



**Faculty of Science and Technology**  
**420-436-VA | System Development**

## **DELIVERABLE #7**

**Due Date:**

Monday, December 9th 2024

**Red Team**

Amir-Georges

Douyon

Raeeba

Grechelle

**Client:** Georges AMO

**Contact Name:** Georges

## SIGNATURES

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**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

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## EXECUTIVE OVERVIEW

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In this deliverable, we worked on finalizing the web application. We consulted the client one final time and received some last-minute feedback on certain changes he would like for us to make to the web application. The changes were mainly regarding the user interface (UI), specifically the placement of the buttons in the Inventory and Employee Management pages.

In order to successfully implement the project and meet all evaluation criteria, we made certain decisions regarding the software design as well as the overall design of the web application which we will explain in this report.

We also implemented security measures such as 2-factor authentication, separation of user login information from user information in the database, user permissions as well as hashing for passwords and codes.

Additionally, we reflected on any future work that is left in order to complete the web application or any improvements that could be made to it, such as adding additional features, security measures or implementing any testing strategies.

At the end of this deliverable, you will find our revised user interface as well as a list with images of the different pages of the web application (Appendix 1 & 3), and a user guide for the web application (Appendix 2).

## SUMMARY DESCRIPTION

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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. He also wants a secure way to access his inventory which is something our web application will provide with 2-factor authentication.

## NARRATIVE DESCRIPTION

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The two types of users of the system are Super Admins and Admins. Super Admins represent individuals with higher authority within the business, while Admins are employees. There can be multiple users of the same type.

All users 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 to the web application. 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 web application which includes the inventory system (updating, deleting, and modifying the inventory), the Calculator, and Employee Management. 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 web 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 web application. They can view the inventory, search for products and filter 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 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.

## CLIENT COMMENTS

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The client approved of the general web application layout, design, features and flow that we planned out in the previous deliverables. The only changes he instructed us to make was to place all the add, delete, modify, and update buttons at the bottom of the Inventory and Employee Management Pages for easy access. Due to the number of products in the inventory list, it would be inconvenient for him to keep scrolling up and down to click the different buttons.

## DESIGN AND IMPLEMENTATION DECISIONS

---

For this project, as it is a joint project between both our E-Commerce and System Development classes, we used PHP to code the web application, as that is the language we are currently working with in our E-Commerce class.

In order to create the project, we chose to use Visual Studio Code as it supports PHP, HTML, and Javascript. To run the web application, we used XAMPP.

In terms of code, we made sure to optimize where we could, such as the add product and the list product functions. Since our project involves using a database, we ensured query optimization for performing operations such as fetching, updating, and deleting data. Additionally, we implemented measures to guarantee atomicity and data integrity to ensure all operations run reliably and consistently.. We also incorporated some error checkings when it comes to birthdays and units.

Due to some of the changes we made in the hopes of optimizing the application's code, we ended up changing and removing some of the methods we had previously defined in the class diagram. We also added more fields to our initial database design in the userlogin table, notably `reset_token_hash`, `reset_token_hash_expires_at`, `authentication_code_hash`, and `authentication_code_expires_at`. These fields were added to help with resetting

users' passwords in Forgot Password, as well as logging in with 2-factor authentication respectively.

For the design, since our user already has a website, we referenced it when creating the web application. We tried keeping the web application design consistent with his website's established design. To do so, we used the same colours (yellow, black, white, and gray), the same rectangular buttons and text formatting, namely having all the pages' titles be in bold, uppercase letters.

We also made it so that the entire Employee Management tab, as well as the add, modify, update, and delete buttons on the Inventory page would not be visible to Admins, as they do not have access to those features.

Upon further reflection, we also realized it wouldn't be useful to include a list of low-stock items on the Calculator page, thus we removed it. We instead included a table with a list of building materials, like wooden planks as well as a list of insulation materials that features their stock information. The latter seems more relevant to the purpose of the Calculator.

We were not able to add icons to the add, modify, update, and delete buttons, due to a lack of time.

## SECURITY MEASURES

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Concerning security, we implemented specific measures to ensure no unauthorized people may access the web application, or modify or access important information.

These measures are:

- **2-factor authentication:**

After providing the correct login information (i.e., an email and password that is registered in the database), the user will be sent a code to their email address, which they must then enter on the web application's "Two Factor Authentication" page. The entered code must match the code stored in the database that is associated with that user's record for the user to gain access to the web application.



This ensures that only registered users such as employees of the business will be able to access the web application.

- **The separation of user login information from user information in the database:**

In the event of a breach of security, the user's personal information, such as first name, last name, and birthdate are stored in a separate table from their login information.

- **User rights:**

We implemented user rights so that normal employees cannot do the same actions as individuals with higher authority (i.e., boss, manager). Different types of users have different rights. These rights allow them to access different features. Our web application has two different types of users: Super Admins and Admins. Only Super Admins can access employee information and modify the database through the web application, while Admins are limited to viewing the information of products in the inventory, and using the Calculator page. Super Admins have access to all features, as they occupy higher positions in the business, whereas Admins, as employees, cannot modify or add anything to the database. This ensures that employees don't accidentally mess around with the inventory or employee information. This also prevents malicious employees from adding or modifying any important information such as product stock, or employees' admin type.

- **Hashing for passwords, and codes:**

Passwords are hashed when they are stored in the database. Codes sent to a user's email such as authentication codes for 2-factor authentication, or Forgot Password are also hashed. This prevents individuals from obtaining all employees' passwords, or codes by consulting the database. The authentication codes for 2-factor authentication and Forgot Password also have an expiry time of 5 minutes to prevent malicious individuals from attempting to guess the code, but also allow users to log in within the time limit.

## FUTURE WORK

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To complete this project, we would need to add the following:

- **User interface improvements:**

The user interface could be improved by fixing the format of the Inventory page table so that it is the same style as the table on the Calculator page. Making the layout responsive, as well as fixing up the spacing and alignment of text fields in certain pages such as the Add Product or Modify Product page would also be ideal. Adding icons to each button for the user to quickly understand what each button does would also be an improvement.

- **Unimplemented user stories and functions:**

All user stories were implemented, however the following are incomplete:

- **Filter Products**

The Filter feature should be improved, so that it displays the additional columns for the glues and isolant tables once those categories are selected. Currently, it displays the same columns for each category.

- **Modify Product Information**

When modifying a product's information, you cannot modify the product's family. This was done since allowing users to modify the product's family would require changing a lot of properties, which we did not have time to implement.

- **Modify Employee Information**

Super Admins cannot modify a user's email or password for a similar reason while modifying employee information. As email is a key for most of the user-related tables, it would be difficult to modify it for all user-related tables. As for passwords, users can change their personal password by using 'Forgot Password' which will allow them to set a new password. We also got rid of it as we think other users don't need to be able to modify other users' passwords, as this could cause security risks.

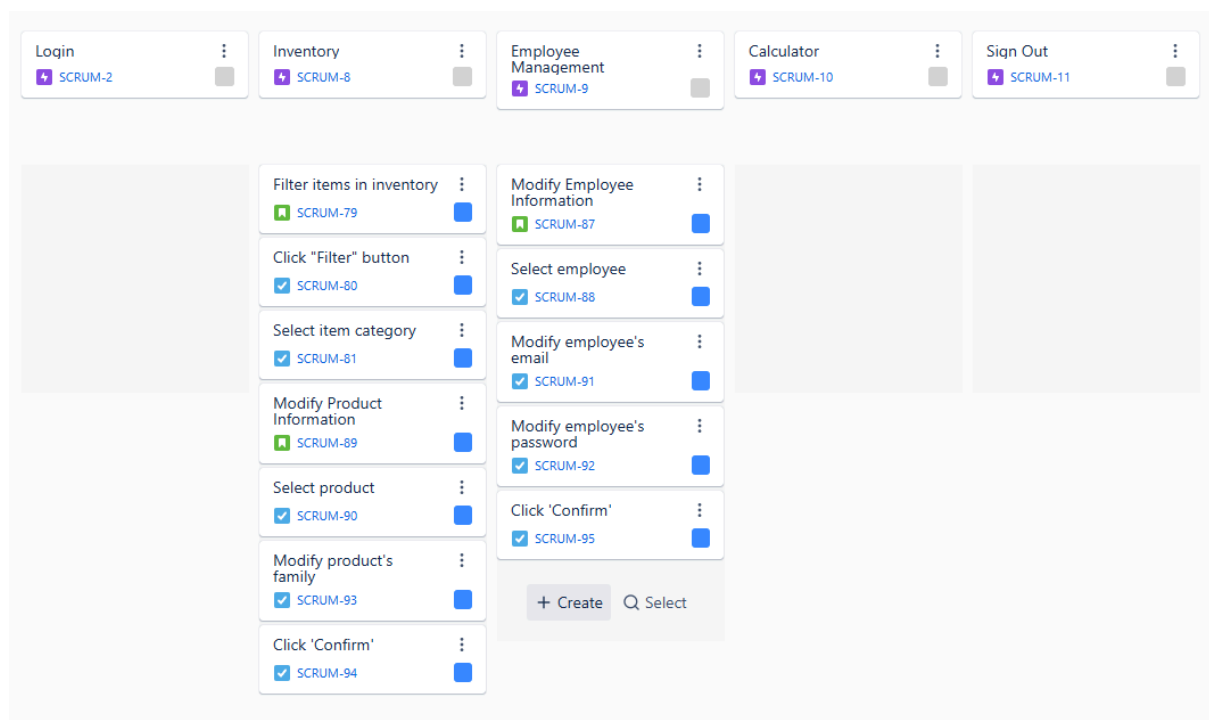
- **Recommendations regarding future security measures to be taken:**

In order to minimize the risk of users' accounts being messed with, we could add specific requirements for passwords that users must follow. This would force users to create strong passwords.

- **Recommendations regarding unit and integration test strategies to be used:**

For unit and integration testing, letting someone use and explore the features in each page and/or try to navigate the entire web application with no help would be a good way to test both the functionality of each page as well as the overall functionality of the web application respectively.

Here is our revised story map:



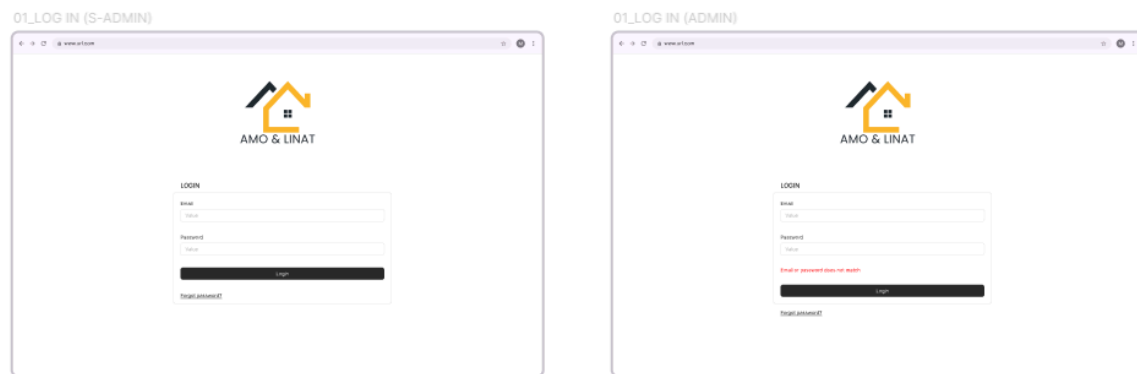
## APPENDIX 1 & 3 - REVISED USER INTERFACE & IMPLEMENTED USER STORIES

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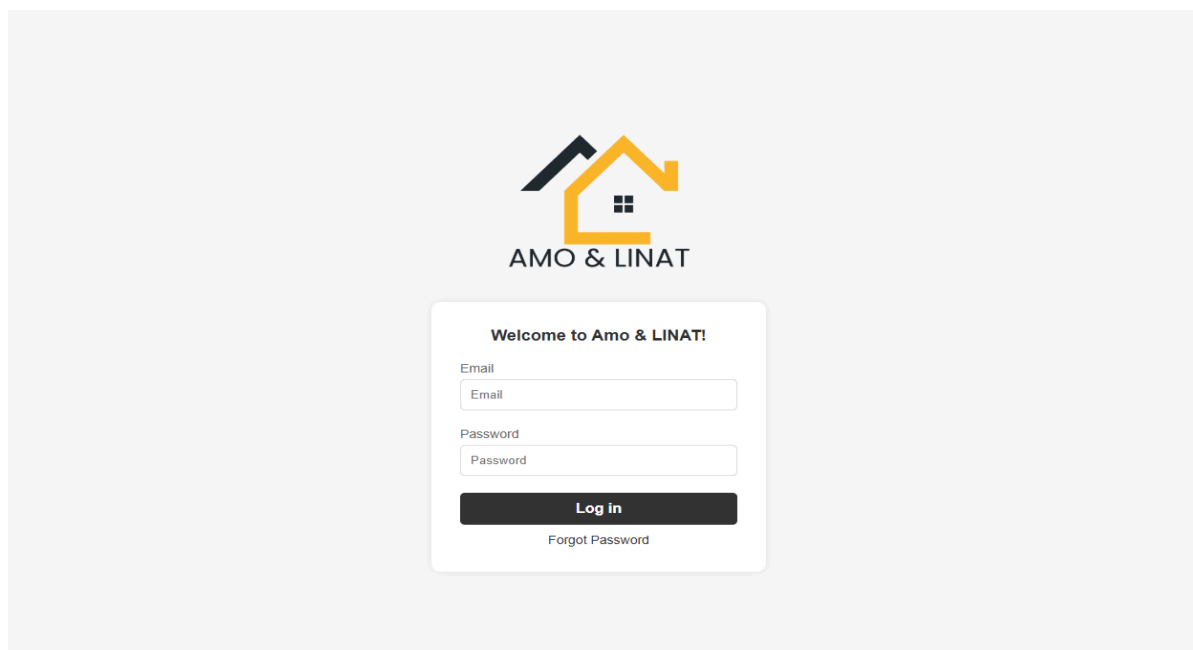
### LOGIN PAGE

*Prototype*

#### Log In



*Implementation*



The style of the form is slightly different.

This page implements the **login** user story.

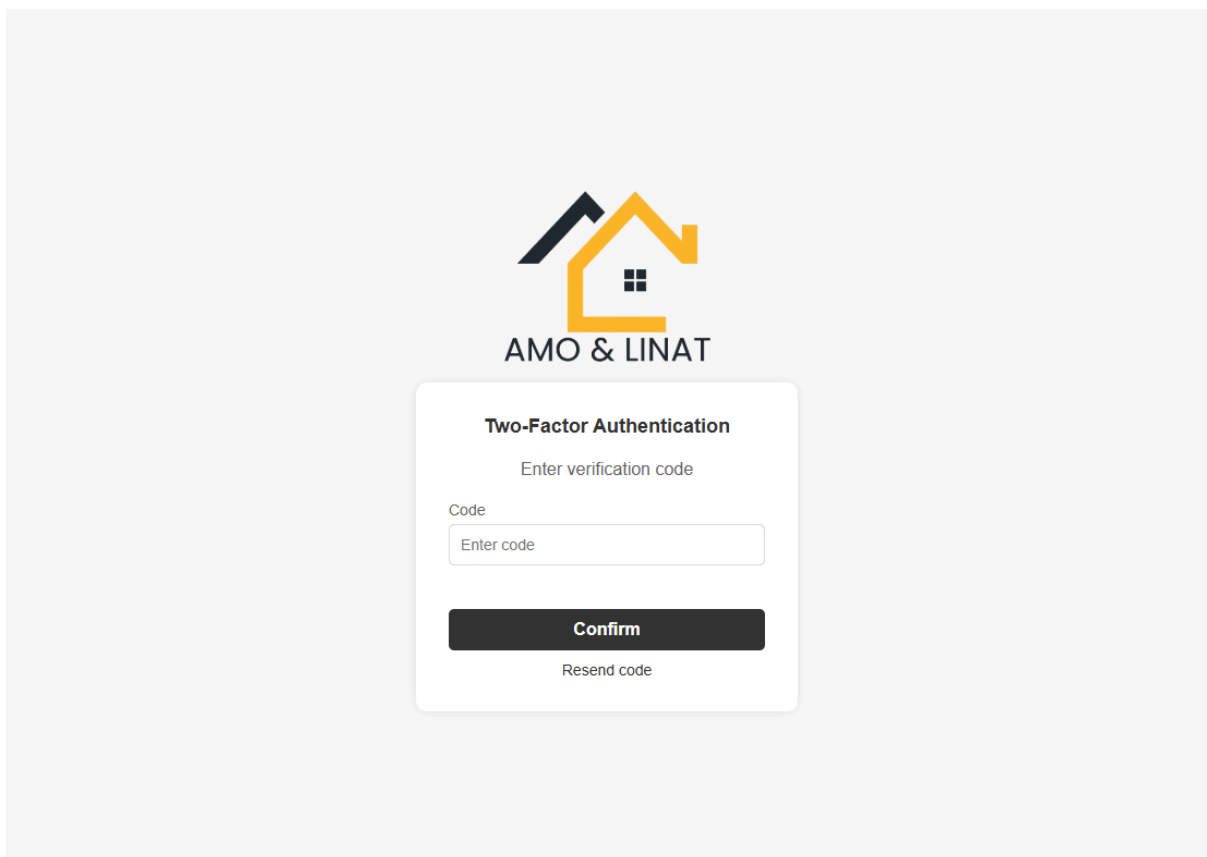
## 2FA PAGE

*Prototype*

### 2-Factor Authentication (2FA)



*Implementation*



The style of the form is slightly different.

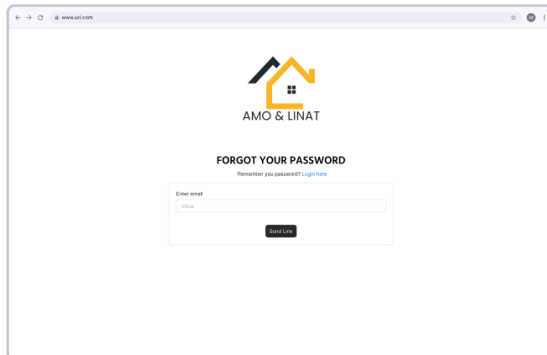
This page implements the **2-factor authentication** user story.

## FORGOT PASSWORD PAGE

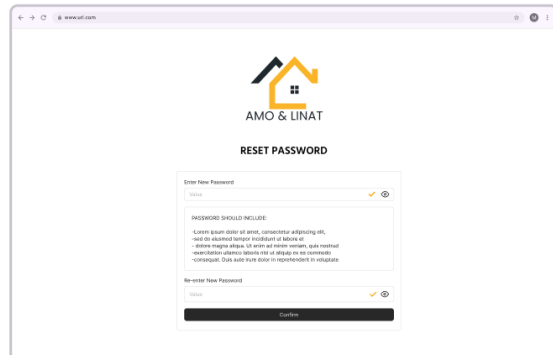
Prototype

### Forgot Password

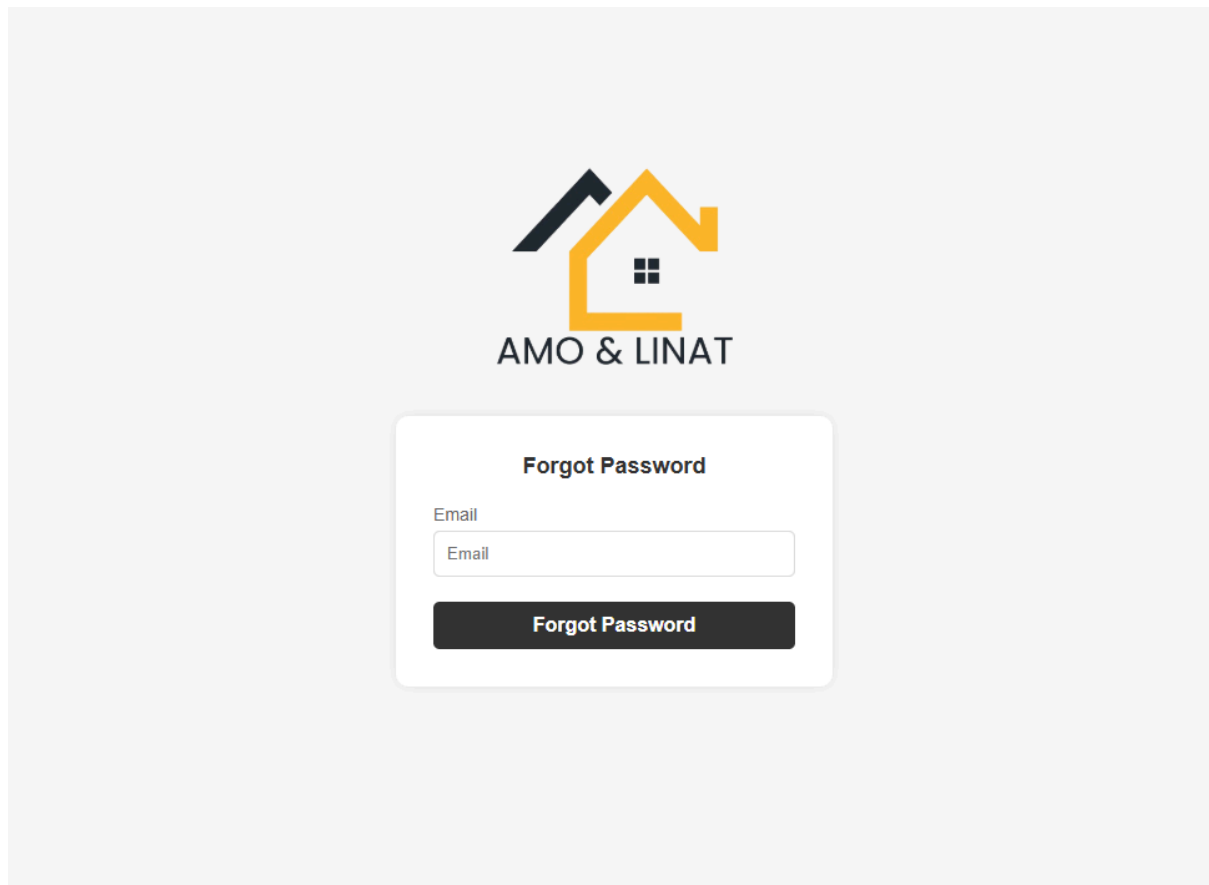
FORGOT PASSWORD




FORGOT PASSWORD - NEW PASSWORD



Implementation





### Confirm password

Enter new password

Confirm password

**Confirm**

### Confirm new password

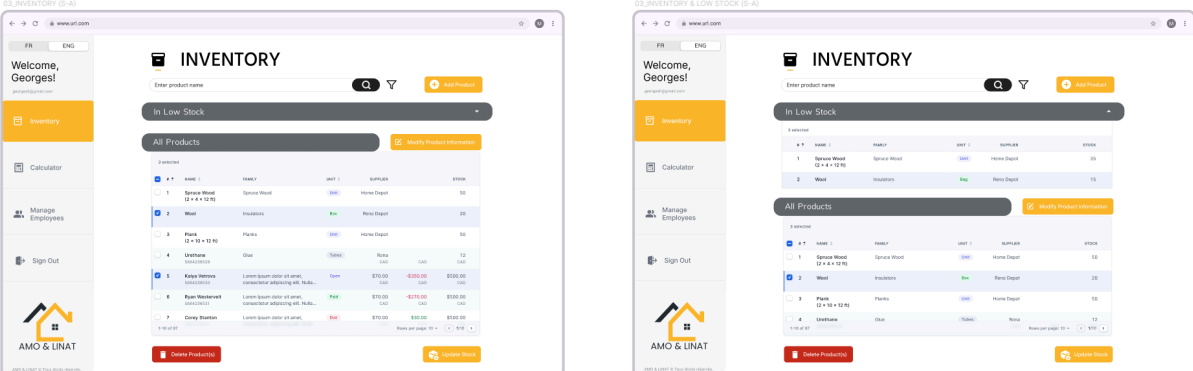
The style of the form is slightly different. We also did not include any instructions on password creation.

This page implements the **forgot password** user story.

## INVENTORY PAGE

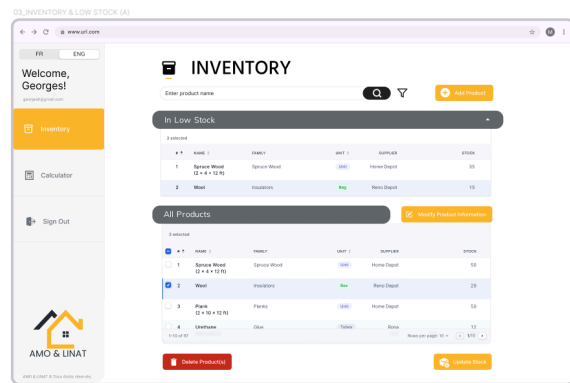
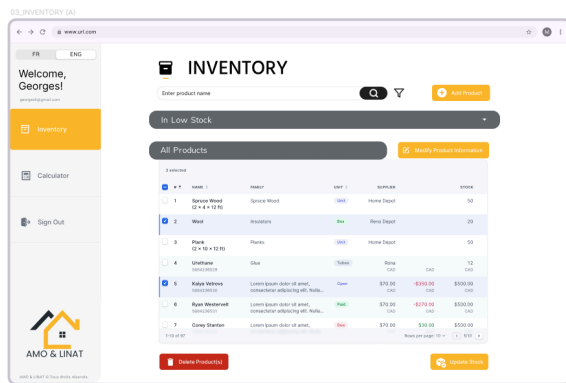
### Prototype

#### View Inventory

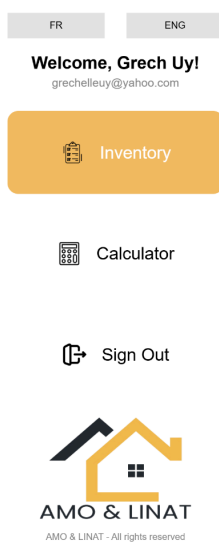


The screenshots show the AMO & LINAT inventory management system. The left screenshot displays the 'INVENTORY' page with a search bar, 'In Low Stock' filter, and a table of products. The right screenshot displays the 'INVENTORY & LOW STOCK' page with a similar layout but highlighting low stock items.

## View Inventory



## Implementation



Inventory

Enter Product Name

Q

Select a category:

All Category

LOW STOCK INVENTORY

ALL PRODUCTS

Pick	ID	Name	Units	Family	Category	Suppliers	Low Stock Inventory	Stock
<input type="checkbox"/>	1	2-inch x 4-inch x 8-ft SPF Select 2Btr Grade Lumber	Unit(s)	Plank	Building	Rona, Home Depot	10	50000
<input type="checkbox"/>	2	LePage PL Premium Construction Adhesive	Tube(s)	liquid	Glue	Home Depot	120	240
<input type="checkbox"/>	3	Loctite PL Premium Max Construction Adhesive	Tube(s)	liquid	Glue	Home Depot	211	421
<input type="checkbox"/>	4	SANCTUARY Cellulose Blown-In or Spray Applied Insulation (R3.7 per inch)	Bag(s)	spray	Isolant	Rona, Home Depot	100	200
<input type="checkbox"/>	5	AttiCat Expanding PINK FIBERGLAS Blown-In Insulation (32.6 sq.ft.)	Bag(s)	physical	Isolant	Rona	10	30
<input type="checkbox"/>	6	1-inch x 2-inch x 10 ft. Select / Clear Pine Board	Unit(s)	Plank	Building	Rona	20	8
<input type="checkbox"/>	120	popopopi	pop	plank	Building	Rona, Home Depot	99	2000

Add Product

Modify Product Information

Update Stock

Delete Product

FR

ENG

Welcome, Kirby Dummy!

kirbywenby462@gmail.com

Inventory

Calculator

Sign Out

AMO & LINAT

AMO & LINAT - All rights reserved

Inventory

Enter Product Name

Select a category: All Category

LOW STOCK INVENTORY

ID	Name	UNITS	FAMILY	Category	Suppliers	LOW STOCK INVENTORY	STOCK
6	1-inch x 2-inch x 10 ft. Select / Clear Pine Board	Unit(s)	Plank	Building	Rona	20	1
120	popopo	pop	plank	Building	Rona, Home Depot	9	1
122	Chicken Nuggets Poulet mais croquette	per chicken	plank	Building	Home Depot	10	5
124	NOT chicken Poulet mais croquette	per chicken	lumber	Building	Rona	10	5

ALL PRODUCTS

Pick	ID	Name	UNITS	FAMILY	Category	Suppliers	LOW STOCK INVENTORY	STOCK
<input type="checkbox"/>	1	2-inch x 4-inch x 8-ft SPF Select 2Btr Grade Lumber	Unit(s)	Plank	Building	Rona, Home Depot	10	50000
<input type="checkbox"/>	2	LePage PL Premium Construction Adhesive	Tube(s)	liquid	Glue	Home Depot	120	240
<input type="checkbox"/>	3	Loctite PL Premium Max Construction Adhesive	Tube(s)	liquid	Glue	Home Depot	211	421
<input type="checkbox"/>	4	SANCTUARY Cellulose Blown-In or Spray Applied Insulation (R3.7 per inch)	Bag(s)	spray	Isolant	Rona, Home Depot	100	200
<input type="checkbox"/>	5	AttiCat Expanding PINK FIBERGLAS Blown-In Insulation (32.6 sq ft.)	Bag(s)	physical	Isolant	Rona	10	30
<input type="checkbox"/>	6	1-inch x 2-inch x 10 ft. Select / Clear Pine Board	Unit(s)	Plank	Building	Rona	20	1
<input type="checkbox"/>	120	popopo	pop	plank	Building	Rona, Home Depot	9	1
<input type="checkbox"/>	122	Chicken Nuggets Poulet mais croquette	per chicken	plank	Building	Home Depot	10	5
<input type="checkbox"/>	124	NOT chicken Poulet mais croquette	per chicken	lumber	Building	Rona	10	5



### Low Stock Dropdown Menu

**(NOTE:** This user is an Admin, thus they cannot view the Employee Management tab in the sidebar. They also do have access to the operation buttons such as 'Add Product', 'Modify Product Information', 'Update Stock', and 'Delete Product(s)').

FR ENG


Welcome, Grech Uy!  
grechelleuy@yahoo.com

Inventory

Calculator

Employee Management

Sign Out


  
AMO & LINAT  
AMO & LINAT - All rights reserved

Inventory

Enter Product Name

Select a category: Building

LOW STOCK INVENTORY

ALL PRODUCTS

Pick	ID	Name	Units	Family	Category	Suppliers	Low Stock Inventory	Stock
<input type="checkbox"/>	1	2-inch x 4-inch x 8-ft SPF Select 2Btr Grade Lumber	Unit(s)	Plank	Building	Rona, Home Depot	10	50000
<input type="checkbox"/>	6	1-inch x 2-inch x 10 ft. Select / Clear Pine Board	Unit(s)	Plank	Building	Rona	20	80
<input type="checkbox"/>	120	poppypo	pop	plank	Building	Rona, Home Depot	9	20

Add Product
Modify Product Information
Update Stock
Delete Product

### Filtered by Building

FR ENG


Welcome, Grech Uy!  
grechelleuy@yahoo.com

Inventory

Calculator

Employee Management

Sign Out


  
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Inventory

atticat

Select a category: All Category

LOW STOCK INVENTORY

ALL PRODUCTS

Pick	ID	Name	Units	Family	Category	Suppliers	Low Stock Inventory	Stock
<input type="checkbox"/>	5	AtticCat Expanding PINK FIBERGLAS Blown-In Insulation (32.6 sq.ft.)	Bag(s)	physical	Isolant	Rona	10	30

Add Product
Modify Product Information
Update Stock
Delete Product

### Search for product

The positions of the buttons were changed to be at the bottom of the screen in the final implementation. The filter icon was also replaced with a dropdown menu.

This page implements the **View Inventory, Search for a Product, Filter Products, Add Product, Modify Product Information, Update Stock, Delete Product(s), and Low Stock Alert** user stories.

The **Search for a Product** user story was implemented in the form of the search bar, while the **Filter Products** user story was implemented in the form of a dropdown menu where users can select the category they wish to filter the products by.

The **View Inventory** user story is implemented by the table with all the products' information, while the other operations are all implemented by the buttons at the bottom of the page. These operations are described below. Each of the following pages implements their respective user story.

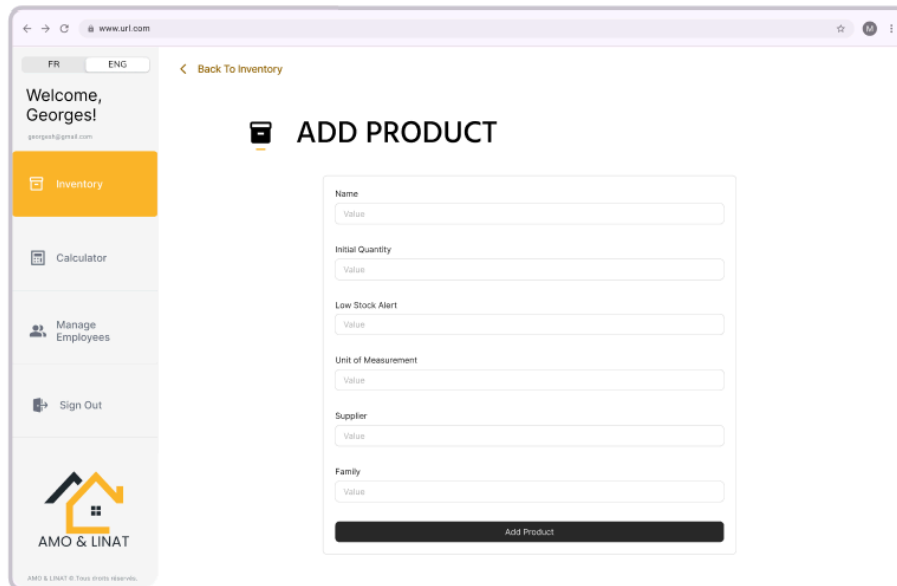
The products in low stock are shown in the table at the top of the page, effectively implementing the **Low Stock Alert** user story. This user story is also implemented in the Add Product page, where users can set a Low Stock amount for products.

## ADD PRODUCT PAGE

Prototype

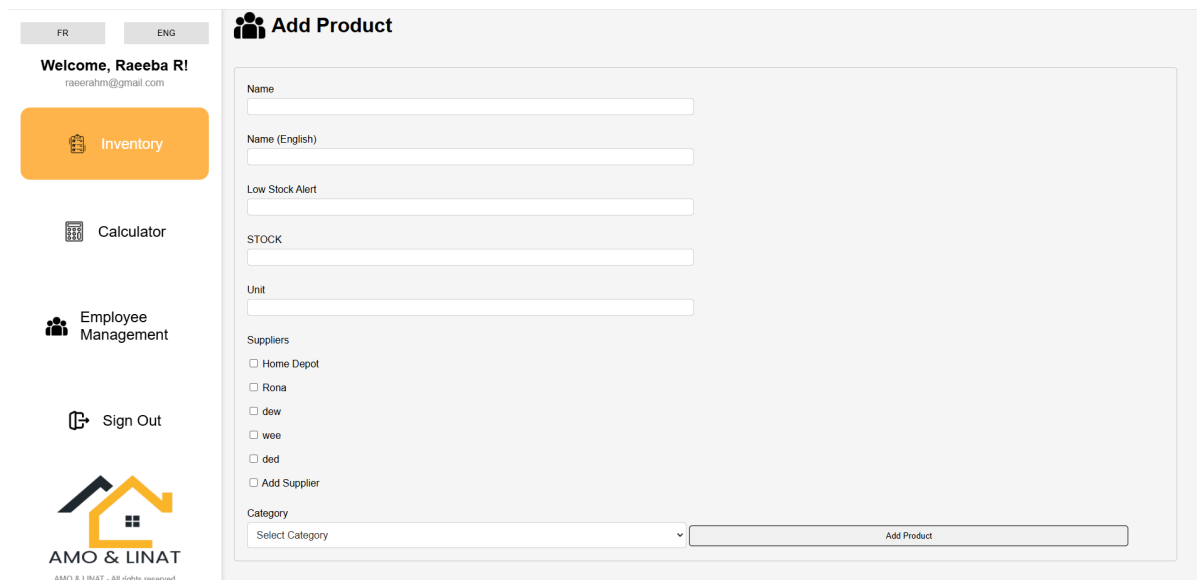
### Add Product

03\_INVENTORY - ADD (S-A)



The prototype shows a web browser window with the URL 'www.url.com'. The page has a sidebar on the left with a language selector (FR, ENG), a welcome message 'Welcome, Georges!' with email 'georges@gmail.com', and a menu with 'Inventory' (highlighted), 'Calculator', 'Manage Employees', and 'Sign Out'. The main content area is titled 'ADD PRODUCT' and contains a form with the following fields: Name, Initial Quantity, Low Stock Alert, Unit of Measurement, Supplier, and Family. Each field has a 'Value' placeholder. At the bottom of the form is an 'Add Product' button. The footer of the sidebar shows the 'AMO & LINAT' logo and the text 'AMO & LINAT - Tous droits réservés'.

Implementation



The implementation shows a more detailed version of the 'Add Product' page. The sidebar is similar but the welcome message is 'Welcome, Raeeba R!' with email 'raeerahim@gmail.com'. The 'Inventory' button is highlighted. The main form has the title 'Add Product' and includes fields for Name, Name (English), Low Stock Alert, STOCK, Unit, and Suppliers. The Suppliers field has a list of checkboxes: Home Depot, Rona, dew, wee, ded, and Add Supplier. There is a 'Category' dropdown menu with 'Select Category' as the selected option. An 'Add Product' button is at the bottom right of the form. The footer of the sidebar shows the 'AMO & LINAT' logo and the text 'AMO & LINAT - All rights reserved'.

Add Product

FR
ENG


**Welcome, Raeeba R!**  
raeerahm@gmail.com

Inventory

Calculator

Employee Management

Sign Out

  
**AMO & LINAT**  
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Name (English)

Low Stock Alert

STOCK

Unit

Suppliers  
☐ Home Depot  
☐ Rona  
☐ dew  
☐ wee  
☐ ded  
☒ Add Supplier

**Add New Supplier**  
Supplier Name

Contact Info

Category  
Select Category

Add Product

### Add New Supplier

FR
ENG


**Welcome, Raeeba R!**  
raeerahm@gmail.com

Inventory

Calculator

Employee Management

Sign Out

  
**AMO & LINAT**  
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Name (English)

Low Stock Alert

STOCK

Unit

Suppliers  
☒ Home Depot  
☐ Rona  
☐ dew  
☐ wee  
☐ ded  
☐ Add Supplier

Category  
Building


**Additional Information**  
Family  
plank  
Select a family  
plank  
lumber


### Add to Building Category


FR


ENG


Welcome, Raeeba R!  
raeerahm@gmail.com

 Inventory

 Calculator

 Employee Management

 Sign Out

  
AMO & LINAT  
AMO & LINAT - All rights reserved

STOCK

Unit

Suppliers

☒ Home Depot

☐ Rona

☐ dew

☐ wee

☐ ded

☐ Add Supplier

Category

**Additional Information**

Family

Cure Time

Strength


Add Product


### Add to Glue Category


FR


ENG


Welcome, Raeeba R!  
raeerahm@gmail.com

 Inventory

 Calculator

 Employee Management

 Sign Out

  
AMO & LINAT  
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STOCK

Unit

Suppliers

☒ Home Depot

☐ Rona

☐ dew

☐ wee

☐ ded

☐ Add Supplier

Category

**Additional Information**

Family

Isolant Strength

Add Product

### Add to Isolant Category

The screenshot displays the AMO & LINAT web application interface. On the left is a sidebar with navigation links: 'Inventory' (highlighted in orange), 'Calculator', 'Employee Management', and 'Sign Out'. Below these is the AMO & LINAT logo and the text 'AMO & LINAT - All rights reserved'. The main content area shows a form for adding a product. At the top, there are language tabs for 'FR' and 'ENG'. The form includes fields for 'Name (English)', 'Low Stock Alert', 'STOCK', and 'Unit'. Below these are 'Suppliers' with checkboxes for 'Home Depot' (checked), 'Rona', 'dew', 'wee', 'ded', and 'Add Supplier'. A 'Category' dropdown menu is set to 'Miscellaneous'. An 'Additional Information' section contains a 'Family' dropdown menu with options 'Select a family', 'nails', and 'screws'. The 'nails' option is currently selected.

### *Add to Miscellaneous Category*

The style of the form is slightly different. The page has also been redesigned since we made new tables for the application which changes how we approached the design of it.

This page in addition to the **Add Product** user story, also implements the **Low Stock Alert** user story by allowing users to set a Low Stock Amount for products. In the case where the user wishes to not have a Low Stock Alert for a specific product (meaning they do not want to be notified once the product has run out by having it appear in the Low Stock table), they may set the Low Stock to 0.

## MODIFY PRODUCT PAGE

### Prototype

03\_INVENTORY - MODIFY (S-A)

FR ENG < Back To Inventory

Welcome, Georges!  
georges@gmail.com

Inventory

Calculator

Manage Employees

Sign Out

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### MODIFY PRODUCT

Name  
Value

Initial Quantity  
Value

Low Stock Alert  
Value

Unit of Measurement  
Value

Supplier  
Value

Family  
Value

Modify Product Cancel

### Implementation

FR ENG

Welcome, Raeeba R!  
raeeerahm@gmail.com

Inventory

Calculator

Employee Management

Sign Out

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### Modify Product Information

Name  
Isolant en cellulose soufflé ou appliqué par pulvérisation SANCTUARY (R3.7 par pouce)

Name (English)  
SANCTUARY Cellulose Blown-In or Spray Applied Insulation (R3.7 per inch)

Low Stock Alert  
100

Stock  
200

Save Changes Cancel

The style of the form is slightly different. We got rid of the family field in the “Modify Product Information” page since it would require changing a lot of properties to make it work.

## UPDATE STOCK PAGE

FR
ENG


Welcome, Raeeba R!  
raeerahm@gmail.com

Inventory

Calculator

Employee Management

Sign Out


  
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Inventory

Enter Product Name

Select a category: All Category

LOW STOCK INVENTORY

ALL PRODUCTS

Pick	ID	Name	UNITS	FAMILY	Category	Suppliers	LOW STOCK INVENTORY	STOCK
<input type="checkbox"/>	4	SANCTUARY Cellulose Blown-In or Spray Applied Insulation (R3.7 per inch)	Bag(s)	spray	Isolant		100	200
<input checked="" type="checkbox"/>	5	AttiCat Expanding PINK FIBERGLAS Blown-In Insulation (32.6 sq.ft.)	Bag(s)	physical	Isolant		10	<input type="text" value="30"/>
<input checked="" type="checkbox"/>	2	LePage PL Premium Construction Adhesive	Tube(s)	liquid	Glue		120	<input type="text" value="240"/>
<input type="checkbox"/>	3	Loctite PL Premium Max Construction Adhesive	Tube(s)	liquid	Glue		211	421
<input type="checkbox"/>	1	2-inch x 4-inch x 8-ft SPF Select 2Btr Grade Lumber	Unit(s)	Plank	Building		10	50
<input type="checkbox"/>	6	1-inch x 2-inch x 10 ft. Select / Clear Pine Board	Unit(s)	Plank	Building		20	50

Add Product
Modify Product Information
Submit Stock Updates
Delete Product

localhost says

Are you sure you want to submit the stock updates?

OK

Cancel

Confirmation when clicking the 'Update Stock' button

We did not have a prototype for this, as it's on the same page as the View Inventory.



## DELETE PRODUCT PAGE

FR

ENG

Welcome, Raeeba R!


raeeerahm@gmail.com

Inventory

Calculator

Employee Management

Sign Out



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Inventory

Enter Product Name

Select a category: All Category

LOW STOCK INVENTORY

ALL PRODUCTS

Pick	ID	Name	UNITS	FAMILY	Category	Suppliers	LOW STOCK INVENTORY	STOCK
<input checked="" type="checkbox"/>	4	SANCTUARY Cellulose Blown-In or Spray Applied Insulation (R3.7 per inch)	Bag(s)	spray	Isolant		100	200
<input checked="" type="checkbox"/>	5	AttCat Expanding PINK FIBERGLAS Blown-In Insulation (32.6 sq ft.)	Bag(s)	physical	Isolant		10	35
<input type="checkbox"/>	2	LePage PL Premium Construction Adhesive	Tube(s)	liquid	Glue		120	220
<input type="checkbox"/>	3	Loctite PL Premium Max Construction Adhesive	Tube(s)	liquid	Glue		211	421
<input type="checkbox"/>	1	2-inch x 4-inch x 8-ft SPF Select 2Btr Grade Lumber	Unit(s)	Plank	Building		10	50
<input type="checkbox"/>	6	1-inch x 2-inch x 10 ft. Select / Clear Pine Board	Unit(s)	Plank	Building		20	50

Add Product

Modify Product Information

Update Stock

Delete Product

localhost says

Are you sure you want to delete the selected products?

OK

Cancel

Confirmation when clicking the 'Delete Product(s)' button

We did not have a prototype for this, as it's on the same page as the View Inventory.

## CALCULATOR PAGE

### Prototype

#### Calculator

### Implementation

ID	Name	UNITS	FAMILY	Category	Suppliers	LOW STOCK INVENTORY	STOCK
4	SANCTUARY Cellulose Blown-In or Spray Applied Insulation (R3.7 per inch)	Bag(s)	spray	Insulant		100	200
5	AttCat Expanding PINK FIBERGLAS Blown-In Insulation (32.6 sq ft.)	Bag(s)	physical	Insulant		10	30
1	2-inch x 4-inch x 8-ft SPF Select 2Btr Grade Lumber	Unit(s)	Plank	Building		10	50

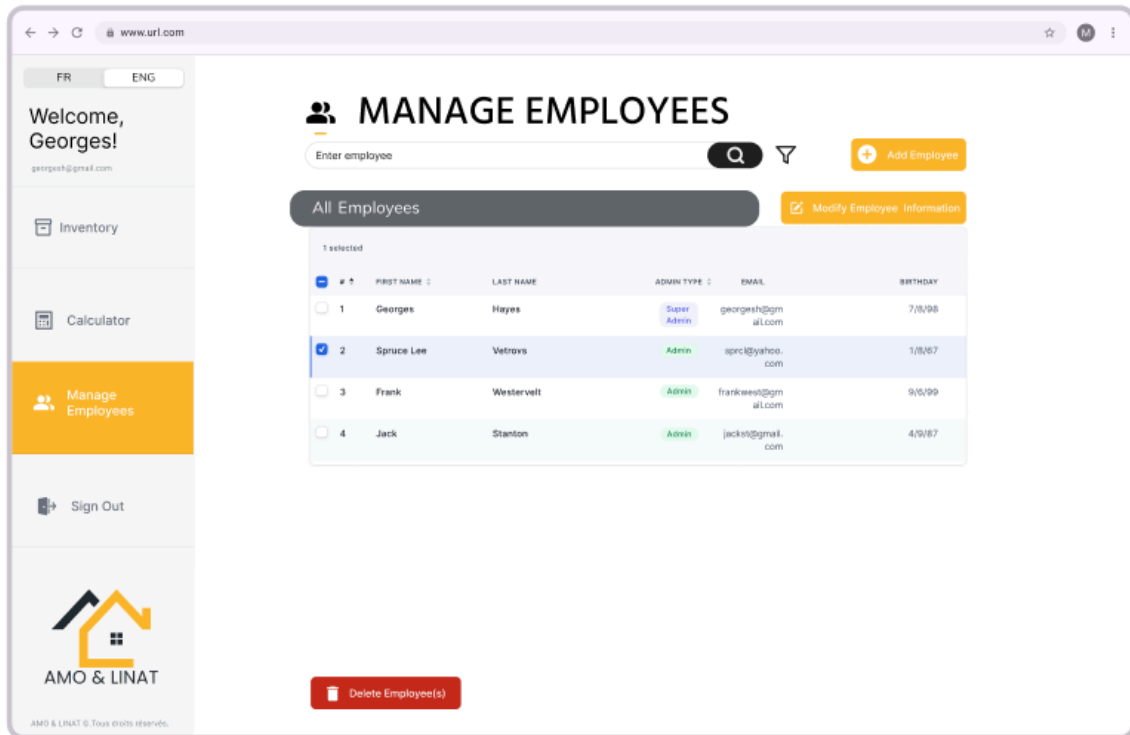
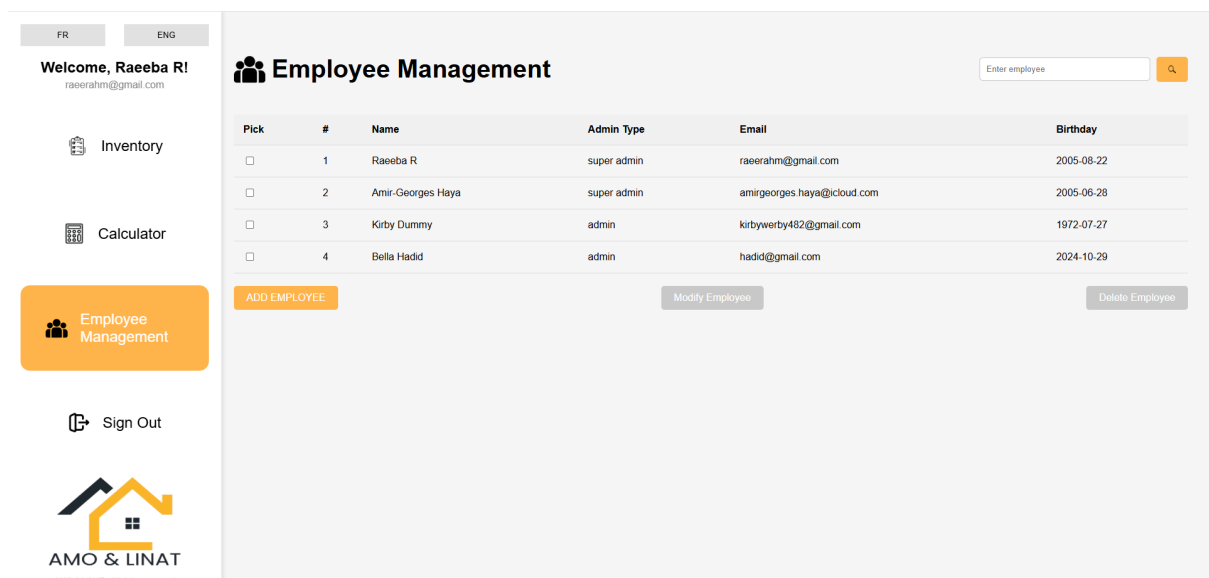
The results of the calculation only pops up after the calculation occurs.

The low stock table was replaced with a table of building materials and isolant (insulation) materials. We also added the unit of measurement of each dimension in their respective text fields' labels.

This page implements the **Calculate the amount of lumber and wool needed to construct a wall** user stories by returning the calculated amount of lumber and wool needed to construct a wall.

**EMPLOYEE PAGE***Prototype***View Employees**

04\_EMPLOYEES (S-A)

*Implementation*

The style of the form is slightly different.

The screenshot shows a web application for Employee Management. On the left is a sidebar with navigation links: 'Inventory', 'Calculator', 'Employee Management' (highlighted in orange), 'Sign Out', and the 'AMO & LINAT' logo. The main content area is titled 'Employee Management' and features a search bar with the text 'Ra' and a magnifying glass icon. Below the search bar is a table with the following data:

Pick	#	Name	Admin Type	Email	Birthday
<input type="checkbox"/>	1	Raeeba R	super admin	raeerahm@gmail.com	2005-08-22

At the bottom of the main content area, there are three buttons: 'ADD EMPLOYEE' (orange), 'Modify Employee' (grey), and 'Delete Employee' (grey).

*Search for employee*

This page implements the **View Employees, Search for an Employee, Add Employee, Modify Employee Information, and Delete Employee(s)** user stories.

The **Search for an Employee** user story was implemented in the form of the search bar.

The **View Employees** user story is implemented by the table with all the employees' information, while the other operations are all implemented by the buttons at the bottom of the page. These operations are described below. Each of the following pages implements their respective user story.

## ADD EMPLOYEE PAGE

Prototype

### Add Employee

04\_EMPLOYEES - ADD (S-A)

Prototype of the Add Employee page (S-A). The page features a sidebar with navigation links: Inventory, Calculator, Manage Employees (highlighted), and Sign Out. The main content area is titled 'ADD EMPLOYEES' and contains a form with fields for First Name, Last Name, Birthday, Email, and Password. Below the form are radio buttons for 'Super Admin' and 'Admin', and an 'Add Employee' button.

04\_EMPLOYEES - ADD 2 (S-A)

Prototype of the Add Employee page (S-A) with a different form layout. The page features a sidebar with navigation links: Inventory, Calculator, Manage Employees (highlighted), and Sign Out. The main content area is titled 'ADD EMPLOYEES' and contains a form with fields for First Name, Last Name, Birthday, Email, and Password. Below the form are radio buttons for 'Super Admin' and 'Admin', and an 'Add Employee' button.

Implementation

Implementation of the Add Employee page. The page features a sidebar with navigation links: Inventory, Calculator, Employee Management (highlighted), and Sign Out. The main content area is titled 'ADD EMPLOYEE' and contains a form with fields for First Name, Last Name, Birthday, Email, and Password. Below the form are radio buttons for 'Super Admin' and 'Admin', and an 'ADD EMPLOYEE' button.

The style of the form is slightly different. We also added a label for the Admin Type radio buttons.

## MODIFY EMPLOYEE PAGE

Prototype

### Modify Employee

04\_EMPLOYEES - MODIFY(S-A)

The prototype shows a web browser window with a sidebar on the left and a main content area. The sidebar contains a language selector (FR, ENG), a welcome message for 'Georges!', and navigation links for Inventory, Calculator, Manage Employees (highlighted in orange), Sign Out, and the AMO & LINAT logo. The main content area has a 'Back To Manage Employees' link and a 'MODIFY EMPLOYEE' heading with a person icon. Below the heading is a form with fields for First Name, Last Name, Birthday, Email, and Password, each with a 'Value' placeholder. At the bottom of the form are radio buttons for 'Super Admin' and 'Admin', and two buttons: 'Modify Employee' and 'Cancel'.

Implementation

The implementation shows a similar layout to the prototype. The sidebar now has a welcome message for 'Raeeba R!' and an 'Employee Management' link highlighted in orange. The main content area has a 'Modify Employee' heading with a person icon. Below the heading is a form with fields for Name (containing 'Kirby Dummy'), Birthday (containing '07/27/1972'), and Admin Type (a dropdown menu with 'Admin' selected). At the bottom of the form are two buttons: 'Save Update' and 'Cancel'.

The style of the form is slightly different. The 'First Name' and 'Last Name' fields have also been combined into a 'Name' field. You also cannot modify the user's email or password, as email is a key for most of the user-related tables, it would be difficult to modify it for all user-related tables. As for passwords, users can

change their personal password by using 'Forgot Password' which will allow them to set a new password. We also got rid of it as we think other users don't need to be able to modify other users' passwords, as this could cause security risks.

## DELETE EMPLOYEE(S) PAGE

The screenshot shows the 'Employee Management' interface. On the left is a sidebar with navigation links: 'Inventory', 'Calculator', 'Employee Management' (highlighted), and 'Sign Out'. The main area has a header 'Employee Management' with a search bar. Below is a table with columns: 'Pick', '#', 'Name', 'Admin Type', 'Email', and 'Birthday'. The table contains four rows. The third and fourth rows are selected. At the bottom of the table are three buttons: 'ADD EMPLOYEE', 'Modify Employee', and 'Delete Employee'.

Pick	#	Name	Admin Type	Email	Birthday
<input type="checkbox"/>	1	Raeeba R	super admin	raeerahm@gmail.com	2005-08-22
<input type="checkbox"/>	2	Amir-Georges Haya	super admin	amirgeorges.haya@icloud.com	2005-06-28
<input checked="" type="checkbox"/>	3	Kirby Dummy	admin	kirbywerby482@gmail.com	1972-07-27
<input checked="" type="checkbox"/>	4	Bella Hadid	admin	hadid@gmail.com	2024-10-29

localhost says

Are you sure you want to delete the selected employees?

OK

Cancel

Confirmation when clicking the 'Delete Employee' button

We did not have a prototype for this, as it's on the same page as the View Inventory.

## SIGN OUT

localhost says

Are you sure you want to log out?

OK

Cancel

Confirmation when clicking the 'Sign Out' button

The user receives confirmation upon clicking the Sign Out tab in the sidebar. They are then redirected to the Login page.

## **APPENDIX 2 - USER GUIDE**

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### **USERS**

The web application has two types of users: Super Admin (SA) users and Admin (A) users. Super Admins have access to all features of the web application, whereas Admins only have access to limited features such as the Calculator, View Inventory, and Search Products, and Filter Products.

### **LOG IN**

To log into the web application, the user must enter their email and password.

If the user's email is found within the system's database of registered users, and the password matches the registered password in the system's database, the user will be redirected to the 2-factor authentication page.

If the user's email is not found within the system's database of registered users, and/or the password does not match the registered password in the system's database, the web application will display a message prompting the user to enter the correct information.

### **2FA**

They will be prompted to enter a code, which will be sent to their email. They must enter the code on the 2-factor authentication page where indicated. If the code matches, they will gain access to the web application, and be redirected



to the Inventory page.

If the entered code doesn't match, the web application will display a message prompting the user to enter the correct code. If the user doesn't receive the code, they will have the option to resend another code to their email.

## **FORGOT PASSWORD**

If the user wants to reset their password, the user must click on the "Forgot Password" link. They will then be redirected to the "Forgot Password" page, where they will be prompted to enter their email.

If the user's email is found within the system's database of registered users, the web application will send an email to the user with a link to change their password.

If the user's email is not found within the system's database of registered users, the web application will display a message saying that email is not valid and prompt the user to enter a valid email.

## **APPLICATION**

Once the user is logged in, they will gain access to the web application, and will be able to navigate between the different pages of the web application, located in the left-hand menu. The different pages of the web application are:

- Inventory,
- Calculator,
- Employee Management (only accessible and visible to Super Admin users).

The Sign Out option will also be located in the menu.

## **INVENTORY**

Upon clicking on the Inventory page, the users will first see the list of all products in the Inventory. The products will be displayed in a table with their information (i.e., product ID, name, unit, family name, category name, supplier name,

low stock, and stock). Each product in the table will also have a checkbox next to it.

- **PRODUCT ID:** The product ID is a unique number which identifies the product in the database.
- **NAME:** The name of the product.
- **UNIT:** The unit is the unit in which the product comes in (i.e., bags, tubes, boxes). For example, glue products typically come in tubes, while insulation generally comes in bags.
- **FAMILY NAME:** The family name is the form in which the product comes in (i.e., spray, liquid, plank, etc.).
- **CATEGORY NAME:** The category name refers to the category the product belongs in (i.e., glue, building, isolant, miscellaneous).
  - GLUE: This category contains adhesives.
  - BUILDING: This category contains products used for building, like planks.
  - ISOLANT: This category contains insulation material, such as wool, foam, etc.
  - MISCELLANEOUS: This category contains miscellaneous products, such as nails, and screws.
- **SUPPLIER NAME:** The supplier name refers to the suppliers that carry the product.
- **LOW STOCK:** The low stock refers to the quantity at which the product would be considered low in stock. If no low stock alert is considered, the user can set it as 0.
- **STOCK:** The stock is the quantity of product currently in the inventory.

- **-----SEARCH FOR PRODUCTS:**

Users will have the option to search for specific products by name by clicking on the search bar located at the top-right of the page, and entering the product's name.

- **-----FILTER PRODUCTS:**

Users will have the option to filter products by category by clicking on the filter icon located at the top-right of the page, and selecting a specific category (i.e., glue, insulation, building, miscellaneous).

Those are all the features that Admin users have access to.

Only the Super Admin users will have the option to either add a product, modify a product's information, delete one or more products, or modify a product's stock.

- **-----ADD PRODUCT:**

Super Admin users can add new products to the inventory. The user must provide a name for the product in French, as well as the initial product stock, a low stock value, the unit of measurement, a product category and family, and the supplier which stocks the product when adding a product or modifying a product's information. An English name for the product can also be provided, however this is optional.

Glues must also have a cure time and strength value provided. The cure time is how long the adhesive takes to dry. The glue strength refers to the strength of the adhesive's hold (i.e., Extra Strength, Medium Strength, Low Strength).

Insulation must also have an insulation strength value provided. The isolant strength refers to how effective the insulation is, meaning how effectively it insulates, and prevents heat transfer.

Only one product may be added at a time.

To modify a product's information, delete one or more products, or update a product's stock, the user must first click the checkbox next to the product.

- **-----MODIFY PRODUCT INFORMATION:**

Super Admin users can modify the existing information of products in the inventory (i.e., name in English, name in French, category, family, unit of measurement, supplier, low stock alert amount, and current stock). Only one

product's information may be modified at a time.

- **-----DELETE PRODUCT(S):**

Super Admin users can remove products from the inventory. Multiple products can be removed at a time.

- **-----UPDATE STOCK:**

Super Admin users can update the stock amount of products in the inventory. Multiple products' stock may be updated at a time.

## **EMPLOYEE MANAGEMENT**

This page is only available to Super Admin users. This page is not visible to Admins.

Upon clicking on the Employee Management page, the Super Admin users will first see the list of all registered users, meaning all employees of the business. The employees will be displayed in a table with their information (i.e., name, email, birthdate, and admin type (Admin or Super Admin)). Each employee in the table will also have a checkbox next to them.

The Super Admin users will have the option to either add an employee, modify an employee's information, or delete one or more employees.

To modify an employee's information, or delete one or more employees, the user must first click the checkbox next to the employee.

- **-----SEARCH FOR EMPLOYEES**

Super Admin users can search for a specific employee by name by clicking on the search bar located at the top-right of the page, and entering the employee's name.

- **-----ADD EMPLOYEE:**

Super Admin users can register new employees, so that they may have access to the web application. The user must provide the name, email, birthdate

and specify an admin type for the employee in question (i.e., Admin or Super Admin).

Additionally, a default password will be randomly generated, so that the newly-added employee may access the web application. The added user can then change their default password using the “Forgot my Password” feature. Only one employee may be added at a time.

- **-----MODIFY EMPLOYEE INFORMATION:**

Super Admin users can modify the existing information of employees (i.e., name, e-mail, birthdate, and admin type (i.e., Admin or Super Admin)). Only one employee’s information may be modified at a time.

- **-----DELETE EMPLOYEE(S):**

Super Admin users can remove employees in case of termination. Multiple employees can be removed at a time.

## **CALCULATOR**

Both Admin and Super Admin users can use the calculator to calculate both the amount of a specific size of wooden plank and the amount of insulation that the user will need to construct a wall.

- **-----CALCULATE THE AMOUNT OF LUMBER AND INSULATION NEEDED TO CONSTRUCT A WALL:**

Users can calculate the amount of lumber and insulation needed to construct a wall. The length, height and thickness of the wall as well as the spacing between the lumbers have to be provided for the calculation.

## **SIGN OUT**

The user can click the Sign Out option in the left-hand menu to sign out of the web application. A confirmation will be shown before signing out.

## GITHUB REPOSITORY

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You will find a link to our GitHub repository which contains all the files for our application below:

<https://github.com/raeeba/Red-Team.git>