# **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 <u>stock</u> <u>administration</u> <u>is the process of guaranteei</u> <u>ng</u> 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 under standing of

<u>businesses</u> <u>pattern</u>. <u>Retail stock administration forms and forms give</u>

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

their own products. The

<u>system will request</u> retaliers to <u>construct</u> their <u>reports by</u> <u>providing basic facts</u>.

Retaliers <u>can approach</u> their <u>reports by record</u>
<u>into the use before</u> retaliers <u>successfully transfer data from</u>
<u>one computer system to another to the use they</u>
<u>can view analyses of the current stock analyses, again consu</u>
mers will able to have or do

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

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

an electronic

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

that they can order new stock.

# Inconsistent Tracking

<u>Using manual stock pursuing processes across various sp</u> <u>readsheet</u>

and spreadsheets is late, excessive and weak to mistakes.

><u>Even limited trades can benefit from a concentrated stock following</u>

method that contains bookkeeping.

resolution: Centralized Tracking deal

with improving to pursuing spreadsheet

that determines electrical lineaments for re-

commanding and obtainment.

<u>Inventory</u> <u>administration</u> <u>podiums</u> <u>determine</u> <u>concentrated</u>, <u>cl</u> <u>oud-located</u>

databases for correct, mechanical stock refurbishes and palp able-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 inte
grates with

accounting and reductions data to help you anticipate demand and schedule orders

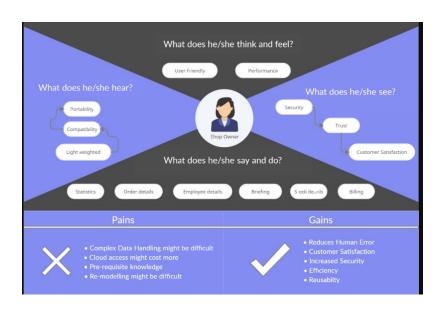
<u>based</u>

on shifting consumer perferences, material availability or sea sonal

**flows** 

# 3. IDEATION & PROPOSED SOLUTION

# 3.1 Empathy Map Canvas



An <u>understanding sketch</u> <u>helps to plan</u> what <u>a design crew</u> <u>experiences about</u>

the potential hearing. This finish helps to accept the reason behind few conduct a consumer takes intensely. This form helps build

Empathy towards consumers and helps design groups shift f ocus from the

amount to the consumers the one are make use

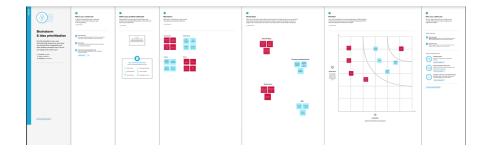
of use the amount. As the crew

learns <u>nearly the consumers</u>, <u>they place that news on the chart</u>

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 ex cessively

narrow matter. Choosing a point maybe a troublesome proce ss when

offset an appointment, writting a paper, or wroking on an spok

# en 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 analyses
- 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 st ock will be accessible on the store for ruling class to buy.
- <u>The</u> <u>system will inform or alert the dealer over the end date of the</u>

commodity.

Novelty / Uniqueness

• <u>Notifications will be shipped to the retailers if any crop that the clients have happened expect is not accessible for fear</u>

that the brand maybe hoarded up soon.

- <u>Exclusive</u> discounts <u>and offers are likely for normal clients to maintain ruling
   <u>class busy accompanying the store frequently.</u>
  </u>
- <u>Certain machine intelligence</u> algorithms <u>are used</u>
   <u>to foresee the seasonal extreme trading output that maybe fashioned handy all along period</u>.

Social Impact / Customer Satisfaction

- The clients will be highly compensated because the ruining momentary while probing for an nonexistent production is lowered
- <u>The work load of the retailers will be underrated if the system is mechanical continually and all along all purchase.</u>
- 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

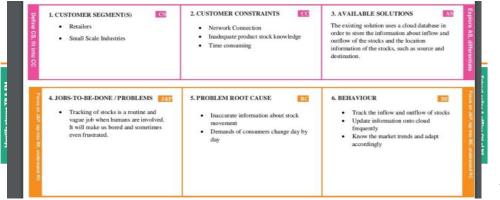
to stock only the required output.

Scalability of the Solution

• This resolution is doable cause we have enough electronic s to implement this solution.

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

#### 3.4 Problem Solution fit



### 4. REQUIREMENT ANALYSIS

4.1 Functional requirement

F Functional R Requirement

Sub Requirement (Story / Sub-Task)

No.	(Epic)	
F	User Registration	Registration through Form
R-1	-	Registration through Gmail
		Registration through LinkedIN
F	User	Confirmation via Email
R-2	Confirmation	Confirmation via OTP
F	Transactions	Transaction processing systems
R-3	processing	provide an execution environment
		that ensures the integrity,
		availability, and security of data.
F	Authorization	Authority levels provide a
R-4	levels	method of grouping privileges and
		higher level operations for
		maintaining database managers
		and utility operations.
F	External	The External Interface enables
R-5	interfaces	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.

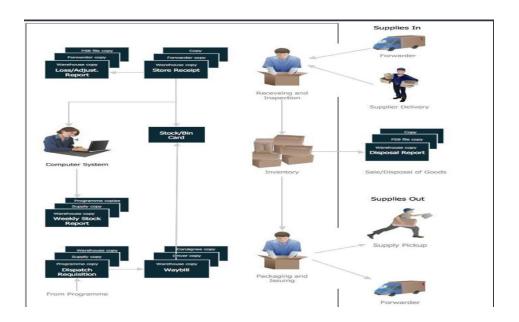
F	Non-Functional	Description
R	Requirement	

No.	l loobility	Lloobility defines how difficult it
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.

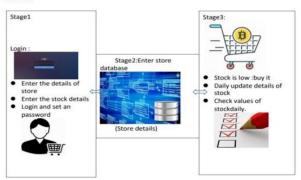
# 5. PROJECT DESIGN

# 5.1 Data Flow Diagrams



5.2 Solution & Technical Architecture

#### Solution



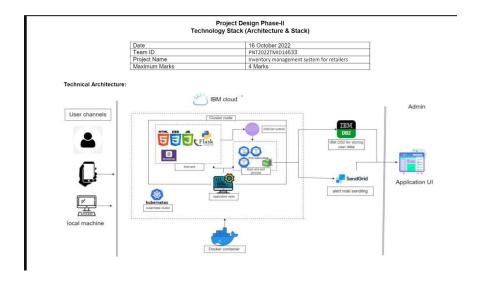


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	It provides an interaction between application and user	HTML, CSS, JavaScript ,python flask
2.	Application Logic-1(Authorization)	getting the necessary details of the user in order to create an account themselves for user authentication	Python
3.	Application Logic-2(Notification)	After successful authentication, the system will email a user ID, user password, and send an alert mail to the user to inform them of product availability.	Sendgrid
4.	Application Logic-3(Interaction)	It is an automated software that is used to provide more interaction and communication.  It helps the user to understand the software better	IBM Watson Assistant
5.	Database	The database stores the inventory details	MySQL
6.	Cloud Database	It is the first priority storage location for the goods (inventory) provided as a service in the IBM Cloud.	IBM DB2
7.	File Storage	The software's file storage, high security and high availability	IBM cloud object storage
8.	External API-1(Payment API)	The purpose of the external API used in the application is to provide payment management services	IBM Weather API, etc.
9.	External API-2(Authentication)	The purpose of the external API used in the application is to provide authentication	authentication API
10.	Infrastructure (Server / Cloud)	Application Deployment on Cloud	Kubernetes,

#### Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	html provides the basic structure of a web page     CSS is used to describe the colour, size, etc. of a web page     JavaScript is a backend framework     Bootstrap is a built in class in CSS for more and instant style     Python flask makes web developer life easy to build a web-application	Bootstrap, python-,flask, HTML, CSS, JS
2.	Security Implementations	For the authentication purpose	Sendgrid
3.	Scalable Architecture	It breaks the architecture into smaller pieces (micro services) and makes them loosely coupled for improving scalability.	Kubernetes
4.	Availability	Docker packages an application and all its dependencies into a virtual container that can run on anywhere	Docker
5.	Performance	Kubernetes services provide load balancing and simplify container management across multiple hosts.	Kubernetes

# 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

	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	20	High	Devadharsh ini
			users are going to service			Harish
						Krishna.S Lakshya jain Hisham
		I	The user can directly talk to Chatbot regarding the	20	High	Lakshya jain

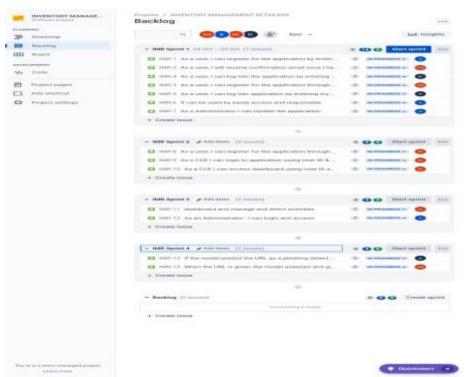
# 6.2 Sprint Delivery Schedule

# Project Tracker, Velocity & Burndown Chart:

Sprint	Total Story	Duration	Sprint Start Date	Sprint End Date	Story Points	Sprint Release Date
	Points			(Planned)	Completed (as on	( Actual )
					Planned End Date)	
					5	
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022		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

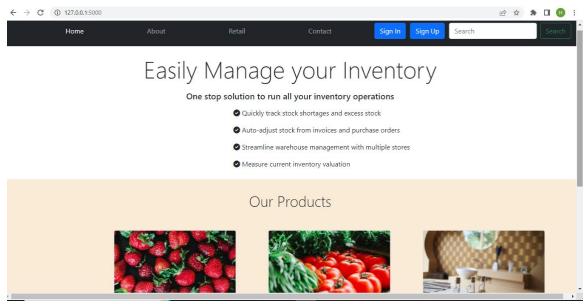


# 7. CODING & SOLUTIONING (Explain the features added in the project along with code)

### 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**



<!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/azprG1Anm3QDgpJLlm9Nao0Yz1ztcQTwFspd3y D65VohhpuuCOmLASjC" crossorigin="anonymous">

<script

src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js" integrity="sha384-

MrcW6ZMFYIzcLA8NI+NtUVF0sA7MsXsP1UyJoMp4YLEuN SfAP+JcXn/tWtlaxVXM" crossorigin="anonymous"></script>

```
<script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/
umd/popper.min.js" integrity="sha384-
IQsoLXI5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwP
tgFTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boot
strap.min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRlcfu0JTxR+EQDz/bgldoEyl4
H0zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
    <link rel="stylesheet"</pre>
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDgeRdPCVd1SpvCA9XXcUnZS2Fm
JNp1coAFzvtCN9BmamE+4aHK8yyUHUSCcJHgXloTyT2A=
=" crossorigin="anonymous" referrerpolicy="no-referrer" />
    <style>
       .cards
         margin-left:15%;
       }
       nav
         margin-bottom: 10px;
       }
       section
         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>
  <body>
    <nav class="navbar navbar-expand-lg navbar-dark bg-
dark">
     <div class="container-fluid">
```

```
<button class="navbar-toggler" type="button" data-bs-</pre>
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"</pre>
id="navbarSupportedContent">
      <a class="nav-link active" aria-current="page"
href="{{url_for('index')}}">Home</a>
       class="nav-item">
        <a class="nav-link"
href="{{url_for('about')}}">About</a>
       <a class="nav-link" href="#">Retail</a>
       <a class="nav-link" href="#">Contact</a>
       <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"</pre>
class="btn btn-primary signUpbtn">Sign Up</button></a>
      <form class="d-flex">
```

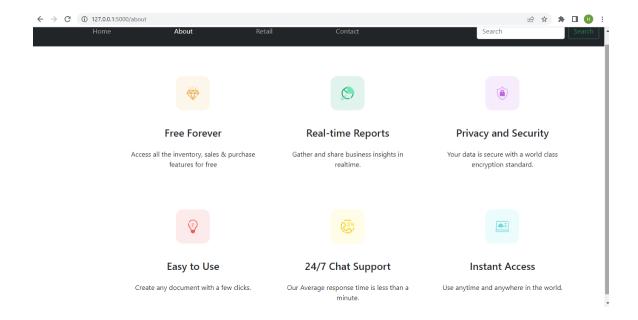
```
<input class="form-control me-2" type="search"
placeholder="Search" aria-label="Search">
        <button class="btn btn-outline-success"</pre>
type="submit">Search</button>
       </form>
      </div>
     </div>
   </nav>
   <div class="container text-center">
     <h3 class="display-4">Easily Manage your
Inventory</h3>
    <h5>One stop solution to run all your inventory
operations</h5>
   </div>
   <div class="list-group">
    ul>
     <i class="fa-solid fa-circle-check"></i>
       Quickly track stock shortages and excess stock
     <i class="fa-solid fa-circle-check"></i>
       Auto-adjust stock from invoices and purchase orders
     <i class="fa-solid fa-circle-check"></i>
       Streamline warehouse management with multiple
stores
     <i class="fa-solid fa-circle-check"></i>
```

```
Measure current inventory valuation
     </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">
          Fruits
         </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">
        Vegetables
       </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">
```

```
Oil Items
      </div>
     </div>
    </div>
   </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">
          Stationery Items
        </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">
          Cosmetics
        </div>
       </div>
    </div>
    <div class="col-md-4">
      <div class="card" style="width: 18rem;">
```

### **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/b
ootstrap.min.css" rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLlm9Nao0Yz1ztcQTwFspd3y
D65VohhpuuCOmLASjC" crossorigin="anonymous">
       <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boot
strap.bundle.min.js" integrity="sha384-
MrcW6ZMFYIzcLA8NI+NtUVF0sA7MsXsP1UyJoMp4YLEuN
SfAP+JcXn/tWtlaxVXM" crossorigin="anonymous"></script>
       <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/
umd/popper.min.js" integrity="sha384-
IQsoLXI5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwP
tgFTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
       <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boot
strap.min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRIcfu0JTxR+EQDz/bgldoEyl4
H0zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
       k rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDqeRdPCVd1SpvCA9XXcUnZS2Fm
```

```
JNp1coAFzvtCN9BmamE+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
         margin-left:13%;
         margin-top: 40px;
       }
       img
         padding: 30px;
       h4,p{
         padding: 8px;
     </style>
```

```
<body>
   <nav class="navbar navbar-expand-lg navbar-dark bg-
dark">
    <div class="container-fluid">
     <button class="navbar-toggler" type="button" data-bs-</pre>
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"</pre>
id="navbarSupportedContent">
      class="nav-item">
        <a class="nav-link" aria-current="page"
href="{{url_for('index')}}">Home</a>
       <a class="nav-link active"
href="{{url_for('about')}}">About</a>
       <a class="nav-link" href="#">Retail</a>
       <a class="nav-link" href="#">Contact</a>
```

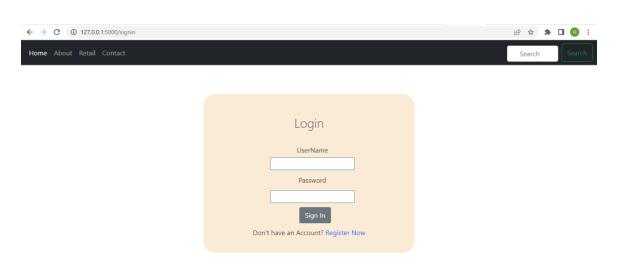
```
<form class="d-flex">
        <input class="form-control me-2" type="search"
placeholder="Search" aria-label="Search">
        <button class="btn btn-outline-success"</pre>
type="submit">Search</button>
       </form>
      </div>
     </div>
   </nav>
   <div class="row container">
       <div class="col-md-4 text-center">
         <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd92
001005e4fe/free-forever.svg" alt="">
         <h4>Free Forever</h4>
          >
            Access all the inventory, sales & purchase
features for free
         </div>
       <div class="col-md-4 text-center">
          <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd92
001005e4fe/reports.svg" alt="">
         <h4>Real-time Reports</h4>
          >
            Gather and share business insights in realtime.
```

```
</div>
       <div class="col-md-4 text-center">
         <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd92
001005e4fe/security.svg
         " alt="">
         <h4>Privacy and Security</h4>
         >
           Your data is secure with a world class
encryption standard.
         </div>
    </div>
    <div class="row container">
       <div class="col-md-4 text-center">
         <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd92
001005e4fe/ease.svg
         " alt="">
         <h4>Easy to Use</h4>
         >
           Create any document with a few clicks.
         </div>
       <div class="col-md-4 text-center">
         <img
src="https://media.swipepages.com/2022/8/5fb695d1b9cd92
001005e4fe/support.svg
```

```
" alt="">
           <h4>24/7 Chat Support</h4>
           >
              Our Average response time is less than a
  minute.
           </div>
         <div class="col-md-4 text-center">
           <img
  src="https://media.swipepages.com/2022/8/5fb695d1b9cd92
  001005e4fe/access.svg
           " alt="">
           <h4>Instant Access</h4>
           >
              Use anytime and anywhere in the world.
           </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/bootstrap.min.css" rel="stylesheet" integrity="sha384-EVSTQN3/azprG1Anm3QDgpJLlm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC" crossorigin="anonymous">

```
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boot
strap.bundle.min.js" integrity="sha384-
MrcW6ZMFYIzcLA8NI+NtUVF0sA7MsXsP1UyJoMp4YLEuN
SfAP+JcXn/tWtlaxVXM" crossorigin="anonymous"></script>
       <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/
umd/popper.min.js" integrity="sha384-
IQsoLXI5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwP
tgFTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
       <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boot
strap.min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRlcfu0JTxR+EQDz/bgldoEyl4
H0zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
       k rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDgeRdPCVd1SpvCA9XXcUnZS2Fm
JNp1coAFzvtCN9BmamE+4aHK8yyUHUSCcJHgXloTyT2A=
=" crossorigin="anonymous" referrerpolicy="no-referrer" />
    </head>
    <style>
      #signIn{
         margin: auto;
         margin-top:5%;
         border: solid 2px none;
         background-color: antiquewhite;
         border-radius: 30px;
```

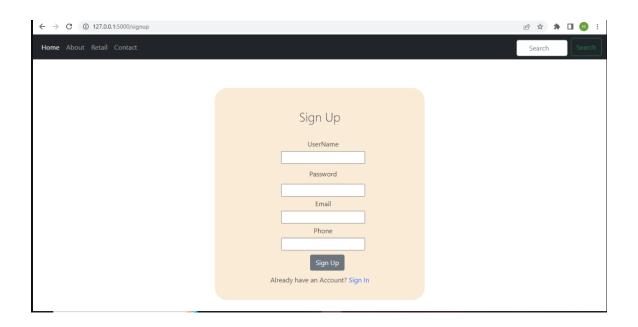
```
width: 500px;
     padding: 20px;
     color: #444;
  input,label
     width: 200px;
    margin-left: 30%;
    text-align: center;
    margin-top: 5px;
  #signInbtn
     margin-top:10px;
    margin-left: 45%;
    text-align: center;
  }
  h3{
    font-size: 30px;
    font-weight: 300;
    margin: 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-</pre>
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"</pre>
id="navbarSupportedContent">
        <a class="nav-link active" aria-current="page"
href="{{url_for('index')}}">Home</a>
         <a class="nav-link"
href="{{url_for('about')}}">About</a>
         <a class="nav-link" href="#">Retail</a>
         <a class="nav-link" href="#">Contact</a>
```

```
<form class="d-flex">
           <input class="form-control me-2" type="search"</pre>
placeholder="Search" aria-label="Search">
           <button class="btn btn-outline-success"</pre>
type="submit">Search</button>
         </form>
        </div>
       </div>
     </nav>
     <div id="signIn">
       <form>
         <h3 class="text-center">Login</h3>
            <label >UserName</label><br/>
            <input type="text" id="UserName">
         <br/>
            <label for="lastName" class="col-form-</pre>
label">Password</label><br/>
            <input id="pass" type="password">
            <br/>
         <button type="submit" class="btn btn-secondary "</pre>
id="signInbtn">Sign In</button>
         Don't have an
Account?<span><a href="{{url_for('signup')}}"> Register
Now</a></span>
        </form>
     </div>
```

</body>

</html>



<!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/azprG1Anm3QDgpJLlm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC" crossorigin="anonymous">

```
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boot
strap.bundle.min.js" integrity="sha384-
MrcW6ZMFYIzcLA8NI+NtUVF0sA7MsXsP1UyJoMp4YLEuN
SfAP+JcXn/tWtlaxVXM" crossorigin="anonymous"></script>
       <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/
umd/popper.min.js" integrity="sha384-
IQsoLXI5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwP
tgFTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
       <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boot
strap.min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRlcfu0JTxR+EQDz/bgldoEyl4
H0zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
       k rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDgeRdPCVd1SpvCA9XXcUnZS2Fm
JNp1coAFzvtCN9BmamE+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;
  #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-</pre>
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"</pre>
id="navbarSupportedContent">
        <a class="nav-link active" aria-current="page"
href="{{url_for('index')}}">Home</a>
         <a class="nav-link"
href="{{url_for('about')}}">About</a>
         <a class="nav-link" href="#">Retail</a>
         <a class="nav-link" href="#">Contact</a>
```

```
<form class="d-flex">
           <input class="form-control me-2" type="search"</pre>
placeholder="Search" aria-label="Search">
           <button class="btn btn-outline-success"</pre>
type="submit">Search</button>
          </form>
        </div>
       </div>
     </nav>
     <div id="signIn">
       <form>
          <h3 class="text-center">Sign Up</h3>
            <label >UserName</label><br/>
            <input type="text" id="UserName">
          <br/>
            <label for="lastName" class="col-form-</pre>
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 "</pre>
id="signInbtn">Sign Up</button>
          Already have an
Account?<span><a href="{{url_for('signin')}}"> Sign
In</a></span>
        </form>
```

```
</div>
</body>
</html>
```

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

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

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

<thead>
Username

Email

</thead>
</thead>

Athead>

Atd>
```

```
</body>
  </html>
<html>
  <head>
    <title>Retail Consumer</title>
    link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/b
ootstrap.min.css" rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLlm9Nao0Yz1ztcQTwFspd3y
D65VohhpuuCOmLASjC" crossorigin="anonymous">
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boot
strap.bundle.min.js" integrity="sha384-
MrcW6ZMFYIzcLA8NI+NtUVF0sA7MsXsP1UyJoMp4YLEuN
SfAP+JcXn/tWtlaxVXM" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/
umd/popper.min.js" integrity="sha384-
```

```
IQsoLXI5PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwP
tgFTxbJ8NT4GN1R8p" crossorigin="anonymous"></script>
    <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boot
strap.min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRlcfu0JTxR+EQDz/bgldoEyl4
H0zUF0QKbrJ0EcQF" crossorigin="anonymous"></script>
    k rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.2.0/css/all.min.css" integrity="sha512-
xh6O/CkQoPOWDdYTDgeRdPCVd1SpvCA9XXcUnZS2Fm
JNp1coAFzvtCN9BmamE+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-</pre>
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"</pre>
id="navbarSupportedContent">
      <a class="nav-link active" aria-current="page"
href="Index.html">Home</a>
       <a class="nav-link" href="About.html">About</a>
       <a class="nav-link" href="Retail.html">Retail</a>
       <a class="nav-link"
href="contact.html">Contact</a>
```

```
<form class="d-flex">
       <input class="form-control me-2" type="search"
placeholder="Search" aria-label="Search">
       <button class="btn btn-outline-success"</pre>
type="submit">Search</button>
      </form>
     </div>
    </div>
   </nav>
     <a href="#">HTML</a>
      <a href="#">CSS</a>
      <a href="#">JavaScript</a>
      <a href="#">PHP</a>
      <a href="#">Python</a>
      <a href="#">¡Query</a>
      <a href="#">SQL</a>
      <a href="#">Bootstrap</a>
      <a href="#">Node.js</a>
     </body>
</html>
```

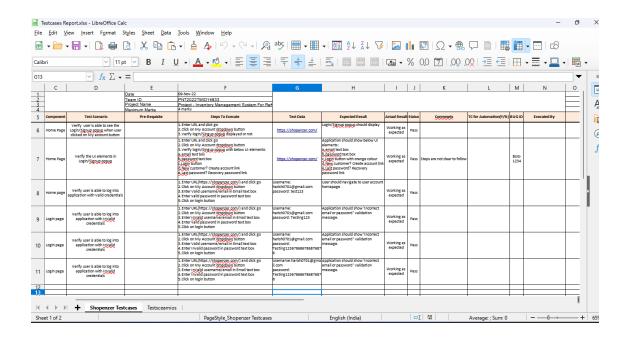
# 7.3 Database Schema (if Applicable)

```
File Edit Selection View Go Run Terminal Help spppy-flask-Visual Studio Code

| Park |
```

#### 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

Resolutio	Severi	Severi	Severi	Severi	Subtot
n	ty1	ty2	ty3	ty4	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	0	0	1	0	1
Reproduced					
Skipped	0	0	1	1	2
Won'tFix	0	5	2	1	8
Totals	24	14	13	26	7
					7

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

Section	TotalC	Not	Fa	Pa
	ases	Tested	il	SS
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 oper ating system characteristic captured are

- a. Scalability
- b. <u>Speed</u>
- c. Stability
- d. Reliability
- e. <u>Security</u>
- 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 opti mum stock 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

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

name: cluster-admin

subjects:

- kind: ServiceAccount

name: admin-user

namespace: kubernetes-dashboard

FLASK DEPLOYMENT

apiVersion: apps/v1

kind: Deployment

```
metadata:
```

name: flask-app

## spec:

replicas: 3

selector:

matchLabels:

app: flask-app

template:

metadata:

labels:

app: flask-app

# spec:

#### containers:

- name: web

image: Abinaya/flask

imagePullPolicy: Never

ports:

- containerPort: 5000

protocol: TCP

### IBM CLOUD DEPLOYMENT

apiVersion: apps/v1

kind: Deployment

metadata:

name: flask-deploy

#### spec:

replicas: 3

selector:

matchLabels:

app: flask-deploy

template:

metadata:

labels:

app: flask-deploy

# spec:

## containers:

- name: web

image: jp.icr.io/website/web

imagePullPolicy: Always

ports:

- containerPort: 5000

protocol: TCP

```
FLASK FILE:
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')
@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** 

FROM python:3.10.4

WORKDIR /app

COPY requirements.txt ./

RUN pip install -r requirements.txt

COPY..

**EXPOSE 5000** 

CMD ["python","./app.py"]

GitHub Link

https://github.com/IBM-EPBL/IBM-Project-10510-1659183638

Project-Demo Link

https://drive.google.com/file/d/1TmZrJ14ohvC6gSEGN2b-

AFevOcPJGKNG/view?usp=drivesdk