INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

A PROJECT REPORT

Submitted by

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1. **INTRODUCTION**

The aim of this project is to demonstrate how versatile Flask can be, how easily it integrates with MySQL, and how simple it is to create sophisticated web applications. A brief description of each technology used and how they interact with one another has been included.

1.1 Project Overview

For any online store, managing an inventory system is one of the most important activities. Managing an inventory system involves tracking sales / purchases and keeping track of stock levels. To make this process easier, we can use a software application known as an inventory management system. These systems help keep records and organize them into neat categories. They also provide us with reports that allow us to see how much product we currently have, what our sales are, where the product

comes from and what price it was sold for.Inventory management systems are generally used by businesses such as manufacturers, wholesalers and retailers who sell goods and services by storing stock in warehouses.

1.2 Purpose

The aim of this project is to demonstrate the flexibility and effectiveness of using Flask along with Remote MySQL in order to build an efficient and robust inventory management system. In particular, the scope of this project includes the successful delivery of a fully functional application that allows for the submission of data, insertion of new records, deletion/updating existing records, and retrieval of records based upon an assortment of filters.

2. **LITERATURE SURVEY**
2.1 Existing problem

Businesses are quickly realizing that inventory management is absolutely essential to running an efficient business and making money in the process. In particular, businesses today cannot afford to lose money or have cash flow issues. Having a consistent stock level means not having any issues with the availability of your products; as such, it ensures that your clients remain satisfied. Also, having high rates of inventory turnover minimizes the risk of

obsolescence. Businesses also benefit from having low amounts of working capital because they can focus on core activities rather than constantly investing in inventory. Finally, high levels of working capital mean that there is no need to spend as much money on storage costs. With a spreadsheet system, employees can enter inventory information into spreadsheets, which minimizes the likelihood of data entry errors. Furthermore, if someone changes the data, the entire spreadsheet needs to be updated. Lastly, lost customers due to poor inventory management should be avoided because without good inventory management, the business could easily suffer from customer attrition.

2.2 References

* https://www.researchgate.net/publication/352910876_CloudBased_Inventory_System_for_Effective_Management_of_Under_and_Overstock_Hazards

https://www.researchgate.net/publication/282069074_A_CloudBased_Retail_Management_System

2.3 Problem Statement Definition

Retailers stock administration is the process of guaranteeing you bear merchandise that shoppers want, accompanying neither too little nor also chew
available. By mananging stock,
retaliers meet consumer demand outside
failing of stock or bearing waste supply in practice, persuasive sell stock administration results in lower costs and a better understandi

ng of

businesses pattern. Retail stock administration forms and forms give

retailers more facts on that to run their trades. Application
have existed grown to help retaliers path and control stocks had connection with

their own products.The

system will request retaliers to construct their reports by providing basic facts.

Retaliers can approach their reports by record
into the use before retaliers successfully transfer data from one computer system to another to the use they

can view analyses of the current stock analyses,again consumers will able to have or do

adjoin new stock by submitting essentail analyses had connection with the stock. They

can view analyses of the current stock.The system will as a matter of usual practice transmit

an electronic

mail alert to the retailers if skilled is no stock about their accounts. So

that they can order new stock.

Inconsistent Tracking

Using manual stock pursuing processes across various spreadsheet
and spreadsheets is late, excessive and weak to mistakes.
>Even limited trades can benefit from a concentrated stock following
method that contains bookkeeping.
resolution: Centralized Tracking deal
with improving to pursuing spreadsheet
that determines electrical lineaments for re-
commanding and obtainment.
Inventory administration podiums determine concentrated, cloud-
located
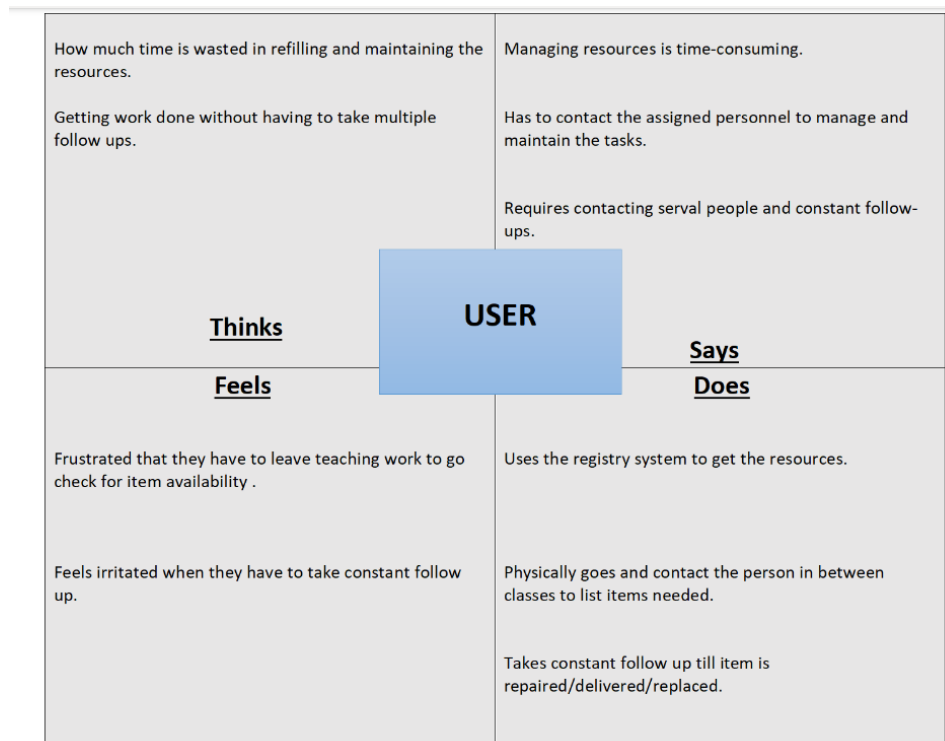databases for correct, mechanical stock refurbishes and palpable-
opportunityS

SUPPLY DEMAND

Customer demand is uniformly shifting. Keeping too much keep result
in obsolete stock you are unable to advertise, while keeping too
little manage leave you unable to fulfil customer orders.
⇒ Order plans for core items in addition
to technology to create and
kill an inventory plan, can help fix changing demand.
Solution: Demand forecasting few inventory management
terraces include demand forecasting forms. This feature integrates
with
accounting and reductions data to help you anticipate demand and
schedule orders
based

on shifting consumer perferences, material availability or seasonal flows

3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

How much time is wasted in refilling and maintaining the resources. Getting work done without having to take multiple follow ups.	Managing resources is time-consuming. Has to contact the assigned personnel to manage and maintain the tasks. Requires contacting serval people and constant follow-ups.
Thinks **USER** **Says**	
Feels	**Does**
Frustrated that they have to leave teaching work to go check for item availability . Feels irritated when they have to take constant follow up.	Uses the registry system to get the resources. Physically goes and contact the person in between classes to list items needed. Takes constant follow up till item is repaired/delivered/replaced.

An understanding sketch helps to plan what a design crew experiences about
the potential hearing. This finish helps to accept the reason
behind few conduct a consumer takes intensely. This form helps bu
ild
Empathy towards consumers and helps design groups shift focus fr
om the
amount to the consumers the one are make use

of use the amount. As the crew
learns nearly the consumers, they place that news on the chart
and gain an meticulous view of the consumer demeanor, questions,
time.

3.2 Ideation & Brainstorming
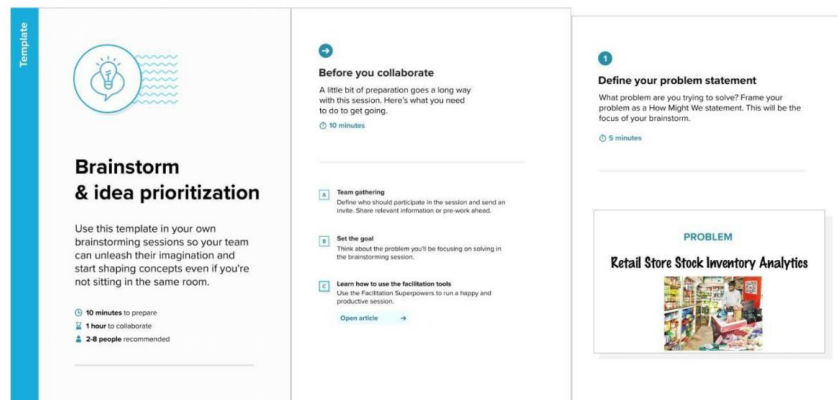
the process which plans are created utilizing
methods like idea plan,free writting,etc.It maybe secondhand
pick a issue ,decrease a board argument, or to boarden a excessivel
y
narrow matter. Choosing a point maybe a troublesome process whe
n
offset an appointment,writting a paper,or wroking on an spoken
performance

3.3 Proposed Solution

Problem Statement (Problem expected answered)

- Stock analyses and administration is a grown task
- As there is no decent stock

Management resolutions famous to bureaucracy

☐

Idea / Solution writing

- By providing a plank to uphold a decent report of the product ana lyses

∘ Both the retailers and the clients can path the order surely at this moment use.

- The request admits the consumers to see all the

present period possible stocks and likewise when the new stock wil l be accessible on the store for ruling class to buy.

- The

system will inform or alert the dealer over the end date of the com modity.

☐

Novelty / Uniqueness

- Notifications will be shipped to the retailers if any crop that the cl ients have happened expect is not accessible for fear

that the brand maybe hoarded up soon.

∘ Exclusive discounts and offers are likely for normal clients to mai

ntain ruling class busy accompanying the store frequently.

• Certain machine intelligence algorithms are used
to foresee the seasonal extreme trading output that maybe fashioned handy all along period.

☐

Social Impact / Customer Satisfaction

• The clients will be highly compensated because the ruining momentary while probing for an nonexistent production is lowered

• The work load of the retailers will be underrated if the system is mechanical continually and all along all purchase.

• The consumer delight will be revised for capturing appropriate answer from the retailers directly.
☐

Business Model (Revenue Model)

Through this solution we can increase consumer vindication that leads to more
profit in addition
to decent stock support will decrease the money cost
as well
as the disappearance of the device will be prevented. Through this we are going
to stock only the required output.

□
Scalability of the Solution
• This resolution is doable cause we have enough electronics to im plement this solution.

We have cloud estimating for detached achieve and miscellaneous communication order to inform.

3.4 Problem Solution fit

4. REQUIREMENT ANALYSIS

4.1 Functional requirement

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form
		Registration through Gmail
		Registration through LinkedIN
F	User Confirmation	Confirmation via Email

FR No.	Functional Requirement	Description
R-2		Confirmation via OTP
F R-3	Transactions processing	Transaction processing systems provide an execution environment that ensures the integrity, availability, and security of data.
F R-4	Authorization levels	Authority levels provide a method of grouping privileges and higher level operations for maintaining database managers and utility operations.
F R-5	External interfaces	The External Interface enables client applications to start and converse with applications that are running. It is therefore a method of enhancing an existing application by adding a graphical or other modern interface.

4.2 Non-Functional requirements

Non-functional Requirements:

Following are the non-functional requirements of the proposed

solution.

F R No.	Non-Functional Requirement	Description
N FR-1	**Usability**	Usability defines how difficult it will be for a user to learn and operate the system. Usability can be accessed from different points of

		view.
N FR-2	**Security**	Security requirements ensure that the software is protected from unauthorized access to the system and its stored data.
N FR-3	**Reliability**	Reliability defines how likely it is for the software to work without failure for a given period .It decreases because of bugs in the code, hardware failures, or problems with other system components.
N FR-4	**Performance**	Performance is a quality attribute that describes the responsiveness of the system to various user interactions with it. Poor performance leads to negative user experience. It also jeopardizes system safety when overloaded.
N FR-5	**Availability**	Availability is gauged by the period that the system's functionality and services are available for use with all operations.
N FR-6	**Scalability**	Scalability requirements describe how the system must grow without negative influence on its performance. This means serving more users, processing more data, and doing more transactions.

5. **PROJECT DESIGN**

5.1 Data Flow Diagrams

5.2 Solution & Technical Architecture

Retailer

IBM Cloud

IBM Cognos Analytics with Watson

Collect Sales Data

Store Database

Explore Dataset

Upload Dataset

Upload Dataset to IBM Cognos Analytics Watson

Clean Dataset

Create Interactive Dashboard

DASHBOARD

Create Visualization Charts

Details on how much Inventory to be maintained

Make report from Dashboard
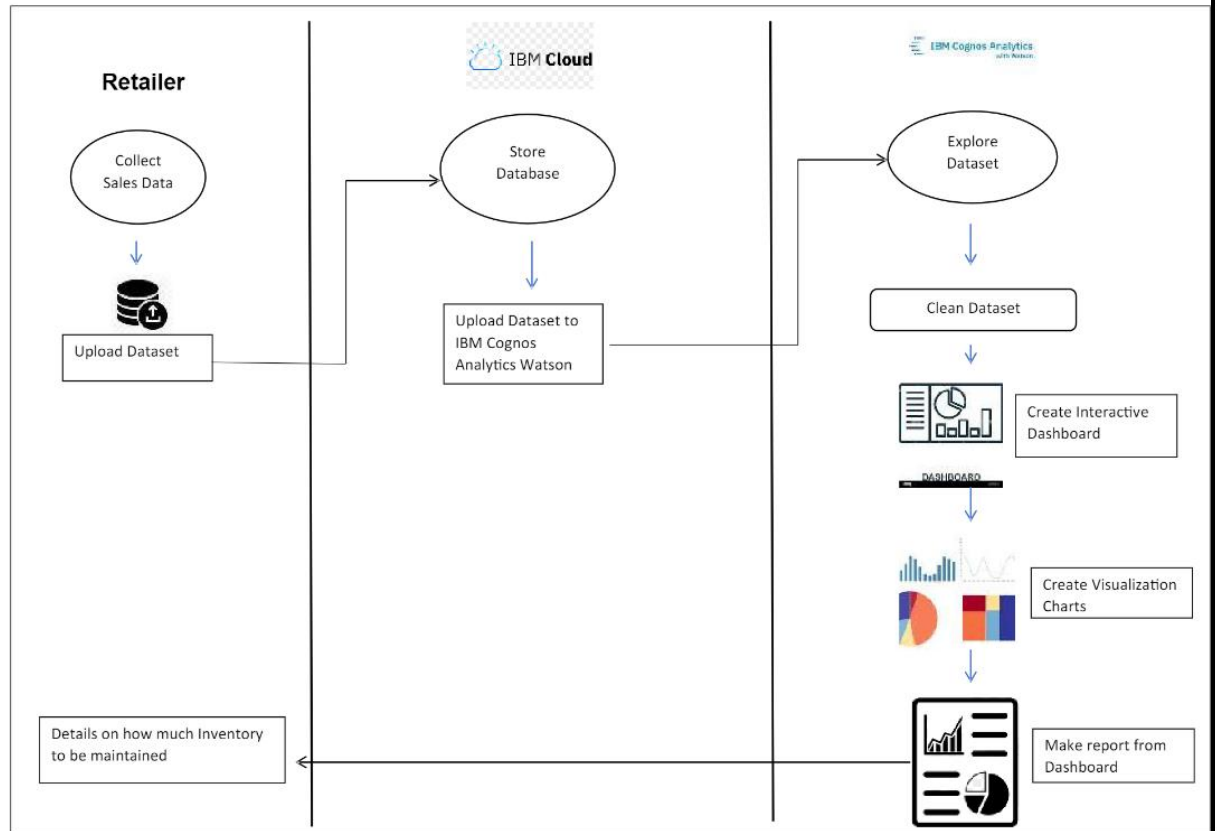
Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user interacts with application using web UI	HTML, CSS, JavaScript
2.	Dataset Collection	The sales data is been collected	Retail Store
3.	Data Processing	The data from dataset is pre-processed	IBM Cognos Analytics with Watson
4.	Cloud Database	The dataset is uploaded in IBM cloud	IBM Cloud
5.	Data Visualization	The data is visualized with various charts	IBM Cognos Analytics with Watson, Python
6.	Prediction	The algorithm helps to predict the proper way to make inventory available	Logistic Regression, Linear Regression, Random Forest, ABC Technique
7.	Report	A detailed report is made from the dashboard	IBM Cognos Analytics with Watson

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	IBM Cognos Analytics with Watson is used	IBM Cognos Analytics with Watson, Python ,Jupyter Notebook.
2.	Security Implementations	Authentication is undergone	Encryptions
3.	Scalable Architecture	This is a 3-tier application	Application server – Python Database Server – IBM Cloud
4.	Availability	The application is available for IBM Cloud users	IBM Cloud Hosting
5.	Performance	This makes retailer to maintain the inventory to make happy customers.	ML Algorithms

5.3 User Stories

User Stories

Use the below template to list all the user stories for the product.

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	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	I can log into the application by entering email & password	High	Sprint-1
	Request	USN-6	Request an item	Happy to find ease to use	High	Sprint-2
	Search	USN-7	Search an item	Easy to find an item	High	Sprint-3
	Orders	USN-8	As an user can place the order	User can receive a confirmation message	High	Sprint-3
	Payments	USN-9	Make a payment for purchasing	I can pay and get confirmation bill	High	Sprint-4
	Monitoring	USN-10	Monitoring quantity of the items	I can update how much of item needed	High	Sprint-4
	Feedback	USN-11	Users can share their experience about the items	users friendly customer support	High	Sprint-5

6. **PROJECT PLANNING & SCHEDULING**

6.1 Sprint Planning & Estimation

Product Backlog, Sprint Schedule, and Estimation

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	User Panel	USN-1	The user will login into the website and go through the services available on the webpage	20	High	Devadharshini Harish Krishna.S Lakshya jain Hisham
Sprint-2	Admin panel	USN-2	The role of the admin is to check out the database about the availability and have a track of all the things that the users are going to service	20	High	Devadharsh ini Harish
						Krishna.S Lakshya jain Hisham
Sprint-3	Chat Bot	USN-3	The user can directly talk to Chatbot regarding the services. Get the recommendations based on information provided by the user.	20	High	Lakshya jain Hisham

6.2 Sprint Delivery Schedule

Project Tracker, Velocity & Burndown Chart:

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	6	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	4	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	5	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	7	19 Nov 2022

6.3 Reports from JIRA

1. Create a new JIRA Board using SCRUM Template.
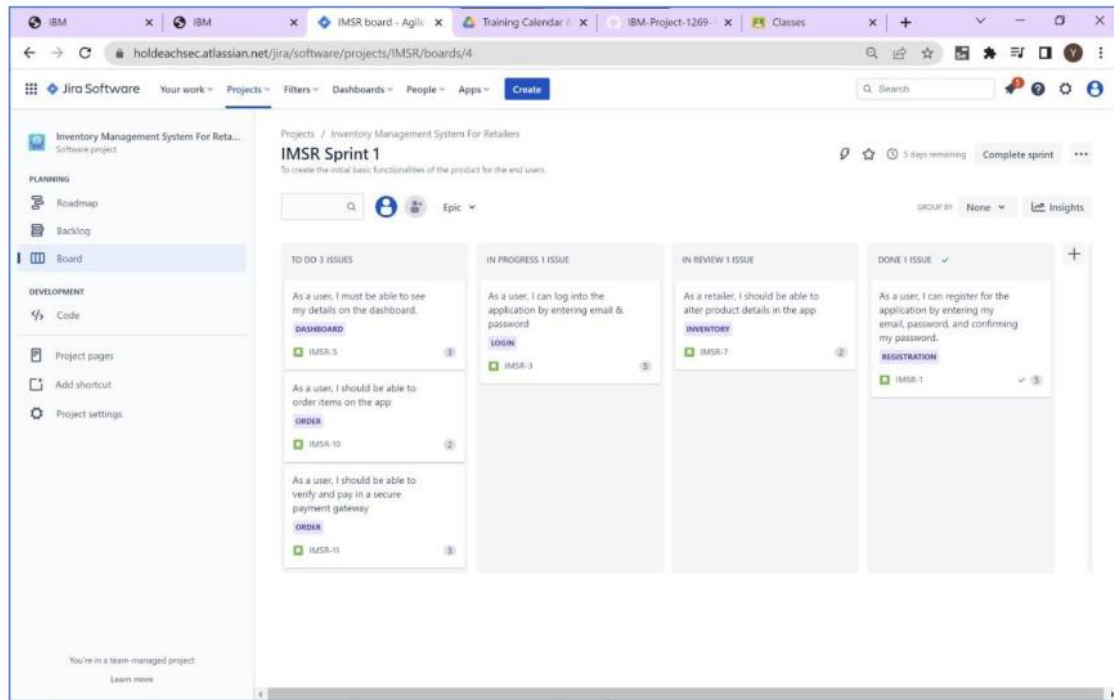
7. **CODING & SOLUTIONING (Explain the features added in the project along with code)**

7.1 Feature 1

Once retailers favorably transfer data from one computer system to another to the request they can renew their
stock analyses, more consumers will within financial
means adjoin new stock by presenting
basic facts had connection
with the stock. They can view analyses of the current
stock. The System will inevitably transmit an electronic
mail alert to the retailers
if skilled is no stock about their reports. So that they can order new
stock.

HOME PAGE
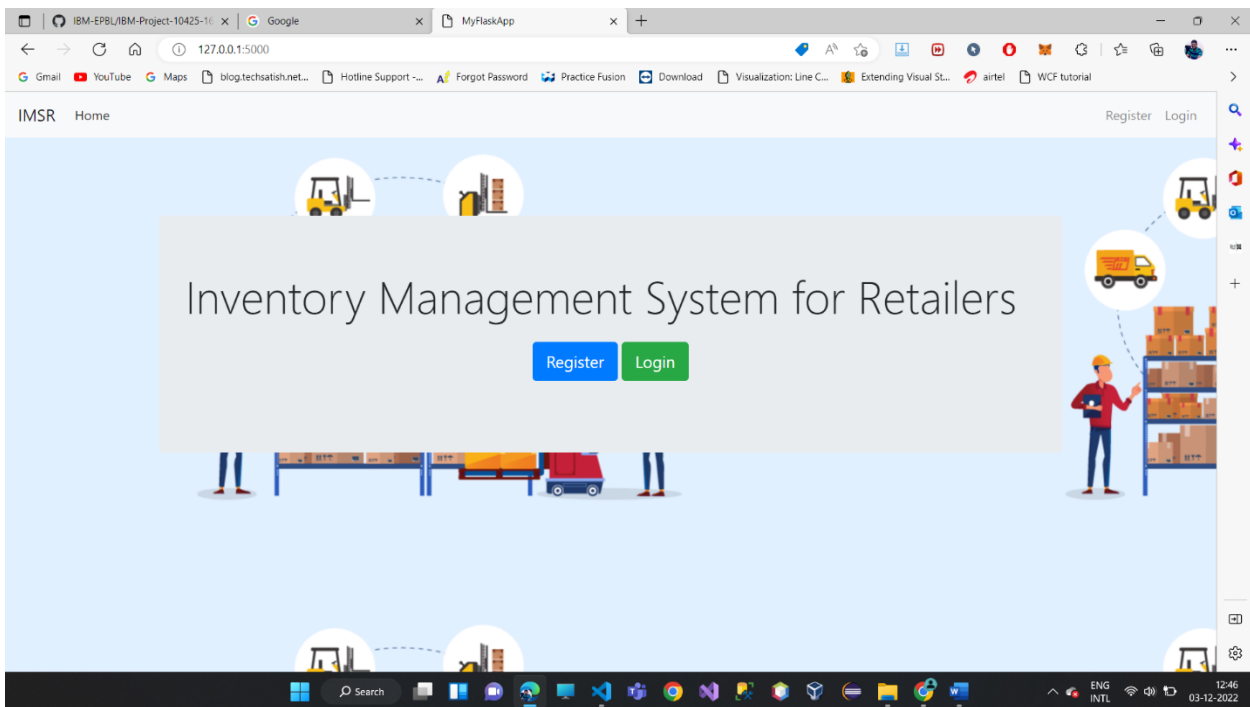

```html
<!DOCTYPE html>
<html>
<head>
    <title>Retail Consumer</title>

    <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65
VohhpuuCOmLASjC" crossorigin="anonymous">
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.
```

```html
bundle.min.js" integrity="sha384-
MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNS
fAP+JcXn/tWtIaxVXM" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd/
popper.min.js" integrity="sha384-
IQsoLXl5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwPtg
FTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.
min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRIcfu0JTxR+EQDz/bgldoEyl4H0
zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
    <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDqeRdPCVd1SpvCA9XXcUnZS2FmJNp
1coAFzvtCN9BmamE+4aHK8yyUHUSCcJHgXloTyT2A=="
crossorigin="anonymous" referrerpolicy="no-referrer" />
    <style>
      .cards
      {
        margin-left:15%;
      }
      nav
      {
        margin-bottom: 10px;
      }
      section
      {
```

```css
      background-color: antiquewhite;
      padding: 30px;
    }
    .display-5
    {
      font-size: 35px;
      font-weight:100;
      padding-bottom:40px ;
    }
    li
    {
      list-style: none;
      text-align: left;
      margin-left:38%;
      padding: 8px;
    }
    h3
    {
      padding: 10px;
    }
    .signUpbtn,.signInbtn
    {
      margin-right:10px
    }
  </style>
```

```html
<body>

  <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
   <div class="container-fluid">
```

```html
        <button class="navbar-toggler" type="button" data-bs-
toggle="collapse" data-bs-target="#navbarSupportedContent" aria-
controls="navbarSupportedContent" aria-expanded="false" aria-
label="Toggle navigation">
          <span class="navbar-toggler-icon"></span>
        </button>
        <div class="collapse navbar-collapse"
id="navbarSupportedContent">
          <ul class="navbar-nav me-auto mb-2 mb-lg-0">
            <li class="nav-item">
              <a class="nav-link active" aria-current="page"
href="{{url_for('index')}}">Home</a>
            </li>
            <li class="nav-item">
              <a class="nav-link"
href="{{url_for('about')}}">About</a>
            </li>
            <li class="nav-item">
              <a class="nav-link" href="#">Retail</a>
            </li>
            <li class="nav-item">
              <a class="nav-link" href="#">Contact</a>
            </li>
          </ul>
          <a href="{{url_for('signin')}}"><button type="button"
class="btn btn-primary signInbtn">Sign In</button></a>
          <a href="{{url_for('signup')}}"><button type="button"
class="btn btn-primary signUpbtn">Sign Up</button></a>
          <form class="d-flex">
```

```html
        <input class="form-control me-2" type="search"
placeholder="Search" aria-label="Search">
          <button class="btn btn-outline-success"
type="submit">Search</button>
        </form>


      </div>
     </div>
    </nav>



    <div class="container text-center">
     <h3 class="display-4 ">Easily Manage your Inventory</h3>
     <h5>One stop solution to run all your inventory
operations</h5>
    </div>
    <div class="list-group">
     <ul>
      <li><i class="fa-solid fa-circle-check"></i>
        Quickly track stock shortages and excess stock
      </li>
      <li><i class="fa-solid fa-circle-check"></i>
        Auto-adjust stock from invoices and purchase orders
      </li>
      <li><i class="fa-solid fa-circle-check"></i>
        Streamline warehouse management with multiple stores
      </li>
      <li><i class="fa-solid fa-circle-check"></i>
        Measure current inventory valuation
      </li>
```

```html
        </ul>
       </div>
     <section>
       <h4 class="text-center display-5">Our Products</h4>
      <div class="row container cards">
        <div class="col-md-4">
          <div class="card" style="width: 18rem;">
            <img src="static/fruits.jpeg" class="card-img-top"
alt="...">
             <div class="card-body">
              <p class="card-text">Fruits</p>
             </div>
            </div>
         </div>
         <div class="col-md-4">
          <div class="card col col-4" style="width: 18rem;">
            <img src="static/veg.jpeg" class="card-img-top" alt="...">
            <div class="card-body">
             <p class="card-text">Vegetables</p>
            </div>
          </div>
         </div>
         <div class="col-md-4">
          <div class="card col col-4" style="width: 18rem;">
            <img src="static/oil.jpeg" class="card-img-top" alt="...">
            <div class="card-body">
             <p class="card-text">Oil Items</p>
            </div>
          </div>
         </div>
```

```html
        </div>
        <br/>


    <div class="row container cards">
       <div class="col-md-4">
          <div class="card" style="width: 18rem;">
             <img src="static/stat.jpeg" class="card-img-top"
alt="...">
             <div class="card-body">
              <p class="card-text">Stationery Items</p>
             </div>
           </div>
        </div>
        <div class="col-md-4">
           <div class="card" style="width: 18rem;">
             <img src="static/cos.jpeg" class="card-img-top"
alt="...">
             <div class="card-body">
              <p class="card-text">Cosmetics</p>
             </div>
           </div>
        </div>
        <div class="col-md-4">
           <div class="card" style="width: 18rem;">
             <img src='static/softDrinks.jpeg' class="card-img-top"
alt="...">
             <div class="card-body">
              <p class="card-text">Soft Drinks</p>
             </div>
```

```
        </div>

      </div>
    </section>
  </div>
</html>
```

ABOUT PAGE

The reorder revel and other details keep the end user and the sales executive updated

```
<!Doctype html>
<html>
  <head>
    <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65
VohhpuuCOmLASjC" crossorigin="anonymous">
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js" integrity="sha384-
MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNS
fAP+JcXn/tWtIaxVXM" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd/popper.min.js" integrity="sha384-
```

```
IQsoLXl5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwPtg
FTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
        <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.
min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRIcfu0JTxR+EQDz/bgldoEyl4H0
zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
        <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDqeRdPCVd1SpvCA9XXcUnZS2FmJNp
1coAFzvtCN9BmamE+4aHK8yyUHUSCcJHgXloTyT2A=="
crossorigin="anonymous" referrerpolicy="no-referrer" />
    </head>
    <style>

        li
        {
            list-style: none;
            text-align: left;
            margin-left:38%;
            padding: 8px;
        }
        .icon
        {
            height: 100px;
            width:200px
        }
        .row
        {
```

```css
                margin-left:13%;
                margin-top: 40px;
            }
            img
            {
                padding: 30px;
            }
            h4,p{
                padding: 8px;
            }
        </style>
```
```html
    <body>
      <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
       <div class="container-fluid">

         <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarSupportedContent" aria-controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle navigation">
           <span class="navbar-toggler-icon"></span>
         </button>
         <div class="collapse navbar-collapse" id="navbarSupportedContent">
           <ul class="navbar-nav me-auto mb-2 mb-lg-0">
             <li class="nav-item">
               <a class="nav-link" aria-current="page" href="{{url_for('index')}}">Home</a>
             </li>
             <li class="nav-item">
```

```html
            <a class="nav-link active"
href="{{url_for('about')}}">About</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="#">Retail</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="#">Contact</a>
          </li>

        </ul>

        <form class="d-flex">
          <input class="form-control me-2" type="search"
placeholder="Search" aria-label="Search">
          <button class="btn btn-outline-success"
type="submit">Search</button>
        </form>
       </div>
      </div>
    </nav>
    <div class="row container">
        <div class="col-md-4 text-center">
          <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd9200100
5e4fe/free-forever.svg" alt="">
          <h4>Free Forever</h4>
          <p>
            Access all the inventory, sales & purchase features for
free
```

```html
        </p>
      </div>

      <div class="col-md-4  text-center">
        <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd9200100
5e4fe/reports.svg" alt="">
        <h4>Real-time Reports</h4>
        <p>
          Gather and share business insights in realtime.
        </p>
      </div>
      <div class="col-md-4 text-center">
        <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd9200100
5e4fe/security.svg
        " alt="">
        <h4>Privacy and Security</h4>
        <p>
          Your data is secure with a world class encryption
standard.
        </p>
      </div>
    </div>
    <div class="row container">
      <div class="col-md-4 text-center">
        <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd9200100
5e4fe/ease.svg
        " alt="">
```

```html
        <h4>Easy to Use</h4>
        <p>
            Create any document with a few clicks.
        </p>
    </div>


    <div class="col-md-4 text-center">
        <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd92001005e4fe/support.svg
        " alt="">
        <h4>24/7 Chat Support</h4>
        <p>
            Our Average response time is less than a minute.
        </p>
    </div>
    <div class="col-md-4 text-center">
        <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd92001005e4fe/access.svg
        " alt="">
        <h4>Instant Access</h4>
        <p>
            Use anytime and anywhere in the world.
        </p>
    </div>
  </div>
</body>

</html>
```
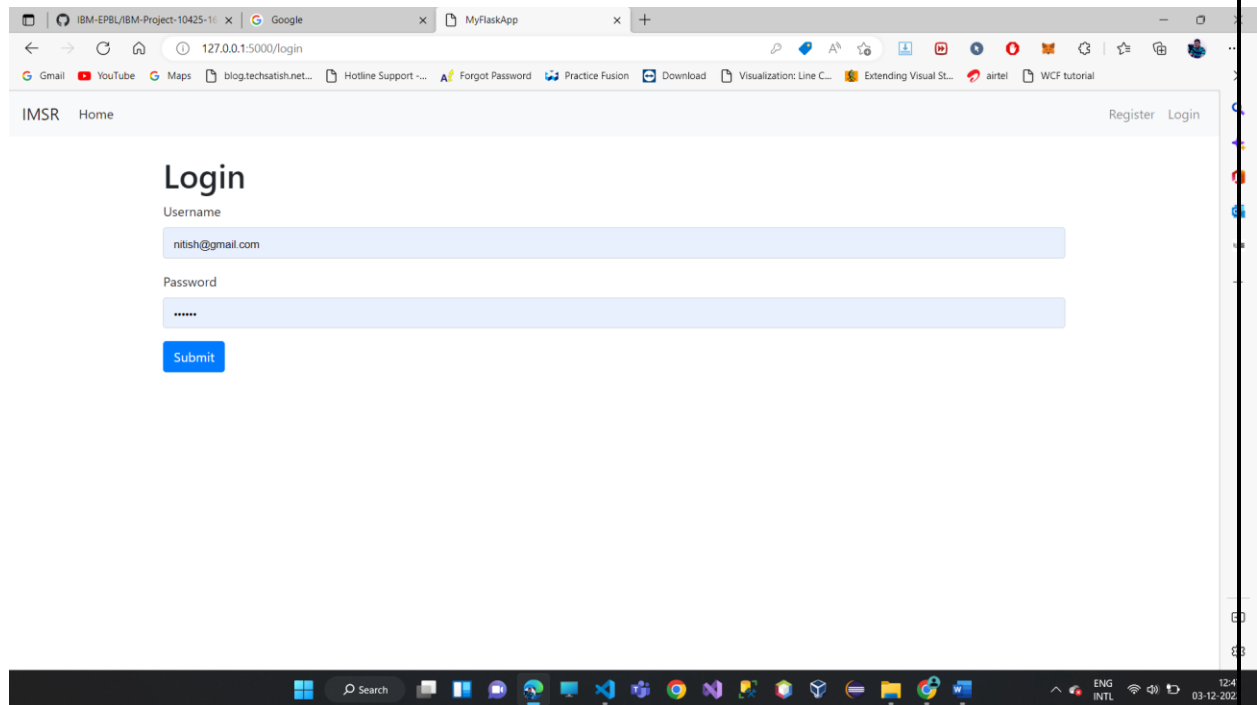
7.2 Feature 2

The next big thing to be added is user and manager login and sign up pages
which includes sub features in our source code – reorder level , restock, auto-updation of temp values -null and missing values in the price section

```
<!Doctype html>
<html>
    <head>
        <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstr
ap.min.css" rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65
VohhpuuCOmLASjC" crossorigin="anonymous">
        <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.
bundle.min.js" integrity="sha384-
MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNS
fAP+JcXn/tWtIaxVXM" crossorigin="anonymous"></script>
        <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd/
popper.min.js" integrity="sha384-
IQsoLXl5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwPtg
FTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
```

```html
        <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.
min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRIcfu0JTxR+EQDz/bgldoEyl4H0
zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
        <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDqeRdPCVd1SpvCA9XXcUnZS2FmJNp
1coAFzvtCN9BmamE+4aHK8yyUHUSCcJHgXloTyT2A=="
crossorigin="anonymous" referrerpolicy="no-referrer" />
    </head>
    <style>

      #signIn{
          margin: auto;
          margin-top:5%;
          border: solid 2px none;
          background-color: antiquewhite;
          border-radius: 30px;
          width: 500px;
          padding: 20px;
          color: #444;
      }
      input,label
      {
          width: 200px;
          margin-left: 30%;
          text-align: center;
          margin-top: 5px;
```

```css
        }
        #signInbtn
        {
          margin-top:10px ;
          margin-left: 45%;
          text-align: center;
        }
        h3{
          font-size: 30px;
          font-weight: 300;
          margin: 30px;
        }
        p{
          margin-top: 10px;
        }
        a{
          text-decoration: none;
        }

    </style>
  <body>
    <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
        <div class="container-fluid">


          <button class="navbar-toggler" type="button" data-bs-
toggle="collapse" data-bs-target="#navbarSupportedContent" aria-
controls="navbarSupportedContent" aria-expanded="false" aria-
label="Toggle navigation">
            <span class="navbar-toggler-icon"></span>
           </button>
```

```html
            <div class="collapse navbar-collapse"
id="navbarSupportedContent">
            <ul class="navbar-nav me-auto mb-2 mb-lg-0">
              <li class="nav-item">
                <a class="nav-link active" aria-current="page"
href="{{url_for('index')}}">Home</a>
              </li>
              <li class="nav-item">
                <a class="nav-link"
href="{{url_for('about')}}">About</a>
              </li>
              <li class="nav-item">
                <a class="nav-link" href="#">Retail</a>
              </li>
              <li class="nav-item">
                <a class="nav-link" href="#">Contact</a>
              </li>
            </ul>
            <form class="d-flex">
              <input class="form-control me-2" type="search"
placeholder="Search" aria-label="Search">
              <button class="btn btn-outline-success"
type="submit">Search</button>
            </form>
          </div>
        </div>
      </nav>
      <div id="signIn">
        <form>
            <h3 class="text-center ">Login</h3>
```

```html
        <label >UserName</label><br/>
        <input  type="text" id="UserName">
    <br/>

        <label for="lastName" class="col-form-
label">Password</label><br/>
        <input  id="pass" type="password">
        <br/>
        <button type="submit" class="btn btn-secondary "
id="signInbtn">Sign In</button>
        <p class="text-center">Don't have an
Account?<span><a href="{{url_for('signup')}}"> Register
Now</a></span></p>
      </form>

    </div>


  </body>

  </html>
```
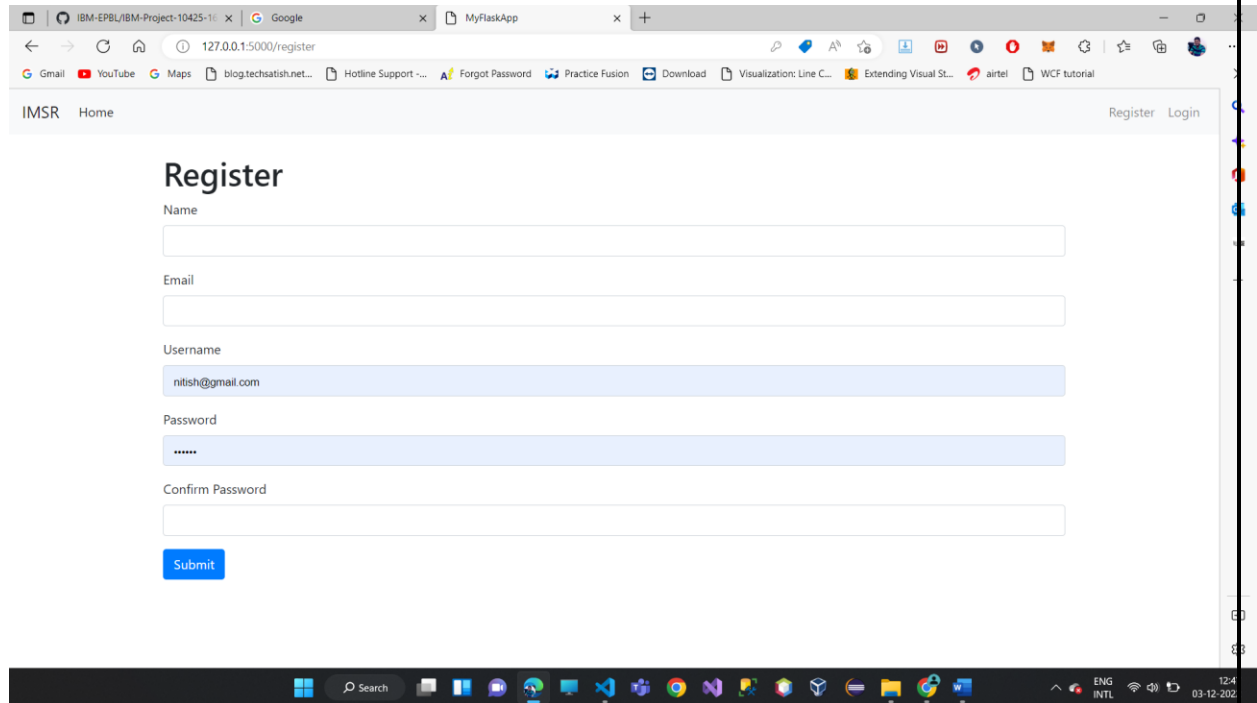
<!Doctype html>
<html>
   <head>
      <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstr
ap.min.css" rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65
VohhpuuCOmLASjC" crossorigin="anonymous">
      <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.
bundle.min.js" integrity="sha384-
MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNS
fAP+JcXn/tWtIaxVXM" crossorigin="anonymous"></script>
      <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd/
popper.min.js" integrity="sha384-

```
IQsoLXl5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwPtg
FTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
        <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.
min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRIcfu0JTxR+EQDz/bgldoEyl4H0
zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
        <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDqeRdPCVd1SpvCA9XXcUnZS2FmJNp
1coAFzvtCN9BmamE+4aHK8yyUHUSCcJHgXloTyT2A=="
crossorigin="anonymous" referrerpolicy="no-referrer" />
    </head>
    <style>

      #signIn{
          margin: auto;
          margin-top:5%;
          border: solid 2px none;
          background-color: antiquewhite;
          border-radius: 30px;
          width: 500px;
          padding: 20px;
          color: #444;
      }
      input,label
      {
          width: 200px;
          margin-left: 30%;
```

```css
          text-align: center;
          margin-top: 5px;
      }
      #signInbtn
      {
          margin-top:10px ;
          margin-left: 45%;
          text-align: center;
      }
      h3{
          font-size: 30px;
          font-weight: 300;
          margin: 30px;
      }
      p{
          margin-top: 10px;
      }
      a{
          text-decoration: none;
      }

  </style>
<body>
  <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
      <div class="container-fluid">

          <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarSupportedContent" aria-controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle navigation">
```

```html
            <span class="navbar-toggler-icon"></span>
          </button>
          <div class="collapse navbar-collapse"
id="navbarSupportedContent">
            <ul class="navbar-nav me-auto mb-2 mb-lg-0">
              <li class="nav-item">
                <a class="nav-link active" aria-current="page"
href="{{url_for('index')}}">Home</a>
              </li>
              <li class="nav-item">
                <a class="nav-link"
href="{{url_for('about')}}">About</a>
              </li>
              <li class="nav-item">
                <a class="nav-link" href="#">Retail</a>
              </li>
              <li class="nav-item">
                <a class="nav-link" href="#">Contact</a>
              </li>
            </ul>
            <form class="d-flex">
              <input class="form-control me-2" type="search"
placeholder="Search" aria-label="Search">
              <button class="btn btn-outline-success"
type="submit">Search</button>
            </form>
          </div>
        </div>
      </nav>
      <div id="signIn">
```

```html
<form>
    <h3 class="text-center ">Sign Up</h3>
        <label >UserName</label><br/>
        <input  type="text" id="UserName">
    <br/>

        <label for="lastName" class="col-form-
label">Password</label><br/>
        <input  id="pass" type="password">
        <br/>
        <label>Email</label><br/>
        <input  id="email" type="email"><br/>
        <label>Phone</label>
        <input  id="phone" type="text"><br/>
    <button type="submit" class="btn btn-secondary "
id="signInbtn">Sign Up</button>
    <p class="text-center">Already have an
Account?<span><a href="{{url_for('signin')}}"> Sign
In</a></span></p>
    </form>

</div>


</body>

</html>
```

CODE FOR RETAIL AND LIST WHICH INCLUDE REORDER AND AUTO UPDATION OF NULL PRICE ENTRIES

```html
<!doctype html>
<html>
  <body>

   <a href="Retail.html"><button >Home</button></a>
   <br><hr>

    <table border = 1>
      <thead>
        <td>Username</td>
        <td>Email</td>
        <td>Password</td>

      </thead>

        <tr>
          <td></td>
          <td></td>
          <td></td>

        </tr>
    </table>


   </body>
</html>
```

```html
<html>
  <head>
    <title>Retail Consumer</title>
    <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstr
ap.min.css" rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65
VohhpuuCOmLASjC" crossorigin="anonymous">
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.
bundle.min.js" integrity="sha384-
MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNS
fAP+JcXn/tWtIaxVXM" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd/
popper.min.js" integrity="sha384-
IQsoLXl5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwPtg
FTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.
min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRIcfu0JTxR+EQDz/bgldoEyl4H0
zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
    <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
```

```html
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDqeRdPCVd1SpvCA9XXcUnZS2FmJNp
1coAFzvtCN9BmamE+4aHK8yyUHUSCcJHgXloTyT2A=="
crossorigin="anonymous" referrerpolicy="no-referrer" />
    <style>
    li
    {
      list-style: none;
      text-align: left;
      margin-left:38%;
      padding: 8px;
    }
    a
    {
     text-decoration: none;
     text-align:left;
     color: #000;
    }
    </style>

  </head>
  <body>
   <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
    <div class="container-fluid">

      <button class="navbar-toggler" type="button" data-bs-
toggle="collapse" data-bs-target="#navbarSupportedContent" aria-
controls="navbarSupportedContent" aria-expanded="false" aria-
label="Toggle navigation">
        <span class="navbar-toggler-icon"></span>
```

```html
      </button>
      <div class="collapse navbar-collapse"
id="navbarSupportedContent">
        <ul class="navbar-nav me-auto mb-2 mb-lg-0">
          <li class="nav-item">
            <a class="nav-link active" aria-current="page"
href="Index.html">Home</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="About.html">About</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="Retail.html">Retail</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="contact.html">Contact</a>
          </li>


        </ul>

        <form class="d-flex">
          <input class="form-control me-2" type="search"
placeholder="Search" aria-label="Search">
          <button class="btn btn-outline-success"
type="submit">Search</button>
        </form>
      </div>
    </div>
  </nav>
```

```html
        <ul id="myMenu">
         <li><a href="#">HTML</a></li>
         <li><a href="#">CSS</a></li>
         <li><a href="#">JavaScript</a></li>
         <li><a href="#">PHP</a></li>
         <li><a href="#">Python</a></li>
         <li><a href="#">jQuery</a></li>
         <li><a href="#">SQL</a></li>
         <li><a href="#">Bootstrap</a></li>
         <li><a href="#">Node.js</a></li>
        </ul>

   </body>
  </html>
```

7.3 Database Schema (if Applicable)

8. TESTING

8.1 Test Cases

8.2 User Acceptance Testing

Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the INVENTORY MANAGEMENT SYSTEM project at the time of the release to User Acceptance Testing (UAT).

Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

Resolution	Severit	Severit	Severit	Severit	Subtot

	y1	y2	y3	y4	al
By Design	10	4	2	3	20
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won'tFix	0	5	2	1	8
Totals	24	14	13	26	77

TestCaseAnalysis

This report shows the number of testcases that have passed, failed, and untested

Section	TotalCases	Not Tested	Fail	Pass
Print Engine	7	0	0	7
Client Application	51	0	0	51
Security	2	0	0	2
Out source Shipping	3	0	0	3
Exception Reporting	9	0	0	9
Final Report Output	4	0	0	4
Version Control	2	0	0	2

9. RESULTS

9.1 Performance Metrics

Software characteristic is a calculation of entity obscured, "by what method good" a spreadsheet device genuinely is. Some of the facets of operating system characteristic captured are

a. Scalability

b. Speed

c. Stability

d. Reliability

e. Security

f. Maintainability and rule characteristic

Test Case ID	Action	Steps	Input Data	Expected Results	Actual Results	Status
TC-1	Invoice No.	Enter Invoice No.	Input "10121"	It should accepted Invoice no.	Invoice no. is accepting	Pass
TC-2	Bill Date	Enter Bill date	Input "17/10/2021"	It should accepted Bill date	Bill date is accepting	Pass
TC-3	Supplier	Select Supplier		Supplier name	Supplier name is	Pass
TC-4	item name(options)	Select item name		Item name should be automatically reflected	Item name is reflecting automatically	Pass
TC-5	Available item stock	Click on Textbox	-	It should reflect automatically item stock.	item stock is reflecting automatically	Pass

TC-6	Quantity	Enter item quantity	Input "5"	item quantity should be accepted	item quantity is accepting	Pass
TC-7	Price(unit)	Click on Textbox	-	Price should be reflected automatically	Price is reflecting automatically	Pass
TC-8	Total(unit)	Click on Textbox	-	Total should be reflected automatically	Total is reflecting automatically	Pass
TC-9	Receive Bill date	Enter Receive Bill date	Input "17/10/2021"	Receive Bill date should be accepted	Receive Bill date is accepting	Pass
TC-10	Add item	Click on add item	-	It should be add item reflected in database	Add item is reflecting in database	Pass

10. ADVANTAGES

- Cost efficient

- Customer service is increased by a large way

- Increases a the planning for the business to expand

- The amount of time saved in the process is huge.

- Real-time stock- following helps to increase
  stock administration and guarantees that you have optimum s
  tock feasible
  to confirm orders.

DISADVANTAGES

- Online inventory system maybe prone to hackers if not
  properly secured

- so security is a major concern unless done in an
  authorized way

- At times due to network traffic delay in payments and
  inventory can cause certain issues.

11. CONCLUSION

Inventory control is a completely complicated however
important a part of the deliver chain. An powerful stock control

machine facilitates to lessen stock-associated fees which include warehousing, carrying, and ordering fees.

Indeed the task of Management is innovative trouble fixing. This innovative trouble fixing is achieved via 4 capabilities of management: planning, organising, main and controlling. The meant end result is the usage of an organisation`s sources in a manner that accomplishes its venture and objectives

12. **FUTURE SCOPE**

- **To improve the maximum outcome**

as the Inventory control allows to enhance the productiveness of the machines and manpower. Employees are aware about shares and the amount that require to produce.

- **IMPROVING THE SECURITY ASPECT OF IT**

13. **APPENDIX**

Source Code

```yaml
1) kubernets apiVersion: v1
kind: ServiceAccount
metadata:
 name: admin-user
 namespace: kubernetes-dashboard
---
apiVersion: v1
kind: Secret
metadata:
 name: admin-user-token
 namespace: kubernetes-dashboard
 annotations:
   kubernetes.io/service-account.name: admin-user
type: kubernetes.io/service-account-token

---
apiVersion: rbac.authorization.k8s.io/v1
kind: ClusterRoleBinding
metadata:
 name: admin-user
roleRef:
 apiGroup: rbac.authorization.k8s.io
 kind: ClusterRole
```

```yaml
  name: cluster-admin
subjects:
- kind: ServiceAccount
  name: admin-user
  namespace: kubernetes-dashboard
```

FLASK DEPLOYMENT

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
 name: flask-app

spec:
 replicas: 3
 selector:
  matchLabels:
    app: flask-app
 template:
  metadata:
   labels:
     app: flask-app
```

```yaml
      spec:
        containers:
          - name: web
            image: Abinaya/flask
            imagePullPolicy: Never
            ports:
              - containerPort: 5000
                protocol: TCP
```

IBM CLOUD DEPLOYMENT

```yaml
apiVersion: apps/v1
kind: Deployment
metadata:
 name: flask-deploy

spec:
 replicas: 3
 selector:
  matchLabels:
    app: flask-deploy
 template:
  metadata:
```

```yaml
      labels:
        app: flask-deploy

    spec:
     containers:
       - name: web
         image: jp.icr.io/website/web
         imagePullPolicy: Always
         ports:
           - containerPort: 5000
             protocol: TCP
```

FLASK FILE :

```python
from flask import Flask,render_template
app=Flask(__name__)


@app.route('/home')
def home():
    return render_template('home.html')


@app.route('/signin')
def signin():
    return render_template('signin.html')
```

```python
@app.route('/about')
def about():
    return render_template('about.html')


@app.route('/signup')
def signup():
    return render_template('signup.html')


if __name__=='__main__':
    app.run()
```

DOCKER ACCESS

```dockerfile
FROM python:3.10.4
WORKDIR /app
COPY requirements.txt ./
RUN pip install -r requirements.txt


COPY . .
EXPOSE 5000
CMD ["python","./app.py"]
```

GitHub & Project Demo Link

IBM-EPBL/IBM-Project-10425-1659179462: Inventory Managment System for Retailers (github.com)