

INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

A PROJECT REPORT

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In the fulfilment of

INNOVATION, EMPLOYABILITY AND ENTREPRENEURSHIP

in

COMPUTER SCIENCE ENGINEERING

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INTRODUCTION

1. INTRODUCTION

1.1. PROJECT OVERVIEW

Cooks and supervisors in the cafeteria sector spend a few hours at the conclusion of their shift putting orders for the coming week and counting inventories. The Cafeteria Inventory Management System is made to do more than only help with this issue. But also automate a lot of the time-consuming tasks that go along with it. The system creates order forms that can be automatically delivered to vendors, estimates how much inventory will be required for the future week, and keeps track of current inventory levels for recipes down to the ingredient level. We were quickly able to pinpoint problems with the upkeep of resource prerequisite lists after speaking with a cook for The Classic Cafeteria, an on-site commercial cafeteria management company.

Staff members had to compile a list of groceries consumed over time, calculate and analyse the needs for the coming weeks, and, if necessary, place their next order with several vendors in order to keep track of their inventory levels. This technique is time-consuming, labor-intensive, and prone to human error. The creation of a system that can be used by both small and large organisations became our key objective. This required the system to provide a clear, straightforward user interface that can yet handle more precise adjustments and inputs. In terms of database design, the system had to be exact and dependable.

It was clear that these requirements were satisfied because all of the data and data objects were kept in a database. The majority of any large company's present assets are found in its inventories. Keeping track of these stocks is never easy for the management. We require a strong inventory management system to ensure efficient manufacturing and happy customers.

1.2. PURPOSE

A real-time inventory database that can link different stores is the Inventory Management System. This can be used to manage the stock deliveries between various branches of a larger franchise or to maintain the inventory of a single store. The system, however, essentially keeps track of sales and restocking information and sends email alerts when stock levels are low at any location at certain intervals.

Instead of holding all store upkeep, the objective is to lessen the burden associated with tracking. The option to generate sales statistics may be among the additional features, however management will once again have to provide an explanation. Additionally, the system offers options for verifying the store inventory and updating item levels because theft does happen periodically.

An inventory management system is used by production units to cut down on transportation expenses. The system tracks goods and parts as they move from a seller to a storage facility, then from one storage facility to another, and eventually to a retail establishment or directly to a client.

The inventory management system is employed for a number of tasks, such as:

- keeping track of and recording data on the amount of excess and inadequate inventory in the business.
- Maintain inventory records while they are moved between different sites.
- logging product data in a warehouse or another place.
- has experience selecting, packing, and selling goods from a warehouse.
- reduction of product degradation and obsolescence.
- preventing out-of-stock circumstances.

LITERATURE SURVEY

2. LITERATURE SURVEY

2.1. EXISTING SYSTEM

In the market, there are numerous inventory management systems. I've learned through my investigation that the most of them just provide a select few things. Others lack a good user interface. Sales growth is not a major focus of marketing strategies.

Due to the varied organisational structures, it is impossible to link the customer management system and inventory management system, which compromises the degree of customer satisfaction. The majority of them do not use the cloud computing concept, but we are working to create a system that works for everyone, not only large corporations or small businesses.

The majority of them have significant operating costs and often expensive maintenance costs. We use a pay-per-use mechanism.

2.2. REFERENCES

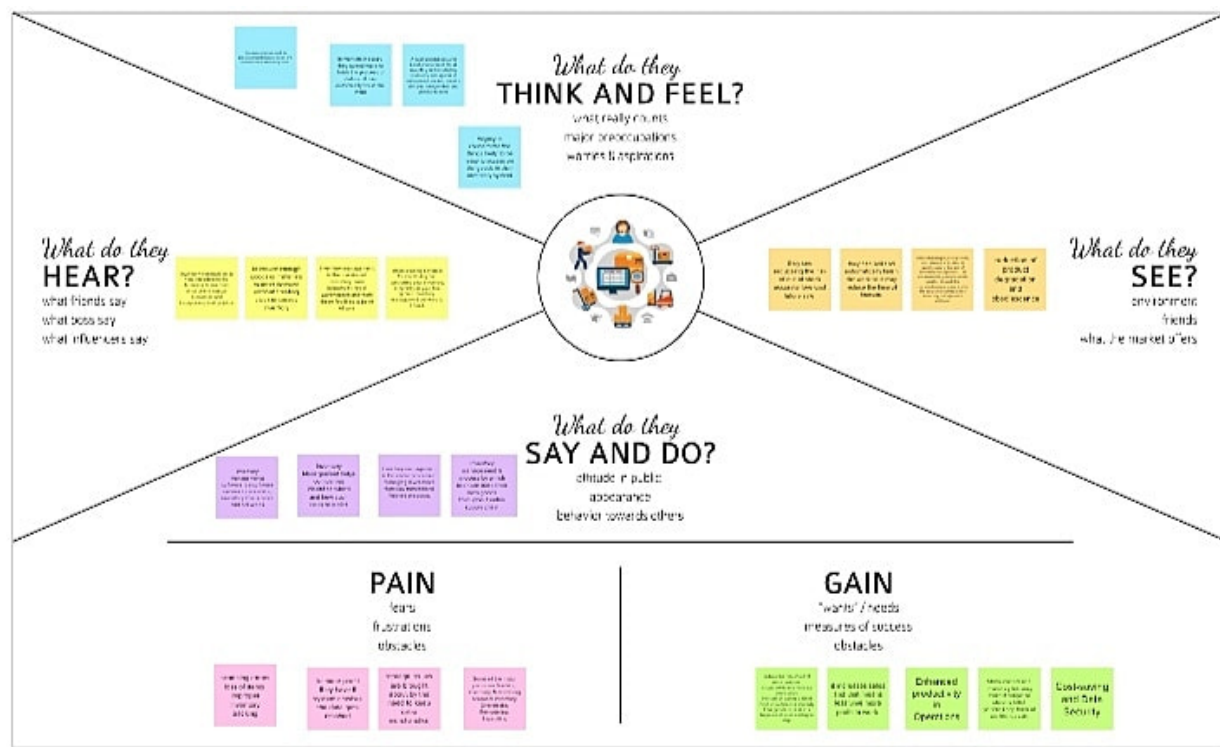
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IDEATION AND PROPOSED SOLUTION

3. IDEATION AND PROPOSED SOLUTION

3.1. EMPATHY MAP CANVAS



An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers. Much like a user persona, an empathy map can represent a group of users, such as a customer segment. The empathy map was originally created by Dave Gray and has gained much popularity within the agile community.

An empathy map canvas serves as a foundation for outstanding user experiences, which focus on providing the experience customers want rather than forcing design teams to rely on guesswork.

Empathy map canvases help identify exactly what it is that users are looking for so brands can deliver. They can be particularly beneficial for getting teams on the same page about who users are and what they want from the brand.

What is an empathy map canvas?

An empathy map canvas is a more in-depth version of the original empathy map, which helps identify and describe the user's needs and pain points. And this is valuable information for improving the user experience.

Teams rely on user insights to map out what is important to their target audience, what influences them, and how they present themselves. This information is then used to create personas that help teams visualize users and empathize with them as individuals, rather than just as a vague marketing demographic or account number.

Who uses an empathy map canvas?

Agile teams in a variety of departments use empathy map canvases to better understand how to meet their customers' needs.

Design teams use them to help understand the various reasons why a user might interact with the product so they can design a user-friendly experience.

Sales teams use them to learn who customers are at an individual level so they can help them invest in a product that suits their needs, rather than leading with a sales pitch that might be off-putting or not appropriately tailored to customers.

Why use an empathy map canvas?

An empathy map canvas helps brands provide a better experience for users by helping teams understand the perspectives and mindset of their customers. Using a template to create an empathy map canvas reduces the preparation time and standardizes the process so you create empathy map canvases of similar quality.

To identify user needs and enhance the overall experience

Good canvases rely on insights from actual users, which help provide an accurate picture of how they feel about their experience with the product. This provides insight into which features are accessed the most often and how they are used. And this knowledge empowers teams to make the improvements that most benefit the user and increase the product's value.

To learn what motivates users to buy

Revenue-driven design teams use an empathy map canvas to learn what factors most impact a user's decision to pay for the product or service. This can be particularly useful when teams want to push a new subscription plan and need to understand which features might prompt users to upgrade.

Understanding what users find the most valuable about the product can also help improve marketing efforts by making it easier to identify why users think it is worth the price.

3.2. IDEATION AND BRAINSTROMING

Template



Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

- 10 minutes to prepare
- 1 hour to collaborate
- 2-8 people recommended

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes

Team gathering

Define who should participate in the session and send an invite. Share essential information or pre-work ahead.

Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.

Learn how to use the facilitation tools

Join the Facilitation Superpowers for a happy and productive session.

[Open article](#)

1

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

How might we [your problem statement]?

Key rules of brainstorming

To set a healthy and productive session

Stay on topic

Encourage wild ideas

Defer judgment

Listen to others

Go for volume

If possible, be smart

Share Template Feedback

Need some inspiration?

See a facilitated version of this template to kickstart your work.

[Open example](#)

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

Tip

Don't select a sticky note and sit there and think, "I wish I had more ideas!"

Person A	Person B	Person C	Person D
1. I think we should have a meeting with the client to discuss their needs.	2. We should consider the impact of the new technology on our current systems.	3. It might be worth exploring the possibility of a partnership with a local university.	4. We need to ensure that our data is secure and compliant with regulations.
5. Perhaps we could offer a pilot program to a select group of users.	6. We should also think about the long-term sustainability of the project.	7. It could be beneficial to conduct a thorough market research.	8. We need to have a clear timeline and milestones for the project.
9. Maybe we could leverage our existing resources and expertise.	10. We should also consider the potential risks and challenges.	11. It might be a good idea to reach out to industry experts for advice.	12. We need to have a solid plan for how we will measure success.

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

10 minutes

Tip

Don't underestimate the value of having someone else's perspective. It can be a game-changer. Encourage others to share their ideas.



Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes



After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

Quick add-ons

 Where the world
Where is the world

Share a link to the content of this question by using the link below. The link will be valid for 24 hours.

Report the results

Support a slope of the coast as a PMS or POF is about to retreat, include children, or even in your class.

Keep moving forward

 Bridge Group

 Define the components of a number in strings

Opens The Navigator - [opens the Navigator](#)

 [Cambridge University Press](http://www.cambridge.org/9780521876223)


 **Unimodal/Limited mode, dual/dual, and dual/dual for transportation**

Figure 10.10: Example of a simple network

 Strengths, weaknesses, opportunities & threats

Identify strengths, weaknesses, opportunities and threats (SWOT) to develop a plan

Open the template.

 share-alike license



Ideation is often closely related to the practice of brainstorming, a specific technique that is utilized to generate new ideas. A principal difference between ideation and brainstorming is that ideation is commonly more thought of as being an individual pursuit, while brainstorming is almost always a group activity

3.3. PROPOSED SOLUTION

Project Design Phase-I Proposed Solution

Date	23 September 2022
Team ID	PNT2022TMID40482
Project Name	Inventory Management System for Retailers
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	It becomes very difficult to distribute items on schedule if you can't find or identify supplies in your inventory, and this might damage your company's image. Your business's bottom line will undoubtedly suffer from inventory that is insufficient, hard to locate, or inaccurate. In actuality, the inability to locate or identify merchandise in the warehouse is the most frequent cause of delayed, incorrect, or incomplete shipments. Receiving the right stock is essential for guaranteeing warehouse efficiency and satisfying client experiences.
2.	Idea / Solution description	A real-time inventory management system, such as Tranquil ERP, will give you complete and precise information on location information and stock availability. This will make it easier to locate goods, which will improve order fulfilment and customer happiness in the long run.
3.	Novelty / Uniqueness	Improved inventory control and forecasting / projection, Barcoding & Scanning, Improved, actionable inventory analysis.
4.	Social Impact / Customer Satisfaction	The results indicate that higher levels of inventory management practice can lead to an enhanced competitive advantage and improved organizational performance.
5.	Business Model (Revenue Model)	Inventory management aids businesses in determining which merchandise to order when and in what quantities. Inventory is tracked from product acquisition to sale.
6.	Scalability of the Solution	To increase the scalability of your business, you should use an automated inventory management system for inventory tracking.

3.4. PROBLEM FIT CANVAS

| INVENTORY MANAGEMENT SYSTEM FOR RETAILERS – Problem Solution Fit | | |

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| Define CS, fit into CC | 1. CUSTOMER SEGMENTS
<i>Who are your customers?</i>

Everyone has different shopping preferences, which may vary by product type or time of day. Loyal Customers, Discount Customers, Impulse Customers, Need-based Customers, Wandering Customer.

Companies often use inventory management software to reduce their carrying costs. The software is used to track products and parts as they are transported from a vendor to a warehouse, between warehouses, and finally to a retail location or directly to a customer. | CS | 6. CUSTOMER CONSTRAINTS
<i>What constraints prevent your customers from taking action or solving their issues?</i>
Of course! To spend more money, budget is one constraint. Lack of knowledge, lack of information, lack of resources, lack of time, lack of staff, lack of space, lack of equipment, lack of technology, lack of training, lack of experience, lack of motivation, lack of commitment, lack of support, lack of communication, lack of coordination, lack of collaboration, lack of cooperation, lack of participation, lack of involvement, lack of engagement, lack of interest, lack of enthusiasm, lack of passion, lack of energy, lack of drive, lack of initiative, lack of proactivity, lack of reactivity, lack of flexibility, lack of adaptability, lack of agility, lack of responsiveness, lack of accountability, lack of ownership, lack of responsibility, lack of liability, lack of risk, lack of loss, lack of damage, lack of harm, lack of injury, lack of pain, lack of suffering, lack of distress, lack of discomfort, lack of inconvenience, lack of hassle, lack of trouble, lack of difficulty, lack of challenge, lack of obstacle, lack of barrier, lack of hurdle, 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lack of lead lagged lagged lagged liability, lack of lagged lead lagged lagged liability, lack of lead lead lagged lagged liability, lack of lagged lagged lead lagged liability, lack of lead lagged lead lagged liability, lack of lagged lead lead lagged liability, lack of lead lead lead lagged liability, lack of lagged lagged lagged lagged risk, lack of lead lagged lagged lagged risk, lack of lagged lead lagged lagged risk, lack of lead lead lagged lagged risk, lack of lagged lagged lead lagged risk, lack of lead lagged lead lagged risk, lack of lagged lead lead lagged risk, lack of lead lead lead lagged risk, lack of lagged lagged lagged lagged loss, lack of lead lagged lagged lagged loss, lack of lagged lead lagged lagged loss, lack of lead lead lagged lagged loss, lack of lagged lagged lead lagged loss, lack of lead lagged lead lagged loss, lack of lagged lead lead lagged loss, lack of lead lead lead lagged loss, lack of lagged lagged lagged lagged damage, lack of lead lagged lagged lagged damage, lack
of lagged lead lagged lagged damage, lack of lead lead lagged lagged damage, lack of lagged lagged lead lagged damage, lack of lead lagged lead lagged damage, lack of lagged lead lead lagged damage, lack of lead lead lead lagged damage, lack of lagged lagged lagged lagged harm, lack of lead lagged lagged lagged harm, lack of lagged lead lagged lagged harm, lack of lead lead lagged lagged harm, lack of lagged lagged lead lagged harm, lack of lead lagged lead lagged harm, lack of lagged lead lead lagged harm, lack of lead lead lead lagged harm, lack of lagged lagged lagged lagged injury, lack of lead lagged lagged lagged injury, lack of lagged lead lagged lagged injury, lack of lead lead lagged lagged injury, lack of lagged lagged lead lagged injury, lack of lead lagged lead lagged injury, lack of lagged lead lead lagged injury, lack of lead lead lead lagged injury, lack of lagged lagged lagged lagged pain, lack of lead lagged lagged lagged pain, lack of lagged lead lagged lagged pain, lack of lead lead lagged lagged pain, lack of lagged lagged lead lagged pain, lack of lead lagged lead lagged pain, lack of lagged lead lead lagged pain, lack of lead lead lead lagged pain, lack of lagged lagged lagged lagged suffering, lack of lead lagged lagged lagged suffering, lack of lagged lead lagged lagged suffering, lack of lead lead lagged lagged suffering, lack of lagged lagged lead lagged suffering, lack of lead lagged lead lagged suffering, lack of lagged lead lead lagged suffering, lack of lead lead lead lagged suffering, lack of lagged lagged lagged lagged distress, lack of lead lagged lagged lagged distress, lack of lagged lead lagged lagged distress, lack of lead lead lagged lagged distress, lack of lagged lagged lead lagged distress, lack of lead lagged lead lagged distress, lack of lagged lead lead lagged distress, lack of lead lead lead lagged distress, lack of lagged lagged lagged lagged discomfort, lack of lead lagged lagged lagged discomfort, lack of lagged lead lagged lagged discomfort, lack of lead lead lagged lagged discomfort, lack of lagged lagged lead lagged discomfort, lack of lead lagged lead lagged discomfort, lack of lagged lead lead lagged discomfort, lack of lead lead lead lagged discomfort, lack of lagged lagged lagged lagged inconvenience, lack of lead lagged lagged lagged inconvenience, lack of lagged lead lagged lagged inconvenience, lack of lead lead lagged lagged inconvenience, lack of lagged lagged lead lagged inconvenience, lack of lead lagged lead lagged inconvenience, lack of lagged lead lead lagged inconvenience, lack of lead lead lead lagged inconvenience, lack of lagged lagged lagged lagged hassle, lack of lead lagged lagged lagged hassle, lack of lagged lead lagged lagged hassle, lack of lead lead lagged lagged hassle, lack of lagged lagged lead lagged hassle, lack of lead lagged lead lagged hassle, lack of lagged lead lead lagged hassle, lack of lead lead lead lagged hassle | | |

Problem-Solution canvas is a tool for entrepreneurs, marketers and corporate innovators, which helps them identify solutions with higher chances for solution adoption, reduce time spent on solution testing and get a better overview of current situation.

REQUIREMENT ANALYSIS

4. REQUIREMENT ANALYSIS

4.1. FUNCTIONAL REQUIREMENTS

Functional requirements may involve calculations, technical details, data manipulation and processing, and other specific functionality that define what a system is supposed to accomplish. Behavioral requirements describe all the cases where the system uses the functional requirements, these are captured in use cases.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail ID Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Allocating and Updating Database	Authentication of the User
FR-4	Creating Alert	Through Phone Number Through Email

4.2. NON-FUNCTIONAL REQUIREMENTS

Nonfunctional Requirements (NFRs) define system attributes such as security, reliability, performance, maintainability, scalability, and usability. They serve as constraints or restrictions on the design of the system across the different backlogs.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	An easy-to-use interface that doesn't require advanced training, support or documentation. Automation for eliminating manual processes of business functions related to inventory management. A reliable, secure database that provides accurate, real-time data.
NFR-2	Security	Security requirements ensure that the software is protected from unauthorized access to the system and its stored data. It considers different levels of authorization and authentication across different users roles.
NFR-3	Reliability	An inventory management system must maintain its adeptness over time while coping with the uncertainty of inventory flow.
NFR-4	Scalability	User can scale their online inventory on based on their usage.

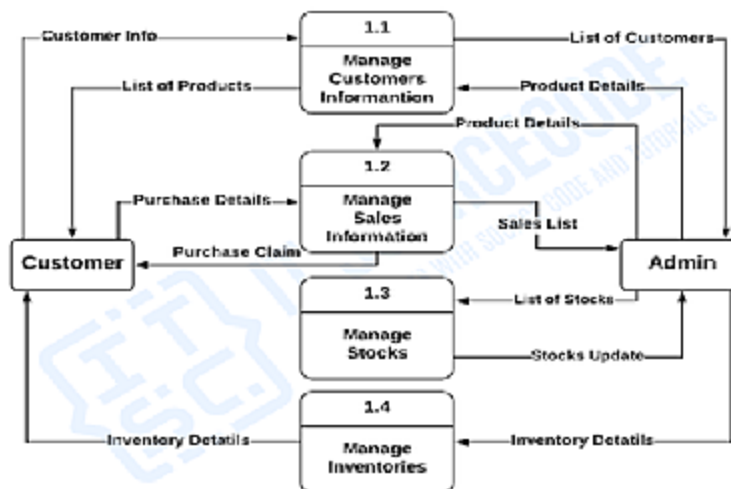
PROJECT DESIGN

5. PROJECT DESIGN

5.1. DATA FLOW DIAGRAM

A data flow diagram (DFD) is a graphical or visual representation using a standardized set of symbols and notations to describe a business's operations through data movement. They are often elements of a formal methodology such as Structured Systems Analysis and Design Method (SSADM).

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyze an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually “say” things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. That’s why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.



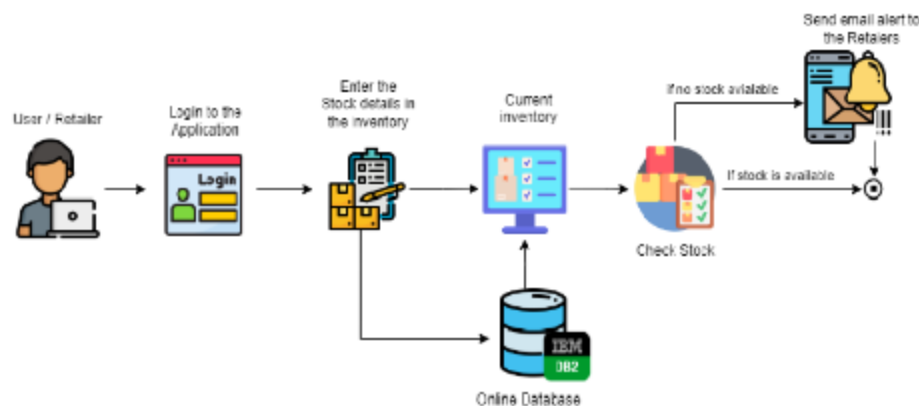
Dataflow diagram for Inventory Management System

5.2. SOLUTION AND TECHNICAL ARCHITECTURE

Solution Architecture are most similar to project managers, ensuring that all parties, including stakeholders, are on the same page and moving in the right direction at all stages. Technical architecture manage all activities leading to the successful implementation of a new application.

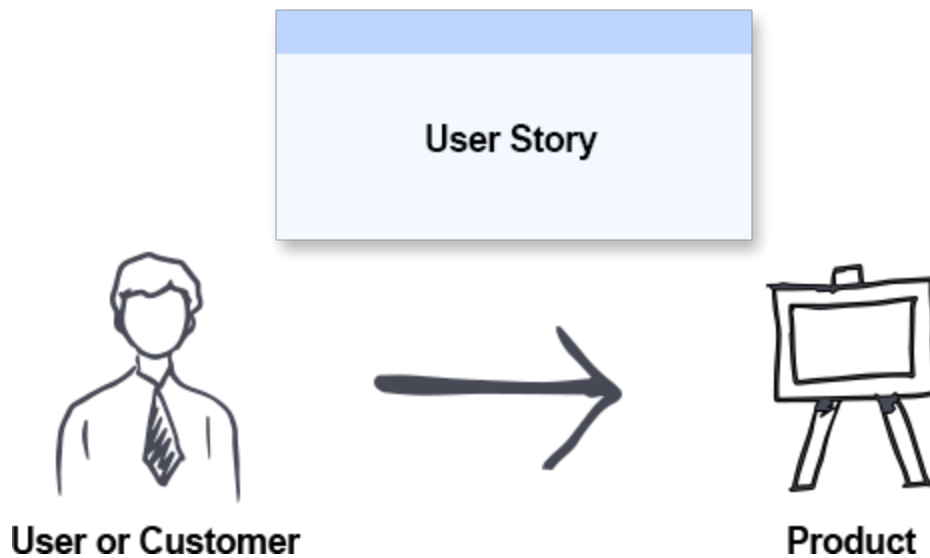
A solution architecture (SA) is an architectural description of a specific solution. SAs combine guidance from different enterprise architecture viewpoints (business, information and technical), as well as from the enterprise solution architecture (ESA).

Technical Architecture (TA) is a form of IT architecture that is used to design computer systems. It involves the development of a technical blueprint with regard to the arrangement, interaction, and interdependence of all elements so that system-relevant requirements are met.



5.3. USER STORIES

A user story is a casual, all-inclusive description of a software feature written from the viewpoint of the client or end user. A user story's objective is to describe how a piece of work will provide the customer with a specific value.



A user narrative is a casual, natural language description of one or more elements of a software system used in software development and product management. In Agile software development, a user story is a tool used to record a description of a software feature from the viewpoint of the end user. A user story explains the type of user, their desires, and their motivations. A user story aids in the creation of a condensed requirement description.

User stories are frequently logged in project management software, on Post-it notes, or on index cards. User stories may be written by a variety of stakeholders, including clients, users, managers, or members of the development team, depending on the project.

"User stories are a component of an agile methodology that aids in moving the emphasis away from writing about requirements and toward discussing them. In addition to a few written sentences, every agile user story also includes conversations about the desired functionality "- Mike Cohn, a key figure in the development of the Scrum software development methodology.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail		Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard	USN-6	As a user, I can Creating a database credentials and enter my stocks	I can manage the stocks and update them in a random manner	High	Sprint-1
		USN-7	As a user, I can create Alerts to required Stocks	I can manage the alerts on the stocks	High	Sprint-1
	Alerts	USN-8	As a user, I can receive alerts on Stock updates	I can receive updates if any stock reduces to less than 10	High	Sprint-1

User Stories for Inventory Management System

PROJECT PLANNING & SCHEDULING

6. PROJECT PLANNING AND SCHEDULING

Project planning is fundamentally all about selecting and creating efficient policies and methodologies to achieve project objectives. The process of assigning tasks to be completed by allocating the proper resources within an estimated budget and time frame is known as "project scheduling."

6.1. SPRINT PLANNING AND ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	Balaji, Junaidh, Rokesh
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	Nithesh
Sprint-2		USN-3	As a user, I can register for the application through Facebook	2	Medium	Balaji, Rokesh
Sprint-2		USN-4	As a user, I can register for the application through Gmail	2	Medium	Balaji, Rokesh
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	2	High	Balaji, Rokesh
Sprint-1	Dashboard	USN-6	As a user, I can access the dashboard by Logging in	3	High	Junaidh, Rokesh
Sprint-2	Inventory	USN-7	As a user, I can get into inventory and Enter my stocks	5	High	Balaji, Rokesh , Nithesh
Sprint-2	Alerts	USN-8	As a User, I can create and alter Email Alerts	2	High	Balaji, Rokesh

6.2. SPRINT DELIVERY SCHEDULE

SPRINT	TOTAL STORY POINT	DURATI ON	SPRINT DATE	SPRINT END DATE (PLANNE D)	STORY POINTS COMPLET ED	SPRINT ACTUAL RELEASE DATE
SPRINT-1	8	6	24 OCT	29 OCT	8	29 OCT
SPRINT-2	10	6	31 OCT	05 OCT	7	05 OCT
SPRINT-3	3	6	7 OCT	12 OCT	3	15 OCT
SPRINT-4	-	-	-	-	-	-

CODING AND SOLUTIONING

7. CODING AND SOLUTIONING

7.1. HTML

The code that organises a web page's content is called HTML (HyperText Markup Language). Content may be organised using paragraphs, a list of bulleted points, images, and data tables, for instance.

The preferred markup language for documents intended to be viewed in a web browser is HTML, or HyperText Markup Language. Technologies like Cascading Style Sheets and scripting languages like JavaScript can help.

Here we use HTML to render our front-end pages,

7.1.1. Coding

INDEX PAGE

```
<body id="page-top">
  <!-- Navigation-->
  <a class="menu-toggle rounded" href="#"><i class="fas fa-bars"></i></a>
  <nav id="sidebar-wrapper">
    <ul class="sidebar-nav">
      <li class="sidebar-brand"
        ><a href="#page-top">Inventory Management App</a></li>
      >
      <li class="sidebar-nav-item"
        ><a href="#page-top"
          ><i class="fa-solid fa-house" style="margin-right: 10px"></i>Home</a>
        ></li>
      >
      <li class="sidebar-nav-item"
```

```

    ><a href="/login"
      ><i class="fa-regular fa-user" style="margin-right: 10px"></i>
      Login</a
    ></li
  >
  <li class="sidebar-nav-item"
    ><a href="/signup"
      ><i
        class="fa-regular fa-address-card"
        style="margin-right: 10px"
      ></i>
      Sign up</a
    ></li
  >
</ul>
</nav>
<!-- Header-->
<header class="masthead d-flex align-items-center">
  <div class="container px-4 px-lg-5 text-center">
    <h1 class="mb-1">Inventory Management System</h1>
    <a class="btn btn-primary btn-xl" href="#about">Find Out More</a>
  </div>
</header>
<!-- About-->
<section class="content-section bg-light" id="about">
  <div class="container px-4 px-lg-5 text-center">
    <div class="row gx-4 gx-lg-5 justify-content-center">
      <div class="col-lg-10">
        <h2>Inventory Management System For Retailers</h2>
        <p class="lead mb-5">
          This is a Inventory Management Software which was created as a
          part of a Project Submission of

```

```

        <strong>Innovation, Employability and Entrepreneurship</strong>
    </p>
    <a class="btn btn-dark btn-xl" href="#services">About our Team</a>
</div>
</div>
</div>
</section>
<!-- Services-->
<section
class="content-section text-white text-center"
id="services"
style="background: #00326d"
>
<div class="container px-4 px-lg-5">
    <div class="content-section-heading">
        <h2 class="text-secondary mb-1" style="margin-bottom: 20px"
        >Our Team</h2
        >
    </div>
    <div class="row gx-4 gx-lg-5">
        <div class="col-lg-3 col-md-6 mb-5 mb-lg-0">
            <span class="service-icon rounded-circle mx-auto mb-3"
            ></i
            ></span>
            <h4><strong>Balaji S</strong></h4>
            <p class="text-faded mb-0">CSE-IV, AMCET</p>
        </div>
        <div class="col-lg-3 col-md-6 mb-5 mb-lg-0">
            <span class="service-icon rounded-circle mx-auto mb-3"
            ></i>

></span>

<h4><strong>MD Junaidh A</strong></h4>

<p class="text-faded mb-0">CSE-IV, AMCET</p>

</div>

<div class="col-lg-3 col-md-6 mb-5 mb-md-0">

<span class="service-icon rounded-circle mx-auto mb-3">

></i>

></span>

<h4><strong>Nithesh K M </strong></h4>

<p class="text-faded mb-0"> CSE-IV, AMCET </p>

</div>

<div class="col-lg-3 col-md-6">

<span class="service-icon rounded-circle mx-auto mb-3">

></i>

></span>

<h4><strong>Rakesh M</strong></h4>

<p class="text-faded mb-0">CSE-IV, AMCET</p>

</div>

</div>

</div>

</section>

<!-- Callout-->

<section class="callout">

<div class="container px-4 px-lg-5 text-center">

<h2 class="mx-auto mb-5"> Experience our Project </h2>

><abbr



```

 title="(If you already have a Account)"
 style="margin-bottom: 100px"
 >
 Login</abbr>
 > &~>
 <abbr title="(To create a new Account)">
 Sign Up</abbr>
 >
</div>
</section>
<!-- inventory-->
<section class="content-section" id="inventory">
 <div class="container px-4 px-lg-5">
 <div class="content-section-heading text-center">
 <h2 class="text-secondary mb-0" style="margin-top: 30px">
 >Other Projects</h2
 >
 </div>
 <div class="row gx-0">
 <div class="col-lg-6">

 <div class="caption">
 <div class="caption-content">
 <div class="h2">Online Code Editor</div>
 <p class="mb-0"> Mini Project </p>
 </div>
 </div>
 </div>

</div>
<div class="col-lg-6">

 <div class="caption">
 <div class="caption-content">
 <div class="h2">Basic AJAX</div>
 <p class="mb-0">Using JavaScript</p>
 </div>
 </div>

</div>
<div class="col-lg-6">

 <div class="caption">
 <div class="caption-content">
 <div class="h2">Watch Case</div>
 <p class="mb-0">Simple watch case using JavaScript</p>
 </div>
 </div>

</div>

<div class="col-lg-6">

<div class="caption">

<div class="caption-content">

<div class="h2">Inventory Management</div>

<p class="mb-0"

>A basic Inventory Management Application using Flask</p>

>

</div>

</div>

</div>

</div>

</div>

```

</section>
<!-- Call to Action-->
<section class="content-section text-white" style="background: #00326d">
  <div class="container px-4 px-lg-5 text-center">
    <h2 class="mb-4">The buttons below are impossible to resist...</h2>
    <a class="btn btn-xl btn-light me-4" href="#">Demo Link</a>
    <a class="btn btn-xl btn-dark" href="#">Project Documentation</a>
  </div>
</section>
<!-- Footer-->
<footer class="footer text-center">
  <div class="container px-4 px-lg-5">
    <p class="text-muted small mb-0">
      >Copyright &copy; Inventory Management System For Retailer</p>
    >
  </div>
</footer>
<!-- Scroll to Top Button-->
<a class="scroll-to-top rounded" href="#page-top"
  ><i class="fas fa-angle-up"></i>
</a>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js">
</script>
<script>
window.addEventListener("DOMContentLoaded", (event) => {
  const sidebarWrapper = document.getElementById("sidebar-wrapper");
  let scrollToTopVisible = false;
  // Closes the sidebar menu
  const menuToggle = document.body.querySelector(".menu-toggle");
  menuToggle.addEventListener("click", (event) => {
    event.preventDefault();

```

```

    sidebarWrapper.classList.toggle("active");
    _toggleMenuIcon();
    menuToggle.classList.toggle("active");
  });

  // Closes responsive menu when a scroll trigger link is clicked
  var scrollTriggerList = [].slice.call(
    document.querySelectorAll("#sidebar-wrapper .js-scroll-trigger")
  );
  scrollTriggerList.map((scrollTrigger) => {
    scrollTrigger.addEventListener("click", () => {
      sidebarWrapper.classList.remove("active");
      menuToggle.classList.remove("active");
      _toggleMenuIcon();
    });
  });

  function _toggleMenuIcon() {
    const menuToggleBars = document.body.querySelector(
      ".menu-toggle > .fa-bars"
    );
    const menuToggleTimes = document.body.querySelector(
      ".menu-toggle > .fa-xmark"
    );
    if (menuToggleBars) {
      menuToggleBars.classList.remove("fa-bars");
      menuToggleBars.classList.add("fa-xmark");
    }
    if (menuToggleTimes) {
      menuToggleTimes.classList.remove("fa-xmark");
      menuToggleTimes.classList.add("fa-bars");
    }
  }

```

```
}
```

```
// Scroll to top button appear
```

```
document.addEventListener("scroll", () => {  
  const scrollToTop = document.querySelector(".scroll-to-top");  
  if (document.documentElement.scrollTop > 100) {  
    if (!scrollToTopVisible) {  
      fadeIn(scrollToTop);  
      scrollToTopVisible = true;  
    }  
  } else {  
    if (scrollToTopVisible) {  
      fadeOut(scrollToTop);  
      scrollToTopVisible = false;  
    }  
  }  
});  
});
```

```
function fadeOut(el) {  
  el.style.opacity = 1;  
  (function fade() {  
    if ((el.style.opacity -= 0.1) < 0) {  
      el.style.display = "none";  
    } else {  
      requestAnimationFrame(fade);  
    }  
  })();  
}
```

```
function fadeIn(el, display) {  
  el.style.opacity = 0;  
  if (display) {  
    el.style.display = display;  
  }
```

```
el.style.display = display || "block";
(function fade() {
  var val = parseFloat(el.style.opacity);
  if (!((val += 0.1) > 1)) {
    el.style.opacity = val;
    requestAnimationFrame(fade);
  }
})();
}
</script>
</body>
</html>
```

DASHBOARD Page

```
{% extends 'base.html' %} {% block title %}
<title>Inventory Management App</title>
{% endblock %} {% block content %}
<style>
.h1 {
  font-size: 18px;
  font-family: "Poppins", sans-serif;
  font-weight: 500;
}
</style>
<main>
<div class="container-fluid">
  <h1
    class="mt-4"
    style="
      font-size: 30px;
      font-family: 'Poppins', sans-serif;
      font-weight: 500;
    "
  >Dashboard</h1
  >
  <ol class="breadcrumb mb-4">
    <li class="breadcrumb-item active">Dashboard</li>
  </ol>
  <div class="card mb-4">
    <div
      class="card-header"
      style="
        font-size: 20px;
        font-family: 'Poppins', sans-serif;
```



```

        font-weight: 500;
    "
    >
    Products</div
>
<div class="card-body">
    <div class="card mb-4">
        <div class="card-header">
            
            Products Table
        </div>
        <div class="card-body">
            <div class="table-responsive">
                {% if products|length < 1 %}
                <h4>There are no Products, add one above</h4>
                {% else %}
                <table
                    class="table table-bordered"
                    id="dataTable"
                    width="100%"
                    cellspacing="0"
                >
                    <thead>
                        <tr>

```

```

        <th>Product Name</th>
        <th>Date</th>
        <th>Actions</th>
    </tr>
</thead>
<tfoot>
    <tr>
        <th>Product Name</th>
        <th>Date</th>
        <th>Actions</th>
    </tr>
</tfoot>
<tbody>
    {% for product in products %}
    <tr>
        <td>{{ product.product_id }}</td>
        <td>{{ product.date_created.date() }}</td>
        <td>
            <a href="/delete-product/{{ product.product_id }}"
              >Delete</a>
            <br />
            <a href="/update-product/{{ product.product_id }}"
              >Update</a>
        </td>
    </tr>
    {% endfor %}
</tbody>
</table>
{% endif %}
</div>

```

```
</div>
</div>
</div>
</div>
<div class="card mb-4">
  <div class="card-header">Locations</div>
  <div class="card-body">
    <div class="card mb-4">
      <div class="card-header">
        
        Locations Table
      </div>
      <div class="card-body">
        <div class="table-responsive">
          {% if locations|length < 1 %}
            <h4>There are no Locations, add one above</h4>
          {% else %}
            <table
              class="table table-bordered"
              id="dataTable"
              width="100%"
              cellspacing="0"
            >
              <thead>
                <tr>
                  <th>Location Name</th>
                  <th>Date</th>
                  <th>Actions</th>
```

```
</tr>
</thead>
<tfoot>
  <tr>
    <th>Location Name</th>
    <th>Date</th>
    <th>Actions</th>
  </tr>
</tfoot>
<tbody>
  {% for location in locations %}
  <tr>
    <td>{{ location.location_id }}</td>
    <td>{{ location.date_created.date() }}</td>
    <td>
      <a href="/delete-location/{{ location.location_id }}"
        >Delete</a>
      <br />
      <a href="/update-location/{{ location.location_id }}"
        >Update</a>
    </td>
  </tr>
  {% endfor %}
</tbody>
</table>
{% endif %}
</div>
</div>
</div>
</div>
```

</div>

</div>

</main>

{% endblock %}

BASE PAGE

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link
      rel="stylesheet"
      href="{{ url_for('static', filename='css/bootstrap/bootstrap.min.css')}}"
    />
    <link
      rel="stylesheet"
      href="{{ url_for('static', filename='css/media-query.css')}}"
    />
    <link rel="preconnect" href="https://fonts.googleapis.com" />
    <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin />
    <link
      href="https://fonts.googleapis.com/css2?family=Poppins:wght@100;200;300;400;
      500;600;700;800;900&display=swap"
      rel="stylesheet"
    />
    <script
      src="https://kit.fontawesome.com/f2586e679c.js"
      crossorigin="anonymous"
    ></script>
    <link
      rel="stylesheet"
      href="https://cdnjs.cloudflare.com/ajax/libs/font-
      awesome/6.2.1/css/fontawesome.min.css"
    />
```

```

<link
  href="https://cdn.datatables.net/1.10.20/css/dataTables.bootstrap4.min.css"
  rel="stylesheet"
  crossorigin="anonymous"
/>
<script
  src="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.13.0/js/all.min.js"
  crossorigin="anonymous"
></script>
{% block title%}{% endblock %}
</head>
<body class="sb-nav-fixed">
  <nav
    class="sb-topnav navbar navbar-expand"
    style="
      background-color: #26558d;
      height: 70px;
      display: flex;
      flex-direction: row;
      justify-content: space-between;
    "
  ><div>
    <button
      class="btn btn-link btn-sm order-1 order-lg-0"
      id="sidebarToggle"
      href="#"
    >
      <i class="fas fa-bars"></i>
    ></button>
    <a class="navbar-brand" href="/">Inventory Managment App</a>
  </div>
  <a

```

```

class="navbar-brand"
style="margin-right: -150px"
href="{{ url_for('logout') }}"
><i class="fa-solid fa-arrow-right-from-bracket"></i>
></a>
</nav>
<div id="layoutSidenav">
<div id="layoutSidenav_nav">
<nav
class="sb-sidenav accordion"
id="sidenavAccordion"
style="background-color: #00326d"
>
<div class="sb-sidenav-menu">
<div class="nav">
<div class="sb-sidenav-menu-heading" style="color: #ffffff8f"
>Core</div
>
<a
class="nav-link"
href="/dashboard"
style="
color: #fff;
font-size: 18px;
font-family: 'Poppins', sans-serif;
font-weight: 500;
"
>
<div class="sb-nav-link-icon" style="color: #000"
><img
src="https://inventorymgmt.s3.jp-tok.cloud-object-
storage.appdomain.cloud/dashboard1.png"

```



```
        style="width: 35px; height: 35px; margin-bottom: 5px"
    /></div>
    Dashboard
</a>
<div class="sb-sidenav-menu-heading" style="color: #ffffff8f"
    >Sections</div>
>
<a
    class="nav-link"
    href="/products/"
    style="
        color: #fff;
        font-size: 18px;
        font-family: 'Poppins', sans-serif;
        font-weight: 500;
    "
>
    <div class="sb-nav-link-icon" style="color: #000"
        ></div>
    Products
</a>
<a
    class="nav-link"
    href="/locations/"
    style="
        color: #fff;
        font-size: 18px;
        font-family: 'Poppins', sans-serif;
```

```

        font-weight: 500;
    "
>
<div class="sb-nav-link-icon" style="color: #000"
    ></div>
    Locations
</a>
<a
    class="nav-link"
    href="/movements/"
    style="
        color: #fff;
        font-size: 18px;
        font-family: 'Poppins', sans-serif;
        font-weight: 500;
    "
>
<div class="sb-nav-link-icon" style="color: #000"
    ></div>
    Movements
</a>
<a
    class="nav-link"
    href="/product-balance/"

```

```

        style="
            color: #fff;
            font-size: 18px;
            font-family: 'Poppins', sans-serif;
            font-weight: 500;
        "
    >
    <div class="sb-nav-link-icon" style="color: #000"
        ></div>
        Product Balance Report
    </a>
</div>
</div>
</nav>
</div>
<div id="layoutSidenav_content"> {% block content %} {% endblock %}
</div>
</div>
<style>
.sb-topnav .navbar-brand {
    width: 225px;
    padding-left: 20px;
    padding-right: 1rem;
    margin: 0;
    font-size: 25px;
    color: #fff;
    font-family: "Poppins", "sans-serif";
}

```

```
.btn-sm {
  padding: 0.25rem 0.5rem;
  font-size: 25px;
  line-height: 1.5;
  border-radius: 0.2rem;
  margin-left: 10px;
  color: #fff;
  margin-left: 10px;
  font-size: 25px;
  box-shadow: none;
  outline: none;
}

@media (min-width: 320px) and (max-width: 480px) {
  .sb-topnav .navbar-brand {
    font-size: 20px;
    padding-right: 1rem;
    margin: 0;
    color: #fff;
  }
  .btn-sm {
    padding: 0.25rem 0.5rem;
    font-size: 25px;
    line-height: 1.5;
    border-radius: 0.2rem;
    color: #fff;
    margin-left: -220px;
    box-shadow: none;
    outline: none;
  }
}

@media (min-width: 481px) and (max-width: 767px) {
  .sb-topnav .navbar-brand {
```

```
        width: 225px;
        padding-left: 20px;
        padding-right: 1rem;
        margin: 0;
        color: #fff;
    }
}
</style>
<script
    src="https://code.jquery.com/jquery-3.5.1.min.js"
    crossorigin="anonymous"
></script>
<script src="{{ url_for('static', filename='js/bootstrap/scripts.js')}}"></script>
<script
    src="https://cdn.datatables.net/1.10.20/js/jquery.dataTables.min.js"
    crossorigin="anonymous"
></script>
<script
    src="https://cdn.datatables.net/1.10.20/js/dataTables.bootstrap4.min.js"
    crossorigin="anonymous"
></script>
<script src="{{ url_for('static', filename='js/datatables-demo.js')}}"></script>
<script src="{{ url_for('static', filename='js/script.js')}}"></script>
</body>
</html>
```

LOGIN PAGE

```
{% extends "bootstrap/base.html" %} {% import "bootstrap/wtf.html" as wtf %}
{% block title%} Login {% endblock %} {% block styles %} {{super()}}
<link
  rel="stylesheet"
  href="https://inventorymgmt.s3.jp-tok.cloud-object-
storage.appdomain.cloud/signin.css"
/>
{% endblock%} {% block content %}

<h1 style="text-align: center">login</h1>
<div class="container">
  <form class="form-signin" method="POST" action="/login">
    {{ form.hidden_tag() }} {{ wtf.form_field(form.username) }} {{
    wtf.form_field(form.password) }} {{ wtf.form_field(form.remember) }}
    <button class="btn btn-lg btn-primary btn-block" type="submit"
      >Sign in</button
  >
  <p style="padding: 20px">New User? <a href="/signup">Register
now</a>!!</p>
  <a href="/"
    >Back to home page</a
  >
</form>
</div>
{% endblock %}
```

SIGNUP PAGE

```
{% extends "bootstrap/base.html" %} {% import "bootstrap/wtf.html" as wtf %}
{%
block title %} Sign Up {% endblock %} {% block styles %} {{super()}}
<link
  rel="stylesheet"
  href="https://inventorymgmt.s3.jp-tok.cloud-object-
storage.appdomain.cloud/signin.css"
/>
{% endblock %} {% block content %}
<h1 style="text-align: center">signup</h1>
<div class="container">
  <form class="form-signin" method="POST" action="/signup">
    {{ form.hidden_tag() }} {{ wtf.form_field(form.username) }} {{
    wtf.form_field(form.email) }} {{ wtf.form_field(form.password) }}
    <button class="btn btn-lg btn-primary btn-block" type="submit"
      >Sign Up</button
  >
  <p style="padding: 20px"
    >Already have an account. <a href="/login">Login</a> !</p>
  >
  <a href="/"
    >Back to home page</a>
  >
</form>
</div>
{% endblock %}
```

LOCATIONS PAGE

```
{% extends 'base.html' %} {% block title %}
<title>Inventory Managmnet App</title>
{% endblock %} {% block content %}
<main>
  <div class="container-fluid">
    <h1
      class="mt-4"
      style="
        font-size: 30px;
        font-family: 'Poppins', sans-serif;
        font-weight: 500;
      "
    >Dashboard</h1>
    <ol class="breadcrumb mb-4">
      <li class="breadcrumb-item"><a href="/">Dashboard</a></li>
      <li class="breadcrumb-item active">Locations</li>
    </ol>
    <div class="card mb-4">
      <div
        class="card-header"
        style="
          font-size: 20px;
          font-family: 'Poppins', sans-serif;
          font-weight: 500;
        "
      ><img
        src="https://inventorymgmt.s3.jp-tok.cloud-object-
storage.appdomain.cloud/product-placement.png"
        style="width: 35px; height: 35px"
```



```

    />Locations</div>
  >
  <div class="card-body">
    <div class="card mb-4">
      <div class="card-header">New Location</div>
      <div class="card-body">
        <form action="/locations/" method="POST" id="location_form">
          <label for="location_name" class="col-form-label">
            Location Name</label>
          >
          <input type="text" name="location_name" id="location_name" />
          <input
            id="submitLocation"
            value="Add Location"
            class="btn btn-primary"
          />
        </form>
      </div>
    </div>
    <div class="card mb-4">
      <div class="card-header">
        
        Locations Table
      </div>
      <div class="card-body">
        <div class="table-responsive">
          {% if locations|length < 1 %}
          <h4>There are no Locations, add one above</h4>

```

```

{% else %}
<table
  class="table table-bordered"
  id="dataTable"
  width="100%"
  cellspacing="0"
>
  <thead>
    <tr>
      <th>Location Name</th>
      <th>Date</th>
      <th>Actions</th>
    </tr>
  </thead>
  <tfoot>
    <tr>
      <th>Location Name</th>
      <th>Date</th>
      <th>Actions</th>
    </tr>
  </tfoot>
  <tbody>
    {% for location in locations %}
    <tr>
      <td>{{ location.location_id }}</td>
      <td>{{ location.date_created.date() }}</td>
      <td>
        <a href="/delete-location/{{ location.location_id }}"
          >Delete</a>
        <br />
        <a href="/update-location/{{ location.location_id }}"

```

```

>Update</a>
>
</td>
</tr>
{% endfor %}
</tbody>
</table>
{% endif %}
</div>
</div>
</div>
</div>
</div>
</main>
{% endblock %}

```

MOVEMENTS PAGE

```
{% extends 'base.html' %} {% block title %}
<title>Inventory Managmnet App</title>
{% endblock %} {% block content %}
<main>
  <div class="container-fluid">
    <h1
      class="mt-4"
      style="
        font-size: 30px;
        font-family: 'Poppins', sans-serif;
        font-weight: 500;
      "
    >Dashboard</h1>
    <ol class="breadcrumb mb-4">
      <li class="breadcrumb-item"><a href="/">Dashboard</a></li>
      <li class="breadcrumb-item active">Movements</li>
    </ol>
    <div class="card mb-4">
      <div
        class="card-header"
        style="
          font-size: 20px;
          font-family: 'Poppins', sans-serif;
          font-weight: 500;
        "
      >
Movements</div>
>
<div class="card-body">
  <div class="card mb-4">
    <div class="card-header">New Movement</div>
    <div class="card-body">
      <form action="/movements/" method="POST" id="movements_from">
        <div class="form-row">
          <div class="col-md-6">
            <div class="form-group">
              <label for="productId">Product Name</label>
              <select
                id="productId"
                name="productId"
                class="form-control"
              >
                <option selected value="">Choose...</option>
                {% if products|length > 0 %} {% for product in products%}
                <!-- <option
value="{{ product.product_id }}">{{ product.product_name }}</option> -->
                <option value="{{ product.product_id }}"
                  >{{ product.product_id }}</option>
                </option>
                </option>
                {% endfor %} {% endif %}
              </select>
            </div>
          </div>
          <div class="col-md-6">
            <div class="form-group">
              <label for="qty">quantity</label>
              <input

```

```

        class="form-control"
        name="qty"
        id="qty"
        type="number"
        placeholder="Enter Quantity"
    />
</div>
</div>
<div class="form-row">
    <div class="col-md-6">
        <label for="fromLocation">From</label>
        <select
            id="fromLocation"
            class="form-control"
            name="fromLocation"
        >
            <option selected value="">Choose...</option>
            {# {% if locations|length > 0 %} {% for location in
            locations%}
            <option value="{{ location.location_id }}"
                >{{ location.location_id }}</option>
            >
            {% endfor %} {% endif %} #}
        </select>
    </div>
    <div class="col-md-6">
        <label for="toLocation">TO</label>
        <select
            id="toLocation"
            name="toLocation"
            class="form-control"

```

```

    >
    <option selected value="">Choose...</option>
    {% if locations|length > 0 %} {% for location in locations%}
    <option value="{{ location.location_id }}"
    >{{ location.location_id }}</option>
    >
    {% endfor %} {% endif %}
  </select>
</div>
</div>
<div class="form-group mt-4 mb-0">
  <input
    type="submit"
    class="btn btn-primary btn-block"
    value="Add Movement"
    class="btn btn-primary"
  />
</div>
</form>
</div>
</div>
<div class="card mb-4">
  <div class="card-header">
    
    Movements Table
  </div>
  <div class="card-body">
    <div class="table-responsive">

```

```
{% if movements|length < 1 %}
<h4>There are no Movements, add one above</h4>
{% else %}
<table
  class="table table-bordered"
  id="dataTable"
  width="100%"
  cellspacing="0"
>
  <thead>
    <tr>
      <th>ID</th>
      <th>Product Name</th>
      <th>Quantity</th>
      <th>From</th>
      <th>To</th>
      <th>Time</th>
    </tr>
  </thead>
  <tfoot>
    <tr>
      <th>ID</th>
      <th>Product Name</th>
      <th>Quantity</th>
      <th>From</th>
      <th>To</th>
      <th>Time</th>
    </tr>
  </tfoot>
  <tbody>
    {% for movement in movements%}
    <tr>
```



```

        <td>{{ movement.movement_id }}</td>
        <td>{{ movement.product_id }}</td>
        <td>{{ movement.qty }}</td>
        <td>{{ movement.from_location }}</td>
        <td>{{ movement.to_location }}</td>
        <td>{{ movement.movement_time }}</td>
    </tr>
    {% endfor %}
</tbody>
</table>
{% endif %}
</div>
</div>
</div>
</div>
</div>
</main>
{% endblock %}

```

PRODUCT BALANCE PAGE

```
{% extends 'base.html' %} {% block title %}
<title>Inventory Managmnet App</title>
{% endblock %} {% block content %}
<main>
  <div class="container-fluid">
    <h1
      class="mt-4"
      style="
        font-size: 30px;
        font-family: 'Poppins', sans-serif;
        font-weight: 500;
      "
    >Dashboard</h1>
    <ol class="breadcrumb mb-4">
      <li class="breadcrumb-item"><a href="/">Dashboard</a></li>
      <li class="breadcrumb-item active">Product Balance</li>
    </ol>
    <div class="card mb-4">
      <div
        class="card-header"
        style="
          font-size: 20px;
          font-family: 'Poppins', sans-serif;
          font-weight: 500;
        "
      >
Product Balance</div>
>
<div class="card-body">
  <div class="card mb-4">
    <div class="card-header">
      <i class="fas fa-table mr-1"></i>
      Product Balance Report
    </div>
    <div class="card-body">
      <div class="table-responsive">
        {% if movements|length < 1 %}
        <h4>There are no Movements, add one above</h4>
        {% else %}
        <table
          class="table table-bordered"
          id="dataTable"
          width="100%"
          cellspacing="0"
        >
          <thead>
            <tr>
              <th>Product Name</th>
              <th>Warehouse</th>
              <th>Quantity</th>
            </tr>
          </thead>
          <tfoot>
            <tr>
              <th>Product Name</th>
              <th>Warehouse</th>
              <th>Quantity</th>

```

```

        </tr>
    </tfoot>
    <tbody>
        {% for pkey, values in movements.items() %} {% set count =
        values|length() %}
        <tr>
            <td>{{pkey}}</td>
            {% for key, value in values.items() %}
            <td>{{key}}</td>
            <td>{{value.qty}}</td>
            {% if values|length() > 1 %} {% if values|last != key %}
        </tr>
        <tr>
            <td>{{pkey}}</td>
            {% endif %} {% endif %} {% endfor %}
        </tr>
        {% endfor %}
    </tbody>
</table>
{% endif %}
</div>
</div>
</div>
</div>
</div>
</main>
{% endblock %}

```

PRODUCTS PAGE

```
{% extends 'base.html' %} {% block title %}
<title>Inventory Managmnet App</title>
{% endblock %} {% block content %}
<main>
  <div class="container-fluid">
    <h1
      class="mt-4"
      style="
        font-size: 30px;
        font-family: 'Poppins', sans-serif;
        font-weight: 500;
      "
    >Dashboard</h1>
    <ol class="breadcrumb mb-4">
      <li class="breadcrumb-item"><a href="/">Dashboard</a></li>
      <li class="breadcrumb-item active">Products</li>
    </ol>
    <div class="card mb-4">
      <div
        class="card-header"
        style="
          font-size: 20px;
          font-family: 'Poppins', sans-serif;
          font-weight: 500;
        "
      >
Products</div
>
<div class="card-body">
  <div class="card mb-4">
    <div class="card-header">New Product</div>
    <div class="card-body">
      <form action="/products/" method="POST" id="product_form">
        <label for="product_name" class="col-form-label">
          >Product Name</label
        >
        <input type="text" name="product_name" id="product_name" />
        <input
          id="submitProduct"
          value="Add Product"
          class="btn btn-primary"
        />
      </form>
    </div>
  </div>
  <div class="card mb-4">
    <div
      class="card-header"
      style="
        font-size: 20px;
        font-family: 'Poppins', sans-serif;
        font-weight: 500;
        "
    >
  </div>
</div>

```

```
/>
Product Table</div>
>
<div class="card-body">
  <div class="table-responsive">
    {% if products|length < 1 %}
    <h4>There are no Products, add one above</h4>
    {% else %}
    <table
      class="table table-bordered"
      id="dataTable"
      width="100%"
      cellspacing="0"
    >
      <thead>
        <tr>
          <th>Product Name</th>
          <th>Date</th>
          <th>Actions</th>
        </tr>
      </thead>
      <tfoot>
        <tr>
          <th>Product Name</th>
          <th>Date</th>
          <th>Actions</th>
        </tr>
      </tfoot>
      <tbody>
        {% for product in products %}
        <tr>
          <td>{{ product.product_id }}</td>
```

```
<td>{{ product.date_created.date() }}</td>
<td>
  <a href="/delete-product/{{ product.product_id }}"
    >Delete</a>
  <br />
  <a href="/update-product/{{ product.product_id }}"
    >Update</a>
</td>
</tr>
{% endfor %}
</tbody>
</table>
{% endif %}
</div>
</div>
</div>
</div>
</div>
</main>
{% endblock %}
```


UPDATE LOCATION PAGE

```
{% extends 'base.html' %}
```

```
{% block title%
```

```
<title>Update Location</title>
```

```
{% endblock %}
```

```
{% block content %}
```

```
<main>
```

```
    <div class="container-fluid">
```

```
        <h1 class="mt-4" style="font-size: 30px; font-family: 'Poppins', sans-serif;
font-weight: 500;">Dashboard</h1>
```

```
        <ol class="breadcrumb mb-4">
```

```
            <li class="breadcrumb-item"><a href="/">Dashboard</a></li>
```

```
            <li class="breadcrumb-item"><a href="/locations/">Locations</a></li>
```

```
            <li class="breadcrumb-item active">Update Location</li>
```

```
        </ol>
```

```
        <div class="card mb-4">
```

```
            <div class="card-header">Update Location</div>
```

```
            <div class="card-body">
```

```
                <form action="/update-location/{{location.location_id}}"
method="POST" id="location_form">
```

```
                    <label for="location_name" class="col-form-label">Location
Name</label>
```

```
                    <input type="text" name="location_name" id="location_name"
value="{{location.location_id}}">
```

```
                    <input id="submitLocation" value="Update" class="btn btn-primary">
```

```
                </form>
```

```
            </div>
```

```
        </div>
```

</div>

</main>

{% endblock %}

UPDATE MOVEMENTS

```
{% extends 'base.html' %}
```

```
{% block title%
```

```
<title>Update Product Movement</title>
```

```
{% endblock %}
```

```
{% block content %}
```

```
<main>
```

```
    <div class="container-fluid">
```

```
        <h1 class="mt-4" style="font-size: 30px; font-family: 'Poppins', sans-serif;
font-weight: 500;">Dashboard</h1>
```

```
        <ol class="breadcrumb mb-4">
```

```
            <li class="breadcrumb-item"><a href="/">Dashboard</a></li>
```

```
            <li class="breadcrumb-item active">Update Product Movement</li>
```

```
        </ol>
```

```
        <div class="card mb-4">
```

```
            <div class="card-header">Update Product Movement</div>
```

```
            <div class="card-body">
```

```
                <form action="/update-movement/{ {movement.movement_id} }"
method="POST">
```

```
                    <div class="form-row">
```

```
                        <div class="col-md-6">
```

```
                            <div class="form-group">
```

```
                                <label for="productId">Product Name</label>
```

```
                                <select id="productId" name="productId" class="form-
control">
```

```
                                    <option selected value="">Choose...</option>
```

```
                                    {% if products|length > 0 %}
```

```
                                    {% for product in products %}
```

```
                                        <option value="{ {product.product_id} }">
```

```

        {% if product.product_id|string() ==
movement.product_id %} selected {% endif %}>
        {{product.product_id}}
    </option>
    {% endfor %}
    {% endif %}
</select>
</div>
</div>
<div class="col-md-6">
    <div class="form-group">
        <label for="qty">quantity</label>
        <input class="form-control" value={{movement.qty}}
name="qty" id="qty" type="number" placeholder="Enter Quantity" />
    </div>
</div>
</div>
<div class="form-row">
    <div class="col-md-6">
        <label for="fromLocation">From</label>
        <select id="fromLocation" class="form-control"
name="fromLocation">
            <option selected value="">Choose...</option>
            {% if locations|length > 0 %}
            {% for location in locations%}
            <option value="{{location.location_id}}"
            {% if location.location_id|string() ==
movement.from_location %} selected {% endif %}>
                {{location.location_id}}
            </option>
            {% endfor %}
            {% endif %}

```

```

        </select>
    </div>
    <div class="col-md-6">
        <label for="toLocation">TO</label>
        <select id="toLocation" name="toLocation" class="form-
control">
            <option selected value="">Choose...</option>
            {% if locations|length > 0 %}
            {% for location in locations%}
            <option value="{ {location.location_id} }"
                {% if location.location_id|string() == movement.to_location
%} selected {% endif %}
                >
                { {location.location_id} }
            </option>
            {% endfor %}
            {% endif %}
        </select>
    </div>
</div>
<div class="form-group mt-4 mb-0">
    <input type="submit" class="btn btn-primary btn-block"
value="Update Movement" class="btn btn-primary">
</div>
</form>
</div>
</div>
</div>
</main>
{% endblock %}

```

UPDATE PRODUCT PAGE

```
{% extends 'base.html' %}
```

```
{% block title%
```

```
<title>Update Product</title>
```

```
{% endblock %}
```

```
{% block content %}
```

```
<main>
```

```
    <div class="container-fluid">
```

```
        <h1 class="mt-4" style="font-size: 30px; font-family: 'Poppins', sans-serif;
font-weight: 500;">Dashboard</h1>
```

```
        <ol class="breadcrumb mb-4">
```

```
            <li class="breadcrumb-item"><a href="/">Dashboard</a></li>
```

```
            <li class="breadcrumb-item"><a href="/products/">Products</a></li>
```

```
            <li class="breadcrumb-item active">Update Product</li>
```

```
        </ol>
```

```
        <div class="card mb-4">
```

```
            <div class="card-header">Update Product</div>
```

```
            <div class="card-body">
```

```
                <form action="/update-product/{{product.product_id}}"
method="POST" id="product_form">
```

```
                    <label for="product_name" class="col-form-label">Product
Name</label>
```

```
                    <input type="text" name="product_name" id="product_name"
value="{{product.product_id}}">
```

```
                    <br>
```

```
                    <input id="submitProduct" value="Update" class="btn btn-primary">
```

```
                </form>
```

```
            </div>
```

```
        </div>
```

</div>

</main>

{% endblock %}

7.2. CSS

Web pages are styled and laid out using CSS (Cascading Style Sheets), which can be used to change the font, color, size, and spacing of your content, divide it into multiple columns, or add animations and other decorative elements.

Cascading Style Sheets is a language for creating style sheets that describe how a document presented in a markup language, like HTML or XML. Along with HTML and JavaScript, CSS is a key component of the World Wide Web.

7.2.1. CODING

STYLE.CSS

```
@charset "UTF-8";
/*!
* Start Bootstrap - SB Admin v6.0.1 (https://startbootstrap.com/templates/sb-admin)
* Copyright 2013-2020 Start Bootstrap
* Licensed under MIT (https://github.com/StartBootstrap/startbootstrap-sb-admin/blob/master/LICENSE)
*/
/*!
* Bootstrap v4.5.0 (https://getbootstrap.com/)
* Copyright 2011-2020 The Bootstrap Authors
* Copyright 2011-2020 Twitter, Inc.
* Licensed under MIT (https://github.com/twbs/bootstrap/blob/master/LICENSE)
*/
:root {
  --blue: #007bff;
  --indigo: #6610f2;
  --purple: #6f42c1;
```



```
--pink: #e83e8c;
--red: #dc3545;
--orange: #fd7e14;
--yellow: #ffc107;
--green: #28a745;
--teal: #20c997;
--cyan: #17a2b8;
--white: #fff;
--gray: #6c757d;
--gray-dark: #343a40;
--primary: #007bff;
--secondary: #6c757d;
--success: #28a745;
--info: #17a2b8;
--warning: #ffc107;
--danger: #dc3545;
--light: #f8f9fa;
--dark: #343a40;
--breakpoint-xs: 0;
--breakpoint-sm: 576px;
--breakpoint-md: 768px;
--breakpoint-lg: 992px;
--breakpoint-xl: 1200px;
--font-family-sans-serif: -apple-system, BlinkMacSystemFont, "Segoe UI",
Roboto, "Helvetica Neue", Arial, "Noto Sans", sans-serif, "Apple Color Emoji",
"Segoe UI Emoji", "Segoe UI Symbol", "Noto Color Emoji";
--font-family-monospace: SFMono-Regular, Menlo, Monaco, Consolas,
"Liberation Mono", "Courier New", monospace;
}
```

*

*::before,

```
*::after {  
  box-sizing: border-box;  
}
```

```
html {  
  font-family: sans-serif;  
  line-height: 1.15;  
  -webkit-text-size-adjust: 100%;  
  -webkit-tap-highlight-color: rgba(0, 0, 0, 0);  
}
```

```
article, aside, figcaption, figure, footer, header, hgroup, main, nav, section {  
  display: block;  
}
```

```
body {  
  margin: 0;  
  font-family: -apple-system, BlinkMacSystemFont, "Segoe UI", Roboto,  
  "Helvetica Neue", Arial, "Noto Sans", sans-serif, "Apple Color Emoji", "Segoe UI  
  Emoji", "Segoe UI Symbol", "Noto Color Emoji";  
  font-size: 1rem;  
  font-weight: 400;  
  line-height: 1.5;  
  color: #212529;  
  text-align: left;  
  background-color: #fff;  
}
```

```
[tabindex="-1"]:focus:not(:focus-visible) {  
  outline: 0 !important;  
}
```

```
hr {  
  box-sizing: content-box;  
  height: 0;  
  overflow: visible;  
}
```

```
h1, h2, h3, h4, h5, h6 {  
  margin-top: 0;  
  margin-bottom: 0.5rem;  
}
```

```
p {  
  margin-top: 0;  
  margin-bottom: 1rem;  
}
```

```
abbr[title],  
abbr[data-original-title] {  
  text-decoration: underline;  
  -webkit-text-decoration: underline dotted;  
  text-decoration: underline dotted;  
  cursor: help;  
  border-bottom: 0;  
  -webkit-text-decoration-skip-ink: none;  
  text-decoration-skip-ink: none;  
}
```

```
address {  
  margin-bottom: 1rem;  
  font-style: normal;  
  line-height: inherit;  
}
```

```
ol,  
ul,  
dl {  
    margin-top: 0;  
    margin-bottom: 1rem;  
}
```

```
ol ol,  
ul ul,  
ol ul,  
ul ol {  
    margin-bottom: 0;  
}
```

```
dt {  
    font-weight: 700;  
}
```

```
dd {  
    margin-bottom: 0.5rem;  
    margin-left: 0;  
}
```

```
blockquote {  
    margin: 0 0 1rem;  
}
```

```
b,  
strong {  
    font-weight: bolder;  
}
```

```
small {  
    font-size: 80%;  
}
```

```
sub,  
sup {  
    position: relative;  
    font-size: 75%;  
    line-height: 0;  
    vertical-align: baseline;  
}
```

```
sub {  
    bottom: -0.25em;  
}
```

```
sup {  
    top: -0.5em;  
}
```

```
a {  
    color: #007bff;  
    text-decoration: none;  
    background-color: transparent;  
}
```

```
a:hover {  
    color: #0056b3;  
    text-decoration: underline;  
}
```

```
a:not([href]) {
```

```
    color: inherit;
    text-decoration: none;
}
a:not([href]):hover {
    color: inherit;
    text-decoration: none;
}
```

```
pre,
code,
kbd,
samp {
    font-family: SFMono-Regular, Menlo, Monaco, Consolas, "Liberation Mono",
"Courier New", monospace;
    font-size: 1em;
}
```

```
pre {
    margin-top: 0;
    margin-bottom: 1rem;
    overflow: auto;
    -ms-overflow-style: scrollbar;
}
```

```
figure {
    margin: 0 0 1rem;
}
```

```
img {
    vertical-align: middle;
    border-style: none;
}
```

```
svg {  
  overflow: hidden;  
  vertical-align: middle;  
}
```

```
table {  
  border-collapse: collapse;  
}
```

```
caption {  
  padding-top: 0.75rem;  
  padding-bottom: 0.75rem;  
  color: #6c757d;  
  text-align: left;  
  caption-side: bottom;  
}
```

```
th {  
  text-align: inherit;  
}...
```

MEDIA QUERY.CSS

```
/*##Device = Most of the Smartphones Mobiles (Portrait)
##Screen = B/w 320px to 479px
*/
```

```
@media (min-width: 320px) and (max-width: 480px) {
```

```
.sb-nav-fixed .sb-topnav .navbar-brand{
  font-size: 23px; font-weight: 500;
}
```

```
}
```


7.3. JAVASCRIPT

JavaScript is the world's most popular programming language. JavaScript is the programming language of the Web. JavaScript is easy to learn.

JavaScript is a scripting language that enables you to create dynamically updating content, control multimedia, animate images, and pretty much everything else

7.3.1. CODING

SCRIPT.JS

```
$(document).ready(function() {  
    disableOptions();  
    $("#productId").on("change", function(){  
        $("#fromLocation option").not(":first").remove();  
        if ($("#productId").val()) {  
            ajaxCall("get-from-locations");  
            enableOptions();  
        } else {  
            disableOptions();  
        }  
        return false;  
    });
```

```
    $("#submitLocation").on("click", function(e){  
        e.preventDefault();  
        $.ajax({  
            data: {  
                location: $("#location_name").val(),  
            },  
            type: "POST",  
            url: "/dub-locations/",
```

```
}).done(function (data) {  
    if (data.output) {  
        $("#location_form").submit();  
        console.log(data.output);  
    } else {  
        alert("This Name is already used, please choose other one.");  
    }  
});  
});
```

```
$("#submitProduct").on("click", function (e) {  
    e.preventDefault();  
    $.ajax({  
        data: {  
            product_name: $("#product_name").val(),  
        },  
        type: "POST",  
        url: "/dub-products/",  
    }).done(function (data) {  
        if (data.output) {  
            $("#product_form").submit();  
            console.log(data.output);  
        } else {  
            alert("This Name is already used, please choose other one.");  
        }  
    });  
});
```

```
$("#product_form").submit(function (e) {  
    if (!$("#product_name").val()) {  
        e.preventDefault();  
        alert("Please fill the Prodcut first");  
    }  
});
```

```

    }
});

$("#movements_from").submit(function (e) {
    var msg = "
    if ($("#qty").val() && $("#qty").val() <=0 ){
        msg += "Please add postive number";
    }

    if (!$("#productId").val() || !$("#qty").val()) {
        msg += "Please fill the missing fields\n";
    }

    if (!$("#fromLocation").val() && !$("#toLocation").val()) {
        msg += "Please choose a warehouse\n";
    }

    if (
        parseInt($("#fromLocation option:selected").attr("data-max")) <
        parseInt($("#qty").val())
    ) {
        msg +=
            "Please Note that the quantity in the warehouse must be less than ( " +
            $("#fromLocation option:selected").attr("data-max") +
            " )";
    }

    if (msg) {
        e.preventDefault();
        alert(msg);
    }
});

```

```
if ($("#productId").val()) {  
    enableOptions();  
}
```

```
function enableOptions()  
{  
    $("#qty").prop("disabled", false);  
    $("#toLocation").prop("disabled", false);  
    $("#fromLocation").prop("disabled", false);  
}
```

```
function disableOptions()  
{  
    $("#qty").prop("disabled", "disabled");  
    $("#toLocation").prop("disabled", "disabled");  
    $("#fromLocation").prop("disabled", "disabled");  
}
```

```
function ajaxCall(table){  
    $.ajax({  
        data: {  
            productId: $("#productId").val(),  
            location: $("#fromLocation").val(),  
        },  
        type: "POST",  
        url: table,  
    }).done(function (data) {  
        $.each(data, function (index,value){  
            $("#fromLocation").append(  
                $("#<option>", {  
                    value: index,
```

```

        text: index,
        "data-max": value.qty,
    })
    );
});

});
}
/* function ajaxCallLocation() {
$.ajax({
    data: {
        location: $("#location_name").val(),
    },
    type: "POST",
    url: "dub-locations",
}).done(function (data) {
    if(data.output) {
        console.log(data.output)
    } else {
        alert("This Name is already used, please choose other one.");
        return false;
    }
});
} */

});

```

DATABASE DEMO

```
// Call the dataTables jQuery plugin
$(document).ready(function() {
    $('#dataTable').DataTable();
});
```

7.4. PYTHON

The general-purpose, interactive, object-oriented, and high-level programming language Python is particularly well-liked. Python is a garbage-collected, dynamically typed programming language. Between 1985 and 1990, Guido van Rossum created it. Python source code is also accessible under the GNU General Public License, just like Perl.

Programming languages such as procedural, object-oriented, and functional are supported by Python. Python's design philosophy places a strong emphasis on code readability through the use of deep indentation.

7.5. FLASK

To get started, Flask offers settings and conventions with reasonable defaults. The many Flask framework components are covered in this portion of the documentation, along with usage, customization, and extension options. To add even more functionality, seek for community-maintained extensions in addition to Flask itself.

Python is used to create web applications with Flask, which is developed on Werkzeug and Jinja2. There are benefits to using the Flask framework. A quick debugger and an integrated development server are offered.

7.5.1. CODING

To run any Flask Application the following code is used,

- "flask run"
- "flask --debug run"
- "python app.py"

A Minimal Application

A minimal Flask application looks something like this:

```
from flask import Flask
```

```
app = Flask(__name__)
```

```
@app.route("/")
```

```
def hello_world():
```

```
    return "<p>Hello, World!</p>"
```


APP.PY

```
from flask import Flask, render_template, url_for, request, redirect
from flask_sqlalchemy import SQLAlchemy
from collections import defaultdict
from datetime import datetime

app = Flask(__name__)
app.config['SQLALCHEMY_DATABASE_URI'] = 'sqlite:///inventory.db'
db = SQLAlchemy(app)

class Product(db.Model):

    __tablename__ = 'products'
    product_id    = db.Column(db.String(200), primary_key=True)
    date_created  = db.Column(db.DateTime, default=datetime.utcnow)

    def __repr__(self):
        return '<Product %r>' % self.product_id

class Location(db.Model):

    __tablename__ = 'locations'
    location_id   = db.Column(db.String(200), primary_key=True)
    date_created  = db.Column(db.DateTime, default=datetime.utcnow)

    def __repr__(self):
        return '<Location %r>' % self.location_id

class ProductMovement(db.Model):

    __tablename__ = 'productmovements'
```

```
movement_id = db.Column(db.Integer, primary_key=True)
product_id = db.Column(db.Integer, db.ForeignKey('products.product_id'))
qty = db.Column(db.Integer)
from_location = db.Column(db.Integer, db.ForeignKey('locations.location_id'))
to_location = db.Column(db.Integer, db.ForeignKey('locations.location_id'))
movement_time = db.Column(db.DateTime, default=datetime.utcnow)
```

```
product = db.relationship('Product', foreign_keys=product_id)
fromLoc = db.relationship('Location', foreign_keys=from_location)
toLoc = db.relationship('Location', foreign_keys=to_location)
```

```
def __repr__(self):
    return '<ProductMovement %r>' % self.movement_id
```

```
@app.route('/', methods=["POST", "GET"])
```

```
def index():
```

```
    if (request.method == "POST") and ('product_name' in request.form):
        product_name = request.form["product_name"]
        new_product = Product(product_id=product_name)
```

```
    try:
        db.session.add(new_product)
        db.session.commit()
        return redirect("/")
```

```
    except:
        return "There Was an issue while add a new Product"
```

```
    if (request.method == "POST") and ('location_name' in request.form):
        location_name = request.form["location_name"]
        new_location = Location(location_id=location_name)
```

```

try:
    db.session.add(new_location)
    db.session.commit()
    return redirect("/")

except:
    return "There Was an issue while add a new Location"
else:
    products = Product.query.order_by(Product.date_created).all()
    locations = Location.query.order_by(Location.date_created).all()
    return render_template("index.html", products = products, locations =
locations)

@app.route('/locations/', methods=["POST", "GET"])
def viewLocation():
    if (request.method == "POST") and ('location_name' in request.form):
        location_name = request.form["location_name"]
        new_location = Location(location_id=location_name)

        try:
            db.session.add(new_location)
            db.session.commit()
            return redirect("/locations/")

        except:
            locations = Location.query.order_by(Location.date_created).all()
            return "There Was an issue while add a new Location"
        else:
            locations = Location.query.order_by(Location.date_created).all()
            return render_template("locations.html", locations=locations)

```

```

@app.route('/products/', methods=["POST", "GET"])
def viewProduct():
    if (request.method == "POST") and ('product_name' in request.form):
        product_name = request.form["product_name"]
        new_product = Product(product_id=product_name)

        try:
            db.session.add(new_product)
            db.session.commit()
            return redirect("/products/")

        except:
            products = Product.query.order_by(Product.date_created).all()
            return "There Was an issue while add a new Product"
    else:
        products = Product.query.order_by(Product.date_created).all()
        return render_template("products.html", products=products)

@app.route("/update-product/<name>", methods=["POST", "GET"])
def updateProduct(name):
    product = Product.query.get_or_404(name)
    old_porduct = product.product_id

    if request.method == "POST":
        product.product_id = request.form['product_name']

        try:
            db.session.commit()
            updateProductInMovements(old_porduct, request.form['product_name'])
            return redirect("/products/")

        except:

```

```

        return "There was an issue while updating the Product"
    else:
        return render_template("update-product.html", product=product)

@app.route("/delete-product/<name>")
def deleteProduct(name):
    product_to_delete = Product.query.get_or_404(name)

    try:
        db.session.delete(product_to_delete)
        db.session.commit()
        return redirect("/products/")
    except:
        return "There was an issue while deleteing the Product"

@app.route("/update-location/<name>", methods=["POST", "GET"])
def updateLocation(name):
    location = Location.query.get_or_404(name)
    old_location = location.location_id

    if request.method == "POST":
        location.location_id = request.form['location_name']

    try:
        db.session.commit()
        updateLocationInMovements(
            old_location, request.form['location_name'])
        return redirect("/locations/")

    except:
        return "There was an issue while updating the Location"
    else:

```

```
return render_template("update-location.html", location=location)
```

```
@app.route("/delete-location/<name>")
```

```
def deleteLocation(id):
```

```
    location_to_delete = Location.query.get_or_404(id)
```

```
    try:
```

```
        db.session.delete(location_to_delete)
```

```
        db.session.commit()
```

```
        return redirect("/locations/")
```

```
    except:
```

```
        return "There was an issue while deleteing the Location"
```

```
@app.route("/movements/", methods=["POST", "GET"])
```

```
def viewMovements():
```

```
    if request.method == "POST" :
```

```
        product_id    = request.form["productId"]
```

```
        qty           = request.form["qty"]
```

```
        fromLocation  = request.form["fromLocation"]
```

```
        toLocation    = request.form["toLocation"]
```

```
        new_movement = ProductMovement(
```

```
            product_id=product_id, qty=qty, from_location=fromLocation,  
to_location=toLocation)
```

```
    try:
```

```
        db.session.add(new_movement)
```

```
        db.session.commit()
```

```
        return redirect("/movements/")
```

```
    except:
```

```
        return "There Was an issue while add a new Movement"
```

```
else:
```

```

products  = Product.query.order_by(Product.date_created).all()
locations  = Location.query.order_by(Location.date_created).all()
movs = ProductMovement.query\
.join(Product, ProductMovement.product_id == Product.product_id)\
.add_columns(
    ProductMovement.movement_id,
    ProductMovement.qty,
    Product.product_id,
    ProductMovement.from_location,
    ProductMovement.to_location,
    ProductMovement.movement_time)\
.all()

movements  = ProductMovement.query.order_by(
    ProductMovement.movement_time).all()
return render_template("movements.html", movements=movs,
products=products, locations=locations)

@app.route("/update-movement/<int:id>", methods=["POST", "GET"])
def updateMovement(id):

    movement  = ProductMovement.query.get_or_404(id)
    products  = Product.query.order_by(Product.date_created).all()
    locations  = Location.query.order_by(Location.date_created).all()

    if request.method == "POST":
        movement.product_id = request.form["productId"]
        movement.qty        = request.form["qty"]
        movement.from_location= request.form["fromLocation"]
        movement.to_location  = request.form["toLocation"]

    try:

```

```

        db.session.commit()
        return redirect("/movements/")

    except:
        return "There was an issue while updating the Product Movement"
    else:
        return render_template("update-movement.html", movement=movement,
                                locations=locations, products=products)

@app.route("/delete-movement/<int:id>")
def deleteMovement(id):
    movement_to_delete = ProductMovement.query.get_or_404(id)

    try:
        db.session.delete(movement_to_delete)
        db.session.commit()
        return redirect("/movements/")
    except:
        return "There was an issue while deleteing the Prodcut Movement"

@app.route("/product-balance/", methods=["POST", "GET"])
def productBalanceReport():
    movs = ProductMovement.query.\
        join(Product, ProductMovement.product_id == Product.product_id).\
        add_columns(
            Product.product_id,
            ProductMovement.qty,
            ProductMovement.from_location,
            ProductMovement.to_location,
            ProductMovement.movement_time).\
        order_by(ProductMovement.product_id).\
        order_by(ProductMovement.movement_id).\

```



```

    all()
    balancedDict = defaultdict(lambda: defaultdict(dict))
    tempProduct = ""
    for mov in movs:
        row = mov[0]
        if(tempProduct == row.product_id):
            if(row.to_location and not "qty" in
balancedDict[row.product_id][row.to_location]):
                balancedDict[row.product_id][row.to_location]["qty"] = 0
            elif (row.from_location and not "qty" in
balancedDict[row.product_id][row.from_location]):
                balancedDict[row.product_id][row.from_location]["qty"] = 0
            if (row.to_location and "qty" in
balancedDict[row.product_id][row.to_location]):
                balancedDict[row.product_id][row.to_location]["qty"] += row.qty
            if (row.from_location and "qty" in
balancedDict[row.product_id][row.from_location]):
                balancedDict[row.product_id][row.from_location]["qty"] -= row.qty
            pass
        else :
            tempProduct = row.product_id
            if(row.to_location and not row.from_location):
                if(balancedDict):
                    balancedDict[row.product_id][row.to_location]["qty"] = row.qty
                else:
                    balancedDict[row.product_id][row.to_location]["qty"] = row.qty

    return render_template("product-balance.html", movements=balancedDict)

@app.route("/movements/get-from-locations/", methods=["POST"])
def getLocations():
    product = request.form["productId"]

```

```

location = request.form["location"]
locationDict = defaultdict(lambda: defaultdict(dict))
locations = ProductMovement.query.\
    filter( ProductMovement.product_id == product).\
    filter(ProductMovement.to_location != ").\
    add_columns(ProductMovement.from_location,
ProductMovement.to_location, ProductMovement.qty).\
    all()

for key, location in enumerate(locations):
    if(locationDict[location.to_location] and
locationDict[location.to_location]["qty"]):
        locationDict[location.to_location]["qty"] += location.qty
    else:
        locationDict[location.to_location]["qty"] = location.qty

return locationDict

```

```

@app.route("/dub-locations/", methods=["POST", "GET"])
def getDublicate():
    location = request.form["location"]
    locations = Location.query.\
        filter(Location.location_id == location).\
        all()
    print(locations)
    if locations:
        return {"output": False}
    else:
        return {"output": True}

```

```

@app.route("/dub-products/", methods=["POST", "GET"])

```

```

def getPDuplicate():
    product_name = request.form["product_name"]
    products = Product.query.\
        filter(Product.product_id == product_name).\
        all()
    print(products)
    if products:
        return {"output": False}
    else:
        return {"output": True}

def updateLocationInMovements(oldLocation, newLocation):
    movement = ProductMovement.query.filter(ProductMovement.from_location
    == oldLocation).all()
    movement2 = ProductMovement.query.filter(ProductMovement.to_location ==
    oldLocation).all()
    for mov in movement2:
        mov.to_location = newLocation
    for mov in movement:
        mov.from_location = newLocation

    db.session.commit()

def updateProductInMovements(oldProduct, newProduct):
    movement = ProductMovement.query.filter(ProductMovement.product_id ==
    oldProduct).all()
    for mov in movement:
        mov.product_id = newProduct

    db.session.commit()

if (__name__ == "__main__"):
    app.run(debug=True)

```

7.6. SQLITE

In the C programming language, SQLite is a database engine. It is a library that software designers incorporate into their apps rather than a stand-alone application. As a result, it is a member of the embedded databases family.

Embedded software for gadgets like televisions, smartphones, cameras, etc. is created using SQLite. It can handle HTTP requests with low to medium traffic. Files can be converted into smaller-sized archives with less metadata using SQLite. As a temporary dataset, SQLite is used by an application to process some data.

SQLite is a C-language library that implements a small, fast, self-contained, high-reliability, full-featured, SQL database engine. SQLite is the most used database engine in the world. SQLite is built into all mobile phones and most computers and comes bundled inside countless other applications that people use every day. More Information...

The SQLite file format is stable, cross-platform, and backwards compatible and the developers pledge to keep it that way through the year 2050. SQLite database files are commonly used as containers to transfer rich content between systems.

7.7. IBM DB2

IBM created the Db2 family of data management tools, which includes database servers. Although it was originally designed to support the relational model, it has since been expanded to support object-relational functionality as well as non-relational structures like JSON and XML.

The Db2 relational database is part of the IBM Db2 family of data management tools. You can modernise the management of both structured and unstructured data across on-premises and multicloud environments with the aid of the products' AI-powered capabilities.

7.8. IBM OBJECT STORAGE

Unstructured data can be stored on the highly reliable, long-lasting, and secure IBM Cloud® Object Storage platform. Unstructured data, also known as binary or "blob" data, is information that isn't highly organised in the way that databases are. The most effective way to store PDFs, media files, database backups, disc images, or even sizable structured datasets, is with object storage.

Objects are the names given to the files that are uploaded to IBM Cloud Object Storage. From very little (a few bytes) to very enormous, objects can range in size (up to 10TB). They are arranged into containers for objects called buckets, each of which can be configured differently in terms of its location, resiliency, billing, security, and object lifetime. In the form of user-defined tags, legal holds, or archive status, objects have their own metadata. Although it is possible to add prefixes to object names to provide some organisation and flexibility in listing and other operations, the hierarchy of objects within a bucket is essentially "flat."

TESTING

8. TESTING

Testing is generally used to determine how well a product functions. Testing reveals a person's level of knowledge or talent in terms of other people. Testing is used in the overall process of developing computer hardware and software at crucial checkpoints to see if goals are being met.

8.1. TEST CASES

A test case is a written document that was created for a particular test scenario to check compliance with a certain requirement. It contains a set of test data, preconditions, expected results, and postconditions.

After applying a set of input values, the application has a clear outcome and exits the system at some end point, also referred to as the execution postcondition, which serves as the starting point for the test execution.

TESTCASES FOR INVENTORY MANAGEMENT SYSTEM

- Login button click with wrong credentials entered.
- Signup with already registered mail ID.
- Signup with wrong form data entered.
- Entering home page with logged out session.
- Invalid data entered in change password page and requested for change in password.
- Entering the item details, save them in a database.
- Show the items in the Inventory to the user.
- Allow the user to change the item details.

8.2. USER ACCEPTANCE TESTING

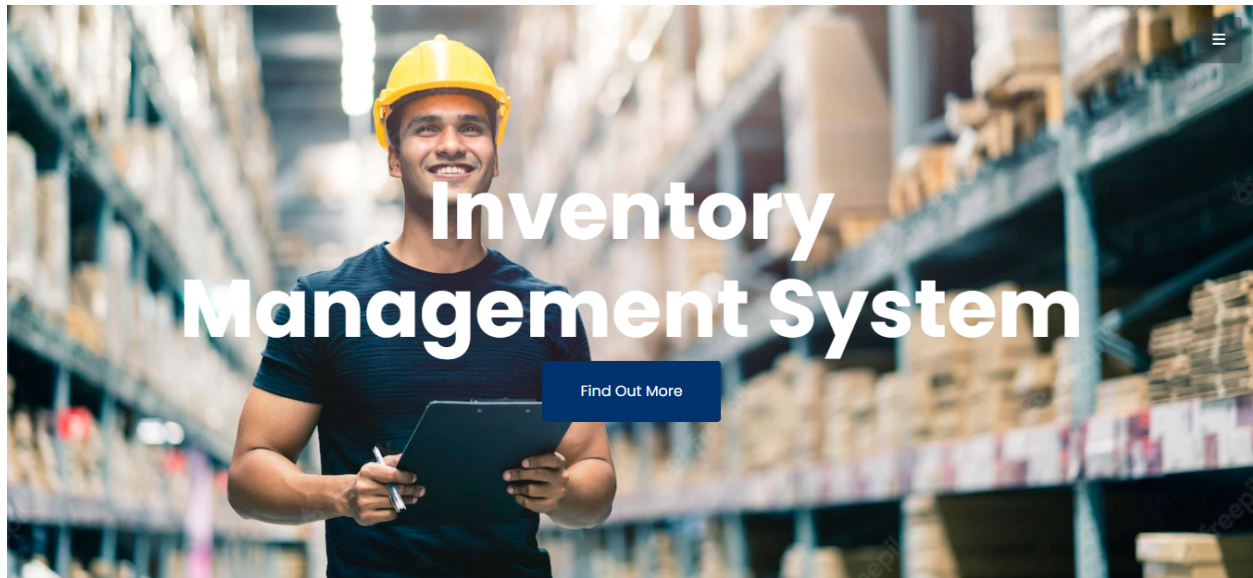
User Acceptance Testing (UAT), which is performed on most UIT projects, sometimes called beta testing or end-user testing, is a phase of software development in which the software is tested in the "real world" by the intended audience or business representative.

S.No.	Test cases	Action	Steps	Expected Result	Actual Result	Status
1	Login	Verify Credentials	Enter details	if user available Enter else no	if user available Enter else no	PASS
2	Email	Verify Email	Enter Email id	Vaild email	Vaild Email	PASS
3	Logout	Logout	Session Logout	Session Logout	Session Logout	PASS
4	Password	Check Password	Verify Password	Correct password	Correct Password	PASS
5	Item	Enter Item	Save in Database	Entered in DB	Entered in DB	PASS
6	Display Inventory	Check Items	Search DB	Display Inventory	Display Inventory	PASS
7	Remove Item	Check item	Remove from DB	Item Removed	Item Removed	PASS

RESULT

9. RESULT

9.1. SCREENSHOTS



HOME PAGE

A screenshot of a web application's signup page. The page has a light gray background. At the top, the word 'signup' is centered in a dark gray, lowercase font. Below it are three input fields, each with a label above it: 'username', 'email', and 'password'. The labels are in a small, dark gray font. Each input field is a white rectangle with a thin gray border. Below the password field is a dark blue button with the text 'Sign Up' in white. Underneath the button is a link that says 'Already have an account. Login !' in a small, dark gray font. At the bottom of the form area is a link that says '← Back to home page' in a small, dark gray font.

SIGNUP PAGE

login

username

password

☐ remember me

Sign in

New User? Register now!!

[← Back to home page](#)

LOGIN PAGE

Inventory Managment App

CORE

Dashboard

SECTIONS

Products

Locations

Movements

Product Balance Report

Dashboard

Products

Products Table

Show 10 entries Search:

Product Name	Date	Actions
Apple1	2022-11-04	Delete Update
Blueberry	2020-11-01	Delete Update
...

DASHBOARD

Inventory Managment App

CORE

Dashboard

SECTIONS

Products

Locations

Movements

Product Balance Report

Dashboard

Dashboard

Products

Products Table

Show 10 entriesSearch:

Product Name	Date	Actions
Apple1	2022-11-04	Delete Update
Blueberry	2020-11-01	Delete Update

Dashboard

Dashboard / Locations

Locations

New Location

Location NameAdd Location

Locations Table

Show 10 entriesSearch:

Location Name	Date	Actions
---------------	------	---------

movements

Inventory Managment App

CORE

Dashboard

SECTIONS

Products

Locations

Movements

Product Balance Report

Dashboard

Dashboard / Movements

Movements

New Movement

Product Name

quantity

Choose...

Enter Quantity

From

TO

Choose...

Choose...

Add Movement

Inventory Managment App

CORE

Dashboard

SECTIONS

Products

Locations

Movements

Product Balance Report

Dashboard

Dashboard / Movements

Movements

New Movement

Product Name

quantity

Choose...

Enter Quantity

From

TO

Choose...

Choose...

Add Movement

ADVANTAGES & DISADVANTAGES

10. ADVANTAGES AND DISADVANTAGES

10.1. ADVANTAGES

- inventory management automation.
- Forecasting inventory for peak season and holiday readiness.
- Prevent overselling and stock shortages.
- cut back on expenses for online stores.
- better forecasting and planning for inventories.
- enhancing supply chain processes.
- Simple to add new selling channels.

10.2. DISADVANTGES

- Even with an effective inventory management strategy, business risk can be managed but not totally removed.
- Because it serves so many purposes, inventory control is complicated.
Therefore, it ought to be seen as a shared obligation.
- Having inventory increases your risk of suffering a loss from depreciation.

CONCLUSION

11. CONCLUSION

In conclusion, an inventory management system is a straightforward desktop programme that is mostly appropriate for small businesses. It contains all essential elements required for a small business. Our team has been successful in creating an application that allows us to update, insert, and delete items as needed. This tool also offers a straightforward report each day that includes the daily sales and purchases. This application is appropriate for small organisations with few ifgodwomen. Despite some of its limitations, our team is adamant that the organisation will benefit from the implementation of this system.

CONCLUSION

12. FUTURE SCOPE

Some of the scope we can increase for the betterment and effectiveness of our listed below.

- design of an interactive user interface.
- wisely manage the stock godown.
- Oracle is used as the database.
- A system of online payments could be added.
- making any form of system adaptable.
- To enable product returns, a sales and buy return mechanism will be developed.
- Inaccurate and broken

APPENDIX

13. APPENDIX

13.1. SOURCE CODE

<https://github.com/IBM-EPBL/IBM-Project-45574-1660731105/tree/main/Final%20Deliverables/Final%20Source%20Code>

13.2. PROJECT DEMO LINK

https://drive.google.com/file/d/1qCfQ_3638Bi_iFEVjuJZ6nvcM4s8RI72/view?usp=share_link