

Project Report - Inventory Management System for Retailers

Team ID: PNT2022TMID51170

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1. INTRODUCTION

1.1 Project Overview

Retail inventory management is the process of ensuring you carry merchandise that shoppers want, with neither too little nor too much on hand. By managing inventory, retailers meet customer demand without running out of stock or carrying excess supply.

In practice, effective retail inventory management results in lower costs and a better understanding of sales patterns. Retail inventory management tools and methods give retailers more information on which to run their businesses. Applications have been developed to help retailers track and manage stocks related to their own products. The System will ask retailers to create their accounts by providing essential details. Retailers can access their accounts by logging into the application.

Once retailers successfully log in to the application they can update their inventory details, also users will be able to add new stock by submitting essential details related to the stock. They can view details of the current inventory. The System will automatically send an email alert to the retailers if there is no stock found in their accounts. So that they can order new stock.

1.2 Purpose

The main purpose of inventory management is to help businesses easily and efficiently manage the ordering, stocking, storing, and using of inventory. By effectively managing your inventory, you'll always know what items are in stock, how many of them there are, and where they are located.

Plus, practicing strong inventory management allows you to understand how you use your inventory—and how demand changes for it—over time. You can zero in on exactly what you need, what's not so important, and what's just a waste of money. That's using inventory management to practice inventory control. By the way, inventory control is the balancing act of always having enough stock to meet demand, while spending as little as possible on ordering and carrying inventory.

2. LITERATURE SURVEY

2.1 Existing problem

Inconsistent Tracking:

Using manual inventory tracking procedures across different software and spreadsheets is time-consuming, redundant and vulnerable to errors. Even small businesses can benefit from a centralized inventory tracking system that includes accounting features.

Warehouse Efficiency:

Inventory management controls at the warehouse is labor-intensive and involves several steps, including receiving and, picking, packing and shipping. The challenge is to perform all these tasks in the most efficient way possible.

Inaccurate Data:

You need to know, at any given moment, exactly what inventory you have. Gone are the days when inventory could be counted once a year with an all-hands-on-deck approach.

Changing Demand:

Customer demand is constantly shifting. Keeping too much could result in obsolete inventory you're unable to sell, while keeping too little could leave you unable to fulfill customer orders. Order strategies for core items, as well as technology to create and execute an inventory plan, can help compensate for changing demand.

Limited Visibility:

When your inventory is hard to identify or locate in the warehouse, it leads to incomplete, inaccurate or delayed shipments. Receiving and finding the right stock is vital to efficient warehouse operations and positive customer experiences.

Manual Documentation:

Managing inventory with paperwork and manual processes is tedious and not secure. And it doesn't easily scale across multiple warehouses with lots of stock.

Problem Stock:

Perishable and fragile stock need specialized plans for care and storage. And high-value inventory needs specific loss-prevention strategies and inventory controls.

Supply Chain Complexity:

Global supply chains shift daily, placing a burden on your inventory planning and management operations. The manufacturers and wholesale distributors that dictate when, where and how your inventory ships require flexibility and offer unpredictable lead times.

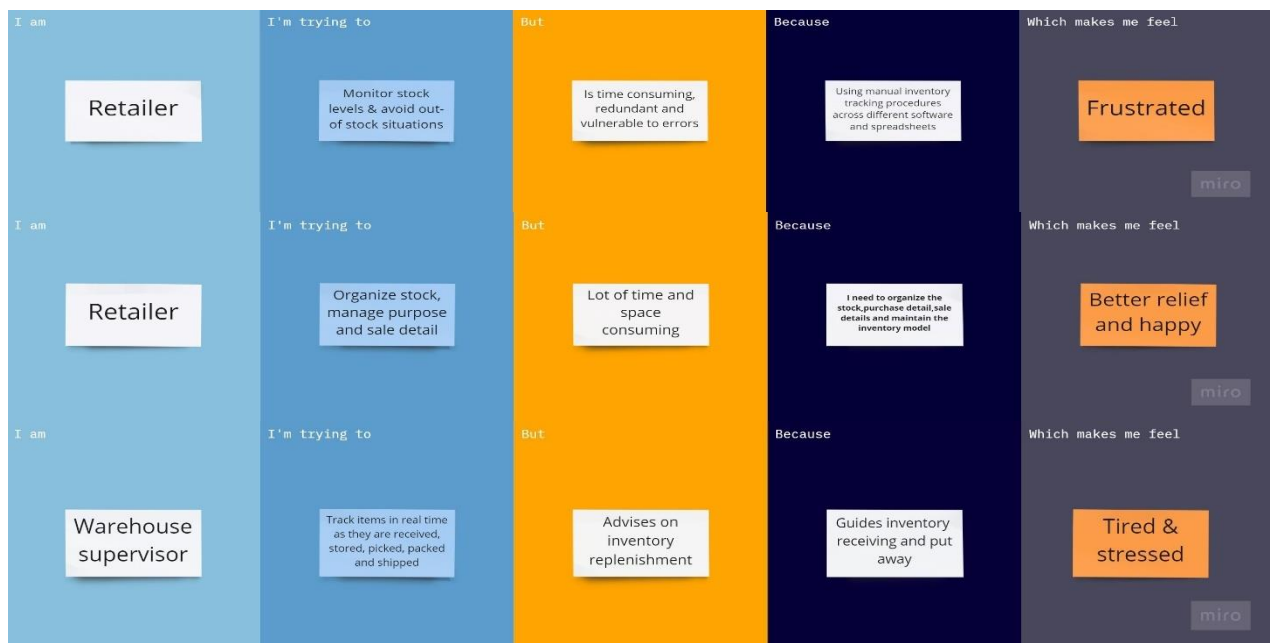
Managing Warehouse Space:

Efficiently managing space is an intimidating task. Planning and designing warehouse spaces with inventory management platforms helps you better control the timing of new stock deliveries. It can account for important factors, such as available space. Read more about the differences between warehouse management and inventory management.

2.2 References

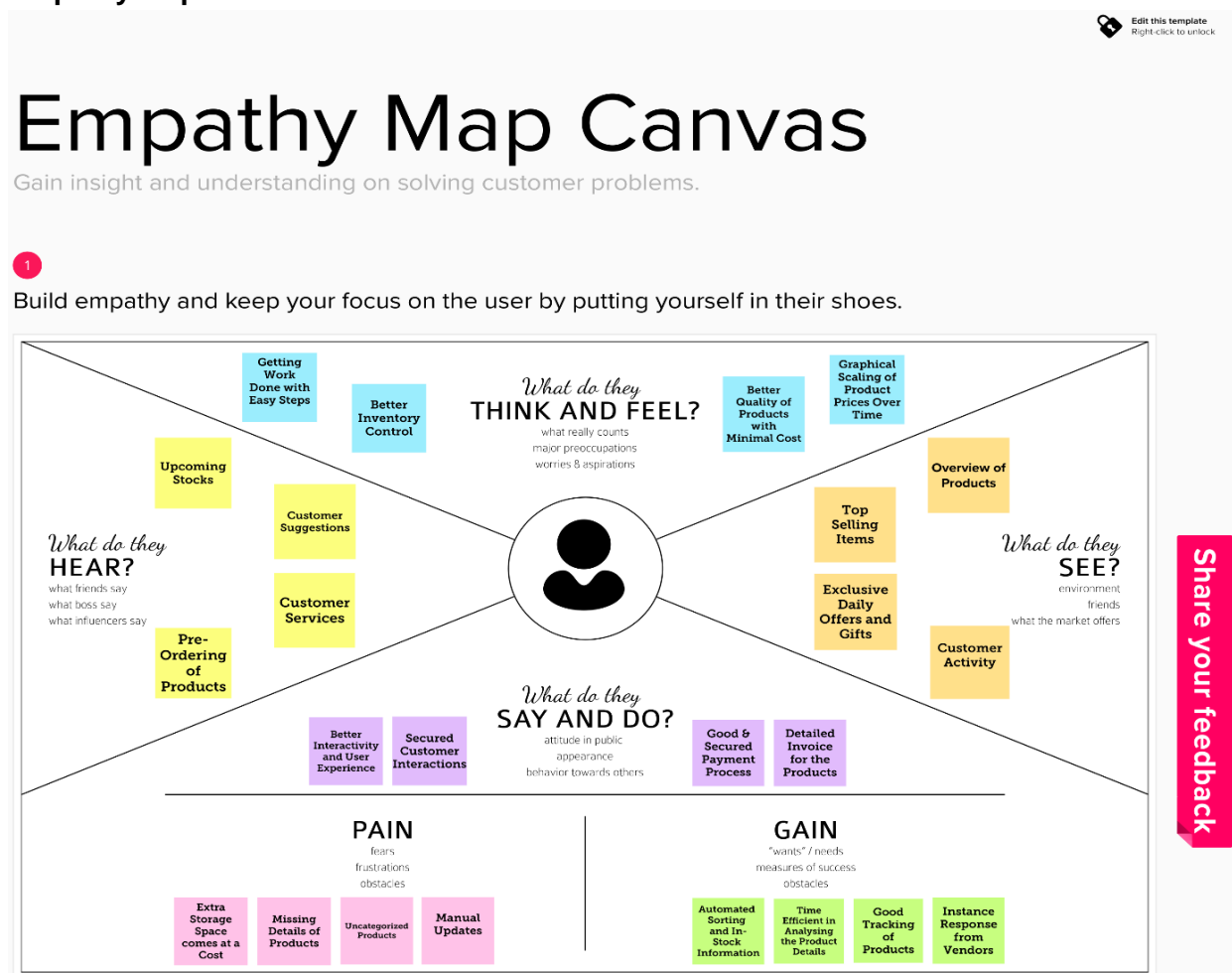
S. No.	Title	How does it related to my study	Used methodologies	limitation	Recommendation from this paper	Year
1.	Agricultural Inventory Management System	Support national commerce policies by annually, semi-annually, quarterly and monthly periods	Assets and their details are recorded at village and farmer level.	opportunity cost and handle the investment in inventory are more the funds are blocks up with inventory.	To make proper agricultural inventory management system to make the proper yield of products to be sold at good price.	2015 Fourth International Conference on Agro-Geoinformatics (Agro-geoinformatics)
2.	Online inventory management of packaged gases	Using advanced gadgets to manage the product or Items to be managed	By sensors the gas are monitored and the total amount is measured managed.	The proper functioning of sensors are monitored and uninterrupted power supply should be provided	Making using of available modern gadgets for the proper maintenance of the inventories	2010 IEEE Sensors Applications Symposium (SAS)
3.	A Case Study of Inventory Management System for an International Lifestyle Product Retailer in Bolivia	It is to help introducing the new type of innovations should be carried out using modern techniques, Finally the products recommended by users.	Survey from user in different categories , considering the data collected.	Traditional way of placing the items.	To include modern techniques according to the latest trend.	April 2021
4.	A Study of Inventory Management System Case Study	To make use of holding costs and this is frozen fund that can be lost ,Is move as a basic investment for the products	Analyzing of proper financial demands	To change only the frozen funds	To make use of available funds and not by getting any debts.	Sep 2018
5.	A Study of Inventory Management System of Linamar India	The ultimate aim of the study is to examine the inventory management process.	Use various alternative methodologies to maintain the inventory management system	Inaccurate reordering of products and order Tracking.	To increase the rate of accuracy and proper management trying alternative ways.	June 2018

2.3 Problem Statement Definition



3 IDEATION & PROPOSED SOLUTION


3.1 Empathy Map Canvas



3.2 Ideation & Brainstorming




Step-1: Team Gathering, Collaboration and Select the Problem Statement

Template




Brainstorm & idea prioritization

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


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

[Share template feedback](#)



Before you collaborate

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

 10 minutes

A

Team gathering

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

B


Set the goal

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

C

Learn how to use the facilitation tools


Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#) 

1


Define your problem statement

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

 5 minutes


PROBLEM


Retailer has to monitor and manage stocks and keep track of stocks purchased





Key rules of brainstorming


To run a smooth and productive session


 Stay in topic.

 Encourage wild ideas.

 Defer judgment.

 Listen to others.

 Go for volume.

 If possible, be visual.

Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

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

10 minutes

TIP
You can select a sticky note and hit the pencil icon to edit it. Or you can select a sticky note and hit the trash icon to delete it.



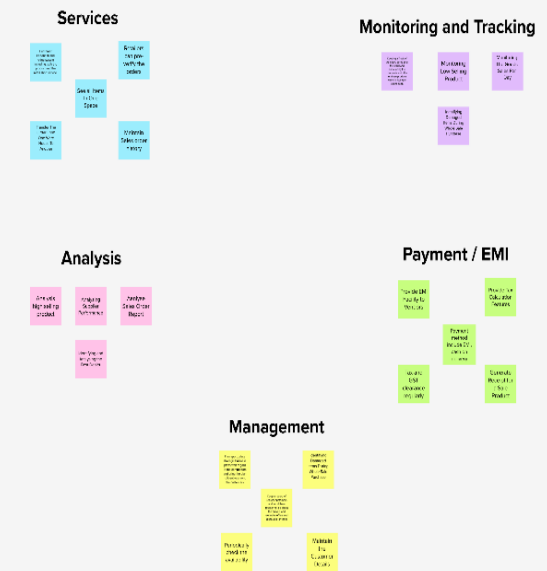
3

Group ideas

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

20 minutes

TIP
Add custom color tags to sticky notes to make it easier to find. You can also add a custom color tag to a sticky note to make it stand out.



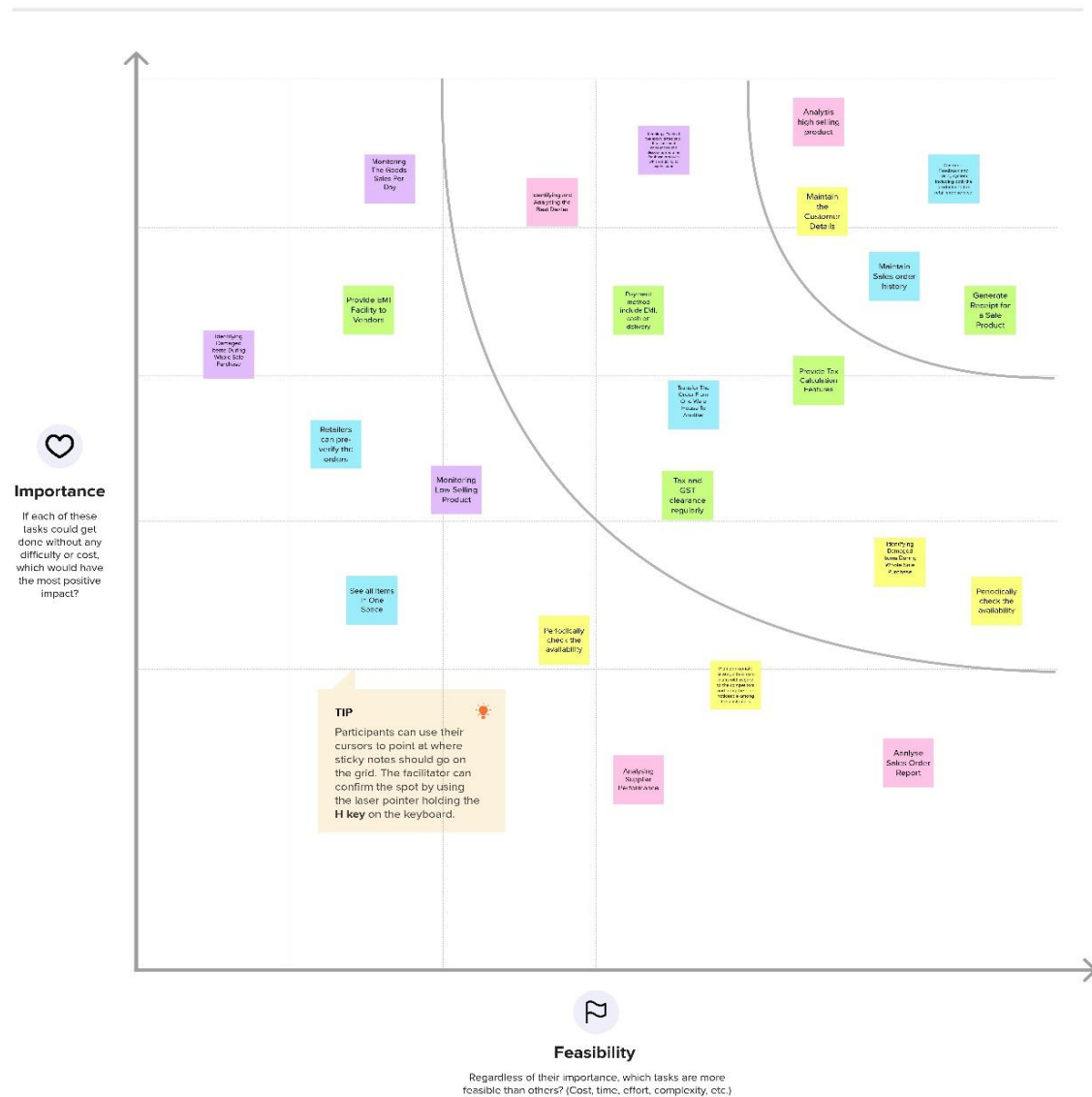
Step-3: Idea Prioritization

4

Prioritize

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

🕒 20 minutes



3.3 Proposed Solution

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Retailers do not have any systematic system to record and keep their inventory data.
2.	Idea / Solution description	To develop a cloud web application that will help retailers to manage, track, and control their stocks.
3.	Novelty / Uniqueness	Real time inventory tracking and secured user interactions.
4.	Social Impact / Customer Satisfaction	Better interface to understand the tracking of stocks and better reliability over stock management.
5.	Business Model (Revenue Model)	This cloud web application will get higher usage and acceptance in market and among people of this generation.
6.	Scalability of the Solution	9 out of 10

3.4 Problem Solution fit

<p>Define CS, fit into CC</p>	<p>1. CUSTOMER SEGMENT(S) CS</p> <p>Who is your customer? i.e. working parents of 0-5 y.o. Kids</p> <ul style="list-style-type: none"> Retailers Distributors Wholesalers Manufacturers 	<p>6. CUSTOMER CONSTRAINTS CC</p> <p>What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices</p> <ul style="list-style-type: none"> Inventory Tracking Changing demand Managing warehouse spaces Manual documentation 	<p>5. AVAILABLE SOLUTIONS AS</p> <p>Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking</p> <ul style="list-style-type: none"> Centralized Tracking Demand forecasting Optimized space Add imagery Software tools to replace manual documentation 	<p>Explore AS, differentiate</p>
	<p>2. JOBS-TO-BE-DONE / PROBLEMS J&P</p> <p>Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.</p> <ul style="list-style-type: none"> To check the efficiency of the warehouse Limited visibility Manual documentation Supply chain complexity 	<p>9. PROBLEM ROOT CAUSE RC</p> <p>What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations.</p> <ul style="list-style-type: none"> Low rate of inventory turnover High cost of storage Inaccurate information about stock movement Quick real time updations on the Quality and quantity of products 	<p>7. BEHAVIOUR BE</p> <p>What does your customer do to address the problem and get the job done? i.e. Directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)</p> <ul style="list-style-type: none"> Secured data Manage, access and control through software Process will be on time FIFO approach to ensure proper transactions of good 	
<p>Identify strong TR & EM</p>	<p>3. TRIGGERS TR</p> <p>What triggers customers to act? i.e. seeing their neighbor installing solar panels, reading about a more efficient solution in the news.</p> <ul style="list-style-type: none"> Increased Productivity Easy to access and manage stocks User friendly and better user satisfaction 	<p>10. YOUR SOLUTION SL</p> <p>If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solve a problem, and matches customer behavior.</p> <ul style="list-style-type: none"> This application works on the cloud and uses a DB2 database. This application allows easy access to manage and control the stocks. Provide an option for a graphical view of sales. 	<p>8. CHANNELS of BEHAVIOUR CH</p> <p>8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7</p> <p>8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.</p> <p>online:</p> <ul style="list-style-type: none"> Supports pre-purchase stage Updating of flowing of the stocks regularly <p>offline:</p> <ul style="list-style-type: none"> Manual checking Organised delivery of stocks 	<p>Identify strong TR & EM</p>
	<p>4. EMOTIONS: BEFORE / AFTER EM</p> <p>How do customers feel when they face a problem or a job and afterward? i.e. lost, insecure -> confident, in control - use it in your communication strategy & design.</p> <p>BEFORE</p> <ul style="list-style-type: none"> Less accuracy of stocks Less productivity More work and stress <p>AFTER</p> <ul style="list-style-type: none"> High accuracy of stocks High productivity Less work and stress 			

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
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User Login	Username/Email-ID Login with Password
FR-4	Admin Login	Login with Username/Email-ID Login with Password
FR-5	Inventory Management	Track quantity of products present in inventory at any instant
FR-6	Tracking of stock	Notifications through Email

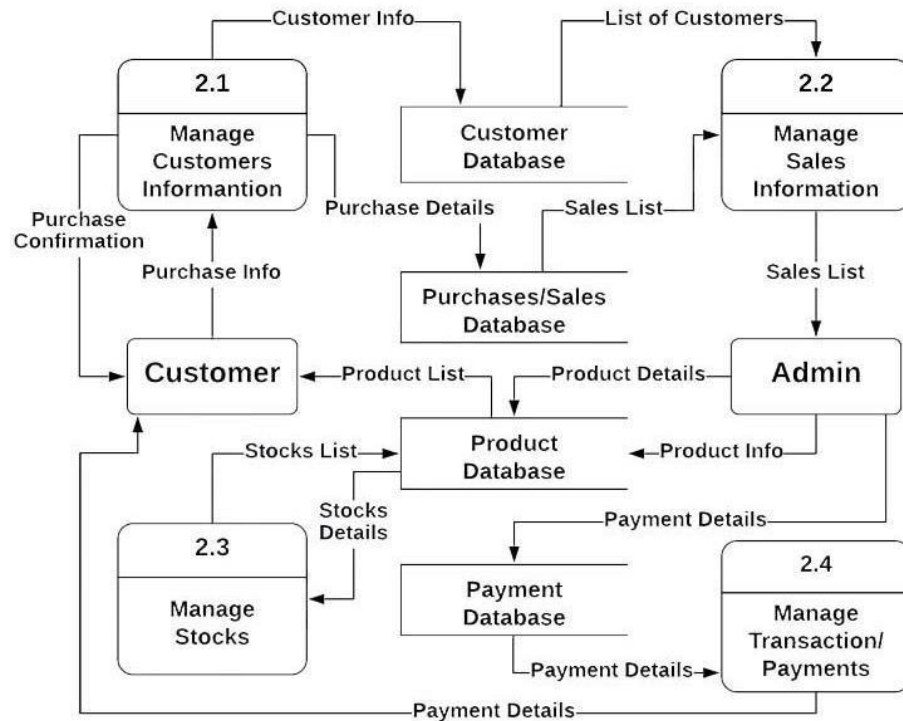
4.2 Non-Functional requirements

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	This cloud web application makes the process of inventory management a lot easier which saves money and time both. This system is highly responsive to both desktop and mobile users.
NFR-2	Security	Inventory security aims to prevent inventory losses – for example, due to incorrect storage, theft, or incorrect incoming goods inspection – so that the correct stock is always available.

NFR-3	Reliability	The availability of products should be properly updated for customer satisfaction. The out-of-stock information should be notified. The system must give accurate inventory status to the user continuously.
NFR-4	Performance	The companies have to design and operate materials management and product distribution functions effectively. Inventory control systems enable a business to determine and maintain an optimum level of investment in inventory in order to achieve the required operational performance.
NFR-5	Availability	The software will be available only to the administrator of the organization and the product, as well as customer details, will be recorded by him. He can manage the inventory.
NFR-6	Scalability	The System can manage large inventory and provides quick access to the inventory in no time.

5 PROJECT DESIGN

5.1 Data Flow Diagrams



5.2 Solution & Technical Architecture

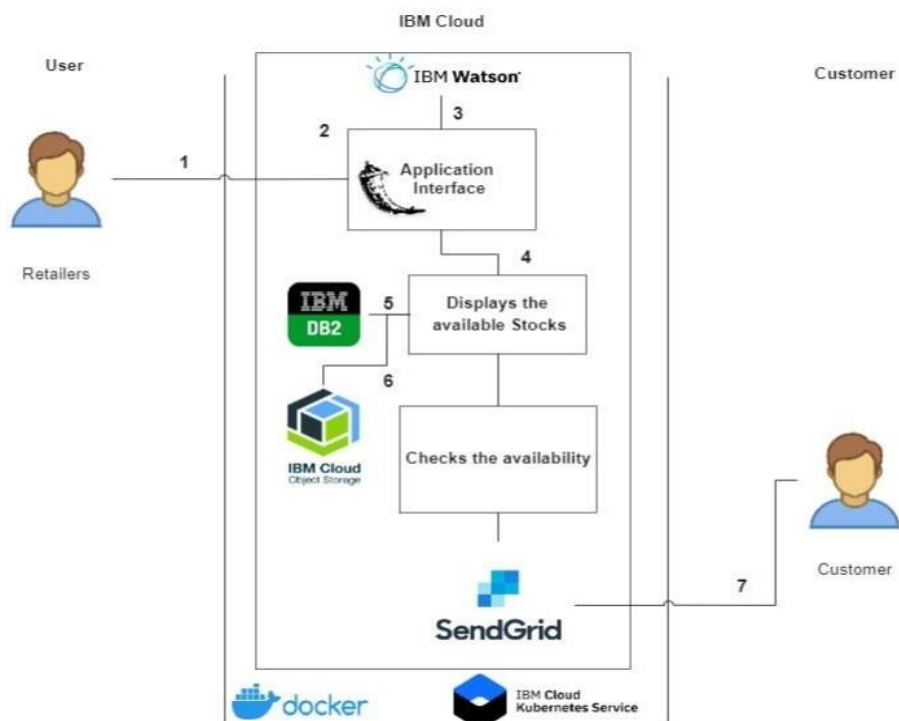


Table-1: Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface	User interacts with the cloud web application.	HTML, CSS, JavaScript
2.	Application Logic-1	Logic for a process in the application	Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson Assistant
4.	Database	Data Type, Configurations	MySQL
5.	Cloud Database	Database Service on Cloud	IBM DB2
6.	File Storage	File storage requirements	IBM Object Storage
7.	Infrastructure (Server / Cloud)	Kubernetes is an open-source container orchestration system for automating software deployment, scaling, and management	Kubernetes

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Micro web framework, written in Python	Flask
2.	Security Implementations	List all the security/access controls implemented, use of firewalls, etc.	SHA-256
3.	Scalable Architecture	Kubernetes is an open-source container orchestration system for automating software deployment, scaling, and management.	Kubernetes
4.	Availability	Docker CLI stores its configuration files in a directory called .docker within your \$HOME directory.	Docker CLI
5.	Performance	To send alerts to users based on their stock	Sendgrid

5.3 User Stories

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 a confirmation email once I have registered for the application	I can receive a confirmation email & click confirm	Medium	Sprint-1
	Confirmation	USN-3	As a user, I will confirm the registration once I have received the email from the application	I can get a confirmation for my email and password and create an authenticated account.	Medium	Sprint-1
	Login	USN-4	As a user, I can log in to the application through Gmail & Password	I can log onto the application with a verified email and password	High	Sprint-1
	Dashboard	USN-5	As a user, I can view the dashboard of the application by entering my email & password	Once I log on to the application, I can view products to buy.	High	Sprint-2
	Add items to the cart	USN-6	As a user, I can add the products I wish to buy to the carts.	As a user, I can buy any product or add it to my cart for buying later	Medium	Sprint-2
	Stock Update	USN-7	As a user, I can add products that are not available in the dashboard to the stock list.	If any of the products are not available, as a user I can update the inventory and send mail to the owner	Medium	Sprint-3
Customer (Web user)	Registration	USN-8	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-9	As a user, I will receive a confirmation email once I have registered for the application	I can receive a confirmation email & click confirm	Medium	Sprint-1
	Confirmation	USN-10	As a user, I will confirm the registration once I have received the email from the application	I can get a confirmation for my email and password	Medium	Sprint-1

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
				and create an authenticated account.		
	Login	USN-11	As a user, I can log in to the application through Gmail & Password	I can log onto the application with a verified email and password	High	Sprint-1
	Dashboard	USN-12	As a user, I can view the dashboard of the application by entering my email & password	Once I log on to the application, I can view products to buy.	High	Sprint-2
	Add items to the cart	USN-13	As a user, I can add the products I wish to buy to the carts.	As a user, I can buy any product or add it to my cart for buying later	Medium	Sprint-2
	Stock Update	USN-14	As a user, I can add products that are not available in the dashboard to the stock list.	If any of the products are not available, as a user I can update the inventory and send mail to the owner	Medium	Sprint-3
Customer Care Executive	Request to Customer Care	USN-15	As a user, I can contact the Customer Care Executive and request any services I want from customer care.	As a user, I can contact Customer Care and get support.	Low	Sprint-4
Administrator	Contact Administrator	USN-16	I can be able to report any difficulties I experience as a report	As a user, and I can give my support in possible ways to the administrator and the administration.	Medium	Sprint-4

6 PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

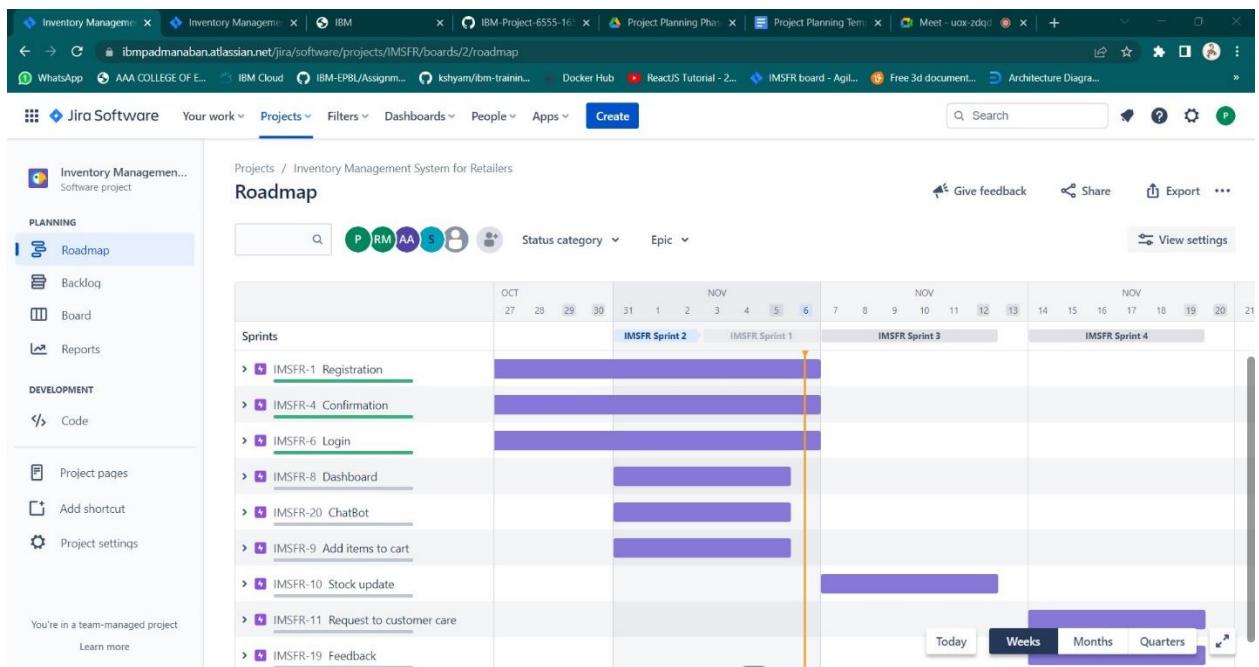
Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	Padmanaban P
Sprint-1	Registration	USN-2	As a user, I can register for the application through E-mail	1	High	Ramesh Kumar M
Sprint-1	Confirmation	USN-3	As a user, I will confirm the registration once I have received the email from the application	2	Medium	Selva Balaje R
Sprint-1	Login	USN-4	As a user, I can log into the application by entering email & password	2	High	Arumugaperumal A
Sprint-2	Dashboard	USN-5	As a user, I can view the dashboard of the application by entering my email & password	3	High	Padmanaban P
Sprint-2	ChatBot	USN-6	As a user, I can interact and get help from chatbot	3	Medium	Ramesh Kumar M
Sprint-2	Add items to cart	USN-7	As a user, I can add the products I wish to buy to the carts..	3	Medium	Selva Balaje R
Sprint-3	Stock Update	USN-8	As a user, I can add products that are not available in the dashboard to the stock list.	5	Medium	Arumugaperumal A
Sprint-4	Request to Customer Care	USN-9	As a user, I can post queries through mail	5	Low	Padmanaban P
Sprint-4	Feedback	USN-10	As a user, I can give my feedback by submitting the form.	5	Low	Ramesh Kumar M

Sprints	Sprint Duration	Velocity	Actual velocity
Sprint-1	6	7	0.85
Sprint-2	6	9	0.66
Sprint-3	6	5	1.2
Sprint-4	6	10	0.6

6.2 Sprint Delivery Schedule

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	7	6 Days	24 Oct 2022	29 Oct 2022	7	29 Oct 2022
Sprint-2	9	6 Days	31 Oct 2022	05 Nov 2022	9	29 Oct 2022
Sprint-3	5	6 Days	07 Nov 2022	12 Nov 2022	5	12 Nov 2022
Sprint-4	10	6 Days	14 Nov 2022	19 Nov 2022	10	19 Nov 2022

6.3 Reports from JIRA



Inventory Management System for Retailers

Backlog

9 0 0 Complete sprint

- IMSFR-13 As a user, I can view the dashboard of the application by entering my email & password **DASHBOARD** 3 TO DO P
- IMSFR-14 As a user, I can interact and get help from chatbot **CHATBOT** 3 TO DO RM
- IMSFR-15 As a user, I can add the products I wish to buy to the carts. **ADD ITEMS TO CART** 3 TO DO T

+ Create issue

5 0 0 Start sprint

- IMSFR-16 As a user, I can add products that are not available in the dashboard to the stock list. **STOCK UPDATE** 5 TO DO AA

+ Create issue

10 0 0 Start sprint

Inventory Management System for Retailers

IMSFR Sprint 2

0 days remaining Complete sprint

GROUP BY None Insights

TO DO 2 ISSUES	IN PROGRESS 1 ISSUE	DONE ✓
<p>As a user, I can interact and get help from chatbot CHATBOT</p> <p>IMSFR-14 3 RM</p> <p>As a user, I can add the products I wish to buy to the carts. ADD ITEMS TO CART</p> <p>IMSFR-15 3 T</p>	<p>As a user, I can view the dashboard of the application by entering my email & password DASHBOARD</p> <p>IMSFR-13 3 P</p>	

IMSFR board - Agile | xInventory Managemen... xIBM xIBM-Project-6555-16: xProject Planning Pha: xProject Planning Tem: xMeet - uox-2dqj/ x+ x

ibmpadmanaban.atlassian.net/jira/software/projects/IMSFR/boards/2/reports/burndown

WhatsAppAAA COLLEGE OF E...IBM CloudIBM-EP8U/Assignm...kshyam/bm-trainin...Docker HubReactJS Tutorial - 2...IMSFR board - Agil...Free 3d document...Architecture Diagrama...

Jira SoftwareYour workProjectsFiltersDashboardsPeopleAppsCreate

Inventory Managemen...
Software project

Back to project

Reports

Overview

Burnup report

Sprint burndown chart

Velocity report

Cumulative flow diagram

Cycle time report

Deployment frequency report

Completed issues

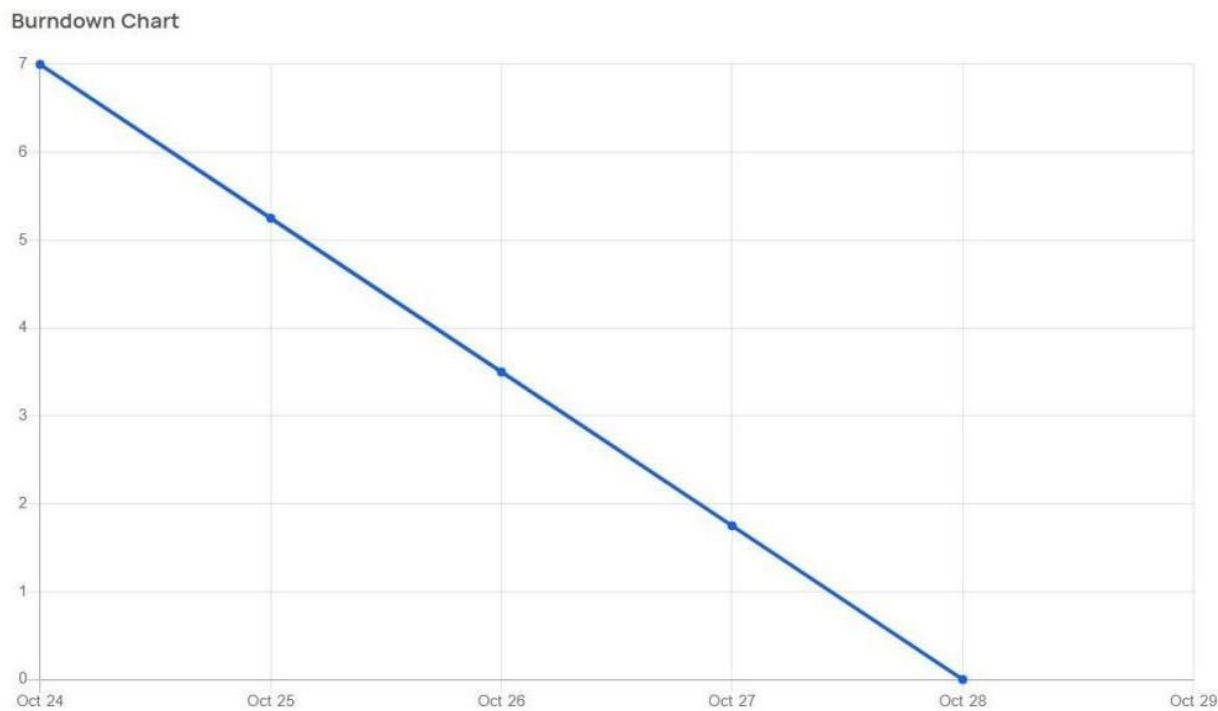
View in issue navigator

Key	Summary	Issue type	Epic	Status	Assignee	Story points
IMSFR-2	As a user, I can register for the application by entering my email...	Story	REGISTRATION	DONE	P	2
IMSFR-3	As a user, I will receive a confirmation email once I have register...	Story	REGISTRATION	DONE	RM	1
IMSFR-5	As a user, I will confirm the registration once I have received the ...	Story	CONFIRMATION	DONE	S	2
IMSFR-7	As a user, I can log in to the application through Gmail & Passw...	Story	LOGIN	DONE	AA	2

Issues completed outside of sprint

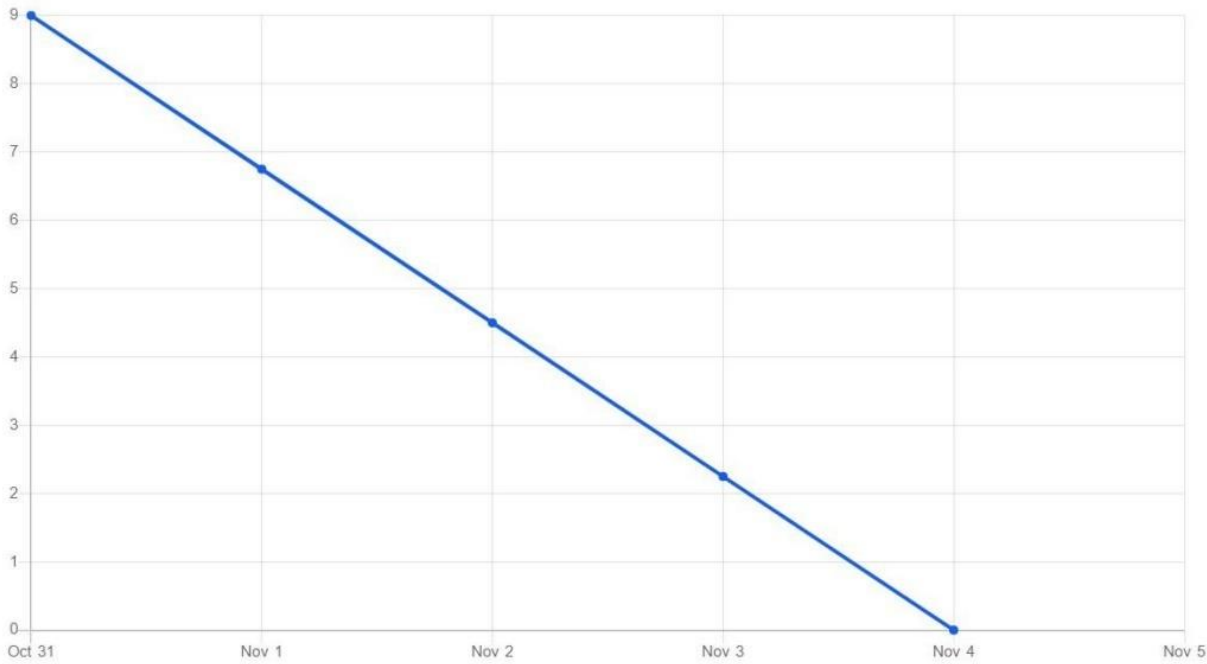
Key	Summary	Issue type	Epic	Status	Assignee	Story points
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SPRINT-1



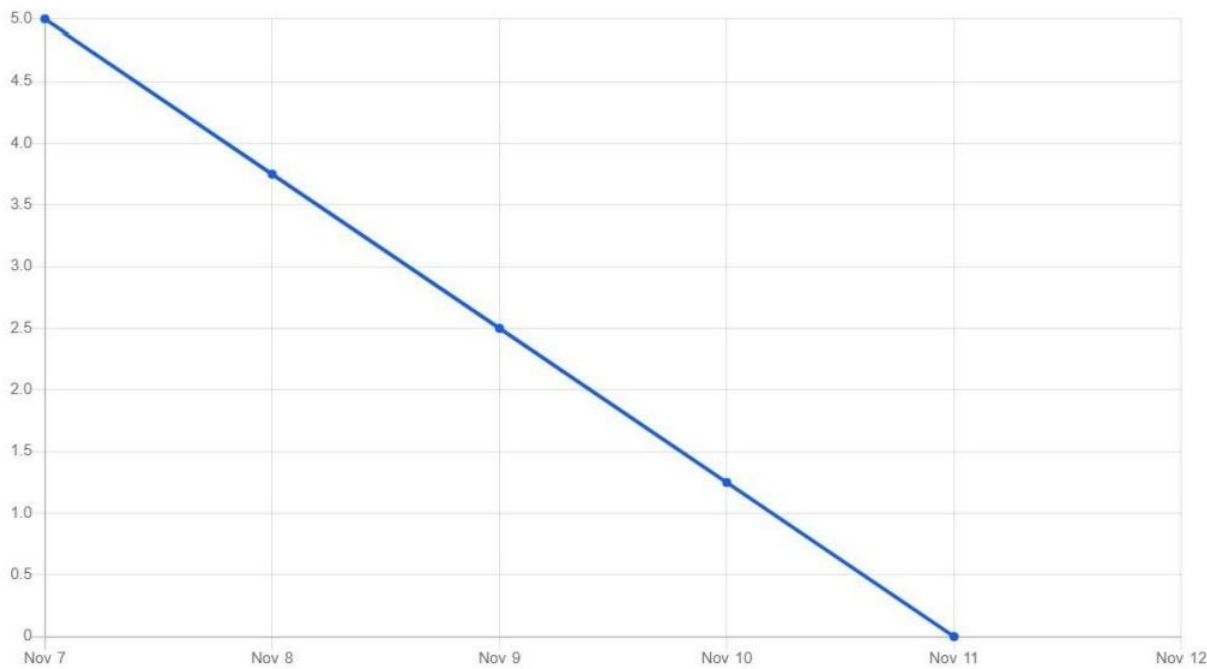
SPRINT-2

Burndown Chart



SPRINT-3

Burndown Chart



SPRINT-4

Burndown Chart

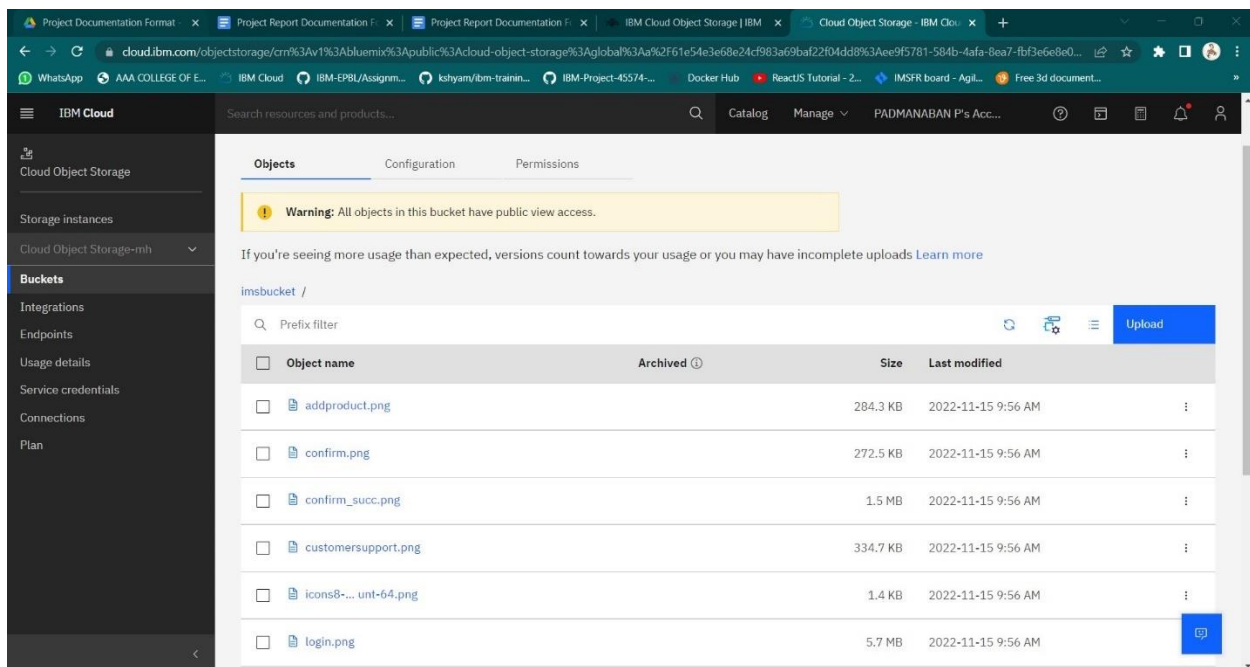


7 CODING & SOLUTIONING (Explain the features added in the project along with code)

7.1 IBM Object Storage Service

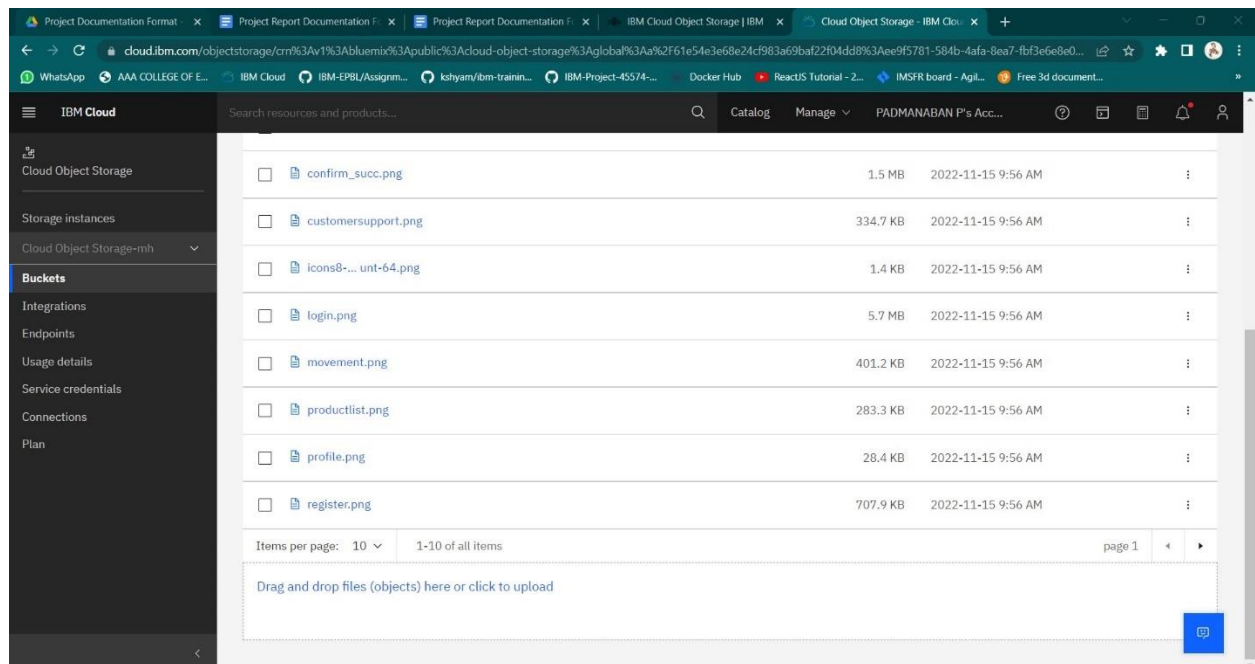
IBM Cloud Object Storage, with its global presence and flexible resiliency options, supports exponential data growth for your cloud-native workloads with best-in-class cost optimization, robust data security, and data governance with ease of use. Built-in data lifecycle operations also make it easy to observe and manage your critical workloads.

Creating a bucket in IBM Object Storage and uploading the images to the bucket:

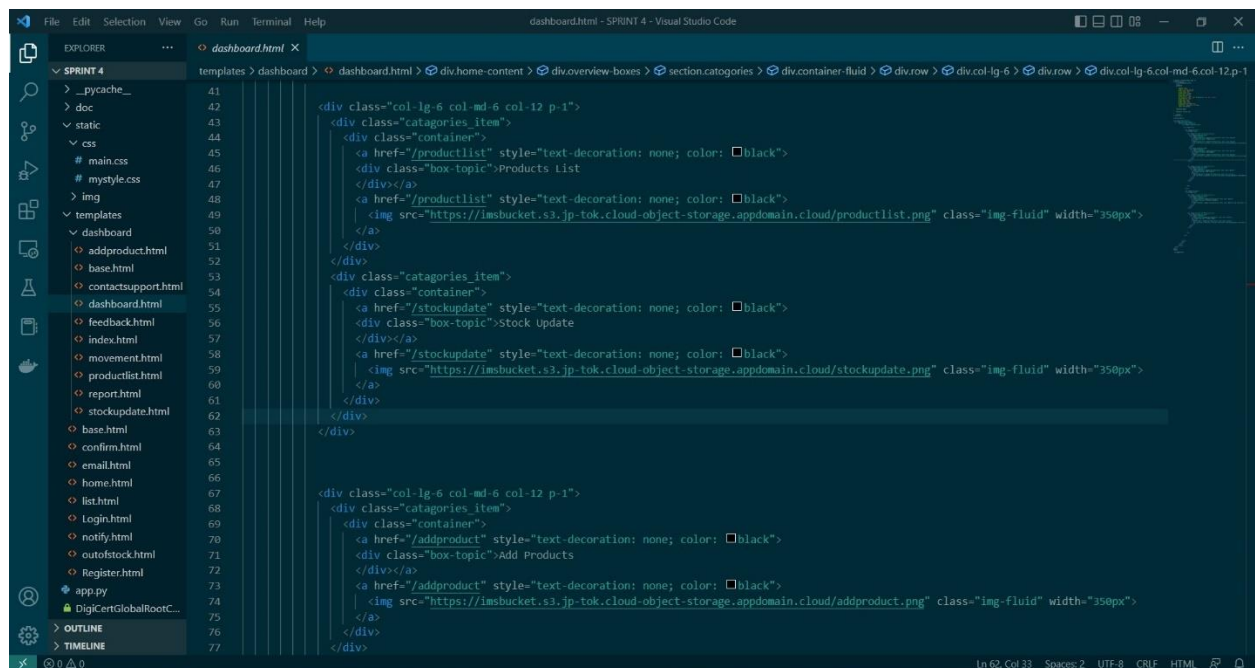


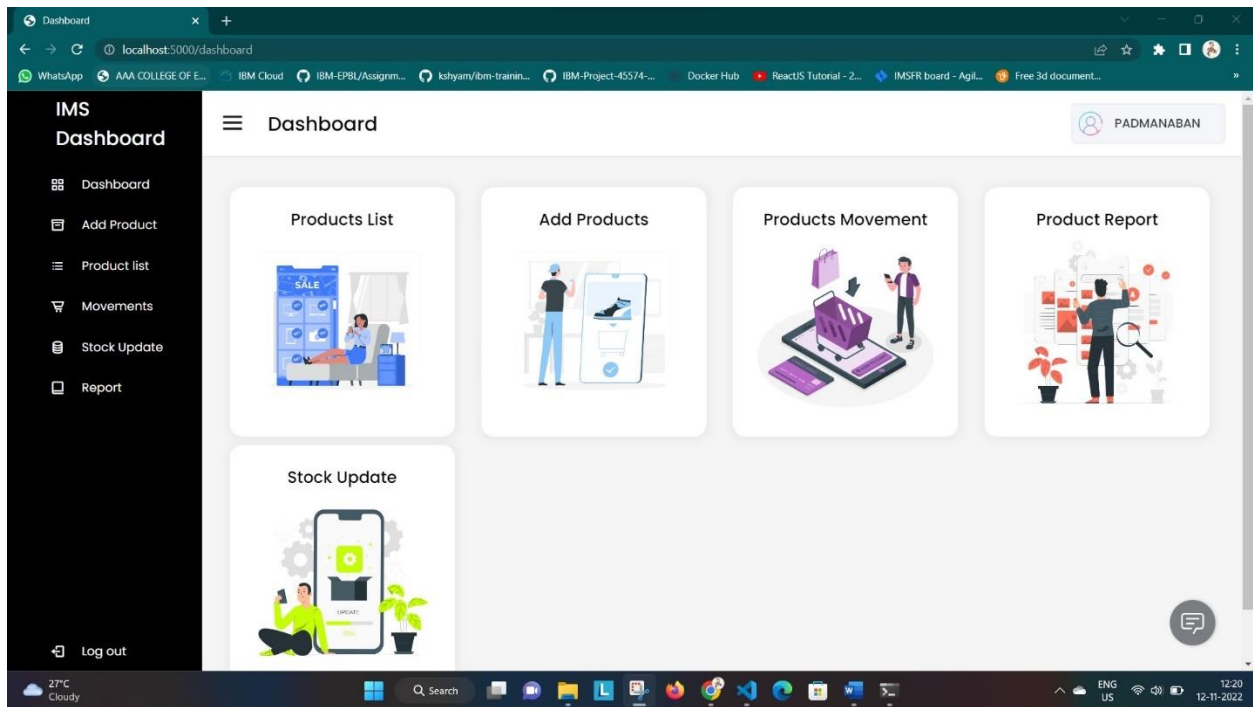
The screenshot displays the IBM Cloud Object Storage console. The left sidebar shows the navigation menu with 'Buckets' selected. The main area shows the 'Objects' tab for a bucket named 'imsbucket'. A warning message states: 'Warning: All objects in this bucket have public view access.' Below this, a table lists the objects in the bucket:

Object name	Archived	Size	Last modified
addproduct.png		284.3 KB	2022-11-15 9:56 AM
confirm.png		272.5 KB	2022-11-15 9:56 AM
confirm_succ.png		1.5 MB	2022-11-15 9:56 AM
customersupport.png		334.7 KB	2022-11-15 9:56 AM
icons8-unt-64.png		1.4 KB	2022-11-15 9:56 AM
login.png		5.7 MB	2022-11-15 9:56 AM



Displaying the images in the application by accessing the images publicly:





7.2 IBM Watson Assistant Service

IBM Watson Assistant uses artificial intelligence that understands customers in context to provide fast, consistent, and accurate answers across any application, device, or channel. Remove the frustration of long wait times, tedious searches, and unhelpful chatbots with the leader in trustworthy AI.

Setting Actions to IBM Watson Assistant:

The screenshot shows the IBM Watson Assistant console interface. On the left, a conversation flow diagram is visible, showing a sequence of steps. The current step being configured is labeled '2 is Dashboard'. The main panel on the right is titled 'Customer starts with:' and contains instructions for defining phrases that trigger the action. Below the instructions, there is a list of phrases: 'jarvis', 'hi', 'hello', 'hey', and 'I want to know about the IMS'. A 'Preview' button is located at the bottom right of the main panel.

The screenshot shows the IBM Watson Assistant console interface. On the left, a conversation flow diagram is visible, showing a sequence of steps. The current step being configured is labeled '2 is Chat with an agent'. The main panel on the right is titled 'Customer starts with:' and contains instructions for defining phrases that trigger the action. Below the instructions, there is a list of phrases: 'jarvis', 'hi', 'hello', 'hey', and 'I want to know about the IMS'. A 'Preview' button is located at the bottom right of the main panel.

Project Document x Project Report D x Project Report D x N 20 Inventory Mai x IBM x IBM Watson Serv x IBM Watson Assi x Virtual Agent - IB x

jp-tok.assistant.watson.cloud.ibm.com/cm%3Av1%3Abluemix%3Apublic%3Aconversation%3Ajp-tok%3Aa%2Fa23b914be20346fa83a3da7951decc98%3Ab7ec50cd-af28-4bb0-aa53-52dc00c3...

WhatsApp AAA COLLEGE OF E... IBM Cloud IBM-EP8U/Assignm... kshyam/ibm-trainin... IBM-Project-45574-... Docker Hub ReactJS Tutorial - 2... IMSFR board - Agil... Free 3d document...

IBM Watson Assistant Lite Upgrade IMS bot Learning center

I want to know about the IMS

connected to our sales agent now

Action complete

2 is Login / Sign up

Is there anything else that I can assist you with?

8 No, Thank you Login + 2

Continue to next step

8 is Back to Main Menu

9 Anything else I can help you with?

Re-ask previous step(s)

8 is No, Thank you

10 Bye

Action complete

8 is Login

Please use this link

New step +

Customer starts with:

Enter phrases that a customer types or says to start the conversation about a specific topic. These phrases determine the task, problem, or question your customer has.

The more phrases you enter, the better your assistant can recognize what the customer wants.

Enter phrases your customer might use to start this action Total: 5

Enter a phrase

jarvis

hi

hello

hey

I want to know about the IMS

Preview

Project Document x Project Report D x Project Report D x N 20 Inventory Mai x IBM x IBM Watson Serv x IBM Watson Assi x Virtual Agent - IB x

jp-tok.assistant.watson.cloud.ibm.com/cm%3Av1%3Abluemix%3Apublic%3Aconversation%3Ajp-tok%3Aa%2Fa23b914be20346fa83a3da7951decc98%3Ab7ec50cd-af28-4bb0-aa53-52dc00c3...

WhatsApp AAA COLLEGE OF E... IBM Cloud IBM-EP8U/Assignm... kshyam/ibm-trainin... IBM-Project-45574-... Docker Hub ReactJS Tutorial - 2... IMSFR board - Agil... Free 3d document...

IBM Watson Assistant Lite Upgrade IMS bot Learning center

I want to know about the IMS

Continue to next step

8 is Sign up

Please use this link
(http://localhost:9000/register) to Sign Up

Continue to next step

This step has no content

13 Back to Main ... End

Continue to next step

13 is End

14 Thank you for your time. We will reach you shortly

Action complete

13 is Back to Main Menu

15 Anything else I can help you with?

Continue to next step

New step +

Customer starts with:

Enter phrases that a customer types or says to start the conversation about a specific topic. These phrases determine the task, problem, or question your customer has.

The more phrases you enter, the better your assistant can recognize what the customer wants.

Enter phrases your customer might use to start this action Total: 5

Enter a phrase

jarvis

hi

hello

hey

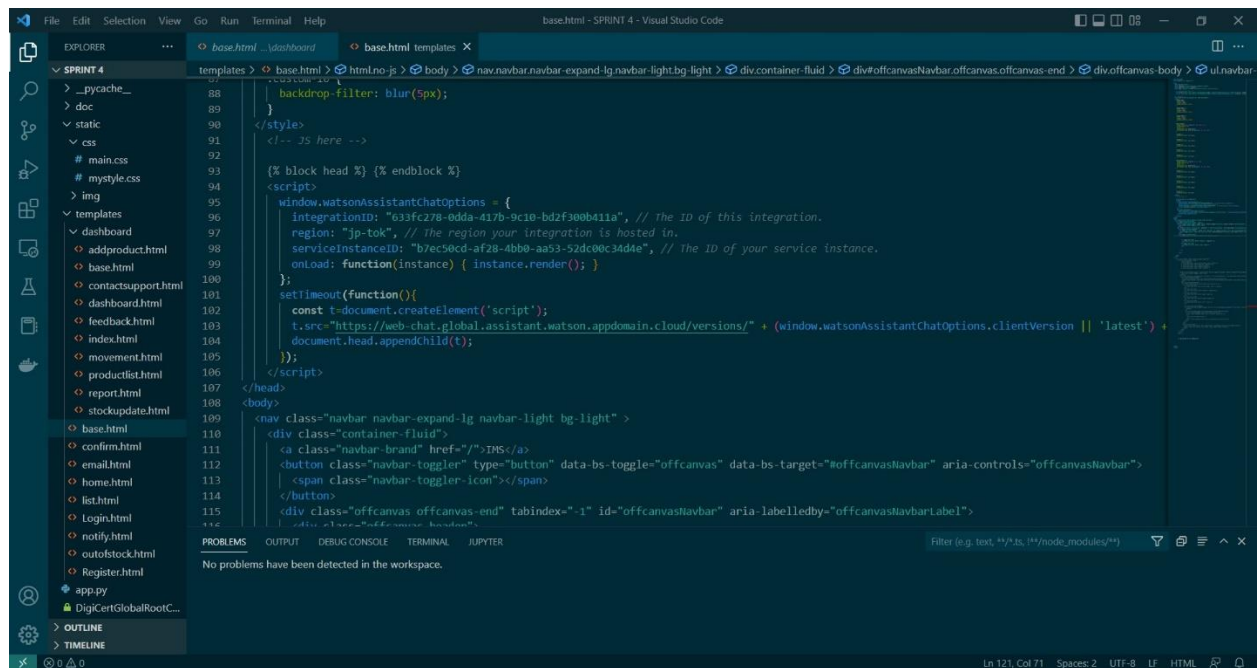
I want to know about the IMS

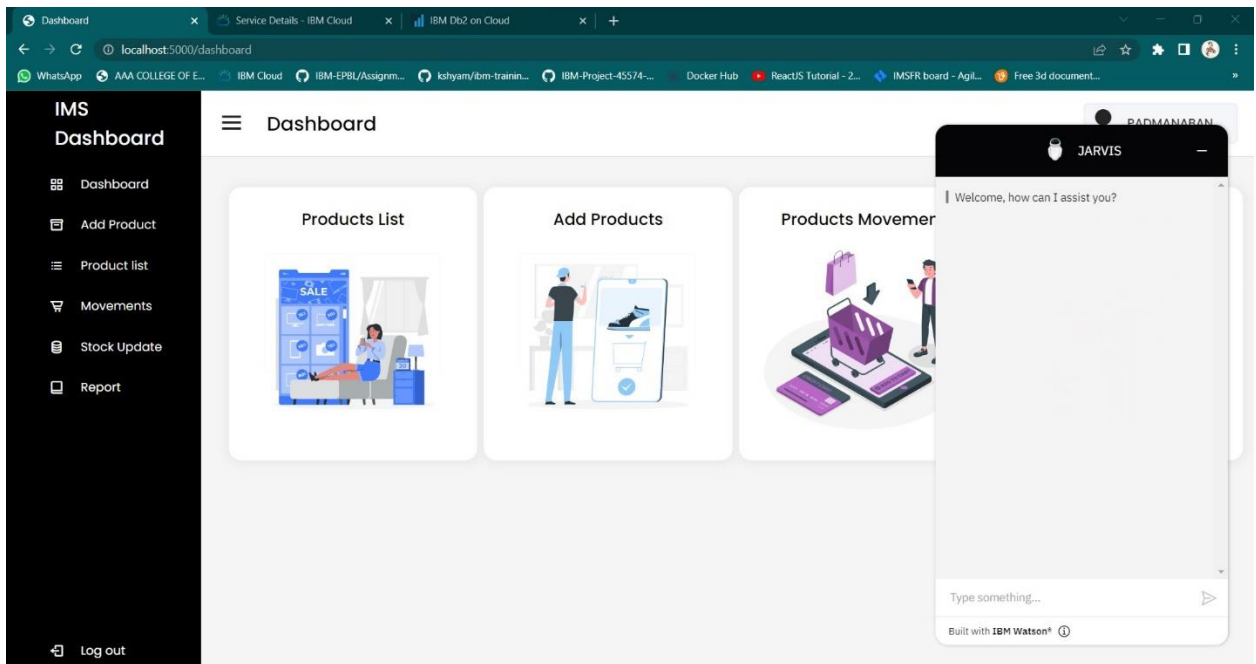
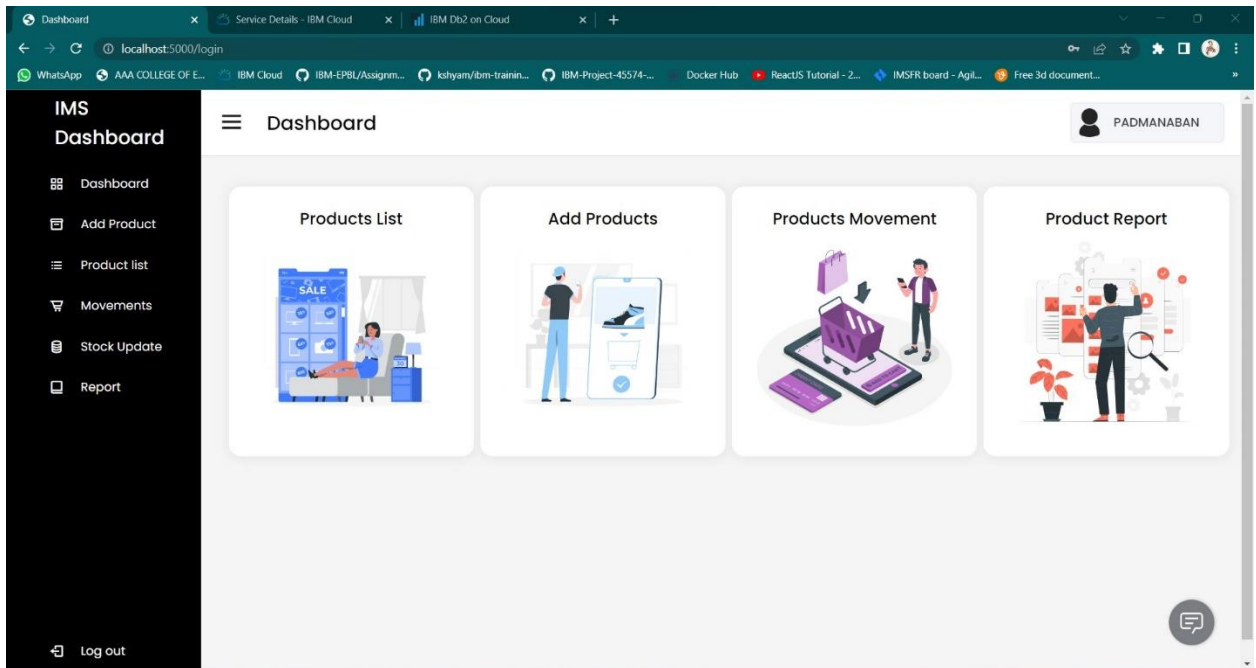
Preview

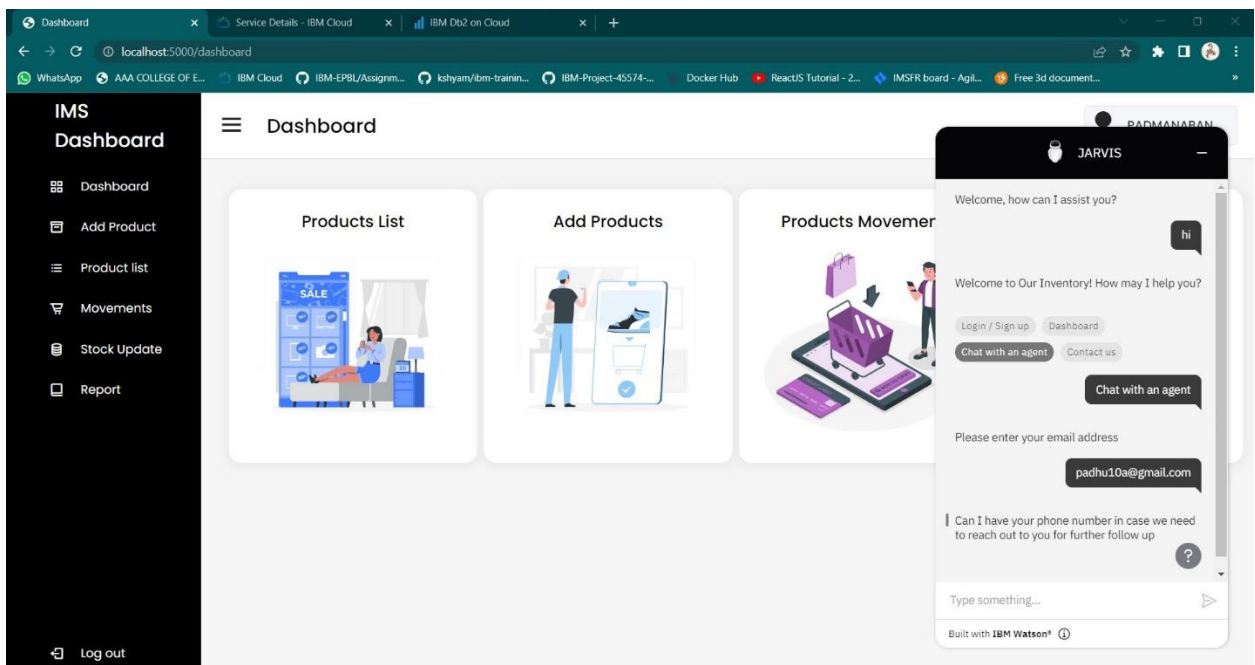
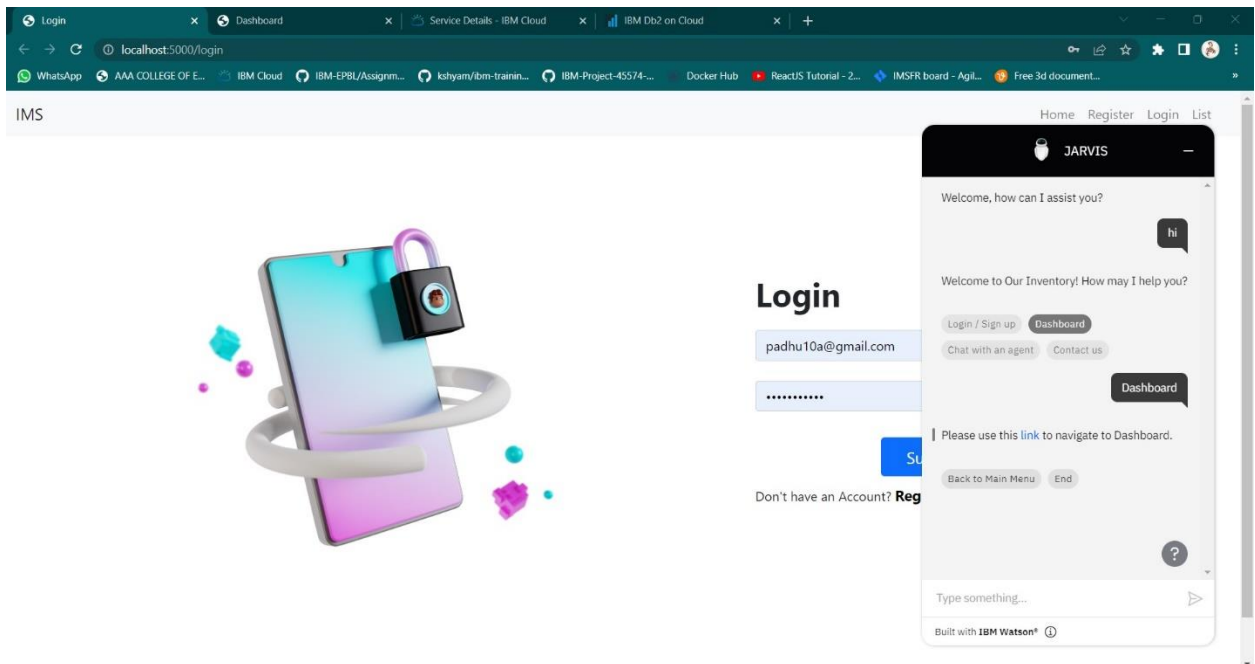
Code:

```
<script>
  window.watsonAssistantChatOptions = {
    integrationID: "633fc278-0dda-417b-9c10-bd2f300b411a", // The ID of this integration.
    region: "jp-tok", // The region your integration is hosted in.
    serviceInstanceID: "b7ec50cd-af28-4bb0-aa53-52dc00c34d4e", // The ID of your
service instance.
    onLoad: function(instance) { instance.render(); }
  };
  setTimeout(function(){
    const t=document.createElement('script');
    t.src="https://web-chat.global.assistant.watson.appdomain.cloud/versions/" +
(window.watsonAssistantChatOptions.clientVersion || 'latest') +
"/WatsonAssistantChatEntry.js";
    document.head.appendChild(t);
  });
</script>
```

Integrating the IBM Watson Assistant in the base template:







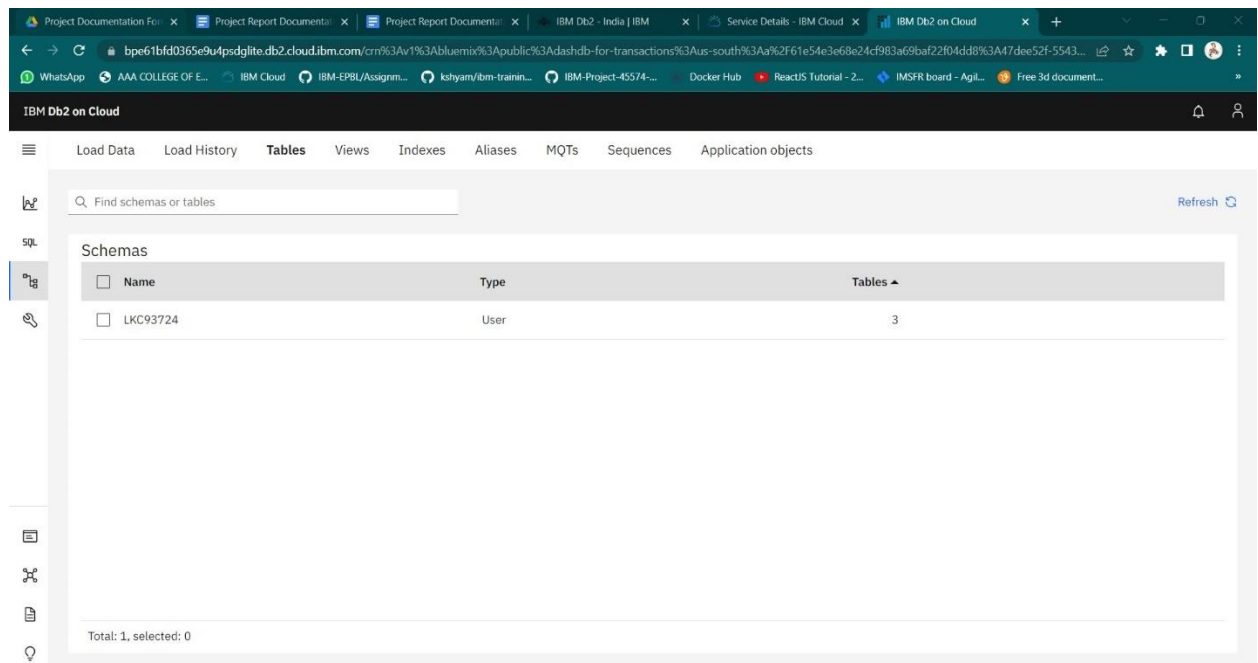
7.3 Database Schema(IBM DB2)

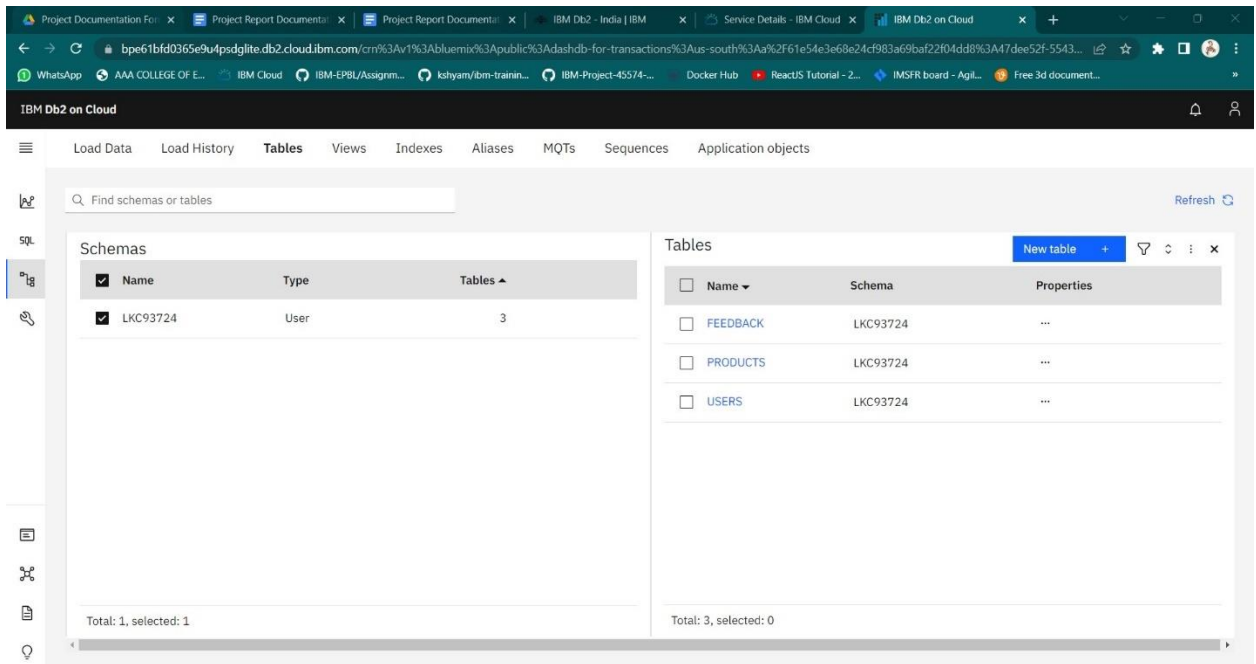
IBM Db2 Database on IBM Cloud combines a proven, AI-infused, enterprise-ready data management system with an integrated data and AI platform built on the security-rich, scalable Red Hat® OpenShift® foundation. Derive insights with machine learning embedded into query processing. Cut costs with the multimodal capability that eliminates the need for data replication and migration. And enhance agility by running Db2 on any cloud vendor.

Code: (Connecting with IBM Db2 in app.py)

```
import ibm_db
```

```
conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=54a2f15b-5c0f-46df-8954-7e38e612c2bd.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud;PORT=32733;SECURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=lkc93724;PWD=zAzNGa6DaNk6xvle", "", "")
```





8 TESTING

8.1 Test Cases

				Date	16-Nov-22							
				Team ID	PNT2022TMD51170							
				Project Name	Project - Inventory Management System For Retail							
				Maximum Marks	4 marks							
Test case ID	Feature Type	Component	Test Scenario	Pre-Requlite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments	TC for Automation(Y/N)	BUG ID
LoginPage_TC_OO1	Functional	Home Page	Verify user is able to see the Login/Signup popup when user clicked on My account button		1.Enter URL and click go 2.Click on My Account dropdown button 3.Verify login/Signup popup displayed or not	https://shopenzer.com/	Login/Signup popup should display	Working as expected	Pass			
LoginPage_TC_OO2	UI	Home Page	Verify the UI elements in Login/Signup popup		1.Enter URL and click go 2.Click on My Account dropdown button 3.Verify login/Signup popup with below UI elements: a.email text box b.password text box c.Login button d.New customer? Create account link e.Last password? Recovery password link	https://shopenzer.com/	Application should show below UI elements: a.email text box b.password text box c.Login button with orange colour d.New customer? Create account link e.Last password? Recovery password link	Working as expected	Pass	Steps are not clear to follow		BUG-1234
LoginPage_TC_OO3	Functional	Home page	Verify user is able to log into application with Valid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: padhu10a@gmail.com password: padhu123	User should navigate to user account homepage	Working as expected	Pass			
LoginPage_TC_OO4	Functional	Login page	Verify user is able to log into application with Invalid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Invalid username/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: padhu10a@gmail.com password: padhu123	Application should show 'Incorrect email or password' validation message.	Working as expected	Pass			
LoginPage_TC_OO4	Functional	Login page	Verify user is able to log into application with Invalid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box 4.Enter Invalid password in password text box 5.Click on login button	Username: padhu10a@gmail.com password: padhu123	Application should show 'Incorrect email or password' validation message.	Working as expected	Pass			
LoginPage_TC_OO5	Functional	Login page	Verify user is able to log into application with Invalid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Invalid username/email in Email text box 4.Enter Invalid password in password text box 5.Click on login button	Username: padhu10a@gmail.com password: padhu123	Application should show 'Incorrect email or password' validation message.	Working as expected	Pass			

8.2 User Acceptance Testing

1. *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).

2. *Defect Analysis*

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

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	10	4	2	3	19
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't Fix	0	5	2	1	8
Totals	24	14	13	26	77

3. *Test Case Analysis*

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

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	6	0	0	6
Client Application	25	0	0	20
Security	2	0	0	2

Outsource Shipping	3	0	0	3
Exception Reporting	7	0	0	7
Final Report Output	4	0	0	4
Version Control	2	0	0	2

9 RESULTS

9.1 Performance Metrics

					Date	16-Nov-22			
					Team ID	PNT2022TMD51170			
					Project Name	Project - Inventory Management System For Retailers			

10 ADVANTAGES & DISADVANTAGES

10.1 Advantages:

Better Inventory Accuracy:

With solid inventory management, you know what's in stock and order only the amount of inventory you need to meet demand.

Reduced Risk of Overselling:

Inventory management helps track what's in stock and what's on backorder, so you don't oversell products.

Cost Savings:

Stock costs money until it sells. Carrying costs include storage handling and transportation fees, insurance and employee salaries. Inventory is also at risk of theft, loss from natural disasters or obsolescence.

Avoiding Stockouts and Excess Stock:

Better planning and management helps a business minimize the number of days, if any, that an item is out of stock and avoid carrying too much inventory.

Greater Insights:

With inventory tracking and stock control, you can also easily spot sales trends or track recalled products or expiry dates.

More Productivity:

Good inventory management solutions save time that could be spent on other activities.

10.2 Disadvantages:

Expensive for Small Businesses:

The cost of inventory management software can seem daunting to a small business, but the investment often pays for itself in increased profits and improved customer loyalty. Additionally, cloud-based systems have made software that was once the domain of large enterprises available to smaller businesses.

Complex to Learn:

Business software is sometimes tricky to learn. However, managers can help by investing in online training to quickly bring users up to speed.

Risk of System Crashes: Software does crash. However, you can remove the risk of data and productivity loss by using cloud-based platforms.

Malicious Hacks:

Malicious hacks are a risk to all businesses. The Internet of Things (IoT) adds even more complexity. Cloud-based software typically has greater security than a single company would offer on its own because of the risk a breach would have on the vendor.

Reduced Physical Audits:

When you automate some warehouse operations, it's easy to skip a physical inventory check. Solve this by instituting regular audits.

11 CONCLUSION

Inventory management is a very complex but essential part of the supply chain. An effective inventory management system helps to reduce stock-related costs such as warehousing, carrying, and ordering costs. As you have read above, there are different techniques that

businesses can utilize to simplify and optimize stock management processes and control systems.

12 FUTURE SCOPE

Stock control for omnichannel retailing

Stores doing omnichannel retailing are at the top of their game; they attract the 90% of consumers who switch between at least three applications per day to complete specific tasks.

Inventories that power experiential retail

Experiential retail is a trend that's catching fire — especially in the past few months. In fact, they keep popping up in the news section of Google search results.

Advanced sales forecasting

Inventory management is big on having products on the shelf ready for shoppers when they need it. It curbs stockouts and fosters better personalization.

Season-based product recommendations

Speaking of Artificial Intelligence, AI-powered recommendation engines that adjust inventory based on real-time weather conditions and forecast are making their way to retail stores.

13 APPENDIX

Source Code

App.py:

```
from turtle import st
from flask import Flask, render_template, request, redirect, url_for, session
from markupsafe import escape

import ibm_db

conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=54a2f15b-5c0f-46df-8954-7e38e612c2bd.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud;PORT=32733;SECURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=lkc93724;PWD=zAzNGa6DaNk6xvle",'')

import smtplib, ssl
```

```
## email.mime subclasses
from email.mime.multipart import MIMEMultipart
from email.mime.text import MIMEText
## The pandas library is only for generating the current date, which is not necessary for
sending emails
import pandas as pd

from datetime import datetime

from flask import Flask

app = Flask(__name__)

var_list = []

app.secret_key = 'your secret key'

@app.route('/')
def home():
    if not session.get("name"):
        return render_template('home.html')
    return render_template('home.html', session = session)

@app.route('/register')
def new_student():
    return render_template('Register.html')

@app.route('/addrec', methods = ['POST', 'GET'])
def addrec():
    msg=""
    if request.method == 'POST':
```

```
fname = request.form['fname']
lname = request.form['lname']
cname = request.form['cname']
state = request.form['state']
city = request.form['city']
mobilenno = request.form['mobilenno']
emailid = request.form['emailid']
password = request.form['password']
pincode = request.form['pincode']
```

```
sql = "SELECT * FROM Users WHERE EMAILID =?"
stmt = ibm_db.prepare(conn, sql)
ibm_db.bind_param(stmt,1,emailid)
ibm_db.execute(stmt)
account = ibm_db.fetch_assoc(stmt)
```

```
if account:
```

```
    msg="You are already a member, please login using your details"
```

```
    return render_template('Register.html', msg = msg)
```

```
else:
```

```
    var_list.append(fname)
```

```
    var_list.append(lname)
```

```
    var_list.append(cname)
```

```
    var_list.append(state)
```

```
    var_list.append(city)
```

```
    var_list.append(mobilenno)
```

```
    var_list.append(emailid)
```

```
    var_list.append(password)
```

```
    var_list.append(pincode)
```

```
    html= "<!DOCTYPE HTML PUBLIC "-//W3C//DTD XHTML 1.0 Transitional //EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"><html
```

```
xmlns="http://www.w3.org/1999/xhtml"          xmlns:v="urn:schemas-microsoft-com:vml"
xmlns:o="urn:schemas-microsoft-com:office:office"><head><!--[if gte mso 9]><xml>
  <o:OfficeDocumentSettings>
    <o:AllowPNG/>
    <o:PixelsPerInch>96</o:PixelsPerInch>
  </o:OfficeDocumentSettings>
</xml>
<![endif]-->
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta name="x-apple-disable-message-reformatting">
  <!--[if !mso]><!-->
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <!--<![endif]-->
  <title></title>

  <style type="text/css">
    @media only screen and (min-width: 620px) {
      .u-row {
        width: 600px !important;
      }
      .u-row .u-col {
        vertical-align: top;
      }
      .u-row .u-col-100 {
        width: 600px !important;
      }
    }

    @media (max-width: 620px) {
      .u-row-container {
        max-width: 100% !important;
        padding-left: 0px !important;
        padding-right: 0px !important;
```

```
}  
.u-row .u-col {  
  min-width: 320px !important;  
  max-width: 100% !important;  
  display: block !important;  
}  
.u-row {  
  width: calc(100% - 40px) !important;  
}  
.u-col {  
  width: 100% !important;  
}  
.u-col>div {  
  margin: 0 auto;  
}  
}
```

```
body {  
  margin: 0;  
  padding: 0;  
}
```

```
table,  
tr,  
td {  
  vertical-align: top;  
  border-collapse: collapse;  
}
```

```
p {  
  margin: 0;  
}
```

```
.ie-container table,
```

```
.mso-container table {  
  table-layout: fixed;  
}
```

```
* {  
  line-height: inherit;  
}
```

```
a[x-apple-data-detectors='true'] {  
  color: inherit !important;  
  text-decoration: none !important;  
}
```

```
table,  
td {  
  color: #000000;  
}
```

```
#u_body a {  
  color: #0000ee;  
  text-decoration: underline;  
}
```

```
</style>
```

```
<!--[if !mso]><!-->
```

```
<link href="https://fonts.googleapis.com/css?family=Cabin:400,700" rel="stylesheet"  
type="text/css">
```

```
<!--<![endif]-->
```

```
</head>
```



```

<body class="clean-body u_body" style="margin: 0;padding: 0;-webkit-text-size-adjust:
100%;background-color: #f9f9f9;color: #000000">
  <!--[if IE]><div class="ie-container"><![endif]-->
  <!--[if mso]><div class="mso-container"><![endif]-->
  <table id="u_body" style="border-collapse: collapse;table-layout: fixed;border-spacing:
0;mso-table-lspace: 0pt;mso-table-rspace: 0pt;vertical-align: top;min-width: 320px;Margin: 0
auto;background-color: #f9f9f9;width:100%" cellpadding="0" cellspacing="0">
    <tbody>
      <tr style="vertical-align: top">
        <td style="word-break: break-word;border-collapse: collapse !important;vertical-align:
top">
          <!--[if (mso)|(IE)]><table width="100%" cellpadding="0" cellspacing="0"
border="0"><tr><td align="center" style="background-color: #f9f9f9;"><![endif]-->

          <div class="u-row-container" style="padding: 0px;background-color: transparent">
            <div class="u-row" style="Margin: 0 auto;min-width: 320px;max-width:
600px;overflow-wrap: break-word;word-wrap: break-word;word-break: break-word;background-
color: transparent;">
              <div style="border-collapse: collapse;display: table;width: 100%;height:
100%;background-color: transparent;">
                <!--[if (mso)|(IE)]><table width="100%" cellpadding="0" cellspacing="0"
border="0"><tr><td style="padding: 0px;background-color: transparent;" align="center"><table
cellpadding="0" cellspacing="0" border="0" style="width:600px;"><tr style="background-color:
transparent;"><![endif]-->

                <!--[if (mso)|(IE)]><td align="center" width="600" style="width: 600px;padding:
0px;border-top: 0px solid transparent;border-left: 0px solid transparent;border-right: 0px solid
transparent;border-bottom: 0px solid transparent;" valign="top"><![endif]-->
                <div class="u-col u-col-100" style="max-width: 320px;min-width: 600px;display:
table-cell;vertical-align: top;">
                  <div style="height: 100%;width: 100% !important;">
                    <!--[if (!mso)&(!IE)]><!-->

```

```
<div style="height: 100%; padding: 0px;border-top: 0px solid
transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom:
0px solid transparent;">
```

```
<!--<![endif]-->
```

```
<table style="font-family:'Cabin',sans-serif;" role="presentation"
cellpadding="0" cellspacing="0" width="100%" border="0">
```

```
<tbody>
```

```
<tr>
```

```
<td style="overflow-wrap:break-word;word-break:break-
word;padding:10px;font-family:'Cabin',sans-serif;" align="left">
```

```
<div style="color: #afb0c7; line-height: 170%; text-align: center; word-
wrap: break-word;">
```

```
<p style="font-size: 14px; line-height: 170%;"><span style="font-size:
14px; line-height: 23.8px;">View Email in Browser</span></p>
```

```
</div>
```

```
</td>
```

```
</tr>
```

```
</tbody>
```

```
</table>
```

```
<!--[if (!mso)&(!IE)]><!-->
```

```
</div>
```

```
<!--<![endif]-->
```

```
</div>
```

```
</div>
```

```
<!--[if (mso)](IE)]></td><![endif]-->
```

```
<!--[if (mso)](IE)]></tr></table></td></tr></table><![endif]-->
```

```
</div>
```

```
</div>
```

```
</div>
```

```

<div class="u-row-container" style="padding: 0px;background-color: transparent">
  <div class="u-row" style="Margin: 0 auto;min-width: 320px;max-width:
600px;overflow-wrap: break-word;word-wrap: break-word;word-break: break-word;background-
color: #ffffff;">
    <div style="border-collapse: collapse;display: table;width: 100%;height:
100%;background-color: transparent;">
      <!--[if (mso)](IE)]><table width="100%" cellpadding="0" cellspacing="0"
border="0"><tr><td style="padding: 0px;background-color: transparent;" align="center"><table
cellpadding="0" cellspacing="0" border="0" style="width:600px;"><tr style="background-color:
#ffffff;"><![endif]-->

      <!--[if (mso)](IE)]><td align="center" width="600" style="width: 600px;padding:
0px;border-top: 0px solid transparent;border-left: 0px solid transparent;border-right: 0px solid
transparent;border-bottom: 0px solid transparent;" valign="top"><![endif]-->

      <div class="u-col u-col-100" style="max-width: 320px;min-width: 600px;display:
table-cell;vertical-align: top;">
        <div style="height: 100%;width: 100% !important;">
          <!--[if (!mso)&(!IE)]><!-->
          <div style="height: 100%; padding: 0px;border-top: 0px solid
transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom:
0px solid transparent;">
            <!--<![endif]-->

            <table style="font-family:'Cabin',sans-serif;" role="presentation"
cellpadding="0" cellspacing="0" width="100%" border="0">
              <tbody>
                <tr>
                  <td style="overflow-wrap:break-word;word-break:break-
word;padding:20px;font-family:'Cabin',sans-serif;" align="left">

                    <table width="100%" cellpadding="0" cellspacing="0" border="0">
                      <tr>

```

<td style="padding-right: 0px;padding-left: 0px;" align="center">

</td>

</tr>

</table>

</td>

</tr>

</tbody>

</table>

<!--[if (!mso)&(!IE)]><!-->

</div>

<!--<![endif]-->

</div>

</div>

<!--[if (mso)](IE)]></td><![endif]-->

<!--[if (mso)](IE)]></tr></table></td></tr></table><![endif]-->

</div>

</div>

</div>

<div class="u-row-container" style="padding: 0px;background-color: transparent">

```
<div class="u-row" style="Margin: 0 auto;min-width: 320px;max-width: 600px;overflow-wrap: break-word;word-wrap: break-word;word-break: break-word;background-color: #003399;">
```

```
<div style="border-collapse: collapse;display: table;width: 100%;height: 100%;background-color: transparent;">
```

```
<!--[if (mso)|(IE)]><table width="100%" cellpadding="0" cellspacing="0" border="0"><tr><td style="padding: 0px;background-color: transparent;" align="center"><table cellpadding="0" cellspacing="0" border="0" style="width:600px;"><tr style="background-color: #003399;"><![endif]-->
```

```
<!--[if (mso)|(IE)]><td align="center" width="600" style="width: 600px;padding: 0px;border-top: 0px solid transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom: 0px solid transparent;" valign="top"><![endif]-->
```

```
<div class="u-col u-col-100" style="max-width: 320px;min-width: 600px;display: table-cell;vertical-align: top;">
```

```
<div style="height: 100%;width: 100% !important;">
```

```
<!--[if (!mso)&(!IE)]><!-->
```

```
<div style="height: 100%; padding: 0px;border-top: 0px solid transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom: 0px solid transparent;">
```

```
<!--<![endif]-->
```

```
<table style="font-family:'Cabin',sans-serif;" role="presentation" cellpadding="0" cellspacing="0" width="100%" border="0">
```

```
<tbody>
```

```
<tr>
```

```
<td style="overflow-wrap:break-word;word-break:break-word;padding:40px 10px 10px;font-family:'Cabin',sans-serif;" align="left">
```

```
<table width="100%" cellpadding="0" cellspacing="0" border="0">
```

```
<tr>
```

```
<td style="padding-right: 0px;padding-left: 0px;" align="center">
```

```

```

```

            </td>

```

```

        </tr>

```

```

    </table>

```

```

    </td>

```

```

    </tr>

```

```

</tbody>

```

```

</table>

```

```

        <table
            style="font-family:'Cabin',sans-serif;"
            role="presentation"
cellpadding="0" cellspacing="0" width="100%" border="0">

```

```

            <tbody>

```

```

                <tr>

```

```

                    <td
                        style="overflow-wrap:break-word;word-break:break-
word;padding:10px;font-family:'Cabin',sans-serif;" align="left">

```

```

                        <div style="color: #e5eaf5; line-height: 140%; text-align: center; word-
wrap: break-word;">

```

```

                            <p style="font-size: 14px; line-height: 140%;"><strong>T H A N K S F
O R S I G N I N G U P !</strong></p>

```

```

                        </div>

```

```

                    </td>

```

```

                </tr>

```

```

            </tbody>

```

```

        </table>

```

<div style="color: #e5eaf5; line-height: 140%; text-align: center; word-wrap: break-word;"><p style="font-size: 14px; line-height: 140%;">Confirm Your E-mail Address </p></div></p></div>

```

<div class="u-row-container" style="padding: 0px;background-color: transparent">
  <div class="u-row" style="Margin: 0 auto;min-width: 320px;max-width:
600px;overflow-wrap: break-word;word-wrap: break-word;word-break: break-word;background-
color: #ffffff;">
    <div style="border-collapse: collapse;display: table;width: 100%;height:
100%;background-color: transparent;">
      <!--[if (mso)|(IE)]><table width="100%" cellpadding="0" cellspacing="0"
border="0"><tr><td style="padding: 0px;background-color: transparent;" align="center"><table
cellpadding="0" cellspacing="0" border="0" style="width:600px;"><tr style="background-color:
#ffffff;"><![endif]-->

      <!--[if (mso)|(IE)]><td align="center" width="600" style="width: 600px;padding:
0px;border-top: 0px solid transparent;border-left: 0px solid transparent;border-right: 0px solid
transparent;border-bottom: 0px solid transparent;" valign="top"><![endif]-->
      <div class="u-col u-col-100" style="max-width: 320px;min-width: 600px;display:
table-cell;vertical-align: top;">
        <div style="height: 100%;width: 100% !important;">
          <!--[if (!mso)&(!IE)]><!-->
          <div style="height: 100%; padding: 0px;border-top: 0px solid
transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom:
0px solid transparent;">
            <!--<![endif]-->

            <table style="font-family:'Cabin',sans-serif;" role="presentation"
cellpadding="0" cellspacing="0" width="100%" border="0">
              <tbody>
                <tr>
                  <td style="overflow-wrap:break-word;word-break:break-word;padding:33px
55px;font-family:'Cabin',sans-serif;" align="left">

                    <div style="line-height: 160%; text-align: center; word-wrap: break-
word;">

                      <p style="font-size: 14px; line-height: 160%;"><span style="font-size:
22px; line-height: 35.2px;">Hi, </span></p>

```


<p style="font-size: 14px; line-height: 160%;">You're almost ready to get started. Please click on the button below to confirm your email address and experience the awesome Inventory Management Service!</p>

</div>

</td>

</tr>

</tbody>

</table>

<table style="font-family:'Cabin',sans-serif;" role="presentation" cellpadding="0" cellspacing="0" width="100%" border="0">

<tbody>

<tr>

<td style="overflow-wrap:break-word;word-break:break-word;padding:10px;font-family:'Cabin',sans-serif;" align="left">

<!--[if mso]><style>.v-button {background: transparent !important;}</style><![endif]-->

<div align="center">

<!--[if mso]><v:roundrect xmlns:v="urn:schemas-microsoft-com:vml" xmlns:w="urn:schemas-microsoft-com:office:word" href="http://localhost:5000/confirm" style="height:46px; v-text-anchor:middle; width:157px;" arcsize="8.5%" stroke="f" fillcolor="#9ecbe4"><w:anchorlock/><center style="color:#103c55;font-family:'Cabin',sans-serif;"><![endif]-->

CONFIRM

<!--[if mso]></center></v:roundrect><![endif]-->

</div>

</td>

</tr>

</tbody>

</table>

<table style="font-family:'Cabin',sans-serif;" role="presentation" cellpadding="0" cellspacing="0" width="100%" border="0">

<tbody>

<tr>

<td style="overflow-wrap:break-word;word-break:break-word;padding:33px 55px 60px;font-family:'Cabin',sans-serif;" align="left">

<div style="color: #3598db; line-height: 160%; text-align: center; word-wrap: break-word;">

<p style="line-height: 160%; font-size: 14px;">Once again, Thanks for signing up with us!</p>

</div>

</td>

</tr>

</tbody>

</table>

<!--[if (!mso)&(!IE)]><!-->

</div>

```

        <!--<![endif]-->
    </div>
</div>
<!--[if (mso)|(IE)]></td><![endif]-->
<!--[if (mso)|(IE)]></tr></table></td></tr></table><![endif]-->
</div>
</div>
</div>

<!--[if (mso)|(IE)]></td></tr></table><![endif]-->
</td>
</tr>
</tbody>
</table>
<!--[if mso]></div><![endif]-->
<!--[if IE]></div><![endif]-->
</body>

</html>>"

```

Set up the email addresses and password. Please replace below with your email address and password

```
email_from = 'padhu10a@gmail.com'
```

```
epassword = 'rbjibzksssszsbrjo'
```

```
email_to = emailid
```

Generate today's date to be included in the email Subject

```
date_str = pd.Timestamp.today().strftime('%Y-%m-%d')
```

Create a MIMEMultipart class, and set up the From, To, Subject fields

```
email_message = MIMEMultipart()
```

```
email_message['From'] = email_from
```

```

email_message['To'] = email_to
email_message['Subject'] = f'Report email - {date_str}'

# Attach the html doc defined earlier, as a MIMEText html content type to the MIME
message
email_message.attach(MIMEText(html, "html"))
# Convert it as a string
email_string = email_message.as_string()

# Connect to the Gmail SMTP server and Send Email
context = ssl.create_default_context()
with smtplib.SMTP_SSL("smtp.gmail.com", 465, context=context) as server:
    server.login(email_from, epassword)
    server.sendmail(email_from, email_to, email_string)
return render_template('notify.html')

```

```

@app.route('/confirm')
def confirmation():
    insert_sql = "INSERT INTO Users (FIRSTNAME, LASTNAME, COMPANYNAME, STATE,
CITY, MOBILENO, EMAILID, PASSWORD, PINCODE) VALUES (?,?,?,?,?,?,?,?,?)"
    prep_stmt = ibm_db.prepare(conn, insert_sql)
    ibm_db.bind_param(prepare_stmt, 1, var_list[0])
    ibm_db.bind_param(prepare_stmt, 2, var_list[1])
    ibm_db.bind_param(prepare_stmt, 3, var_list[2])
    ibm_db.bind_param(prepare_stmt, 4, var_list[3])
    ibm_db.bind_param(prepare_stmt, 5, var_list[4])
    ibm_db.bind_param(prepare_stmt, 6, var_list[5])
    ibm_db.bind_param(prepare_stmt, 7, var_list[6])
    ibm_db.bind_param(prepare_stmt, 8, var_list[7])
    ibm_db.bind_param(prepare_stmt, 9, var_list[8])
    ibm_db.execute(prepare_stmt)
    var_list.clear()

```

```
return render_template('confirm.html')
```

```
@app.route('/login')
```

```
def login():
```

```
    return render_template('Login.html')
```

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

```
def loginrec():
```

```
    msg = "
```

```
    if request.method == 'POST' and 'email' in request.form and 'password' in request.form:
```

```
        email = request.form['email']
```

```
        password = request.form['password']
```

```
        sql = "SELECT * FROM Users WHERE EMAILID =? AND PASSWORD =?"
```

```
        stmt = ibm_db.prepare(conn, sql)
```

```
        ibm_db.bind_param(stmt,1,email)
```

```
        ibm_db.bind_param(stmt,2,password)
```

```
        ibm_db.execute(stmt)
```

```
        account = ibm_db.fetch_assoc(stmt)
```

```
        if account:
```

```
            session['loggedin'] = True
```

```
            session['id'] = account['ID']
```

```
            session['email'] = account['EMAILID']
```

```
            session['name'] = account['FIRSTNAME']
```

```
            return render_template('dashboard/dashboard.html')
```

```
        else:
```

```
            msg = 'Incorrect email / password !'
```

```
        return render_template('login.html', msg = msg)
```

```
@app.route('/dashboard')
```

```
def dashboard():
```

```

if session['loggedin'] == True:
    return render_template('dashboard/dashboard.html')
else:
    return redirect(url_for('home'))

@app.route('/addproduct')
def addproduct():
    if session['loggedin'] == True:
        return render_template('dashboard/addproduct.html')
    else:
        return redirect(url_for('home'))

@app.route('/movement')
def movement():
    if session['loggedin'] == True:
        products = []
        sql = "SELECT * FROM Products WHERE HOLDERNAME = ?"
        prep_stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(prepare_stmt, 1, session['name'])
        ibm_db.execute(prepare_stmt)
        dictionary = ibm_db.fetch_both(prepare_stmt)
        while dictionary != False:
            # print ("The Name is : ", dictionary)
            products.append(dictionary)
            dictionary = ibm_db.fetch_both(prepare_stmt)

        if products:
            return render_template("dashboard/movement.html", products = products , session = session)
        else:
            return render_template("dashboard/movement.html")
    else:
        return redirect(url_for('home'))

```

```

@app.route('/moveproc',methods = ['POST', 'GET'])
def moveproc():
    if request.method == 'POST':
        pname = request.form['pname']
        quantityout = request.form['quantityout']
        tow = request.form['to']

        insert_sql = "UPDATE products SET QUANTITYOUT = ?, TO = ? WHERE
PRODUCTNAME = ? AND HOLDERNAME = ?;"
        prep_stmt = ibm_db.prepare(conn, insert_sql)
        ibm_db.bind_param(prepare_stmt, 1,quantityout)
        ibm_db.bind_param(prepare_stmt, 2, tow)
        ibm_db.bind_param(prepare_stmt, 3, pname)
        ibm_db.bind_param(prepare_stmt, 4, session['name'])
        ibm_db.execute(prepare_stmt)
        select_sql="SELECT QUANTITYIN from PRODUCTS WHERE PRODUCTNAME = ?
AND HOLDERNAME = ?;"
        pre_stmt = ibm_db.prepare(conn, select_sql)
        ibm_db.bind_param(pre_stmt, 1, pname)
        ibm_db.bind_param(pre_stmt, 2, session['name'])
        ibm_db.execute(pre_stmt)
        outofstock = ibm_db.fetch_both(pre_stmt)
        if outofstock['QUANTITYIN'] <= int(quantityout):

            html= "" <!DOCTYPE HTML PUBLIC "-//W3C//DTD XHTML 1.0 Transitional //EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
            <html xmlns="http://www.w3.org/1999/xhtml" xmlns:v="urn:schemas-microsoft-com:vml"
xmlns:o="urn:schemas-microsoft-com:office:office">

            <head>
                <!--[if gte mso 9]>
            <xml>
                <o:OfficeDocumentSettings>
                <o:AllowPNG/>

```

```
<o:PixelsPerInch>96</o:PixelsPerInch>
</o:OfficeDocumentSettings>
</xml>
<![endif]-->
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta name="x-apple-disable-message-reformatting">
<!--[if !mso]><!-->
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<!--<![endif]-->
<title></title>
```

```
<style type="text/css">
```

```
@media only screen and (min-width: 620px) {
```

```
  .u-row {
```

```
    width: 600px !important;
```

```
  }
```

```
  .u-row .u-col {
```

```
    vertical-align: top;
```

```
  }
```

```
  .u-row .u-col-100 {
```

```
    width: 600px !important;
```

```
  }
```

```
}
```

```
@media (max-width: 620px) {
```

```
  .u-row-container {
```

```
    max-width: 100% !important;
```

```
    padding-left: 0px !important;
```

```
    padding-right: 0px !important;
```

```
  }
```

```
  .u-row .u-col {
```

```
    min-width: 320px !important;
```

```
    max-width: 100% !important;
```



```
    display: block !important;
}
.u-row {
    width: calc(100% - 40px) !important;
}
.u-col {
    width: 100% !important;
}
.u-col>div {
    margin: 0 auto;
}
}
```

```
body {
    margin: 0;
    padding: 0;
}
```

```
table,
tr,
td {
    vertical-align: top;
    border-collapse: collapse;
}
```

```
p {
    margin: 0;
}
```

```
.ie-container table,
.mso-container table {
    table-layout: fixed;
}
```

```
* {  
  line-height: inherit;  
}
```

```
a[x-apple-data-detectors='true'] {  
  color: inherit !important;  
  text-decoration: none !important;  
}
```

```
table,  
td {  
  color: #000000;  
}
```

```
@media (max-width: 480px) {  
  #u_column_3 .v-col-background-color {  
    background-color: #3598db !important;  
  }  
}  
</style>
```

```
<!--[if !mso]><!-->  
<link href="https://fonts.googleapis.com/css?family=Cabin:400,700" rel="stylesheet"  
type="text/css">  
<!--<![endif]-->  
  
</head>
```

```
<body class="clean-body u_body" style="margin: 0;padding: 0;-webkit-text-size-adjust:  
100%;background-color: #f9f9f9;color: #000000">  
<!--[if IE]><div class="ie-container"><![endif]-->  
<!--[if mso]><div class="mso-container"><![endif]-->
```

```
<table style="border-collapse: collapse;table-layout: fixed;border-spacing: 0;mso-table-lspace: 0pt;mso-table-rspace: 0pt;vertical-align: top;min-width: 320px;Margin: 0 auto;background-color: #f9f9f9;width:100%" cellpadding="0" cellspacing="0">
```

```
<tbody>
```

```
<tr style="vertical-align: top">
```

```
<td style="word-break: break-word;border-collapse: collapse !important;vertical-align: top">
```

```
<!--[if (mso)](IE)]><table width="100%" cellpadding="0" cellspacing="0" border="0"><tr><td align="center" style="background-color: #f9f9f9;"><![endif]-->
```

```
<div class="u-row-container" style="padding: 0px;background-color: transparent">
```

```
<div class="u-row" style="Margin: 0 auto;min-width: 320px;max-width: 600px;overflow-wrap: break-word;word-wrap: break-word;word-break: break-word;background-color: #ffffff;">
```

```
<div style="border-collapse: collapse;display: table;width: 100%;height: 100%;background-color: transparent;">
```

```
<!--[if (mso)](IE)]><table width="100%" cellpadding="0" cellspacing="0" border="0"><tr><td style="padding: 0px;background-color: transparent;" align="center"><table cellpadding="0" cellspacing="0" border="0" style="width:600px;"><tr style="background-color: #ffffff;"><![endif]-->
```

```
<!--[if (mso)](IE)]><td align="center" width="600" class="v-col-background-color" style="width: 600px;padding: 0px;border-top: 0px solid transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom: 0px solid transparent;" valign="top"><![endif]-->
```

```
<div class="u-col u-col-100" style="max-width: 320px;min-width: 600px;display: table-cell;vertical-align: top;">
```

```
<div class="v-col-background-color" style="height: 100%;width: 100% !important;">
```

```
<!--[if (!mso)&(!IE)]><!-->
```

```
<div style="height: 100%; padding: 0px;border-top: 0px solid transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom: 0px solid transparent;">
```

<!--<![endif]-->

<table style="font-family:'Cabin',sans-serif;" role="presentation" cellpadding="0" cellspacing="0" width="100%" border="0">

<tbody>

<tr>

<td style="overflow-wrap:break-word;word-break:break-word;padding:0px;font-family:'Cabin',sans-serif;" align="left">

<table width="100%" cellpadding="0" cellspacing="0" border="0">

<tr>

<td style="padding-right: 0px;padding-left: 0px;" align="right">

</td>

</tr>

</table>

</td>

</tr>

</tbody>

</table>

<!--[if (!mso)&(!IE)]><!-->

</div>

<!--<![endif]-->

</div>

</div>

```
<!--[if (mso)](IE)]></td><![endif]-->
<!--[if (mso)](IE)]></tr></table></td></tr></table><![endif]-->
</div>
</div>
</div>
```

```
<div class="u-row-container" style="padding: 0px;background-color: transparent">
  <div class="u-row" style="Margin: 0 auto;min-width: 320px;max-width:
600px;overflow-wrap: break-word;word-wrap: break-word;word-break: break-word;background-
color: #003399;">
    <div style="border-collapse: collapse;display: table;width: 100%;height:
100%;background-color: transparent;">
      <!--[if (mso)](IE)]><table width="100%" cellpadding="0" cellspacing="0"
border="0"><tr><td style="padding: 0px;background-color: transparent;" align="center"><table
cellpadding="0" cellspacing="0" border="0" style="width:600px;"><tr style="background-color:
#003399;"><![endif]-->
```

```
<!--[if (mso)](IE)]><td align="center" width="600" class="v-col-background-color"
style="background-color: #3598db;width: 600px;padding: 0px;border-top: 0px solid
transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom:
0px solid transparent;" valign="top"><![endif]-->
```

```
<div id="u_column_3" class="u-col u-col-100" style="max-width: 320px;min-width:
600px;display: table-cell;vertical-align: top;">
```

```
<div class="v-col-background-color" style="background-color: #3598db;height:
100%;width: 100% !important;">
```

```
<!--[if (!mso)]&(!IE)]><!-->
```

```
<div style="height: 100%; padding: 0px;border-top: 0px solid
transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom:
0px solid transparent;">
```

```
<!--<![endif]-->
```

```
<table style="font-family:'Cabin',sans-serif;" role="presentation"
cellpadding="0" cellspacing="0" width="100%" border="0">
```

```
<tbody>
```

```
<tr>
```

```
<td style="overflow-wrap:break-word;word-break:break-word;padding:40px
10px 10px;font-family:'Cabin',sans-serif;" align="left">
```

```
<table width="100%" cellpadding="0" cellspacing="0" border="0">
```

```
<tr>
```

```
<td style="padding-right: 0px;padding-left: 0px;" align="center">
```

```

```

```
</td>
```

```
</tr>
```

```
</table>
```

```
</td>
```

```
</tr>
```

```
</tbody>
```

```
</table>
```

```
<table style="font-family:'Cabin',sans-serif;" role="presentation"
cellpadding="0" cellspacing="0" width="100%" border="0">
```

```
<tbody>
```

```
<tr>
```

```
<td style="overflow-wrap:break-word;word-break:break-
word;padding:10px;font-family:'Cabin',sans-serif;" align="left">
```

```
<div style="color: #e5eaf5; line-height: 140%; text-align: center; word-
wrap: break-word;">
```

```
<p style="font-size: 14px; line-height: 140%;"><span style="color:
#000000; font-size: 20px; line-height: 28px;">WARNING</span></p>
```

```
</div>
```

```
</td>
```

```
</tr>
```

```
</tbody>
```

```
</table>
```

```
<table style="font-family:'Cabin',sans-serif;" role="presentation"
cellpadding="0" cellspacing="0" width="100%" border="0">
```

```
<tbody>
```

```
<tr>
```

```
<td style="overflow-wrap:break-word;word-break:break-word;padding:0px
10px 31px;font-family:'Cabin',sans-serif;" align="left">
```

```
<div style="color: #e5eaf5; line-height: 140%; text-align: center; word-
wrap: break-word;">
```

```
<p style="font-size: 14px; line-height: 140%;"><span style="font-size:
24px; line-height: 33.6px;"><strong>You are <span style="color: #000000; font-size: 24px; line-
height: 33.6px;">Out of Stock !</span></strong>
```

```
</span>
```

```
</p>
```

```
</div>
```

```
</td>
```

```
</tr>
```

```
</tbody>
```

```
</table>
```

```
<!--[if (!mso)&(!IE)]><!-->
```

```
</div>
```

```

        <!--<![endif]-->
    </div>
</div>
<!--[if (mso)](IE)]></td><![endif]-->
<!--[if (mso)](IE)]></tr></table></td></tr></table><![endif]-->
</div>
</div>
</div>

```

```

<div class="u-row-container" style="padding: 0px;background-color: transparent">
    <div class="u-row" style="Margin: 0 auto;min-width: 320px;max-width:
600px;overflow-wrap: break-word;word-wrap: break-word;word-break: break-word;background-
color: #ffffff;">

```

```

        <div style="border-collapse: collapse;display: table;width: 100%;height:
100%;background-color: transparent;">

```

```

            <!--[if (mso)](IE)]><table width="100%" cellpadding="0" cellspacing="0"
border="0"><tr><td style="padding: 0px;background-color: transparent;" align="center"><table
cellpadding="0" cellspacing="0" border="0" style="width:600px;"><tr style="background-color:
#ffffff;"><![endif]-->

```

```

                <!--[if (mso)](IE)]><td align="center" width="600" class="v-col-background-color"
style="background-color: #000000;width: 600px;padding: 0px;border-top: 0px solid
transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom:
0px solid transparent;" valign="top"><![endif]-->

```

```

            <div class="u-col u-col-100" style="max-width: 320px;min-width: 600px;display:
table-cell;vertical-align: top;">

```

```

                <div class="v-col-background-color" style="background-color: #000000;height:
100%;width: 100% !important;">

```

```

                    <!--[if (!mso)&(!IE)]><!-->

```

```

                        <div style="height: 100%; padding: 0px;border-top: 0px solid
transparent;border-left: 0px solid transparent;border-right: 0px solid transparent;border-bottom:
0px solid transparent;">

```


<!--<![endif]-->

<table style="font-family:'Cabin',sans-serif;" role="presentation" cellpadding="0" cellspacing="0" width="100%" border="0">

<tbody>

<tr>

<td style="overflow-wrap:break-word;word-break:break-word;padding:33px 55px;font-family:'Cabin',sans-serif;" align="left">

<div style="color: #000000; line-height: 160%; text-align: center; word-wrap: break-word;">

<p style="font-size: 14px; line-height: 160%;">Please order new stocks to get rid of the out-of-stock.

</p>

</div>

</td>

</tr>

</tbody>

</table>

<table style="font-family:'Cabin',sans-serif;" role="presentation" cellpadding="0" cellspacing="0" width="100%" border="0">

<tbody>

<tr>

<td style="overflow-wrap:break-word;word-break:break-word;padding:33px 55px 60px;font-family:'Cabin',sans-serif;" align="left">

<div style="color: #3598db; line-height: 160%; text-align: center; word-wrap: break-word;">

<p style="line-height: 160%; font-size: 14px; text-align: center;">Post queries in the Contact Support for further clearance!</p>

<p style="line-height: 160%; font-size: 14px; text-align: center;"> </p>

<p style="line-height: 160%; font-size: 14px; text-align: center;">Thank you!</p>

</div>

</td>

</tr>

</tbody>

</table>

<!--[if (!mso)&(!IE)]><!-->

</div>

<!--[endif]>

</div>

</div>

<!--[if (mso)|(IE)]></td><![endif]>

<!--[if (mso)|(IE)]></tr></table></td></tr></table><![endif]>

</div>

</div>

</div>

<!--[if (mso)|(IE)]></td></tr></table><![endif]>

</td>

</tr>

</tbody>

</table>

<!--[if mso]></div><![endif]>

<!--[if IE]></div><![endif]>

</body>

</html>

'''

Set up the email addresses and password. Please replace below with your email address and password

```
email_from = 'padhu10a@gmail.com'
```

```
epassword = 'rbjibzkssszsbrjo'
```

```
email_to = session['email']
```

Generate today's date to be included in the email Subject

```
date_str = pd.Timestamp.today().strftime('%d-%m-%Y')
```

Create a MIMEMultipart class, and set up the From, To, Subject fields

```
email_message = MIMEMultipart()
```

```
email_message['From'] = email_from
```

```
email_message['To'] = email_to
```

```
email_message['Subject'] = f'Warning!!! {pname} - Out Of Stock - {date_str}'
```

Attach the html doc defined earlier, as a MIMEText html content type to the MIME message

```
email_message.attach(MIMEText(html, "html"))
```

Convert it as a string

```
email_string = email_message.as_string()
```

Connect to the Gmail SMTP server and Send Email

```
context = ssl.create_default_context()
```

```
with smtplib.SMTP_SSL("smtp.gmail.com", 465, context=context) as server:
```

```
    server.login(email_from, epassword)
```

```
    server.sendmail(email_from, email_to, email_string)
```

```
products = []
```

```
sql = "SELECT * FROM Products WHERE HOLDERNAME = ?"
```

```
prep_stmt = ibm_db.prepare(conn, sql)
```

```

        ibm_db.bind_param(prepare_stmt, 1, session['name'])
        ibm_db.execute(prepare_stmt)
        dictionary = ibm_db.fetch_both(prepare_stmt)
        while dictionary != False:
            # print ("The Name is : ", dictionary)
            products.append(dictionary)
            dictionary = ibm_db.fetch_both(prepare_stmt)
        return render_template('dashboard/movement.html', msg = "Product movement
noted!", products = products)
    else:
        products = []
        sql = "SELECT * FROM Products WHERE HOLDERNAME = ?"
        prepare_stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(prepare_stmt, 1, session['name'])
        ibm_db.execute(prepare_stmt)
        dictionary = ibm_db.fetch_both(prepare_stmt)
        while dictionary != False:
            # print ("The Name is : ", dictionary)
            products.append(dictionary)
            dictionary = ibm_db.fetch_both(prepare_stmt)
        return render_template('dashboard/movement.html', msg = "Product movement
noted!", products = products)

```

```

@app.route('/report')

```

```

def report():

```

```

    if session['loggedin'] == True:

```

```

        products = []

```

```

        stockonhand = []

```

```

        sql = "SELECT * FROM Products WHERE HOLDERNAME = ?"

```

```

        prepare_stmt = ibm_db.prepare(conn, sql)

```

```

        ibm_db.bind_param(prepare_stmt, 1, session['name'])

```

```

        ibm_db.execute(prepare_stmt)

```

```

dictionary = ibm_db.fetch_both(prepare_stmt)
while dictionary != False:
    # print ("The Name is : ", dictionary)
    products.append(dictionary)
    dictionary = ibm_db.fetch_both(prepare_stmt)

for i in products:
    calc = int((i['QUANTITYIN'])) - int(i['QUANTITYOUT'])
    stockonhand.append(str(calc))

return render_template('dashboard/report.html', row_row1 =zip(products,stockonhand))
else:
    return redirect(url_for('home'))

@app.route('/stockupdate')
def stock():
    if session['loggedin'] == True:
        products = []
        sql = "SELECT * FROM Products WHERE HOLDERNAME = ?"
        prepare_stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(prepare_stmt, 1, session['name'])
        ibm_db.execute(prepare_stmt)
        dictionary = ibm_db.fetch_both(prepare_stmt)
        while dictionary != False:
            # print ("The Name is : ", dictionary)
            products.append(dictionary)
            dictionary = ibm_db.fetch_both(prepare_stmt)

        if products:
            return render_template("dashboard/stockupdate.html", products = products , session =
session)
        else:
            return render_template("dashboard/stockupdate.html")
    else:

```

```
return redirect(url_for('home'))
```

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

```
def proc_delete():
```

```
    id = request.args.get('pid')
```

```
    delete_sql = "DELETE FROM products WHERE ID = ? AND HOLDERNAME = ?;"
```

```
    prep_stmt = ibm_db.prepare(conn, delete_sql)
```

```
    ibm_db.bind_param(prepare_stmt, 1, id)
```

```
    ibm_db.bind_param(prepare_stmt, 2, session['name'])
```

```
    ibm_db.execute(prepare_stmt)
```

```
    products = []
```

```
    sql = "SELECT * FROM Products WHERE HOLDERNAME = ?"
```

```
    prep_stmt = ibm_db.prepare(conn, sql)
```

```
    ibm_db.bind_param(prepare_stmt, 1, session['name'])
```

```
    ibm_db.execute(prepare_stmt)
```

```
    dictionary = ibm_db.fetch_both(prepare_stmt)
```

```
    while dictionary != False:
```

```
        # print ("The Name is : ", dictionary)
```

```
        products.append(dictionary)
```

```
        dictionary = ibm_db.fetch_both(prepare_stmt)
```

```
    return render_template('dashboard/stockupdate.html', msg='Product successfully  
deleted!' , products = products)
```

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

```
def proc_update():
```

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

```
        pname = request.form['pname']
```

```
        quantityin = request.form['quantityin']
```

```
        pid = request.form['pid']
```

```
        update_sql = "UPDATE products SET PRODUCTNAME = ?, QUANTITYIN = ?  
WHERE ID = ? AND HOLDERNAME = ?;"
```

```

prep_stmt = ibm_db.prepare(conn, update_sql)
ibm_db.bind_param(prepare_stmt, 1, pname)
ibm_db.bind_param(prepare_stmt, 2, quantityin)
ibm_db.bind_param(prepare_stmt, 3, pid)
ibm_db.bind_param(prepare_stmt, 4, session['name'])
ibm_db.execute(prepare_stmt)

```

```

products = []
sql = "SELECT * FROM Products WHERE HOLDERNAME = ?"
prep_stmt = ibm_db.prepare(conn, sql)
ibm_db.bind_param(prepare_stmt, 1, session['name'])
ibm_db.execute(prepare_stmt)
dictionary = ibm_db.fetch_both(prepare_stmt)
while dictionary != False:
    # print ("The Name is : ", dictionary)
    products.append(dictionary)
    dictionary = ibm_db.fetch_both(prepare_stmt)
return render_template('dashboard/stockupdate.html', msg='Product successfully
updated!' , products = products)

```

```

@app.route('/addproc',methods = ['POST', 'GET'])
def addproc():
    if request.method == 'POST':
        pname = request.form['pname']
        quantity = request.form['quantity']
        the_time = datetime.now()
        the_time = the_time.replace(second=0, microsecond=0)

        sql = "SELECT * FROM Products WHERE HOLDERNAME =?"
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt,1,session['name'])
        ibm_db.execute(stmt)
        product = ibm_db.fetch_assoc(stmt)

```

if product:

if product['PRODUCTNAME']==pname:

return render_template('dashboard/addproduct.html', msg="Product already added!")

Add a new product.")

else:

```
sql          ="INSERT          INTO          Products
(PRODUCTNAME,QUANTITYIN,QUANTITYOUT,TO,DATE,HOLDERNAME)  VALUES
(?,?,?,?,?,?);"
```

prep_stmt = ibm_db.prepare(conn, sql)

ibm_db.bind_param(prepare_stmt, 1, pname)

ibm_db.bind_param(prepare_stmt, 2, quantity)

ibm_db.bind_param(prepare_stmt, 3, '0')

ibm_db.bind_param(prepare_stmt, 4, "")

ibm_db.bind_param(prepare_stmt, 5, str(the_time))

ibm_db.bind_param(prepare_stmt, 6, session['name'])

ibm_db.execute(prepare_stmt)

return render_template('dashboard/addproduct.html', msg="Product added")

else:

```
sql          ="INSERT          INTO          Products
(PRODUCTNAME,QUANTITYIN,QUANTITYOUT,TO,DATE,HOLDERNAME)  VALUES
(?,?,?,?,?,?);"
```

prep_stmt = ibm_db.prepare(conn, sql)

ibm_db.bind_param(prepare_stmt, 1, pname)

ibm_db.bind_param(prepare_stmt, 2, quantity)

ibm_db.bind_param(prepare_stmt, 3, '0')

ibm_db.bind_param(prepare_stmt, 4, "")

ibm_db.bind_param(prepare_stmt, 5, str(the_time))

ibm_db.bind_param(prepare_stmt, 6, session['name'])

ibm_db.execute(prepare_stmt)

return render_template('dashboard/addproduct.html', msg="Product added")


```

@app.route('/productlist')
def productlist():
    if session['loggedin'] == True:
        products = []
        sql = "SELECT * FROM Products WHERE HOLDERNAME = ?"
        prep_stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(prepare_stmt, 1, session['name'])
        ibm_db.execute(prepare_stmt)
        dictionary = ibm_db.fetch_both(prepare_stmt)
        while dictionary != False:
            # print ("The Name is : ", dictionary)
            products.append(dictionary)
            dictionary = ibm_db.fetch_both(prepare_stmt)

        if products:
            return render_template("dashboard/productlist.html", products = products , session = session)
        else:
            return render_template("dashboard/productlist.html")
    else:
        return redirect(url_for('home'))

@app.route('/contactsupport')
def contactsupport():
    if session['loggedin'] == True:
        return render_template('dashboard/contactsupport.html')
    else:
        return redirect(url_for('home'))

@app.route('/contactsup', methods = ['POST','GET'])
def contactsup():
    if request.method == 'POST':
        name = request.form['name']

```

```
mobilenno = request.form['mobilenno']
emailid = request.form['emailid']
query = request.form['query']
```

```
html = "<h1>Query from, </h1><br/><b>Name: </b>" + name + "<br/><b>Email ID: </b>" + emailid + "<br/><b>Contact no: </b>" + mobilenno + "<br/><b>Query: </b><b>" + query + "</b>"
```

```
# Set up the email addresses and password. Please replace below with your email address and password
```

```
email_from = 'padhu10a@gmail.com'
epassword = 'rbjibzkssszsbrjo'
email_to = 'imsa3258@gmail.com'
```

```
# Generate today's date to be included in the email Subject
date_str = pd.Timestamp.today().strftime('%Y-%m-%d')
```

```
# Create a MIMEMultipart class, and set up the From, To, Subject fields
email_message = MIMEMultipart()
email_message['From'] = email_from
email_message['To'] = email_to
email_message['Subject'] = f'Query email - {date_str}'
```

```
# Attach the html doc defined earlier, as a MIMEText html content type to the MIME message
```

```
email_message.attach(MIMEText(html, "html"))
```

```
# Convert it as a string
email_string = email_message.as_string()
```

```
# Connect to the Gmail SMTP server and Send Email
```

```
context = ssl.create_default_context()
with smtplib.SMTP_SSL("smtp.gmail.com", 465, context=context) as server:
    server.login(email_from, epassword)
    server.sendmail(email_from, email_to, email_string)
```

```
        return render_template('dashboard/contactsupport.html', msg = "We have mailed your query to our Support team! Soon they will reach you.")
```

```
@app.route('/feedback')
```

```
def feedback():
```

```
    if session['loggedin'] == True:
```

```
        return render_template('dashboard/feedback.html')
```

```
    else:
```

```
        return redirect(url_for('home'))
```

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

```
def feedbackadd():
```

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

```
        interface = request.form['interface']
```

```
        availability = request.form['availability']
```

```
        userfriendly = request.form['userfriendly']
```

```
        chatbot = request.form['chatbot']
```

```
        suggest = request.form['suggest']
```

```
    sql = "SELECT * FROM Feedback WHERE NAME =?"
```

```
    stmt = ibm_db.prepare(conn, sql)
```

```
    ibm_db.bind_param(stmt,1,session['name'])
```

```
    ibm_db.execute(stmt)
```

```
    account = ibm_db.fetch_assoc(stmt)
```

```
    if account:
```

```
        return render_template('dashboard/feedback.html', msg = "Your feedback was submitted already.")
```

```
    else:
```

```
        ins_sql = "INSERT INTO Feedback  
(interface,availability,userfriendly,chatbot,suggest,name) VALUES (?, ?, ?, ?, ?, ?);"
```

```
        prep_stmt = ibm_db.prepare(conn, ins_sql)
```

```
        ibm_db.bind_param(prepared_stmt, 1, interface)
```

```
        ibm_db.bind_param(prepared_stmt, 2, availability)
```

```
    ibm_db.bind_param(prepare_stmt, 3, userfriendly)
    ibm_db.bind_param(prepare_stmt, 4, chatbot)
    ibm_db.bind_param(prepare_stmt, 5, suggest)
    ibm_db.bind_param(prepare_stmt, 6, session['name'])
    ibm_db.execute(prepare_stmt)

    return render_template('dashboard/feedback.html', msg = "Your feedback was
submitted.")
```

```
@app.route('/logout')
def logout():
    session['loggedin'] = False
    session.pop('id', None)
    session.pop('email', None)
    session.pop('name', None)
    return redirect(url_for('home'))
```

```
if __name__ == "__main__":
    app.run(debug=True, host="0.0.0.0", port=5000)
```

Dockerfile

```
FROM python:3.10.6
WORKDIR /app
COPY requirements.txt ./
RUN pip install -r requirements.txt
COPY . .
EXPOSE 5000
CMD ["python", "./app.py"]
```

requirements.txt

flask
ibm_db
pandas

flask_service.yaml:

apiVersion: v1
kind: Service
metadata:
 name: flask-app-service
spec:
 type: NodePort
 ports:
 - port: 5000
 selector:
 app: ims-final

flask_ingress.yaml:

apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
 name: flask-app-ingress
 annotations:
 kubernetes.io/ingress.class: nginx
 nginx.ingress.kubernetes.io/ssl-redirect: "false"

spec:
 # ingressClassName: nginx
 rules:
 - http:
 paths:

- backend:
 - service:
 - name: flask-app-service
 - port:
 - number: 5000
 - path: /
 - pathType: Prefix

ibm_deployment.yaml:

apiVersion: apps/v1

kind: Deployment

metadata:

- name: ims-final

spec:

- replicas: 3

- selector:

- matchLabels:

- app: ims-final

- template:

- metadata:

- labels:

- app: ims-final

- spec:

- containers:

- name: job-portal-container

- image: jp.icr.io/padmanaban/ims-final

- imagePullPolicy: Always

- ports:

- containerPort: 5000

- protocol: TCP

GitHub & Project Demo Link

GitHub Link: <https://github.com/IBM-EPBL/IBM-Project-6555-1658831626>

Demo Link: <https://www.youtube.com/watch?v=5Q7Xz2erepo>

View the deployed ims-final flask application by clicking the below link,
<http://159.122.175.228:30496/>