliminating the need to open another page to view the primary materials required for wall construction.

BUSINESS PROBLEM

The client is dissatisfied with his current inventory management system, which relies on an inefficient process built in Excel. His current inventory system consists of multiple spreadsheets filled with a large volume of supply data, but lacks proper filtering and categorization of materials, making it difficult to manage and track inventory effectively. Consequently, this reduces the client's productivity and leads to frustration as the client will have to look through numerous rows of data to locate necessary materials. As the business expands, managing inventory will become even more challenging.

We aim to address these challenges through our web application, which will optimize the business's inventory management. Additionally, since the Excel spreadsheets contain essential formulas and perform necessary calculations for construction, the web application will feature an integrated calculator to handle these calculations, enhancing both convenience and efficiency.

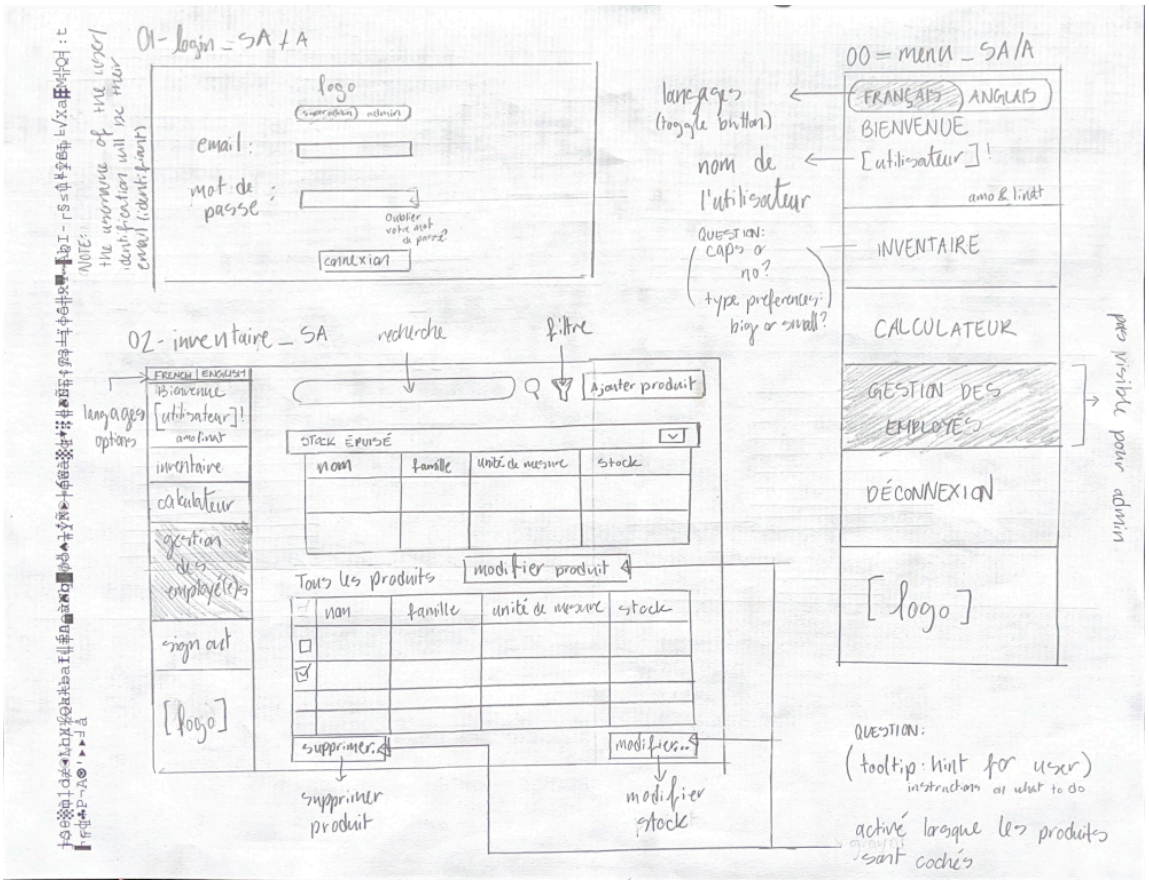
USABILITY GUIDELINES

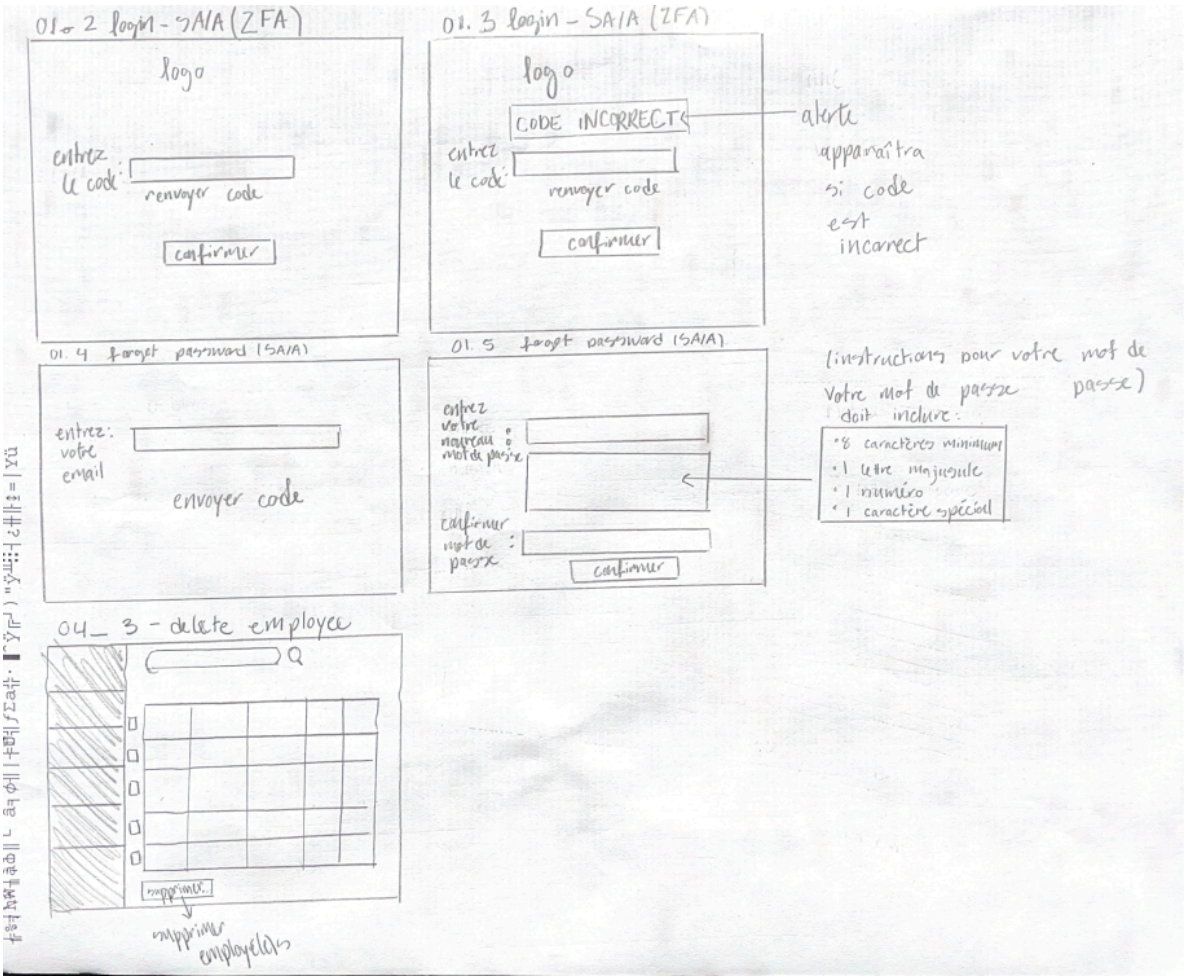
1. The delete buttons were placed on the left-hand side of the screen in order to prevent accidental deletion of any products and employees.
2. The “Update Stock” button was placed on the bottom right-hand side of the View Inventory page to make it easier for the user to reach it, as it will be the most used button on that page.
3. Bright colours were used to highlight buttons the user would use frequently. Buttons for creating, modifying or updating are a bright yellow, whereas the delete buttons were made red, as is customary for most interface designs.
4. Each tab in the navigation menu was given an icon to quickly visually indicate to the user what that tab contains.
5. The tab of the page that the user is currently on will be highlighted in a bright yellow colour in the navigation menu to quickly visually indicate to the user which page of the application they are currently on.
6. Upon logging into the application, the first page the user will see will be the Inventory View, as that is the page the user will be consulting the most frequently. This decision was also made to reduce the number of clicks the user would need to get to the page they want.
7. The tabs in the navigation menu were placed in order of use. The “Manage Employees” tab would presumably be used less frequently than the “Inventory” and “Calculator” tab. Therefore, it is placed below them.
8. The “Sign Out” tab, while it will presumably be used frequently, was placed at the bottom of the navigation menu, so that the user will be able to easily access it. This was also done to prevent accidental misclicks which would redirect the user onto other tabs in the navigation menu.
9. The layout of all the “View” pages (“View Inventory” and “View Employees”) are similar in order to not confuse the user when going from page to page.
10. The “Modify Product Information” is near the top of the Product table, so that the user does not accidentally click on “Update Stock”.

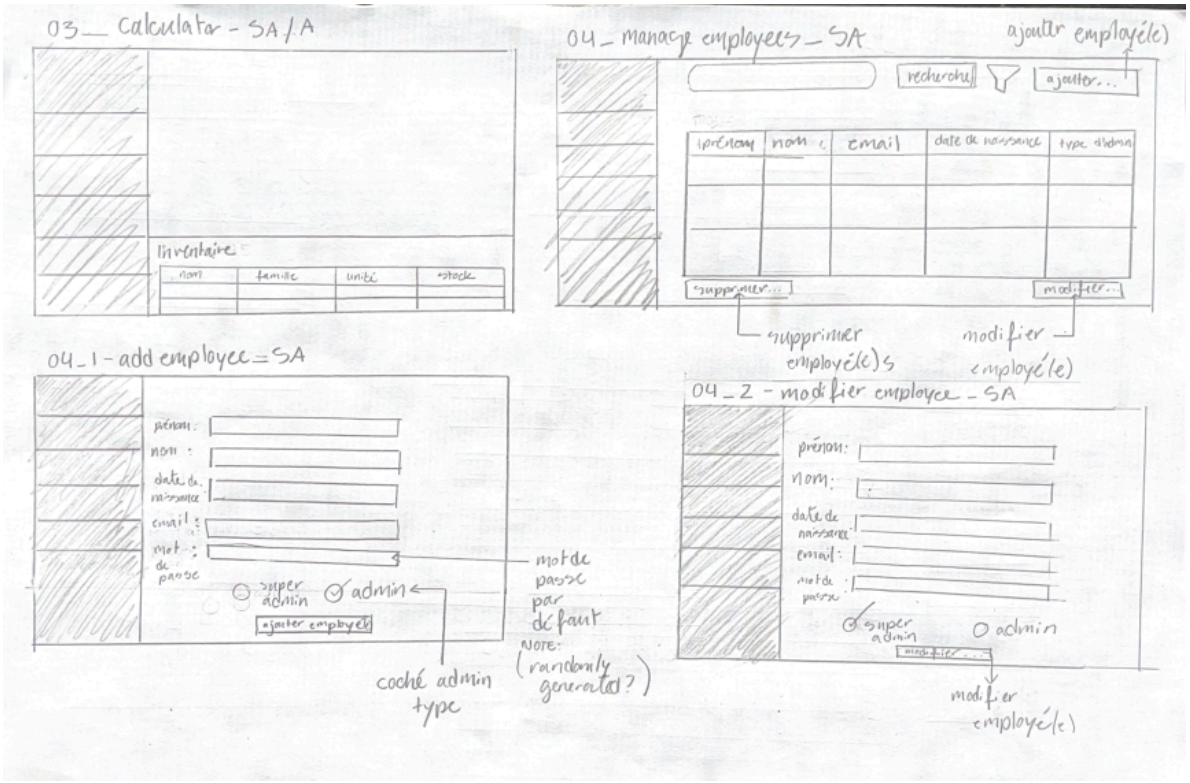
PROTOTYPE INTERFACES

When designing the user interface, we first created a hand-drawn prototype of the user interface (UI). The hand-drawn prototype contains specific notes about the design, such as the fact that the “Gestion des employés (Manage Employees)” would not be made visible to admins. Additionally, we noted down specific questions we wanted to ask the client in order to clarify his preferences for the design. An example of this is the question located at the bottom right of the prototype, where we ask if the client would like there to be tooltips explaining what action the user must take to activate certain buttons. This might be necessary as the user will not be able to click certain buttons in the Inventory and Employee pages if they have not selected any items in these pages’ respective lists. Alternatively, the “Modify Employee” and “Modify Product” buttons will become inactive if multiple items are checked in the Employee and Inventory lists respectively.

Here are the first (hand-drawn) prototype interfaces:




01_2 login - SAIA (2FA)
logo
entrez le code:
renvoyer code
confirmer
01_3 login - SAIA (2FA)
logo
CODE INCORRECT
alerte apparaîtra si code est incorrect
entrez le code:
renvoyer code
confirmer
01_4 forgot password (SAIA)
entrez votre email:
envoyer code
01_5 forgot password (SAIA)
entrez votre nouveau mot de passe:
confirmer mot de passe:
confirmer
(instructions pour votre mot de passe)
Votre mot de passe doit inclure:
• 8 caractères minimum
• 1 lettre majuscule
• 1 numéro
• 1 caractère spécial
04_3 - delete employee
supprimer
supprimer employé(e)s

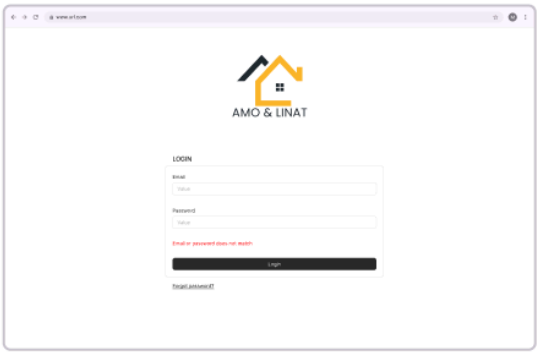

03_ Calculator - SA/A
Inventaire
nom
famille
unité
stock
04_ manage employees - SA
ajouter employé(e)
recherche
ajouter...
prénom
nom
email
date de naissance
type d'admin
supprimer...
modifier...
supprimer employé(e)s
modifier employé(e)
04_1 - add employee - SA
prénom:
nom:
date de naissance:
email:
mot de passe:
super admin
admin
ajouter employé
mot de passe par défaut
Note: (randomly generated?)
coché admin type
04_2 - modifier employee - SA
prénom:
nom:
date de naissance:
email:
mot de passe:
super admin
admin
modifier...
modifier employé(e)

Here are the second (computer-drawn) prototype interfaces:

Log In

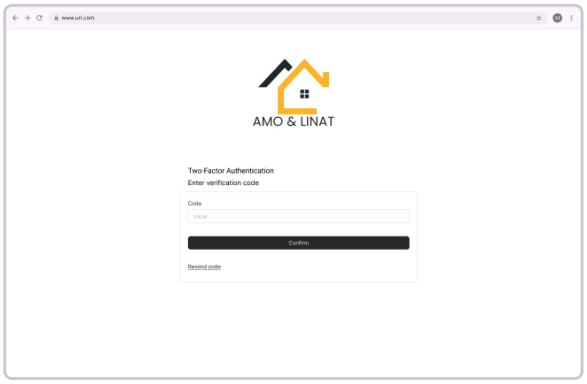
01_LOG IN (S-ADMIN)

01_LOG IN (ADMIN)

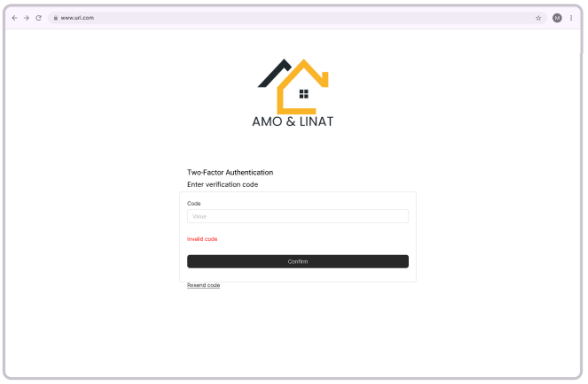


2-Factor Authentication (2FA)

2FA

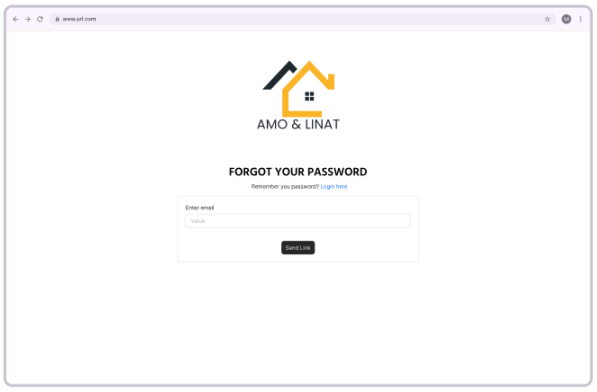


2FA - CODE INCORRECT

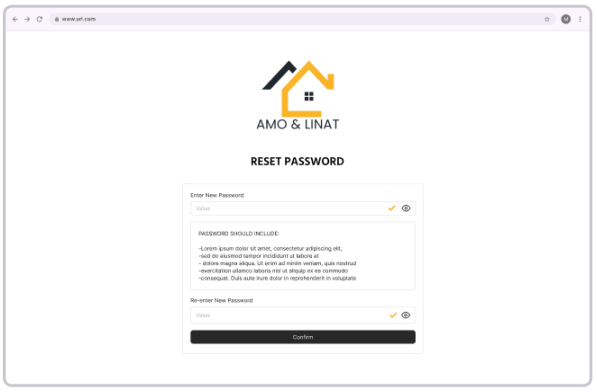


Forgot Password

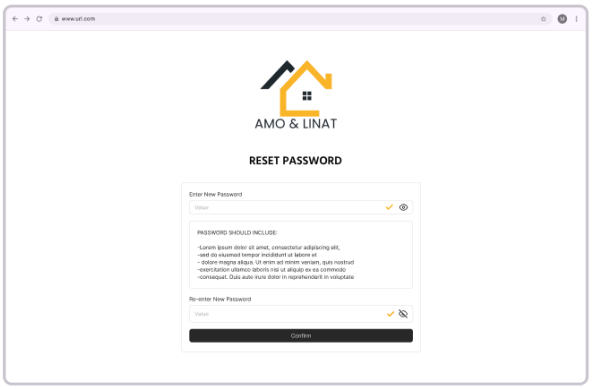
FORGOT PASSWORD



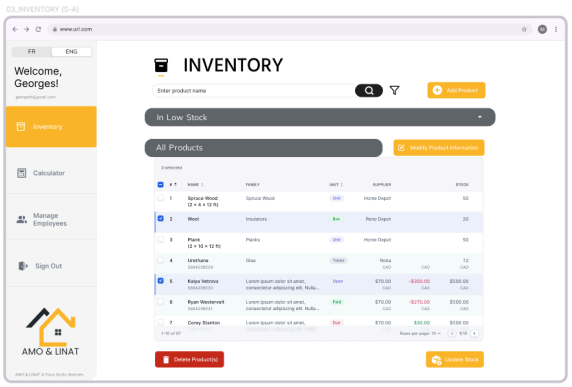
FORGOT PASSWORD - NEW PASSWORD

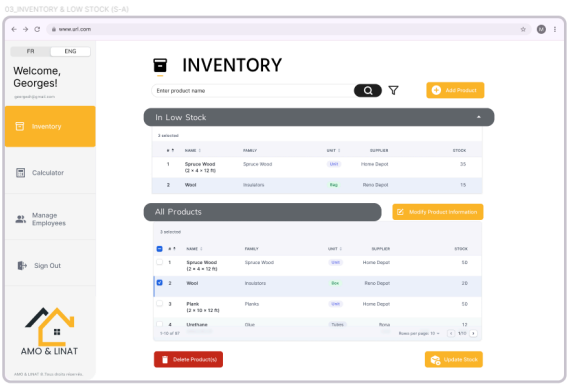


FORGOT PASSWORD - NEW PASSWORD - HIDE

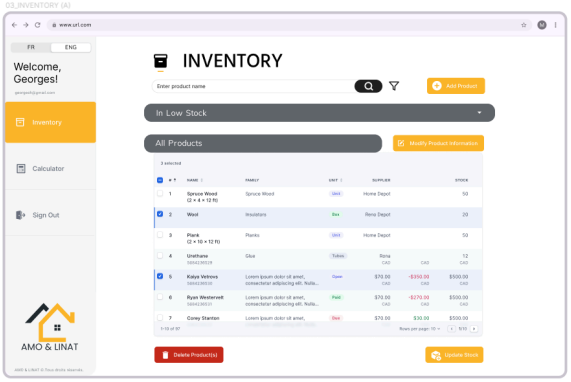


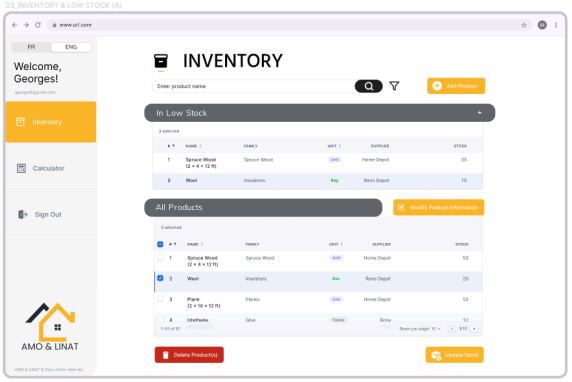
View Inventory





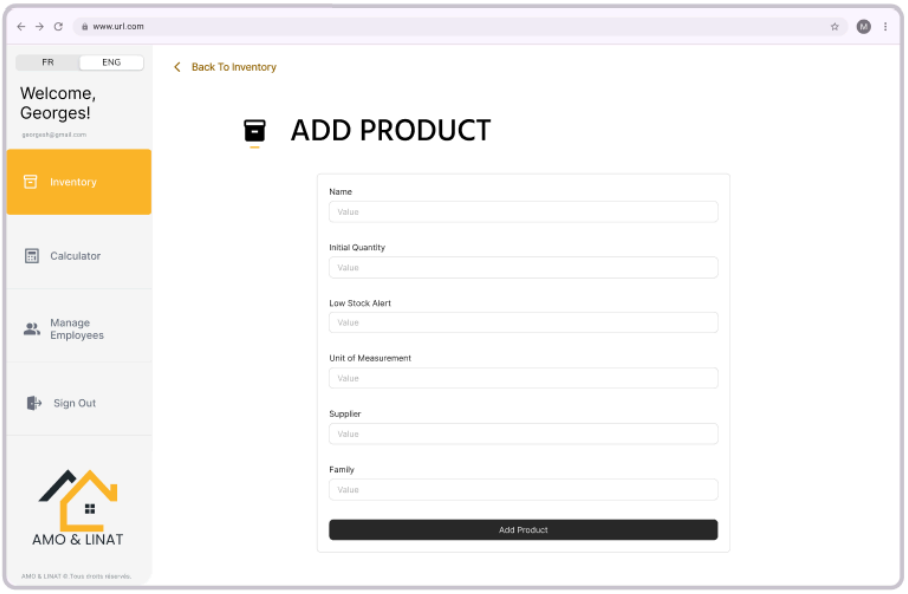
View Inventory





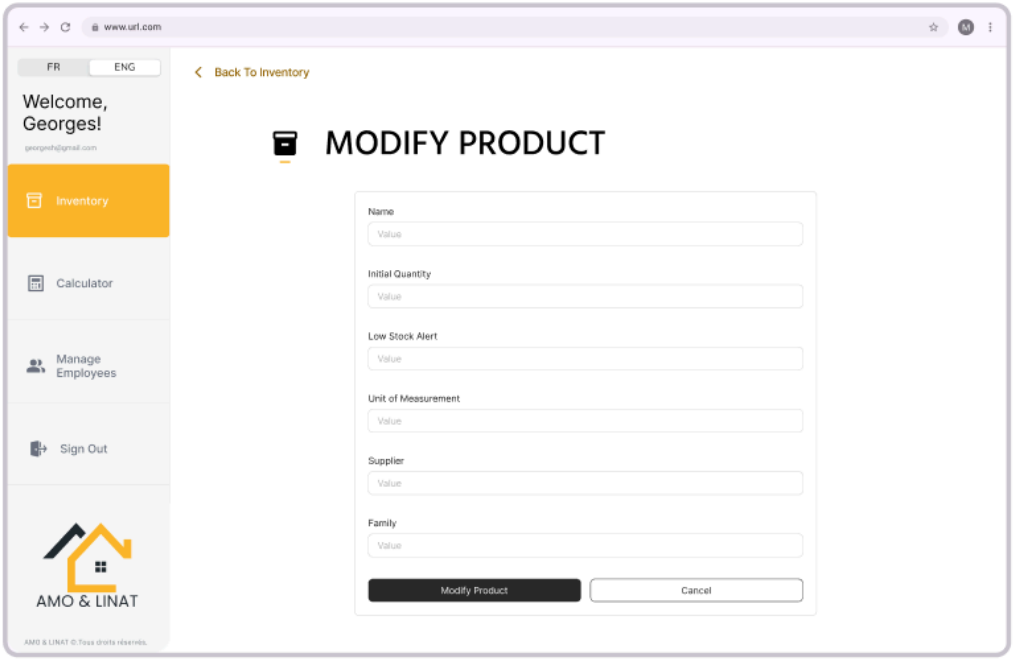
Add Product

03_INVENTORY - ADD (S-A)

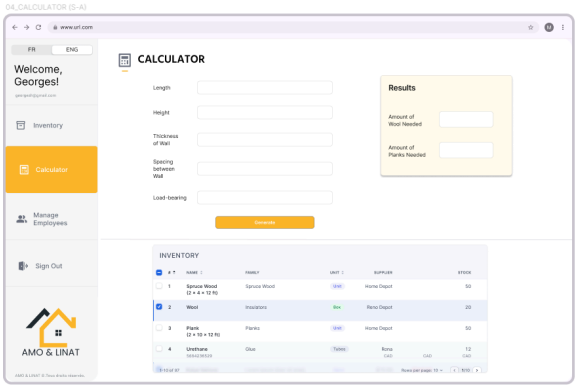


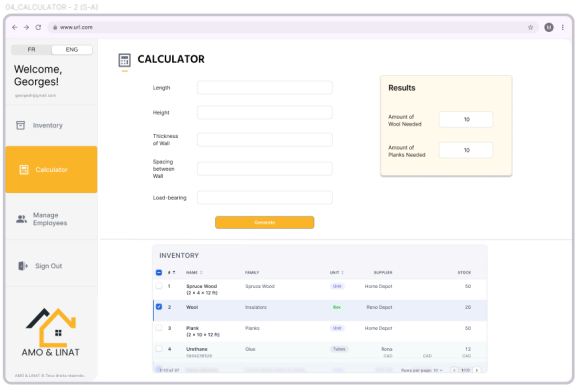
Modify Product

03_INVENTORY - MODIFY (S-A)

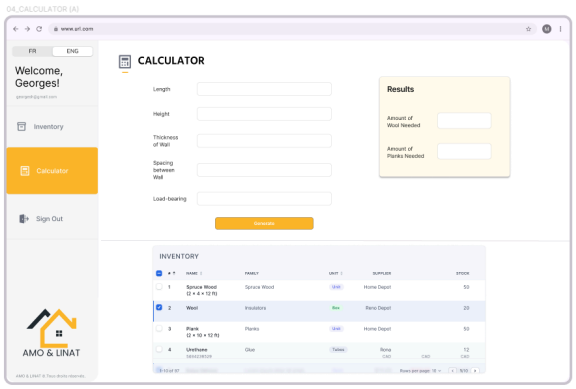


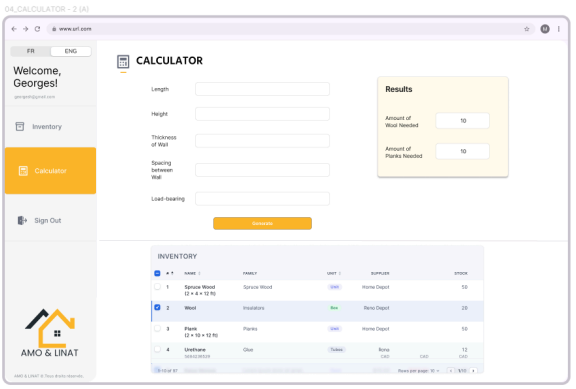
Calculator





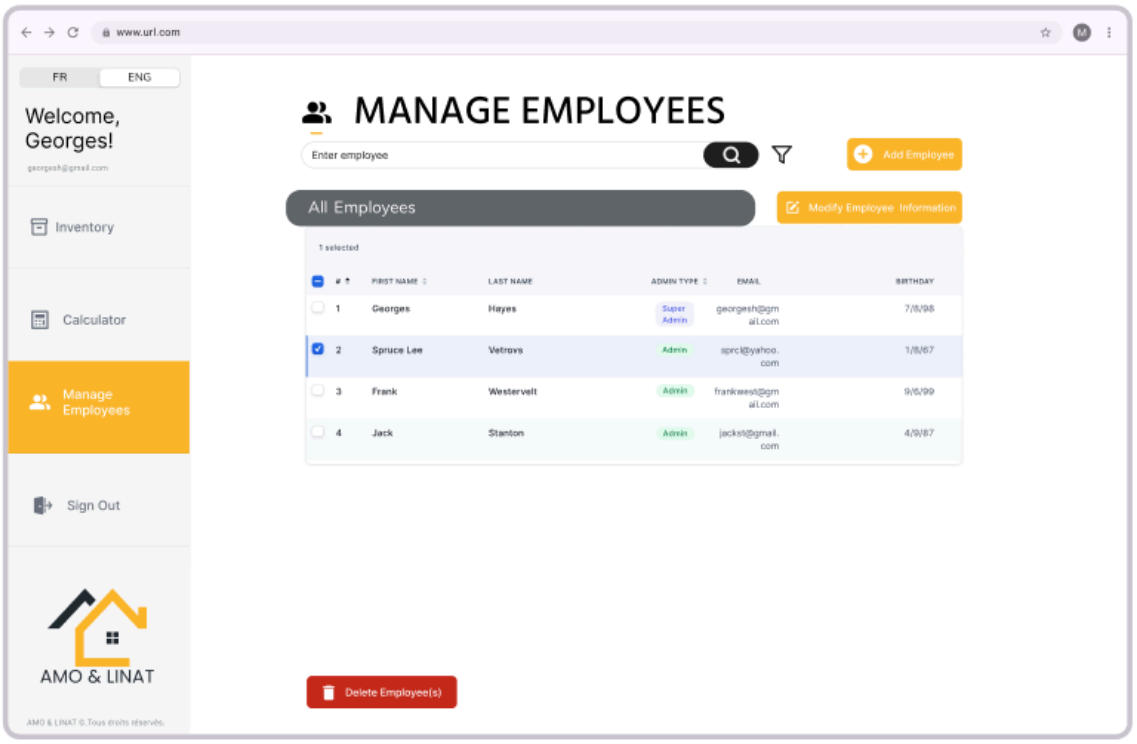
Calculator





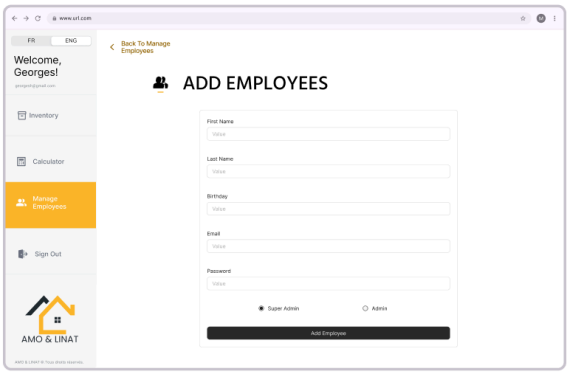
View Employees

04_EMPLOYEES (S-A)

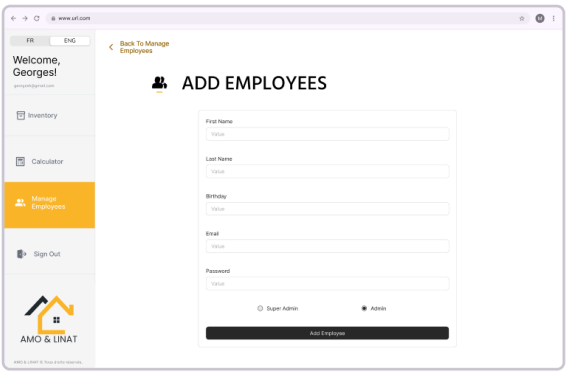


Add Employee

04_EMPLOYEES - ADD (S-A)

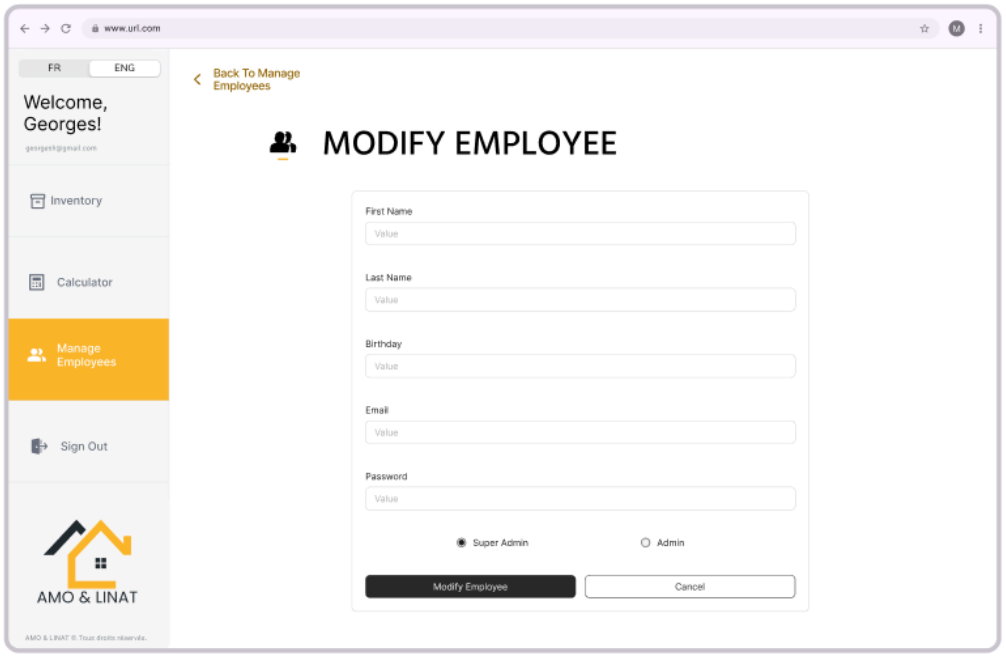


04_EMPLOYEES - ADD 2 (S-A)



Modify Employee

04_EMPLOYEES - MODIFY(S-A)



The webpages in the ‘Manage Employees’ tab would not be visible to the admins as they would not have access to that tab. Additionally, the ‘Add Product’ and ‘Modify Product’ screens would not be visible to admins, as they cannot modify or add products.

CLIENT COMMENTS

Amir showed both of the designs to the client in person. After showing the client the first hand-drawn prototype in person, he did not find any fault with the design. He had no particular comments to make on the design and let us have free reign for the details. He also told us that the tooltips would not be necessary.

We showed him the second design on the computer when it was done and he liked it as well.

Small changes were made from the first design to the second. First of all, we removed the “Super Admin” and “Admin” toggle button, since the application will automatically detect what type of admin the user is during the login process. In the Calculator tab, we decided that we will now show the inventory of wood and insulation products after generating the calculations instead of showing all low stock items in general.

APPENDIX 1 - REVISED USER STORIES AND TESTS

NEW USER STORIES

Our user stories and tests have changed slightly. We added a few features, notably, a search for employees, modify employees, and filter items in the inventory by category. You will find them listed below here:

(**NOTE:** The terms “*product*” and “*item*” are used interchangeably to refer to the materials listed in the Inventory tab. Going forward, the term “product” will be used in the final application.)

TITLE	
1. Search for employee in the employee list	
USER STORY	**STORY TEST**
As a super admin,	Given an employee and its information

	is in the database,
I want to be able to search for a specific employee in the employee list on the Manage Employees page.	when the user clicks on the search bar in the Manage Employees page and writes the employee's name,
So, I need a search bar.	then the employee will appear in the list.

TITLE	
2. Modify employee information	
USER STORY	**STORY TEST**
As a super admin,	Given the user knows which employee they want to modify,
I want to be able to update the information of each employee in case I entered the wrong information or changes occurred (e.g., wrong employee name, wrong birthday, changed email, etc.).	when the user selects the employee to be edited and clicks on "Modify Employee Information",
So, there must be a way to modify employee information in the Manage Employees page.	then, a new page with the selected employee information will appear. They can then change the employee information, when they click on "Modify", the employee information will be updated in the database.

TITLE	
3. Filter items in the inventory	
USER STORY	**STORY TEST**
As a super admin / regular admin,	Given an item and its information is in the database,
I want to be able to see all items in the inventory that belong to the same	when the user clicks on the filter button in the Inventory tab and

category.	selected a specific category of item,
So, I need a filter button.	then only items belonging to that category will appear in the inventory list.

MODIFIED USER STORIES

We also made minor modifications to the following user stories. The modifications are highlighted in bold.

TITLE	
4. Search for item in the inventory	
USER STORY	**STORY TEST**
As a super admin / regular admin,	Given an item and its information is in the database,
I want to be able to search for a specific item in the inventory.	when the user clicks on the search bar in the Inventory tab and writes the item's name,
So, I need a search bar.	**then, the item will be displayed in the list.**

Originally, the search would open a new page with all the item's information, however we realized that this is not necessary as all the information will be displayed in the table.

TITLE	
5. Add new item to inventory	
USER STORY	**STORY TEST**
As a super admin,	Given the user knows which item's stock they want to update,
I want to be able to add a new item to	when the user clicks on the "Add

the inventory if it's not already present.	Item" button,
So, a feature to add a new item must be implemented.	then, **a new page** with a form will appear prompting the client to input the item's information (e.g., name, supplier, quantity, low stock indicator). After clicking "Confirm", the item will be added to the database.

A new page with a form will be opened when the user clicks the 'Add Item' button.

TITLE	
6. Add new users	
USER STORY	**STORY TEST**
As a super admin,	Given a new person is hired,
I want to be able to add new employees to the system, so that they can use the application for work (view inventory, use room calculator).	when the user clicks "Add/Remove Employee" in the navigation menu,
So, I need a way to provide new employees access to the application.	**then, a new page will be opened with a form.** They will be prompted to enter the employee's info. After clicking "Add employee", the employee will be added to the database.

A new page with a form will be opened when the user clicks the 'Add Employee' button.

TITLE	
7. Low Stock Alerts	
USER STORY	**STORY TEST**
As a super admin,	Given the user enabled "Low Stock

	Alert" for an item in the item's information,
I want to know if I have less than a certain amount of a specific item in the inventory, but I don't want to get repeated notifications.	when the quantity in the database is below the set amount,
So, I need a way to see when an item is low in stock.	then, **it will be displayed in a section dedicated to low stock items.**

Originally, the low stock items were supposed to be highlighted in red in the 'All Products' table in the Inventory list. However, we've decided to remove this, as we don't think it will be necessary, since the products are already being displayed in a separate table.

TITLE	
8. Remove users	
USER STORY	**STORY TEST**
As a super admin,	Given a person no longer works for the company,
I want to be able to remove employees from the system, if they no longer work for my company.	**when the user clicks "Manage Employee" tab,**
So, I need a way to remove employees' access to the application.	**then, they can select the employee(s)** and click "Remove Employee". A warning will appear asking if they are sure they want to delete the employee(s), and once they click confirm, the employee(s) will be removed from the database.

Originally, the user would've had to click a tab called 'Add/Remove Employee' then select the employees to be deleted. However, we decided to create a tab in the navigation menu called 'Manage Employees' instead in order to handle all

modifications of employee information. This tab will have a list of all employees, as well as buttons to add new employees, modify existing employee information, and delete employees from the database.

TITLE	
9. Update inventory quantity	
USER STORY	**STORY TEST**
As a super admin,	Given the user knows which item they want to update,
I want to be able to update the amount of each item I have after purchasing more, and after every completed job.	**when the user selects the items to be edited and clicks on the "Update Stock" button,**
So, I need a way to quickly update the stock of each item.	**then, the stock fields of those items become editable.** The super admin can then change the stock. When they click on "Update Stock", the quantity of each item will then be updated in the database.

Originally, the user would've had to click the 'Update Stock' button and then select the product(s) to be updated. However, now the user must first select the product(s) from the Inventory list in order to delete them. This was done as the Inventory list will have checkboxes besides each row by default.

Additionally, our original user story stated that clicking the 'Update Stock' button would open a new page, however we decided instead to simply make the fields editable on the Inventory list page by turning them into text fields once the 'Update Stock' button was clicked.

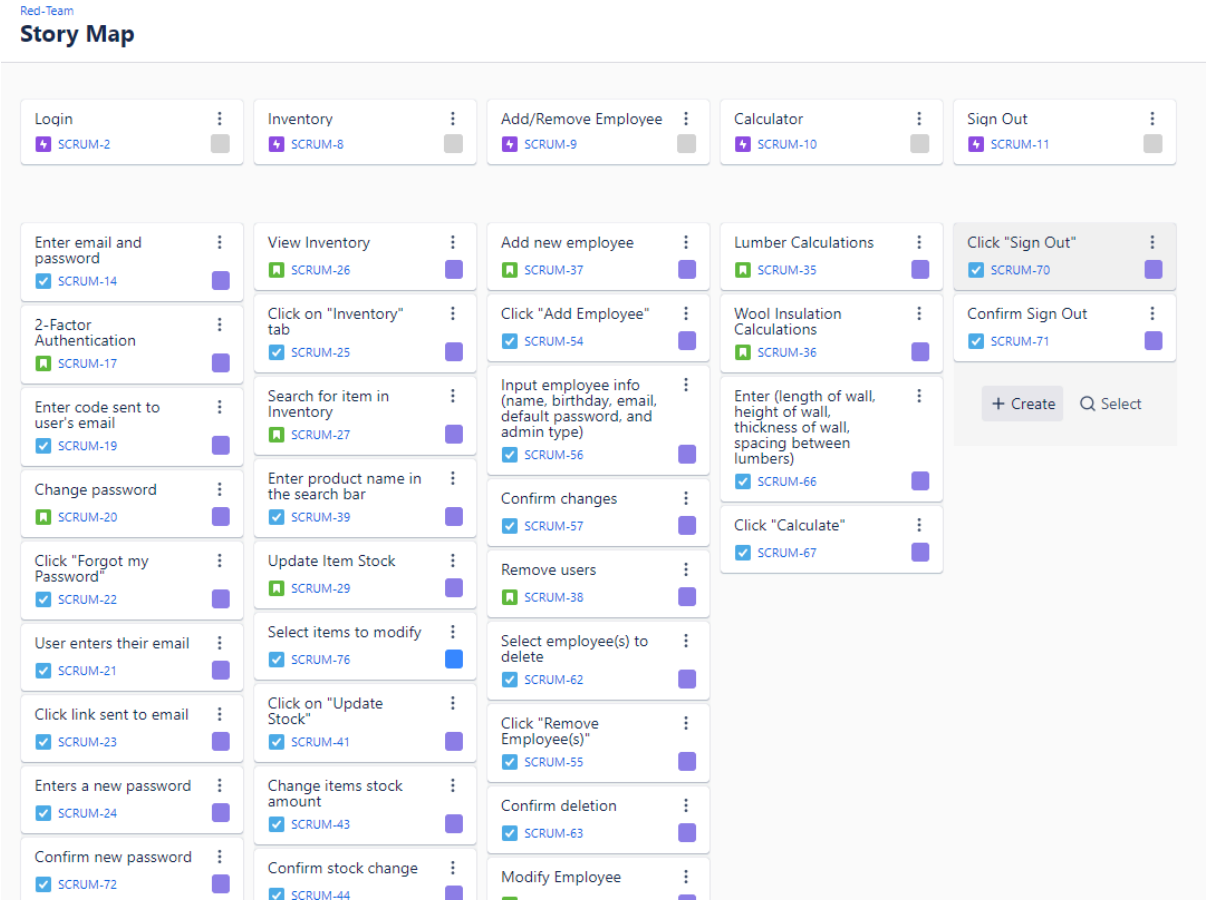
TITLE	
10. Update item information	
USER STORY	**STORY TEST**

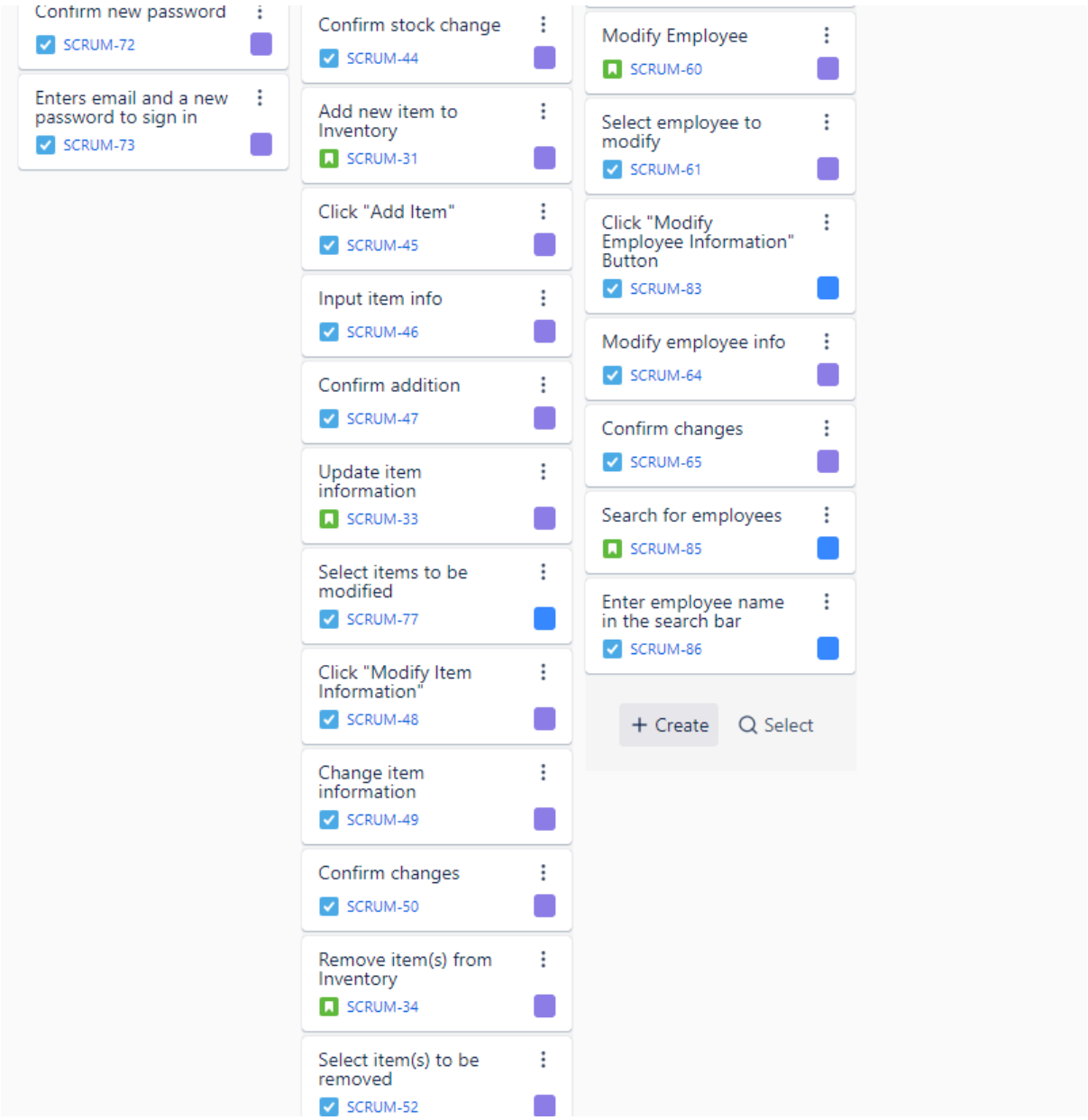
As a super admin,	Given the user knows which item they wants to update,
I want to be able to update the information of each item in case I entered the wrong information or changes occurred (e.g., item is no longer sold at a specific manufacturer).	**when the user selects the item to be edited and clicks on "Modify Item Information",**
So, there must be a way to modify item information in the inventory.	then, a new page with the selected item will appear. They can then change the item information, when they click on "Modify", the item information will be updated in the database.

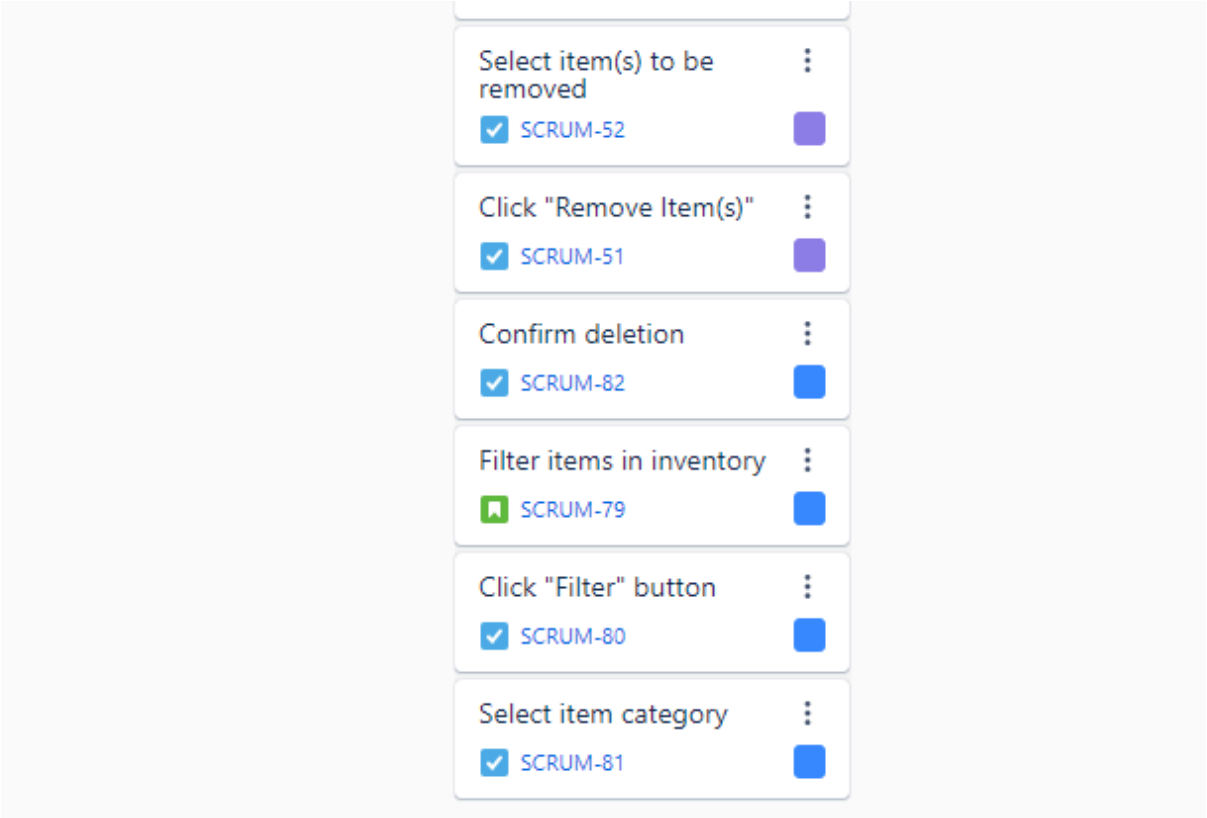
Originally, the user would've had to click the 'Modify Item Information' button and then select the product to be modified. However, now the user must first select the product from the Inventory list in order to modify it. This was done as the Inventory list will have checkboxes besides each row by default.

APPENDIX 2 - REVISED STORY MAP

Our story map has also changed to accommodate the changes in the user stories and tests. The same changes that were listed in the user stories and tests were added to the story map. You will find the story map listed below:


Red-Team
Story Map
Login
SCRUM-2
Inventory
SCRUM-8
Add/Remove Employee
SCRUM-9
Calculator
SCRUM-10
Sign Out
SCRUM-11
Enter email and password
SCRUM-14
2-Factor Authentication
SCRUM-17
Enter code sent to user's email
SCRUM-19
Change password
SCRUM-20
Click "Forgot my Password"
SCRUM-22
User enters their email
SCRUM-21
Click link sent to email
SCRUM-23
Enters a new password
SCRUM-24
Confirm new password
SCRUM-72
View Inventory
SCRUM-26
Click on "Inventory" tab
SCRUM-25
Search for item in Inventory
SCRUM-27
Enter product name in the search bar
SCRUM-39
Update Item Stock
SCRUM-29
Select items to modify
SCRUM-76
Click on "Update Stock"
SCRUM-41
Change items stock amount
SCRUM-43
Confirm stock change
SCRUM-44
Add new employee
SCRUM-37
Click "Add Employee"
SCRUM-54
Input employee info (name, birthday, email, default password, and admin type)
SCRUM-56
Confirm changes
SCRUM-57
Remove users
SCRUM-38
Select employee(s) to delete
SCRUM-62
Click "Remove Employee(s)"
SCRUM-55
Confirm deletion
SCRUM-63
Modify Employee
Lumber Calculations
SCRUM-35
Wool Insulation Calculations
SCRUM-36
Enter (length of wall, height of wall, thickness of wall, spacing between lumbers)
SCRUM-66
Click "Calculate"
SCRUM-67
Click "Sign Out"
SCRUM-70
Confirm Sign Out
SCRUM-71
+ Create
Select


Confirm new password
SCRUM-72
Enters email and a new password to sign in
SCRUM-73
Confirm stock change
SCRUM-44
Add new item to Inventory
SCRUM-31
Click "Add Item"
SCRUM-45
Input item info
SCRUM-46
Confirm addition
SCRUM-47
Update item information
SCRUM-33
Select items to be modified
SCRUM-77
Click "Modify Item Information"
SCRUM-48
Change item information
SCRUM-49
Confirm changes
SCRUM-50
Remove item(s) from Inventory
SCRUM-34
Select item(s) to be removed
SCRUM-52
Modify Employee
SCRUM-60
Select employee to modify
SCRUM-61
Click "Modify Employee Information" Button
SCRUM-83
Modify employee info
SCRUM-64
Confirm changes
SCRUM-65
Search for employees
SCRUM-85
Enter employee name in the search bar
SCRUM-86
+ Create
Select


Select item(s) to be removed
SCRUM-52
Click "Remove Item(s)"
SCRUM-51
Confirm deletion
SCRUM-82
Filter items in inventory
SCRUM-79
Click "Filter" button
SCRUM-80
Select item category
SCRUM-81