

Florida International University
Knight Foundation School of Computing and Information Sciences

Capstone II

Final Deliverable

Invently
Fall 2024

Team Members: Cesar Adames, Christian Esparragoza, Stephanie Hernandez, Emily Salgueiros, Edymar Urdaneta

Product Owner(s): Emily Salgueiros

Instructor: Masoud Sadjadi

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Abstract

This document presents the information necessary to gain a good understanding of the current state of the Invently project.

To provide a specific, informative, and technical understanding of the project, the following information is included: the list of user stories, the project/sprint plan, the design of the system, how project validation was carried out, and several supporting systematic diagrams.

After reading this document, one should have a clear understanding of what was achieved during the previous semester, as well as how to develop the application further.

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INTRODUCTION

Invently: Invently is an inventory management system designed to meet the evolving needs of modern businesses, offering a seamless and efficient approach to inventory tracking and management. Invently enables businesses to efficiently manage inventory, streamline operations, and reduce errors. The system incorporates a real-time database and advanced features, providing a comprehensive solution for inventory management challenges while fostering productivity and scalability.

At its core, Invently leverages Firebase for real-time data synchronization, ensuring accurate and up-to-date inventory information accessible from anywhere. The system includes an integrated barcode scanner that simplifies stock updates and minimizes manual errors. Users can easily track orders, monitor stock levels, and manage multiple storage locations, while dynamic location management ensures precise oversight across warehouses or stores. These features create a unified platform that simplifies complex tasks, making it ideal for businesses of all sizes.

To enhance its capabilities, Invently integrates analytics and reporting tools, enabling businesses to gain insights into sales trends, stock performance, and customer behavior. With customer management features, the system also allows users to maintain detailed customer profiles, track purchase histories, and streamline reordering processes. By combining inventory management, analytics, and customer relationship tools into one cohesive platform, Invently provides businesses with everything they need to operate efficiently and stay competitive in today's fast-paced market.

Current System (First Iteration)

Invently completed its first semester of development in Fall 2024, laying the groundwork for a seamless and user-friendly inventory management system. Below is a list of features and systems implemented in this initial iteration of Invently:

- **Website:** Developed a website to showcase information about the platform's features, platform details, pricing, and provide login/sign-up functionality for users.

- **User Authentication:** Implemented secure login and sign-up features, enabling users to register new accounts and enter existing accounts.
- **Inventory Homepage:** Designed a landing page where users can create new dashboards or select existing ones to manage their inventory.
- **Inventory Dashboard:** Created a comprehensive dashboard displaying inventory analytics and tracking statuses such as pick, pack, ship, and delivered, offering users a clear overview of their operations.
- **Customers Tab:** Added a dedicated section for managing customer profiles and invoices, helping businesses streamline customer relationship management.
- **Inventory Management Tab:** Enabled users to add new items to their inventory either manually or through an integrated barcode scanner, ensuring efficient stock tracking.
- **Orders Tab:** Introduced an orders section for tracking fulfilled orders as well as vendor order statuses, providing a centralized location for order management.
- **Settings Tab:** Included a customizable settings page where users can personalize their experience, toggle dark mode, and update inventory owner information.

Purpose of New System

The purpose of the Invently system is to provide businesses with a streamlined, all-in-one platform for managing inventory, tracking orders, analyzing data, and maintaining customer relationships with ease and efficiency.

USER STORIES

The following section provides the detailed user stories that were implemented in this iteration of the Invently project. These user stories served as the basis for the implementation of the project's features. This section also shows the user stories that are to be considered for future development.

Implemented User Stories

Sprint 1:

- **User Story 1:** Interactive Dashboard
 - As a user, I want to be able to easily manage my inventory through a user friendly dashboard. This will ensure that I will be able to quickly and easily access and track all the items in my inventory.
- **User Story 2:** Add Products
 - As a user, I want to be able to add new products to my inventory and include details such as name, SKU, price, etc.
- **User Story 3:** Edit Inventory
 - As a user, I want to be able to edit the amount of inventory I have available per item. This will allow me to keep track of the amount of stock available per product.
- **User Story 4:** Front End
 - As a user, I would like a smooth user experience so that when adding or editing an item amount the transition goes smoothly.
- **User Story 5:** Data Analysis
 - As a user, I would like to be able to keep track of the sales performance of each item. This will allow me to know when it is time to restock certain items, which items are selling most and least and maintain an inventory that will help maximize profits.

Sprint 2:

- **User Story 1: Interactive Dashboard**
 - As a user, I want to be able to easily manage my inventory through a user friendly dashboard. This will ensure that I will be able to quickly and easily access and track all the items in my inventory.
- **User Story 2: Add Products**
 - As a user, I want to be able to add new products to my inventory and include details such as name, SKU, price, etc.
- **User Story 3: Edit Inventory**
 - As a user, I want to be able to edit the amount of inventory I have available per item. This will allow me to keep track of the amount of stock available per product.
- **User Story 4: Front End**
 - As a user, I would like a smooth user experience so that when adding or editing an item amount the transition goes smoothly.
- **User Story 5: Data Analysis**
 - As a user, I would like to be able to keep track of the sales performance of each item. This will allow me to know when it is time to restock certain items, which items are selling most and least and maintain an inventory that will help maximize profits.

Sprint 3:

- **User Story 1: Sign Up & Log-In Page**
 - As a user, I would like a smooth experience as I create a new account for my business and log into my account.
- **User Story 2: Customizable Dashboard**
 - I want to be able to easily customize my inventory dashboard to meet my business needs. This includes choosing whether or not to display certain statistics and graphs on my dashboard that reflect the performance of my business.
- **User Story 3: Inventory Identifiers/Description**
 - As a user, I want to be able to find specifically the item I am looking for. Therefore, I need a sharp inventory management system that divides the items stored in the database by categorizing each one of them with detailed descriptions.

- **User Story 4: User Interface**
 - As a user, I would like a smooth user experience with no errors or discrepancies when adding or editing an item. I'd also like to interact with a user interface that is intuitive and that I can easily learn.
- **User Story 5: Database**
 - As a user, I would like to be able to have access to a streamlined database where I can see all of the items I have in stock. I would also like to be able to edit my stock to add and remove items from my inventory.

Sprint 4:

- **User Story 1: Sign Up & Log-In Page**
 - As a user, I would like a smooth experience as I create a new account for my business and log into my account.
- **User Story 2: Customizable Dashboard**
 - I want to be able to easily customize my inventory dashboard to meet my business needs. This includes choosing whether or not to display certain statistics and graphs on my dashboard that reflect the performance of my business.
- **User Story 3: Inventory Identifiers/Description**
 - As a user, I want to be able to find specifically the item I am looking for. Therefore, I need a sharp inventory management system that divides the items stored in the database by categorizing each one of them with detailed descriptions.
- **User Story 4: User Interface**
 - As a user, I would like a smooth user experience with no errors or discrepancies when adding or editing an item. I'd also like to interact with a user interface that is intuitive and that I can easily learn.
- **User Story 5: Database**
 - As a user, I would like to be able to have access to a streamlined database where I can see all of the items I have in stock. I would also like to be able to edit my stock to add and remove items from my inventory.

Sprint 5:

- **User Story 1: Sign Up & Log-In Page**
 - As a user, I would like a smooth experience as I create a new account for my business and log into my account.

- **User Story 2: Customizable Dashboard**
 - I want to be able to easily customize my inventory dashboard to meet my business needs. This includes choosing whether or not to display certain statistics and graphs on my dashboard that reflect the performance of my business.
- **User Story 3: Inventory Identifiers/Description**
 - As a user, I want to be able to find specifically the item I am looking for. Therefore, I need a sharp inventory management system that divides the items stored in the database by categorizing each one of them with detailed descriptions.
- **User Story 4: User Interface**
 - As a user, I would like a smooth user experience with no errors or discrepancies when adding or editing an item. I'd also like to interact with a user interface that is intuitive and that I can easily learn.
- **User Story 5: Database**
 - As a user, I would like to be able to have access to a streamlined database where I can see all of the items I have in stock. I would also like to be able to edit my stock to add and remove items from my inventory.

Sprint 6:

User Story 1: Bulk Import and Export of Inventory

- As a user, I want to be able to import and export inventory data in bulk via CSV or Excel files, so I can quickly update my inventory and back up my data.

User Story 2: Notifications and Alerts

- As a user, I would like to receive notifications or alerts when certain stock levels are low or when items in my inventory reach a specified expiration date, so I can reorder or act on inventory in a timely manner.

User Story 3: Clear Inventory Summary

- As a user, I would like a summary box on the dashboard that shows the total number of items and categories in my inventory, so I can get a quick overview without digging into detailed reports.

User Story 4: Theme and Layout Customization

- As a user, I would like to have the option to switch between different themes (e.g., light and dark mode) and layouts, so I can choose a look and feel that makes the interface comfortable for me to work with throughout the day.

User Story 5: Activity Log

- As a user, I would like an activity log to track and view changes made to the inventory by different users, so I can maintain accountability and audit changes when needed.

Pending User Stories

Please note that this list is not presented in chronological order. These are all the uncompleted user stories throughout the entire semester.

User Story 1: Bulk Import and Export of Inventory

- As a user, I want to be able to import and export inventory data in bulk via CSV or Excel files, so I can quickly update my inventory and back up my data.

User Story 2: Notifications and Alerts

- As a user, I would like to receive notifications or alerts when certain stock levels are low or when items in my inventory reach a specified expiration date, so I can reorder or act on inventory in a timely manner.

User Story 5: Activity Log

- As a user, I would like an activity log to track and view changes made to the inventory by different users, so I can maintain accountability and audit changes when needed.

PROJECT PLAN

This section describes the planning that went into the realization of this project. This project incorporated the agile development techniques and as such required the sprints to be planned. These sprint plannings are detailed in the section. This section also describes the components, both software and hardware, chosen for this project.

Hardware and Software Resources

The following is a list of all hardware and software resources that were used in this project:

- **Computer (Live Server Deployment):** The application is developed and deployed using a local computer running a live server environment. This allows for real-time testing and immediate updates to the website during development.
- **Firebase:** Firebase serves as the backbone of the system's database. Its real-time capabilities ensure that inventory data is always up-to-date, secure, and accessible, making it an ideal choice for managing critical business information.
- **ZXing (Zebra Crossing):** The ZXing library is utilized for barcode scanning functionality, enabling seamless and efficient inventory updates by allowing users to scan and manage items directly.
- **Visual Studio Code:** The primary integrated development environment (IDE) for the project. Visual Studio Code provides an intuitive and flexible environment for writing, debugging, and managing JavaScript, HTML, and CSS code used in the development of the application.
- **JavaScript, HTML, CSS:** These core web technologies were used to build the entire front-end of the application. HTML provides the structure, CSS ensures a responsive and visually appealing design, and JavaScript powers the interactivity and dynamic features of the system.
- **Git/GitHub:** Git and GitHub were essential for version control and collaboration. They enabled efficient teamwork by allowing developers to track changes, resolve conflicts, and maintain a clear history of project development.

Sprints Planning

Sprint 1

Sprint Planning Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 9:00pm

End time: 10:00pm

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- **User Story 1:** Interactive Dashboard
 - As a user, I want to be able to easily manage my inventory through a user friendly dashboard. This will ensure that I will be able to quickly and easily access and track all the items in my inventory.
- **User Story 2:** Add Products
 - As a user, I want to be able to add new products to my inventory and include details such as name, SKU, price, etc.
- **User Story 3:** Edit Inventory
 - As a user, I want to be able to edit the amount of inventory I have available per item. This will allow me to keep track of the amount of stock available per product.
- **User Story 4:** Front End
 - As a user, I would like a smooth user experience so that when adding or editing an item amount the transition goes smoothly.
- **User Story 5:** Data Analysis
 - As a user, I would like to be able to keep track of the sales performance of each item. This will allow me to know when it is time to restock certain items, which items are selling most and least and maintain an inventory that will help maximize profits.

The team members indicated their willingness to work on the following user stories:

1. Cesar: User Story 4
2. Emily: User Story 5
3. Edymar: User Story 3
4. Stephanie: User Story 1
5. Christian: User Story 2

Sprint 2

Sprint Planning Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 4:32pm

End time: 5:20pm

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- **User Story 1:** Interactive Dashboard
 - As a user, I want to be able to easily manage my inventory through a user friendly dashboard. This will ensure that I will be able to quickly and easily access and track all the items in my inventory.
- **User Story 2:** Add Products
 - As a user, I want to be able to add new products to my inventory and include details such as name, SKU, price, etc.
- **User Story 3:** Edit Inventory
 - As a user, I want to be able to edit the amount of inventory I have available per item. This will allow me to keep track of the amount of stock available per product.
- **User Story 4:** Front End
 - As a user, I would like a smooth user experience so that when adding or editing an item amount the transition goes smoothly.
- **User Story 5:** Data Analysis
 - As a user, I would like to be able to keep track of the sales performance of each item. This will allow me to know when it is time to restock certain items, which items are selling most and least and maintain an inventory that will help maximize profits.

The team members indicated their willingness to work on the following user stories:

1. Cesar: User Story 4
2. Emily: User Story 5
3. Edymar: User Story 3
4. Stephanie: User Story 1
5. Christian: User Story 2

Sprint 3

Sprint Planning Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 5:00pm

End time: 6:30pm

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- **User Story 1: Sign Up & Log-In Page**
 - As a user, I would like a smooth experience as I create a new account for my business and log into my account.
- **User Story 2: Customizable Dashboard**
 - I want to be able to easily customize my inventory dashboard to meet my business needs. This includes choosing whether or not to display certain statistics and graphs on my dashboard that reflect the performance of my business.
- **User Story 3: Inventory Identifiers/Description**
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- **User Story 5: Database**

- As a user, I would like to be able to have access to a streamlined database where I can see all of the items I have in stock. I would also like to be able to edit my stock to add and remove items from my inventory.

The team members indicated their willingness to work on the following user stories:

1. Cesar: User Story 4
2. Emily: User Story 5
3. Edymar: User Story 3
4. Stephanie: User Story 1
5. Christian: User Story 2

Sprint 4

Sprint Planning Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 5:00pm

End time: 5:50pm

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- **User Story 1: Sign Up & Log-In Page**
 - As a user, I would like a smooth experience as I create a new account for my business and log into my account.
- **User Story 2: Customizable Dashboard**
 - I want to be able to easily customize my inventory dashboard to meet my business needs. This includes choosing whether or not to display certain statistics and graphs on my dashboard that reflect the performance of my business.
- **User Story 3: Inventory Identifiers/Description**
 - As a user, I want to be able to find specifically the item I am looking for. Therefore, I need a sharp inventory management system that divides the items stored in the database by categorizing each one of them with detailed descriptions.
- **User Story 4: User Interface**
 - As a user, I would like a smooth user experience with no errors or discrepancies when adding or editing an item. I'd also like to interact with a user interface that is intuitive and that I can easily learn.

- **User Story 5: Database**
 - As a user, I would like to be able to have access to a streamlined database where I can see all of the items I have in stock. I would also like to be able to edit my stock to add and remove items from my inventory.

The team members indicated their willingness to work on the following user stories:

1. Cesar: User Story 4
2. Emily: User Story 5
3. Edymar: User Story 3
4. Stephanie: User Story 1
5. Christian: User Story 2

Sprint 5

Sprint Planning Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 9:20 PM

End time: 9:40 PM

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- **User Story 1: Sign Up & Log-In Page**
 - As a user, I would like a smooth experience as I create a new account for my business and log into my account.
- **User Story 2: Customizable Dashboard**
 - I want to be able to easily customize my inventory dashboard to meet my business needs. This includes choosing whether or not to display certain statistics and graphs on my dashboard that reflect the performance of my business.
- **User Story 3: Inventory Identifiers/Description**
 - As a user, I want to be able to find specifically the item I am looking for. Therefore, I need a sharp inventory management system that divides the items stored in the database by categorizing each one of them with detailed descriptions.
- **User Story 4: User Interface**

- As a user, I would like a smooth user experience with no errors or discrepancies when adding or editing an item. I'd also like to interact with a user interface that is intuitive and that I can easily learn.
- **User Story 5: Database**
 - As a user, I would like to be able to have access to a streamlined database where I can see all of the items I have in stock. I would also like to be able to edit my stock to add and remove items from my inventory.

The team members indicated their willingness to work on the following user stories:

1. Cesar: User Story 4
2. Emily: User Story 5
3. Edymar: User Story 3
4. Stephanie: User Story 1
5. Christian: User Story 2

Sprint 6

Sprint Planning Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 9:20 PM

End time: 9:40 PM

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- **User Story 1: Bulk Import and Export of Inventory**
 - As a user, I want to be able to import and export inventory data in bulk via CSV or Excel files, so I can quickly update my inventory and back up my data.
- **User Story 2: Notifications and Alerts**
 - As a user, I would like to receive notifications or alerts when certain stock levels are low or when items in my inventory reach a specified expiration date, so I can reorder or act on inventory in a timely manner.
- **User Story 3: Clear Inventory Summary**

- As a user, I would like a summary box on the dashboard that shows the total number of items and categories in my inventory, so I can get a quick overview without digging into detailed reports.
- **User Story 4: Theme and Layout Customization**
 - As a user, I would like to have the option to switch between different themes (e.g., light and dark mode) and layouts, so I can choose a look and feel that makes the interface comfortable for me to work with throughout the day.
- **User Story 5: Activity Log**
 - As a user, I would like an activity log to track and view changes made to the inventory by different users, so I can maintain accountability and audit changes when needed.

The team members indicated their willingness to work on the following user stories:

1. Cesar: User Story 4
2. Emily: User Story 5
3. Edymar: User Story 3
4. Stephanie: User Story 1
5. Christian: User Story 2

SYSTEM DESIGN

This section contains information on the design decisions that went into this project. The architecture patterns are outlined and explained. The entire system is shown in a package diagram and the subsystems are explained. Finally, the design patterns used in the project are discussed.

Architectural Patterns

We chose HTML/CSS/JS to build our front-end, as it was a familiar language that the entire team was comfortable with. Additionally, since the software was designed to function as an online website, these programming languages offered the most straightforward and effective solution for building a responsive and interactive user interface. As for our backend, we chose to work with Firebase due to its powerful real-time database capabilities. Firebase provides secure access to the database directly from client-side code, simplifying development while maintaining robust security. This decision allowed us to efficiently manage real-time data updates, aligning perfectly with the needs of our application.

System and Subsystem Decomposition

The front-end of the Invently Inventory Management System offers a seamless and informative user experience, starting with the homepage. New users can explore detailed information about the application, its features, and its purpose through the Homepage, Features, and About Us pages. These sections effectively highlight the software's capabilities, ensuring users understand its benefits. From these pages, users can easily navigate to sign up or log in to their accounts. Once logged in, users gain access to a powerful inventory management system where they can create and organize their inventory efficiently. The system provides tools to track the status of packages, including "Picked," "Packed," "Shipped," and "Delivered," while also offering visual insights like a stock distribution pie chart and a bar graph comparing invoice totals, profits, and order totals.

Users can further personalize their experience by managing customer profiles, tracking invoices, and customizing vendor information to monitor orders effectively. The system also includes a dark mode, catering to users who prefer working in low-light environments.

On the back-end, Invently leverages Firebase to ensure a reliable and secure infrastructure. Firebase collections, structured with fields containing specific types and values, are used to organize and store data for each tab. For example, the inventory, customers, orders, and invoices are all mapped into collections, enabling real-time synchronization and efficient data retrieval. This robust integration ensures that all functionalities work seamlessly, providing users with a smooth and dynamic experience.

Design Patterns

The Invently project follows a modular and organized structure to separate concerns and ensure maintainability. Each feature is implemented with dedicated scripts and components, adhering to fundamental design principles. All major functionality branches into specific modules for inventory management, order tracking, and customer handling. These modules work cohesively through shared functions and consistent data structures, ensuring efficient communication and data handling throughout the application. JavaScript files act as controllers for their respective HTML pages, each responsible for managing interactivity, user inputs, and interactions with Firebase.

Reusable functions, such as those for authentication, data validation, and database interactions, are abstracted into utility methods, reducing redundancy and promoting code reusability. For example, functions like adding inventory items, editing stock, or deleting records follow a consistent pattern of validating user input, updating the Firebase database, and dynamically reflecting changes in the user interface. The barcode scanning functionality leverages the ZXing library to abstract complex processes into reusable components, ensuring it integrates seamlessly with other inventory management features. Error handling is also modular, with dedicated handlers providing real-time feedback to users through the UI.

SYSTEM VALIDATION

Invently underwent rigorous testing to ensure reliability and seamless functionality across its core features. Using Live Server in Visual Studio Code, real-time previews allowed quick identification and resolution of issues during development. Key features, such as the inventory dashboard, product management, dynamic location updates, and order creation, were thoroughly validated to ensure accurate functionality, data integrity, and smooth user interactions. Firebase was tested extensively to confirm that operations maintained real-time synchronization with the user interface. Additionally, the platform was tested for cross-browser compatibility on different browsers and the responsive design was validated to ensure consistent performance across devices and screen sizes. Simulated user workflows further ensured that Invently met real-world business needs, delivering a reliable and user-friendly experience.

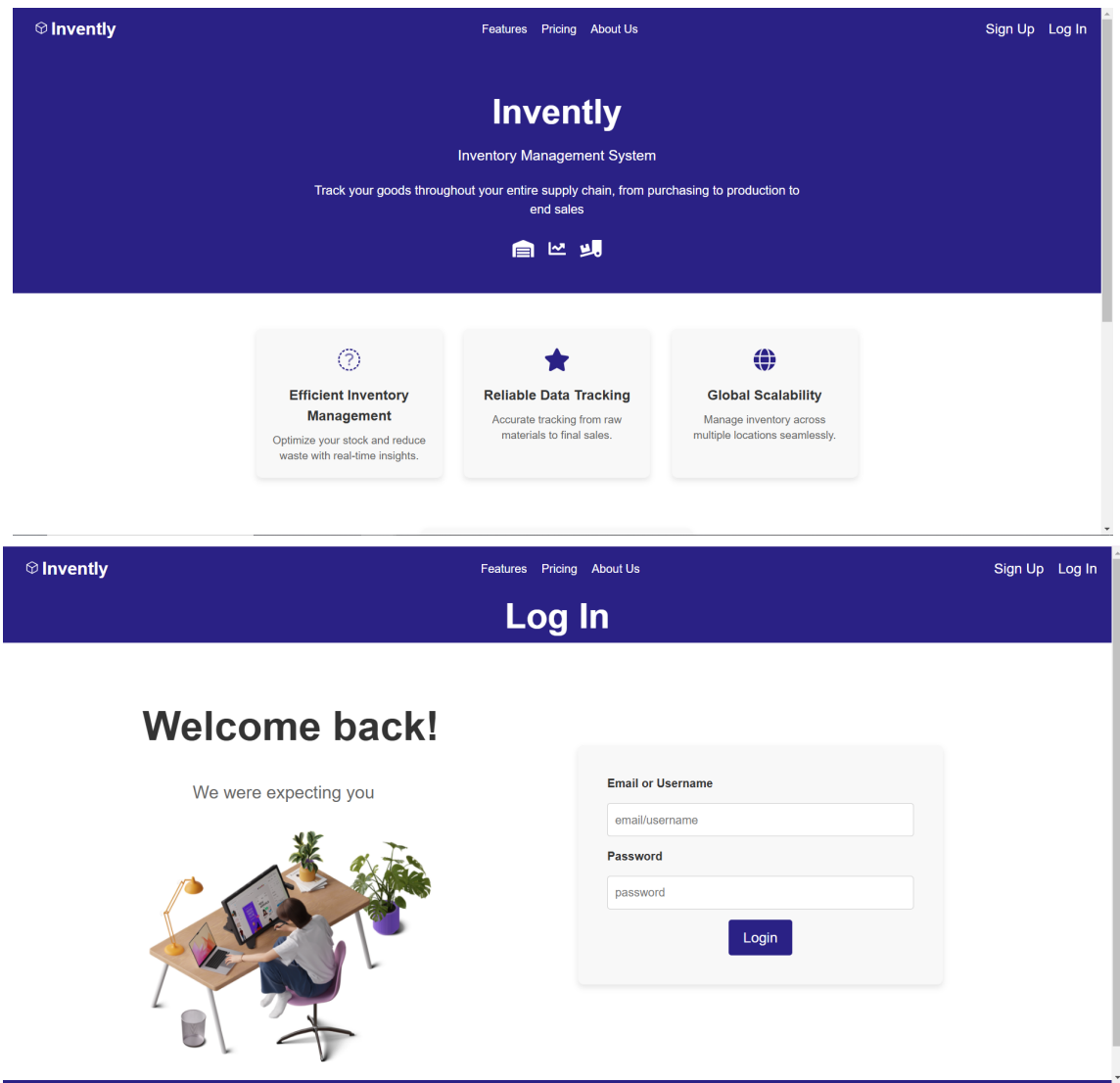
APPENDIX

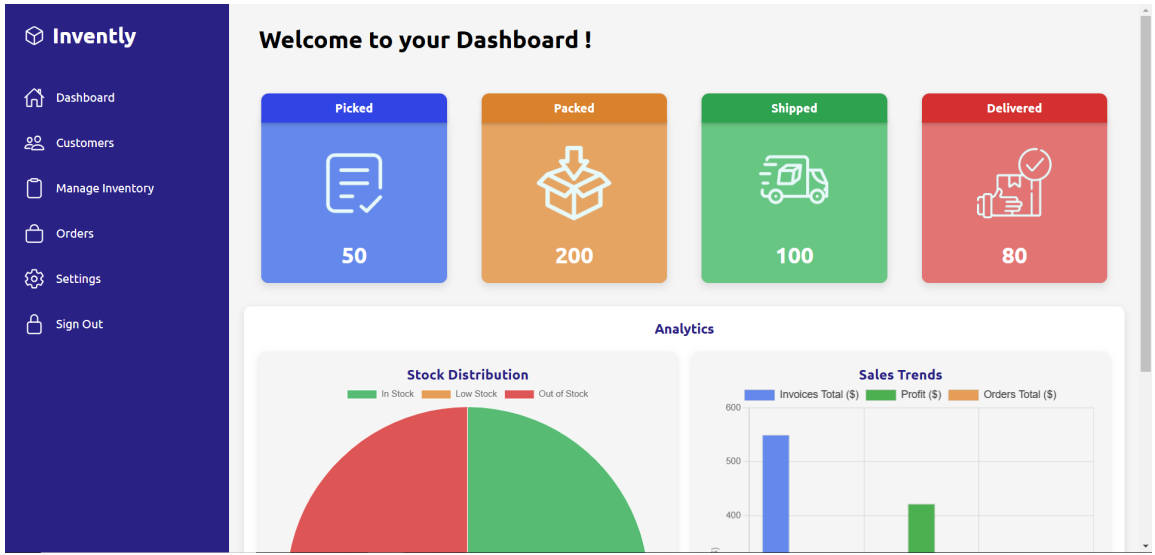
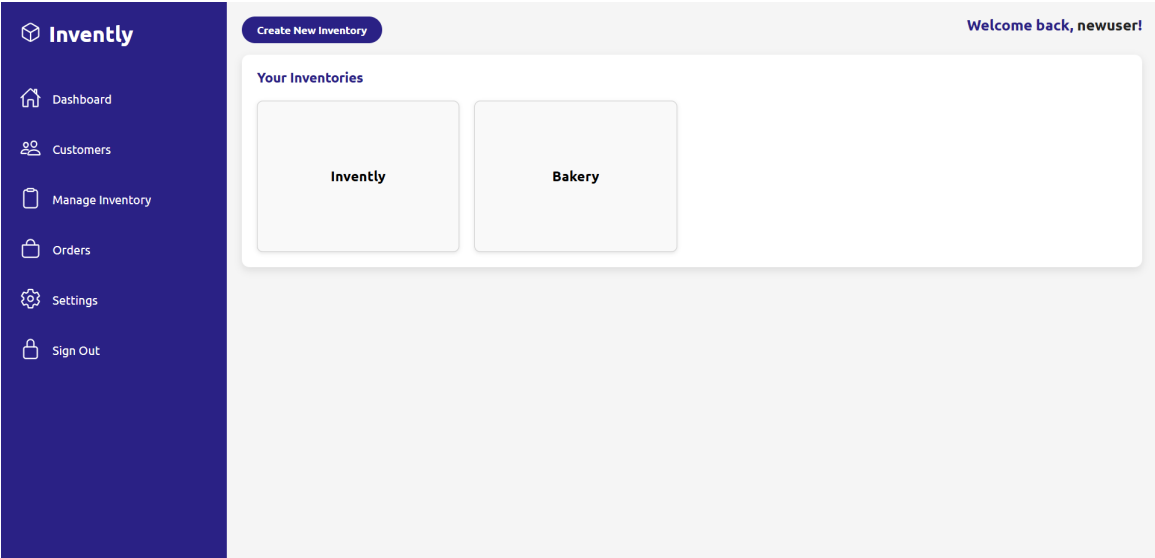
Appendix A - Diagrams

1. System Design



Appendix B - User Interface Design





Dashboard

Customers

Manage Inventory

Orders

Settings

Sign Out

Active Customers

Manage Customers

Add Customer

NAME	COMPANY NAME	EMAIL	WORK PHONE	RECEIVABLES (BCY)	ACTIONS
John Doe	Alphabet	johndoe@gmail.com	305-555-5555	\$0.00	EditDelete

Manage Invoice

Add Invoice

INVOICE ID	CUSTOMER	AMOUNT	DATE	STATUS	ACTIONS
INV-m4ab5fih-SESUSI	John Doe (Alphabet)	500.00	2024-12-04	Pending	EditDeletePaid
INV-m4a3ghh6-EM7ATC	Maria Castillo (CastleBlack)	25.00	2024-12-04	Pending	EditDeletePaid
INV-m4aaoa2-205AAU	Maria Castillo (CastleBlack)	25.00	2024-12-04	Pending	EditDeletePaid

Dashboard

Customers

Manage Inventory

Orders

Settings

Sign Out

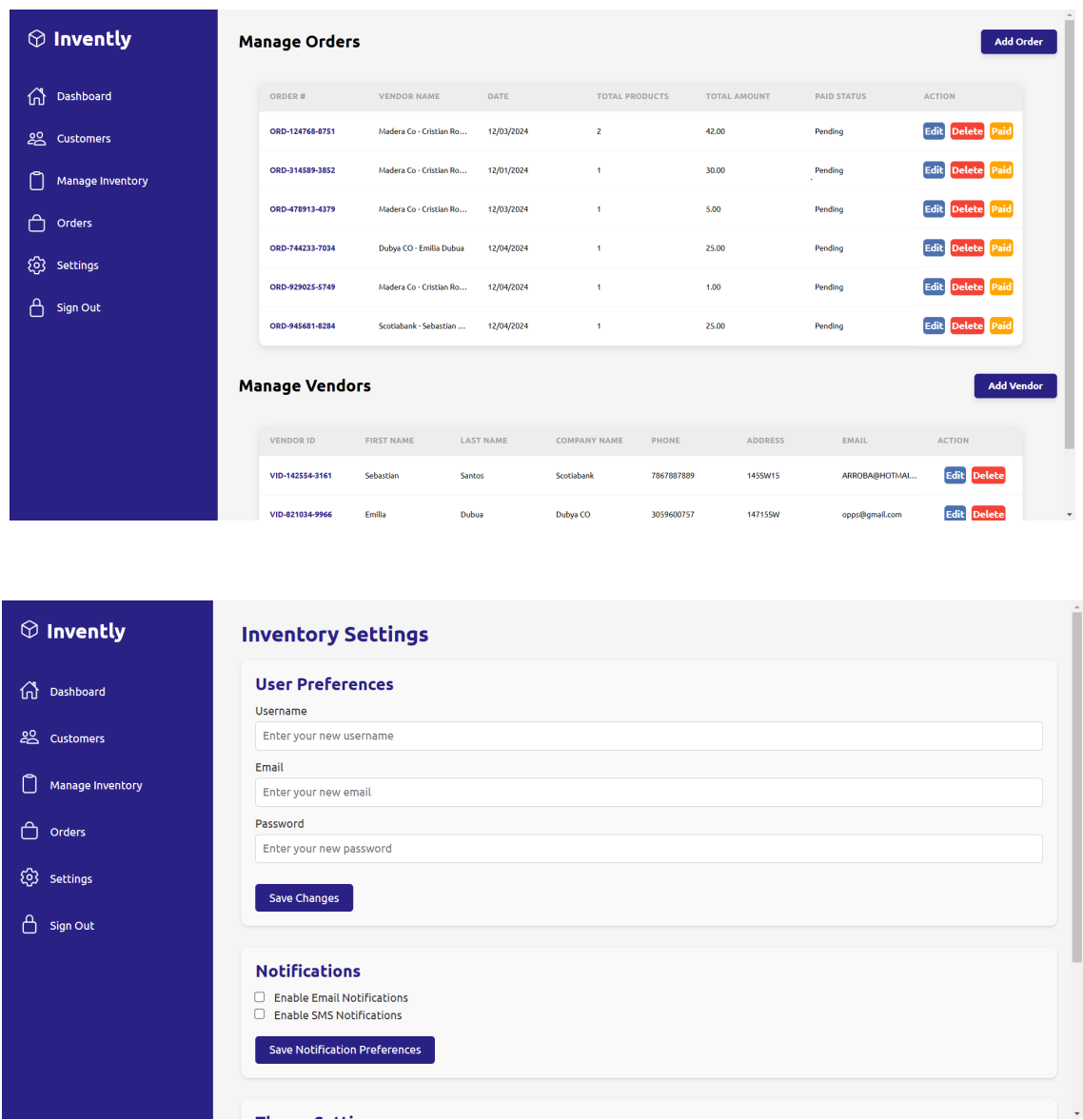
Search Inventory

Add Product

Scan SKU

Manage Inventory

Item Code	SKU	Description	Quantity	Threshold	Status	Location	ACTIONS
4	SL2rQREv5VOZ	Lemonahrio	8	1	In Stock	location 2	EditDelete
7	3bwbsdc7P	Cookies	10	5	In Stock	location 1	EditDelete
6	5000328181844	doritos	10	5	In Stock	location 3	EditDelete
1	GB2vEQH6fi	Bottled Water	10	5	In Stock	location 1	EditDelete
8	5000328181844	Oreo	10	5	In Stock	location 1	EditDelete
2	NQXlykOA3GDj	Pineapple	2	3	Low Stock	location 3	EditDelete
5	FQsYfzeG	Lemon	0	3	Out of Stock	location 1	EditDelete



Appendix C - Sprint Review Reports

Sprint 1

Sprint Review Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 5:00 pm

End time: 6:00 pm

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All

- UserStory 1: Interactive Dashboard
 - As a user, I want to be able to easily manage my inventory through a user friendly dashboard. This will ensure that I will be able to quickly and easily access and track all the items in my inventory.
- UserStory 2: Add Products
 - As a user, I want to be able to add new products to my inventory and include details such as name, SKU, price, etc.
- UserStory 3: Edit Inventory
 - As a user, I want to be able to edit the amount of inventory I have available per item. This will allow me to keep track of the amount of stock available per Product.
- UserStory 4: Front End
 - As a user, I would like a smooth connection between frontend (HTML, CSS, JS) and backend (Java) so that when adding or editing an item amount the transition goes smoothly.
- UserStory 5: Sales Data Analysis
 - As a user, I would like to be able to keep track of the sales performance of each item. This will allow me to know when it is time to restock certain items, which items are selling most and least, and maintain an inventory that will help maximize profits.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting:

- No user stories were rejected during this sprint

Sprint 2

Sprint Review Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 3:00 pm

End time: 4:00 pm

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All

- UserStory 1: Interactive Dashboard
 - As a user, I want to be able to easily manage my inventory through a user friendly dashboard. This will ensure that I will be able to quickly and easily access and track all the items in my inventory.
- UserStory 2: Add Products
 - As a user, I want to be able to add new products to my inventory and include details such as name, SKU, price, etc.
- UserStory 3: Edit Inventory
 - As a user, I want to be able to edit the amount of inventory I have available per item. This will allow me to keep track of the amount of stock available per Product.
- UserStory 4: Front End
 - As a user, I would like a smooth connection between frontend (HTML, CSS, JS) and backend (Java) so that when adding or editing an item amount the transition goes smoothly.
- UserStory 5: Sales Data Analysis
 - As a user, I would like to be able to keep track of the sales performance of each item. This will allow me to know when it is time to restock certain items, which items are selling most and least, and maintain an inventory that will help maximize profits.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting:

- No user stories were rejected during this sprint

Sprint 3

Sprint Review Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 3:00 PM

End time: 4:00 PM

- **User Story 1:** Sign Up & Log-In Page
 - As a user, I would like a smooth experience as I create a new account for my business and log into my account.
- **User Story 2:** Customizable Dashboard
 - I want to be able to easily customize my inventory dashboard to meet my business needs. This includes choosing whether or not to display certain statistics and graphs on my dashboard that reflect the performance of my business.
- **User Story 3:** Inventory Identifiers/Description
 - As a user, I want to be able to find specifically the item I am looking for. Therefore, I need a sharp inventory management system that divides the items stored in the database by categorizing each one of them with detailed descriptions.
- **User Story 4:** User Interface
 - As a user, I would like a smooth user experience with no errors or discrepancies when adding or editing an item. I'd also like to interact with a user interface that is intuitive and that I can easily learn.
- **User Story 5:** Database
 - As a user, I would like to be able to have access to a streamlined database where I can see all of the items I have in stock. I would also like to be able to edit my stock to add and remove items from my inventory.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting:

- No user stories were rejected during this sprint

Sprint 4

Sprint Review Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 3:00 PM

End time: 4:00 PM

- **User Story 1:** Interactive Dashboard
 - As a user, I want to be able to easily manage my inventory through a user friendly dashboard. This will ensure that I will be able to quickly and easily access and track all the items in my inventory.
- **User Story 2:** Add Products
 - As a user, I want to be able to add new products to my inventory and include details such as name, SKU, price, etc.
- **User Story 3:** Inventory Identifiers/Description
 - As a user, I want to be able to find specifically the item I am looking for. Therefore, I need a sharp inventory management system that divides the items stored in the database by categorizing each one of them with detailed descriptions.
- **User Story 4:** Sales Data Analysis
 - As a user, I would like to be able to keep track of the sales performance of each item. This will allow me to know when it is time to restock certain items, which items are selling most and least, and maintain an inventory that will help maximize profits
- **User Story 5:** Database
 - As a user, I would like to be able to have access to a streamlined database where I can see all of the items I have in stock. I would also like to be able to edit my stock to add and remove items from my inventory.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting:

- **User Story 1:** Sign Up & Log-In Page
 - As a user, I would like a smooth experience as I create a new account for my business and log in to my account.
- **User Story 2:** Front End

- As a user, I would like a smooth user interface so that when adding or editing an item amount the transition goes smoothly.

Sprint 5

Sprint Review Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 3:00 PM

End time: 4:00 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- **User Story 1: Sign Up & Log-In Page**
 - As a user, I would like a smooth experience as I create a new account for my business and log into my account.
- **User Story 2: Customizable Dashboard**
 - I want to be able to easily customize my inventory dashboard to meet my business needs. This includes choosing whether or not to display certain statistics and graphs on my dashboard that reflect the performance of my business.
- **User Story 3: Inventory Identifiers/Description**
 - As a user, I want to be able to find specifically the item I am looking for. Therefore, I need a sharp inventory management system that divides the items stored in the database by categorizing each one of them with detailed descriptions.
- **User Story 4: User Interface**
 - As a user, I would like a smooth user experience with no errors or discrepancies when adding or editing an item. I'd also like to interact with a user interface that is intuitive and that I can easily learn.
- **User Story 5: Database**
 - As a user, I would like to be able to have access to a streamlined database where I can see all of the items I have in stock. I would also like to be able to edit my stock to add and remove items from my inventory.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting:

- No user stories were rejected during this sprint

Sprint 6

Sprint Review Meeting Minutes:

Attendees: Emily Salgueiros, Stephanie Hernandez, Edymar Urdaneta, Cesar Adames, Christian Esparragoza

Start time: 3:00 PM

End time: 4:00 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- **User Story 1:** Clear Inventory Summary
 - As a user, I would like a summary box on the dashboard that shows the total number of items and categories in my inventory, so I can get a quick overview without digging into detailed reports.
- **User Story 2:** Theme and Layout Customization
 - As a user, I would like to have the option to switch between different themes (e.g., light and dark mode) and layouts, so I can choose a look and feel that makes the interface comfortable for me to work with throughout the day.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting:

- **User Story 1:** Bulk Import and Export of Inventory
 - As a user, I want to be able to import and export inventory data in bulk via CSV or Excel files, so I can quickly update my inventory and back up my data.
- **User Story 2:** Notifications and Alerts
 - As a user, I would like to receive notifications or alerts when certain stock levels are low or when items in my inventory reach a specified expiration date, so I can reorder or act on inventory in a timely manner.
- **User Story 3:** Activity Log
 - As a user, I would like an activity log to track and view changes made to the inventory by different users, so I can maintain accountability and audit changes when needed

Appendix D - User Manuals, Installation/Maintenance Document, Shortcomings/Wishlist Document and other documents

Installation Guide for Invently

Project Setup

1. **Access the Code Repository:**
 - Visit the [Invently GitHub Repository](#).
 - Either fork the repository to your own GitHub account or download the code directly by clicking the **Code** button and selecting **Download ZIP**.
2. **Set Up Your Development Environment:**
 - Download and install [Visual Studio Code](#).
 - Open Visual Studio Code and install the **Live Server Extension**:
 1. Go to the **Extensions** view by clicking the square icon on the left-hand toolbar or pressing Ctrl+Shift+X.
 2. Search for "Live Server" and click **Install** on the extension
3. **Open the Project:**
 - Extract the downloaded ZIP file (if applicable) and open the project folder in Visual Studio Code.
4. **Launch the Website:**
 - In the file explorer on the left-hand side, locate the **InventlyHomepage.HTML**
 - Right-click the file and select **Open with Live Server**.
 - Your default web browser will open, displaying the Invently website.

After completing these steps, you will be able to view and interact with the Invently website locally through your browser.

Quick GIT Guide

[GIT Documentation](#)

How to create a new branch locally (do this before your changes on someone else's branch):

```
$ git checkout -b <branch_name>
```

How to switch to another GitHub branch:

```
$ git checkout <existing_branch>
```

How to merge changes from another branch into yours:

There are two ways to do this, from the command line or GitHub. Using the command line, you have to resolve conflicts manually and could become a hassle. If you make a pull request on GitHub, you get to see what the conflicts are (if any) and pick which files to merge.

```
$ git pull origin <branch>
```

How to push changes to Github:

Use this command to verify the branch you are pushing to is correct, and see your changes.

```
$ git status
```

Use this command to add the changes you want to add to the commit.

```
$ git add <path/to/filename>
```

Then, use this command to commit your changes to have them queued for pushing.

```
$ git commit -m "<short description of commit>"
```

Lastly, push your changes into Github with this command.

```
$ git push
```

Alternatively, if you made changes on the wrong branch, use this command to push.

```
$ git push origin <current_branch>:<correct_branch>
```

Project Directory Structure

This section provides a detailed overview of the main directories in the Invently project, describing the purpose of each folder and highlighting key functionalities implemented within them.

File Directories:

- **CSS Folder:**

Contains stylesheets that define the visual appearance of the application, ensuring a responsive and user-friendly design for each page or feature:

- [AboutUs.css](#): Styling for the "About Us" page.
- [CustomerPage.css](#): Styles for customer management and invoice tracking.
- [dashboard.css](#): Visual layout for inventory analytics and order statuses.
- [Features.css](#): Design for the "Features" section of the site.
- [InventlyHomepage.css](#): Styling for the main landing page.
- [loginInvently.css](#): Custom styles for login and registration forms.
- [ManageInventory.css](#): Design for inventory management, including product listings and barcode scanning integration.
- [OrdersTab.css](#): Styles for the orders tracking page.
- [Pricing.css](#): Styling for pricing plans or cost-related sections.
- [settings.css](#): Provides themes and user preferences customization styles.
- [setupInventory.css](#): Visual layout for inventory setup workflows.
- [signinInvently.css](#): Styling for the user sign-in process.

- **HTML Folder:**

Contains all the structural elements for the application. Each file defines the layout and content for individual sections of the website:

- [AboutUs.html](#): Information about the platform and its creators.
- [CustomerPage.html](#): Page for managing customer profiles and invoices.
- [dashboard.html](#): Main dashboard displaying analytics and status updates.
- [Features.html](#): Highlights the features of the application.
- [InventlyHomepage.html](#): The main landing page of the application.
- [loginInvently.html](#): Page for user login and registration.
- [ManageInventory.html](#): Dedicated to inventory tracking and barcode scanning.
- [OrdersTab.html](#): Focused on tracking fulfilled and vendor orders.
- [Pricing.html](#): Details on subscription plans or pricing.
- [settingsPage.html](#): Page for user preferences, including themes and settings.
- [setupInventory.html](#): Helps users set up their inventory system.
- [signinInvently.html](#): Page for users to sign in to their accounts.

- **JS Folder:**

This folder contains JavaScript files that add interactivity and functionality to the application. Each file corresponds to a specific feature or page:

- [aboutUs.js](#): Powers the interactivity on the "About Us" page.
- [barcodeScanner.js](#): Implements the barcode scanning functionality for inventory management.
- [CompanyTab.js](#): Handles functionality related to company-specific features (e.g., vendor details).
- [CustomerPage.js](#): Manages customer profile interactions and invoice tracking.
- [darkMode.js](#): Provides functionality for toggling between light and dark modes.
- [dashboardFirestore.js](#): Handles integration with Firebase for real-time dashboard data.
- [dashboardHome.js](#): Manages the interactive elements on the main dashboard.
- [InventlyHomepage.js](#): Controls interactive elements on the homepage.
- [loginInvently.js](#): Manages user authentication for login and sign-up.
- [ManageInventory.js](#): Powers inventory management, including adding, removing, and editing products.
- [OrdersTab.js](#): Handles tracking and updates for fulfilled and vendor orders.
- [selectInventory.js](#): Allows users to switch between different inventory dashboards.

- `settings.js`: Manages user preferences, theme selection, and account updates.
 - `setupInventory.js`: Guides users through setting up a new inventory.
 - `signinInvently.js`: Controls the functionality for signing in existing users.
- **Images Folder:**
 - Stores all image assets used across the website, including:
 - Logos for branding.
 - Icons for navigation and interactive buttons.
 - Background images and other visual elements.

SHORTCOMINGS

Hosting on Cloud:

Invently relies on local hosting using Live Server, which limits its accessibility and scalability. Without deployment to a cloud hosting platform such as Firebase Hosting or AWS, the application cannot be accessed remotely or simulate real-world usage scenarios. Transitioning to a cloud-based deployment would enable global accessibility and facilitate easier updates.

Multi-User Collaboration:

The system currently supports only single-user interaction, making it unsuitable for businesses requiring collaboration among team members. Role-based access control and multi-user support would allow businesses to assign different permissions to team members and work together efficiently.

Limited Analytics:

The inventory dashboard provides only basic analytics, which may not be sufficient for businesses needing in-depth insights into their inventory and sales trends. Adding advanced reporting features, such as sales forecasting and trend analysis, would enhance the system's utility for data-driven decision-making.

Barcode Scanning Capabilities:

While the barcode scanner is functional, it struggles under challenging conditions like poor lighting or damaged barcodes. Expanding support for additional barcode formats and improving error correction would make the scanning process more reliable and versatile.

REFERENCES

1. [HTML Standard](#)
2. [CSS Documentation - MDN Web Docs](#)
3. [JavaScript Documentation - MDN Web Docs](#)
4. [ZXing Barcode Library - npm](#)