INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

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ABSTRACT

This Project is aimed at developing a desktop based application named Inventory Management System for managing the inventory system of any organization. Inventory Management System(IMS) refers to the system and processes to manage the stock of organization with the involvement of Technology system. This system can be used to store the details of the inventory, stock maintanance, update the inventory based on the sales details, generate sales and inventory report daily or weekly based.

This project is categorize individual aspects for the sales and inventory management system. In this system we are solving different problem affecting to direct sales management and purchase management. Inventory Management System is important to ensure quality control in businesses that handle transactions resolving around consumer goods. Without proper inventory control, a large retail store may run out of stock on important item.

A good inventory management system will alert the retailer if the User cannot have stock on their account. An automated Inventory Management System helps to minimize the errors while recording the stock. After User logged in their account and User can get the retail store in nearby location in location filter using Global Positioning System(GPS) Tracker. Also User can scan the particular product using Zia Barcode Scanner. Finally the User can Understand the sales growth percentage by Visualization tool like Tableau that can be viewed in the dashboard.

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CHAPTER - 1

INTRODUCTION

The project Inventory Management System is complete web based application designed on Bootstrap using Visual Studio Software. The main aim of the project is to develop Inventory Management System Model Software in which all the information regarding the stock of the organization will be presented. It is an intranet based desktop application which ahs admin component to manage the inventory and maintenance of the inventory system.

This application is based on the management of stock of an organization. The application contains general organization profile, sales details, Purchase details and the remaining stok that are presented in the organization. There is a provision of updating the inventory also. This application also provides the remaining balance of the stock as well as the details of the balance of transaction.

Each new stock is created and entitled with the named and the entry date of that stock and it can also be update any time when required as per the transaction or the sales is returned in case .Here the login page is created in order to protect the management of the stock of organization in order to prevent it from the threads and misuse of the inventory.

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

Inventory management is key to maintaining a profitable, organized, and productive business. For some companies, practicing inventory management is simple: they take inventory every week or so by walking through a storage closet and checking to see if they're low on anything. But other companies must take inventory management quite seriously, tracking every item the minute it arrives, moves, or is used up. The primary purpose of inventory management is to ensure there is enough goods or materials to meet demand without creating overstock, or excess inventory. Inventory can be a company's most important asset. Inventory management is where all the elements of the supply chain converge. Too little inventory when and where it's needed can create unhappy customers. But a large inventory has its own liabilities — the cost to store and insure it, and the risk of spoilage, theft and damage. Companies with complex supply chains and manufacturing processes must find the right balance between having too much inventory on hand or not enough.

CHAPTER – 2

LITERATURE SURVEY

2.1) EXISTING PROBLEM

- There is a number of Inventory Management System available in the market. After doing my research, I have come to know that most of them are limited to few products. Some others are lacking in good UI.Consuming more time and effort for updating. Most of the system the Barcode system are not available .Most of them are not using the cloud concept but we are trying to develop in cloud storage like Google Drive .

2.2) REFERENCES

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2.3) PROBLEM STATEMENT DEFINITION

The Problem faced by the company is they do not have any systematic system to record and keep their inventory data. It is difficult for the admin to record the inventory data quickly and safely because they only keep it to be the Logbook and not properly organized**.** Also to keep all the stock inventory data because we do not any system to maintain the data. So the retailers faces issues to keep the inventory data. In this Inventory System we are contacting to get the product from suppliers.

CHAPTER - 3

IDEATION & PROPOSED SOLUTION

3.1) EMPATHY MAP CANVAS

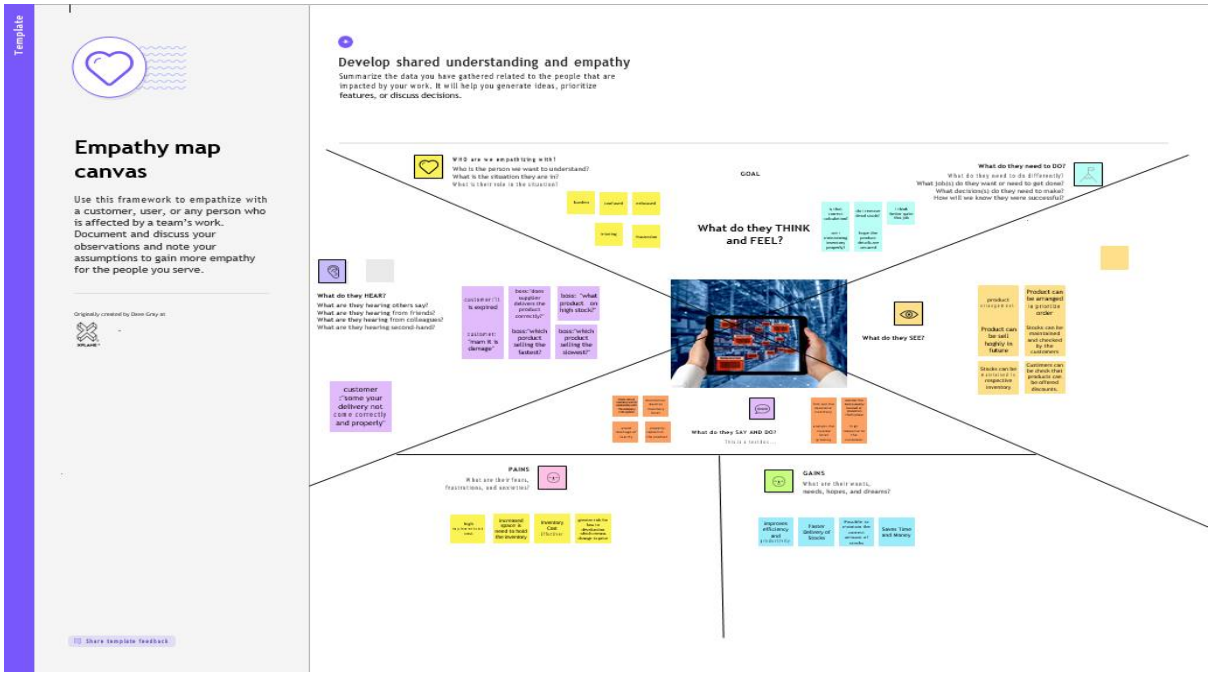
Ideation Phase
Empathy Map Canvas

Date	19 September 2022
Team ID	PNT2022TMID12577
Project Name	Inventory Management System for Retailers
Maximum Marks	4 Marks

Empathy Map Canvas:

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes.

It is a useful tool to helps teams better understand their users.
Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.



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3.2) Ideation & Brainstorming

Ideation Phase

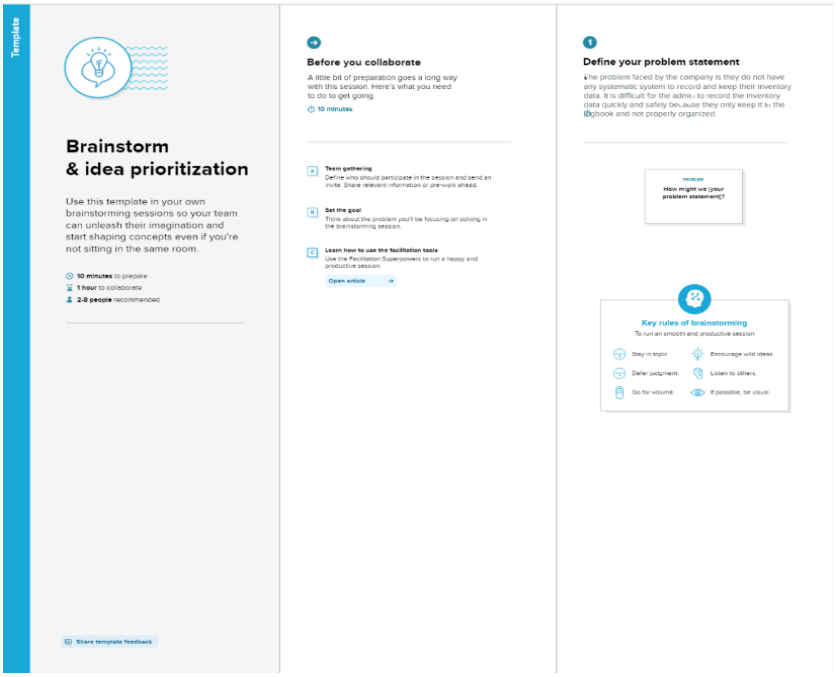
Brainstorm & Idea Prioritization Template

Date	19 September 2022
Team ID	PNT2022TMID12577
Project Name	Inventory Management System for Retailers
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.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.

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



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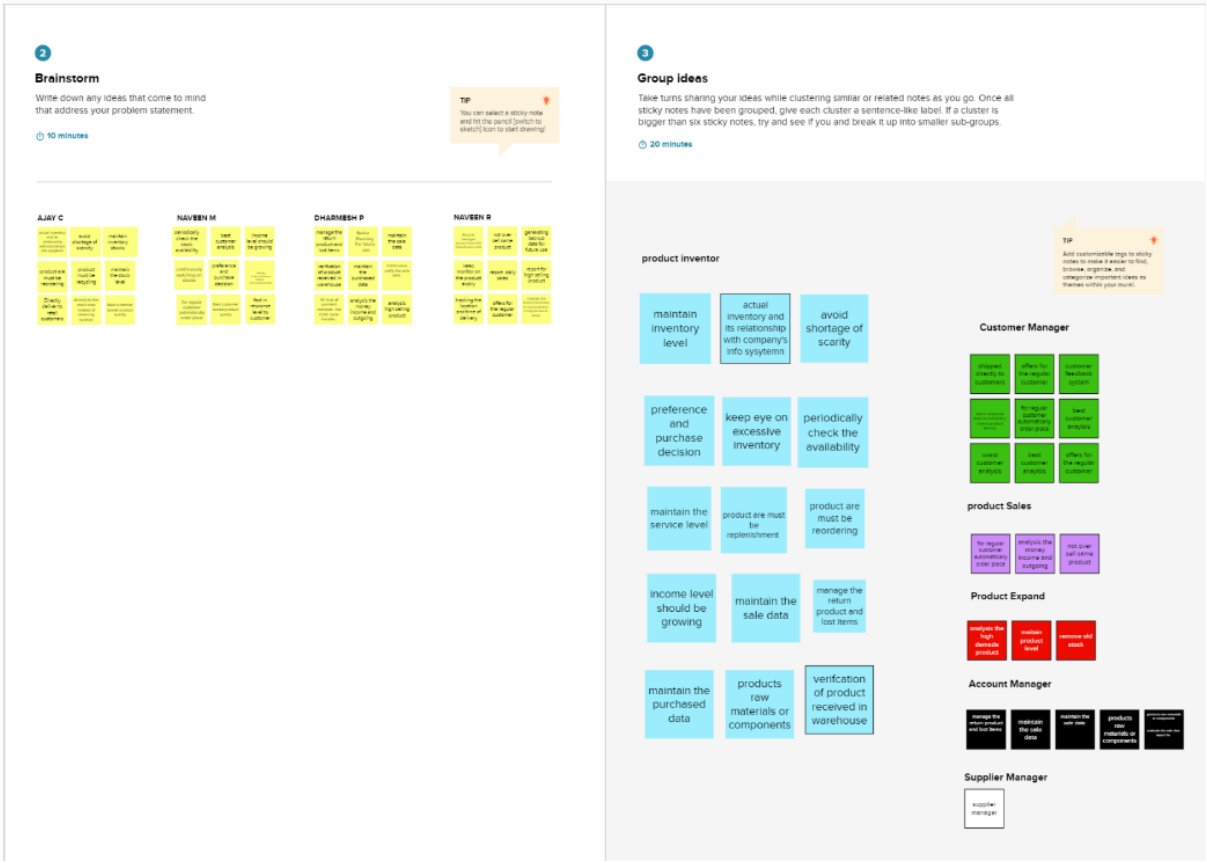
Step-2: Brainstorm, Idea Listing and Grouping



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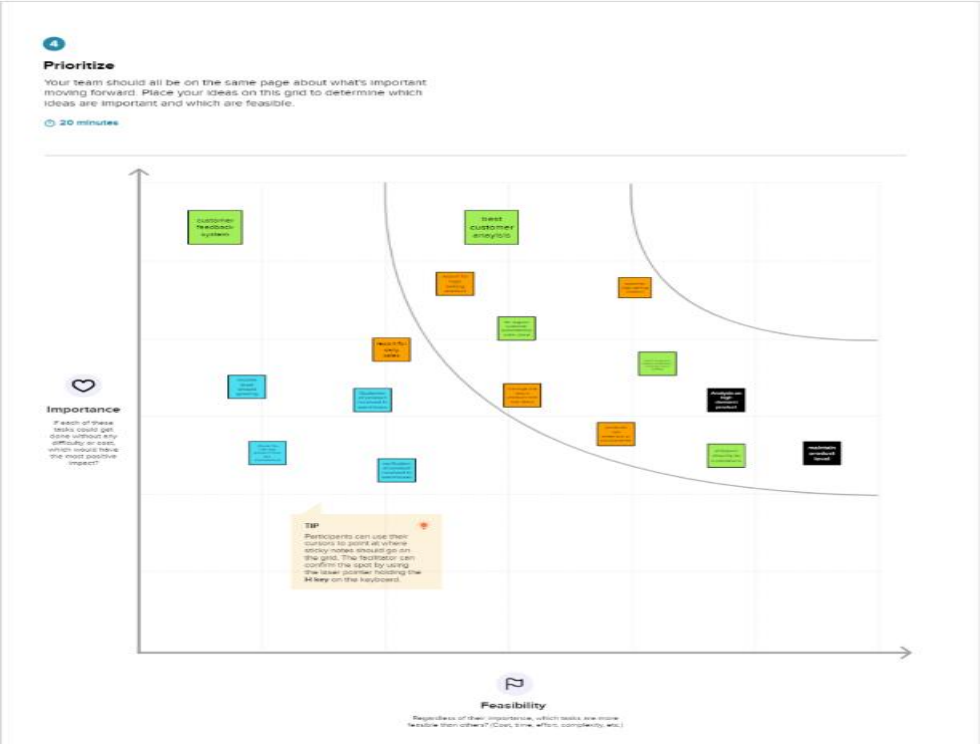
Step-3: Idea Prioritization



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3.3) PROPOSED SOLUTION

Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID12577
Project Name	Inventory Management System for Retailers
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement	The retailer wants to monitor and maintain stock levels, analyze stocks effectively, avoid selling of excessive stocks in the store, retain customers so that he/she can maintain the inventory system effectively and successfully run their retail store.
2.	Idea / Solution description	• Measure and report warehouse performance metrics like inventory turnover, customer satisfaction and order processing speed to overcome warehouse inefficiencies. Share this data with employees and suppliers. • Give employees the right inventory tools for the job. They need software to replace manual inventory documentation, and paperless transactions for invoices and purchase orders. • Categorize inventory storage down to shelf, bin and compartment, and automate order picking, packing and shipping workflows. • Reduce Human Error: Use inventory control processes like blind receiving with barcodes and mobile scanners to prevent human error, inventory

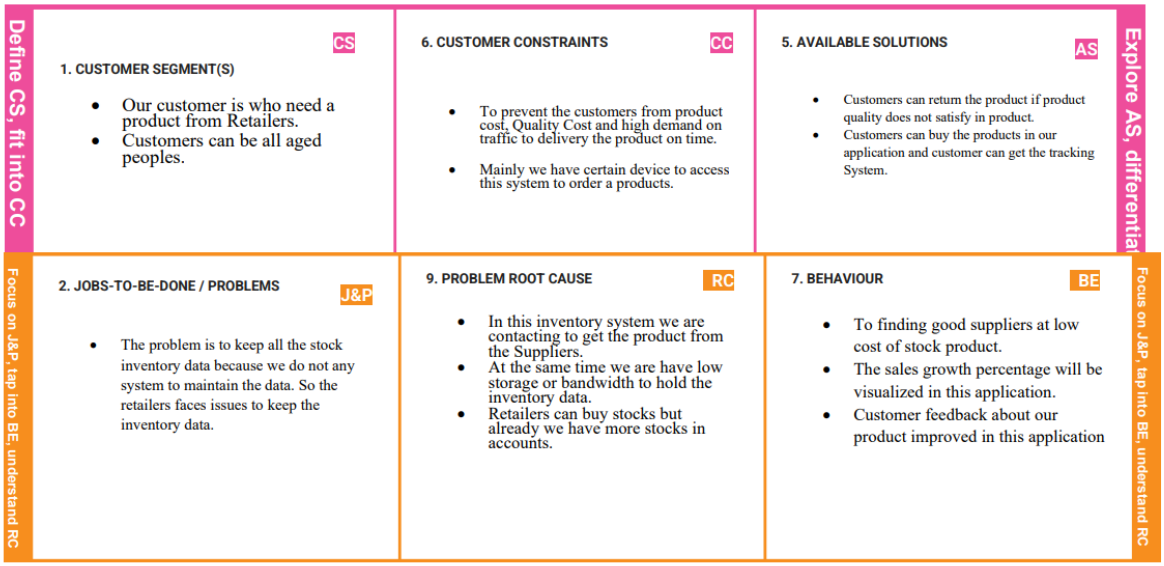
		manipulation and shrinkage due to theft or negligence. • Stock Review : audit your stock • Use LIFO approach(Last in,first out) • Identify low-turn stock. • Inventory Tracking System can be Invoked in that application .
3.	Novelty / Uniqueness	• Reduce the time, efforts and cost involved in stock audits. • Forecast customer demands and plan the supply of stocks • Sales Effectiveness. • Physical and Remote centered ordering • Reduce manual errors and flexibility.
4.	Social Impact / Customer Satisfaction	• We provides enlargement Service for small and large scale retailers stores in affordable pricing.
5.	Business Model (Revenue Model)	Retail Inventory management system helps to tracks from purchase to sale of goods. It ensure that always enough stock to fulfil the customer demands & orders and proper warning on scarcity on stocks. In that case we use Transaction free Revenue Model the buyer and seller both of them can get the stocks easily through them.
6.	Scalability of the Solution	Increase Business Scalability you can build consistent growth of Increased Sales.

3.4) PROBLEM SOLUTION FIT:

Project Title: Inventory Management System for Retailers

Project Design Phase-I – Problem Solution Fit

Team ID: PNT2022TMID12577



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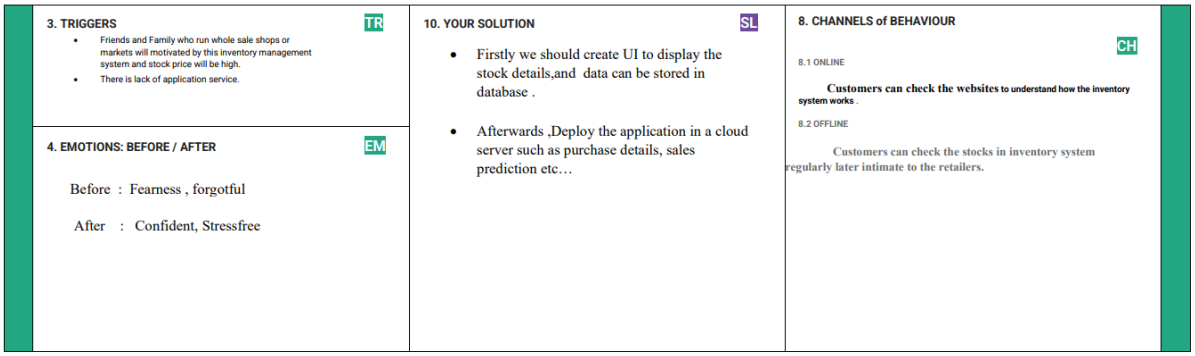

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CHAPTER - 4

REQUIREMENT ANALYSIS

4.1)Functional Requirement

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	03 October 2022
Team ID	PNT2022TMID12577
Project Name	Inventory Management System for Retailers
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Login	User can enter to the Application via Email and Password to access the Inventory System
FR-4	DashBoard Page	Customers can see all the available Products in this phase.
FR-5	Add to Cart	Customers can view the products and send to add to cart option afterwards User can buy later if it is not sold.
FR-6	Billing and Payment	Customers should buy a product it will redirect to payment page automatically generate a bill for the respective Products.
FR-7	Stock Updation	The Particular Stock can be over sold and the stock can be update by the admin quickly and Stock Statistics can be Displayed in the DashBoard page.

4.2)Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	This application can be use any diversity of languages. The UI should be very clear, it can be used by everyone in the world. We can use any

		Assistant like google assistant so that blind people can access this application.
NFR-2	**Security**	This application should be very securely Created. Incase the customers can buy any products in the inventory store the payment phase can be very securely and finally get a receipt of the buyed products.
NFR-3	**Reliability**	The application can be TrustWorthy UI and the Stock Statistics can be properly displayed on the dashboard page and all the modules can be Properly working on that application.
NFR-4	**Performance**	The User and stock Data can be Stored in IBM DataBase(DB) and that Stock Data can be displayed in main page ,Incase stock can be update simultaneously updated in main page.
NFR-5	**Availability**	The application contains user data and stock data and that particular data can be available to display it in main page.
NFR-6	**Scalability**	The application can be modified according to our User Request and accessing speed of that changes can be very fast based on our Internet Speed.

CHAPTER - 5

PROJECT DESIGN

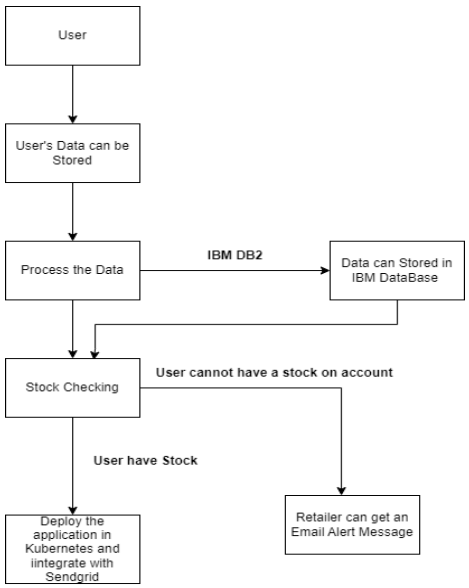
5.1) Data Flow Diagrams

Data Flow Diagram & User Stories

Date	03 October 2022
Team ID	PNT2022TMID12577
Project Name	Inventory Management System for Retailers
Maximum Marks	4 Marks

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where dat stored.



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5.2) Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID12577
Project Name	Inventory Management System for Retailers
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

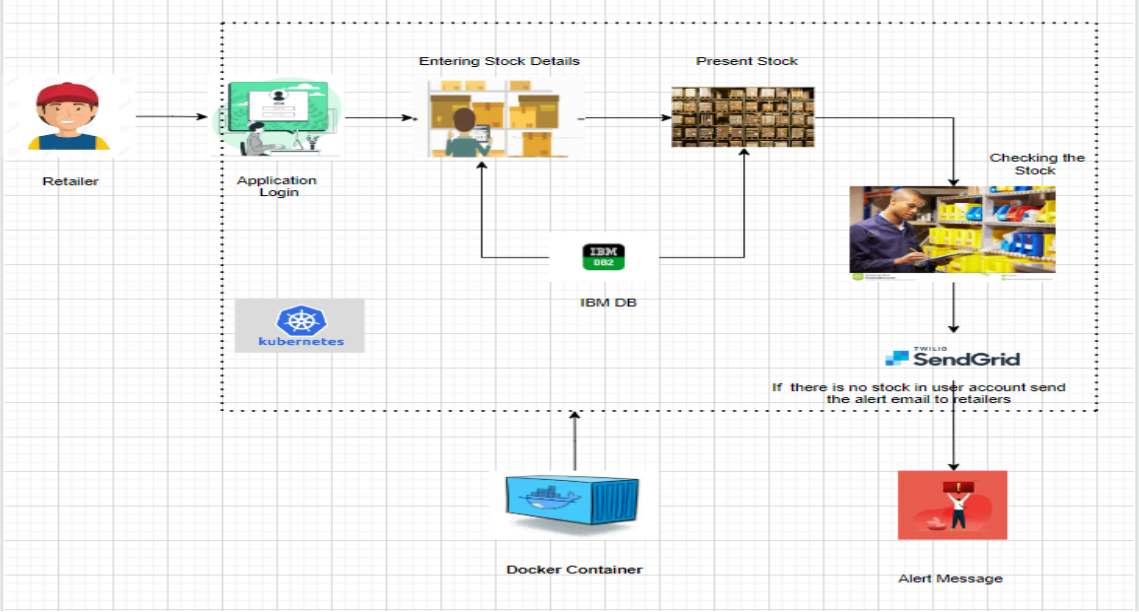

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Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Website User Interface	HTML, CSS, BootStrap
2.	Login	User can login to the application via Email and password	Java Servlet
3.	DashBoard	User can view the Stock Statistics on this page.	HTML,CSS,BootStrap
4.	Product Scanning	The Indivudual products can be scanned using Barcode Scanner.	Zia Barcode Scanner

5.	Database	User and Stock Data can be retrieved and Stored in DataBase..	MySQL
6.	Cloud Database	Database Service on Cloud	IBM DB2,.
7.	File Storage	File storage requirements	IBM Object Storage
8.	Alert Notification	If the User cannot have Stock on accounts the System will automatically sends an email to Retailers so that they can order a new stock.	SendGrid

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Styling a UI Page,Python using Flask Framework	Bootstrap,Python Framework
2.	Security Implementations	To Protect the IBM Cloud Data	IBM DataBase(IBM DB2)
3.	Scalable Architecture	Three Tier Architecture	DataBase – IBM DB2 Web Server-HTML,CSS,Bootstrap,JS Application – Docker,Flask Using Python
4.	Availability	Availability of Data Application	IBM Load Balancer
5.	Performance	Accessing Speed will be High	IBM Cloud

5.3) User Stories

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

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-1
		USN-4	As a user, I can register for the application through Gmail	I can register & receive confirmation Gmail.	Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password	I can view the application by entering email & password	High	Sprint-1

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
	Dashboard	USN-6	As a user,once logged in I can view the Stock Statistics in the Dashboard page.	View Stock details and daily expenses	Medium	Sprint 1
	Alert Message	USN-7	As a user, I cannot have any stock on my account can get the alert email message	I can get the Alert mail Message	High	Sprint 2
Customer Care Executive	Help/Support	USN-8	As a customer care executive,I can fix any issues in my application.	I can give 24x7 support service	Medium	Sprint 2
Administrator	Administrative	USN-9	As a admin,I can Update my application.	I can update any stock details in my application.	High	Sprint 1

CHAPTER - 6

PROJECT PLANNING & SCHEDULING

6.1)Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)

Date	18 October 2022
Team ID	PNT2022TMID12577
Project Name	Inventory Management System for Retailers
Maximum Marks	8 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

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.	5	High	4
Sprint-1	Login	USN-2	As a user, I can log into the application by entering email & password	5	Medium	4
Sprint-1	Dashboard	USN-3	As a user, once logged in I can view the Stock Statistics in the Dashboard page.	10	High	4
Sprint-2	Add items to Stock	USN-4	As a User can able toadd the item to stock	5	Medium	4
Sprint-2	Stock Updation	USN-5	As a user, To update the stock for checkavailability	5	High	4
Sprint -3	Customer Care Executive	USN-6	As a customer care executive, I can fix any issues in my application.	10	Medium	4

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-4	Alert Message	USN-7	As a user, I cannot have any stock on my account can get the alert email message	10	Medium	4

Project Tracker, Velocity & Burndown Chart: (4 Marks)

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

Velocity:

Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

6.2) Milestone and Activity List

TEAM ID	PNT2022TMID12577
PROJECT NAME	Inventory Management System for Retailers

ACTIVITY TITLE	ACTIVITY DESCRIPTION	SUBMISSION DATE	STATUS
Create Flask Project	An application Framework written in Python	17 Sep 2022	Completed
Create IBM Cloud	Create and log into IBM Cloud	17 Sep 2022	Completed
Install IBM Cloud CLI	General-Purpose developer tool that provides access to your IBM Cloud Account	21 Sep 2022	Completed
Docker CLI	Use Docker CLI configuration to customize settings	27 Oct 2022	Completed
Create Account in Send grid	Create account in SendGrid to send mails	27 Oct 2022	Completed
Create UI to Interact with Application	Pages such as Registration, Login page, Displaying items etc.	27 Oct 2022	Completed
Create IBM Db2 and connect with Python	Create IBM Db2 service in IBM Cloud and connect with python code using DB.	28 Oct 2022	Completed
Send Grid Integration with Python Code	To send emails from the applications we need to integrate the SendGrid Service.	28 Oct 2022	Completed
Containerize the App	Need to create Docker Image of the application and push into the IBM Container Registry	28 Oct 2022	In Progress

Upload Image to IBM Container Registry	Upload the Image to IBM Container Registry	31 Oct 2022	In Progress
Deploy in Kubernetes Cluster	Once the image is uploaded the IBM Container registry deploy the image to IBM Kubernetes Cluster.	01 Nov 2022	In Progress
Prepare Milestone & Activity List	Prepare the milestone & activity list of the project.	03 Nov 2022	Completed
Deploy in Kubernetes Cluster	Once the image is uploaded the IBM Container registry deploy the image to IBM Kubernetes Cluster.	01 Nov 2022	In Progress
Prepare Milestone & Activity List	Prepare the milestone & activity list of the project.	03 Nov 2022	Completed
Project Development - Delivery of Sprints	Develop & submit the developed code by testing it.	In Progress	In Progress

REPORTS FROM JIRA

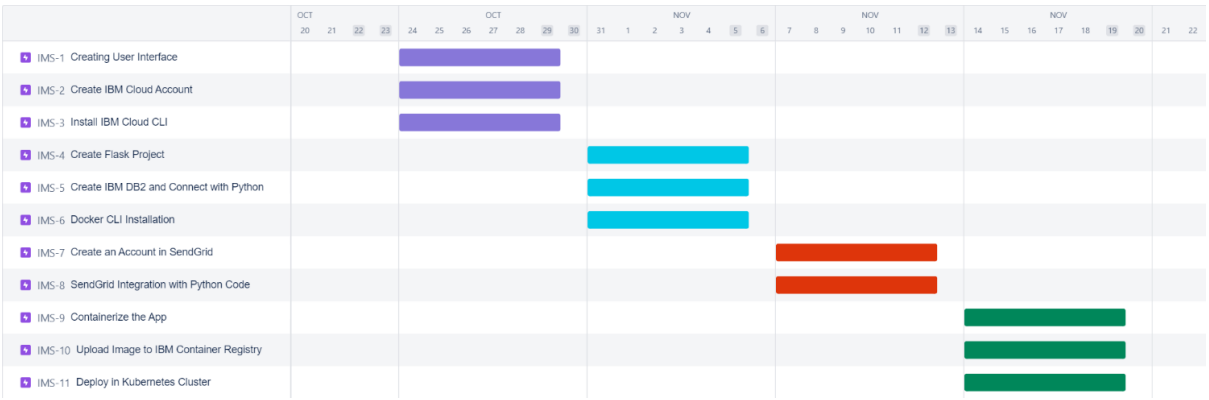

Fig No:6.1

CHAPTER - 7

CODING & SOLUTIONING

Source Code:

LOGIN & SIGNUP:

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta http-equiv="X-UA-Compatible" content="IE=edge">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Document</title>
   <link rel="stylesheet" href="style.css">
</head>
<body>
   <!-- <a href="https://front.codes/" class="logo" target="_blank">
      <img src="https://assets.codepen.io/1462889/fcy.png" alt="">
    </a> -->
    <center>
      <a href="https://front.codes/" class="logo" target="_blank">
         <img src="https://assets.codepen.io/1462889/fcy.png" alt="">
        </a>
        <div class="section">
          <div class="container">
            <div class="row full-height justify-content-center">
              <div class="col-12 text-center align-self-center py-5">
                <div class="section pb-5 pt-5 pt-sm-2 text-center">
                  <h6 class="mb-0 pb-3"><span><b>Log In</b> </span><span><b>Sign
Up</b></span></h6>
                  <input class="checkbox" type="checkbox" id="reg-log" name="reg-log" />
```

```
<label for="reg-log"></label>
<div class="card-3d-wrap mx-auto">
 <div class="card-3d-wrapper">
  <div class="card-front">
   <div class="center-wrap">
    <div class="section text-center">
     <h4 class="test mb-4 pb-3"><b>LOGIN</b> </h4>
     <div class="form-group">
      <input type="email" name="logemail" class="form-style" placeholder="Your Email" id="logemail" autocomplete="off">
      <i class="input-icon uil uil-at"></i>
     </div>
      
     <div class="form-group mt-2">
      <input type="password" name="logpass" class="form-style" placeholder="Your Password" id="logpass" autocomplete="off">
      <i class="input-icon uil uil-lock-alt"></i>
     </div>
       
     <div class="value">
      <a href="#" class="btn mt-4">submit</a>
     </div>
      <p class="mb-0 mt-4 text-center"><a href="#0" class="link">Forgot your password?</a></p>
    </div>
   </div>
  </div>
  <div class="card-back">
   <div class="center-wrap">
    <div class="section text-center">
     <h4 class="mb-4 pb-3">SIGNUP</h4>
```

```
                    <div class="form-group">
                      <input type="text" name="logname" class="form-style" placeholder="Your Full Name" id="logname" autocomplete="off">
                      <i class="input-icon uil uil-user"></i>
                    </div>
                     
                    <div class="form-group mt-2">
                      <input type="email" name="logemail" class="form-style" placeholder="Your Email" id="logemail" autocomplete="off">
                      <i class="input-icon uil uil-at"></i>
                    </div>
                     
                    <div class="form-group mt-2">
                      <input type="password" name="logpass" class="form-style" placeholder="Your Password" id="logpass" autocomplete="off">
                      <i class="input-icon uil uil-lock-alt"></i>
                    </div>
                    <div class="display">
                      <a href="#" class="btn mt-4">submit</a>
                    </div>
                  </div></div></center></body></html>
```

DASHBOARD:

```
<!doctype html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8">
      <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
      <link rel="shortcut icon" href="../assets/images/favicon.ico" />

      <link rel="stylesheet" href="../assets/css/core/libs.min.css" />
```

```
    <link rel="stylesheet" href="../assets/vendor/aos/dist/aos.css" />
    <link rel="stylesheet" href="../assets/css/hope-ui.min.css?v=1.2.0" />
    <link rel="stylesheet" href="../assets/css/custom.min.css?v=1.2.0" />
    <link rel="stylesheet" href="../assets/css/dark.min.css"/>
    <link rel="stylesheet" href="../assets/css/customizer.min.css" />
    <link rel="stylesheet" href="../assets/css/rtl.min.css"/>
  </head>
  <body class="  ">
    <div id="loading">
      <div class="loader simple-loader">
        <div class="loader-body"></div>
      </div>    </div>
    <aside class="sidebar sidebar-default navs-rounded-all ">
      <div class="sidebar-header d-flex align-items-center justify-content-start">
        <a href="../dashboard/index.html" class="navbar-brand">
          <svg width="30" class="" viewBox="0 0 30 30" fill="none"
xmlns="http://www.w3.org/2000/svg">
            <rect x="-0.757324" y="19.2427" width="28" height="4" rx="2" transform="rotate(-45
-0.757324 19.2427)" fill="currentColor"/>
            <rect x="7.72803" y="27.728" width="28" height="4" rx="2" transform="rotate(-45
7.72803 27.728)" fill="currentColor"/>
            <rect x="10.5366" y="16.3945" width="16" height="4" rx="2" transform="rotate(45
10.5366 16.3945)" fill="currentColor"/>
            <rect x="10.5562" y="-0.556152" width="28" height="4" rx="2" transform="rotate(45
10.5562 -0.556152)" fill="currentColor"/>
          </svg>
            <h4 class="logo-title">OneShop</h4>
        </a>
        <div class="sidebar-toggle" data-toggle="sidebar" data-active="true">
          <i class="icon">
```

```
                <svg width="20" height="20" viewBox="0 0 24 24" fill="none"
xmlns="http://www.w3.org/2000/svg">
                </svg>
              </i>
            </div>
          </div>
          <div class="sidebar-body pt-0 data-scrollbar">
            <div class="sidebar-list">
              <!-- Sidebar Menu Start -->
              <ul class="navbar-nav iq-main-menu" id="sidebar-menu">
                <li class="nav-item static-item">
                  <a class="nav-link static-item disabled" href="#" tabindex="-1">
                    <span class="default-icon">Home</span>
                    <span class="mini-icon">-</span>
                  </a>
                </li>
                <li class="nav-item">
                  <a class="nav-link " aria-current="page" href="../dashboard/index.html">
                    <i class="icon">
                      <svg width="20" viewBox="0 0 24 24" fill="none"
xmlns="http://www.w3.org/2000/svg">
                      </svg>
                    </i>
                    <span class="item-name">DashBoard</span>
                  </a>
                </li>
                <li class="nav-item">
                  <a class="nav-link" data-bs-toggle="collapse" href="#horizontal-menu"
role="button" aria-expanded="false" aria-controls="horizontal-menu">
                    <i class="icon">
```

```
                        <svg width="20" viewBox="0 0 24 24" fill="none"
xmlns="http://www.w3.org/2000/svg">
                        </svg>
                    </i>
                    <span class="item-name">Products</span>
                    <i class="right-icon">
                        <svg xmlns="http://www.w3.org/2000/svg" width="18" fill="none"
viewBox="0 0 24 24" stroke="currentColor">
                            <path stroke-linecap="round" stroke-linejoin="round" stroke-width="2"
d="M9 5l7 7-7 7" />
                        </svg>
                    </i>
                </a>
                <ul class="sub-nav collapse" id="horizontal-menu" data-bs-parent="#sidebar-menu">
                    <li class="nav-item">
                        <a class="nav-link " href="../dashboard/index-horizontal.html">
                          <i class="icon">
                              <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                                  <g>
                                  <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                                  </g>
                              </svg>
                          </i>
                          <i class="sidenav-mini-icon"> PG </i>
                          <span class="item-name">  Product Grid </span>
                        </a>
                    </li>
                    <li class="nav-item">
                        <a class="nav-link " href="../dashboard/index-dual-horizontal.html">
                            <i class="icon">
```

```
                        <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                            <g>
                            <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                            </g>
                        </svg>
                    </i>
                    <i class="sidenav-mini-icon">  </i>
                    <span class="item-name">Product List</span>
                </a>
            </li>
            <li class="nav-item">
                <a class="nav-link " href="../dashboard/index-dual-compact.html">
                    <i class="icon svg-icon">
                        <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                            <g>
                            <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                            </g>
                        </svg>
                    </i>
                    <i class="sidenav-mini-icon"> PE </i>
                    <span class="item-name">Product Edit</span>
                </a>
            </li>
            <li class="nav-item">
                <a class="nav-link " href="../dashboard/index-boxed.html">
                    <i class="icon">
                        <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                            <g>
```

```
                        <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                        </g>
                    </svg>
                </i>
                <i class="sidenav-mini-icon"> PD </i>
                <span class="item-name">Product Details</span>
            </a>
        </li>
        <li class="nav-item">
            <a class="nav-link " href="../dashboard/index-boxed-fancy.html">
                <i class="icon">
                    <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                        <g>
                        <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                        </g>
                    </svg>
                </i>
                <i class="sidenav-mini-icon"> AD </i>
                <span class="item-name">Add the Product</span>
            </a>
        </li>
        <li class="nav-item">
            <a class="nav-link " href="../dashboard/index-boxed-fancy.html">
                <i class="icon">
                    <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                        <g>
                        <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                        </g>
                    </svg>
```

```
                        </i>
                        <i class="sidenav-mini-icon"> SC </i>
                        <span class="item-name">Shopping Cart</span>
                    </a>
                </li>
                <li class="nav-item">
                    <a class="nav-link " href="../dashboard/index-boxed-fancy.html">
                        <i class="icon">
                            <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                                <g>
                                <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                                </g>
                            </svg>
                        </i>
                        <i class="sidenav-mini-icon"> Ct </i>
                        <span class="item-name">Checkout</span>
                    </a>
                </li>
            </ul>
        </li>
        <!-- <li class="nav-item">
            <a class="nav-link" aria-current="page" href="https://templates.iqonic.design/hope-
ui/html/dist/" target="_blank">
                <i class="icon">
                    <svg width="20" viewBox="0 0 24 24" fill="none"
xmlns="http://www.w3.org/2000/svg">
                        <circle cx="18" cy="11.8999" r="1" fill="currentColor"></circle>
                    </svg>

                </i>
```

```
                    <span>Design System<span class="badge rounded-pill bg-
success">UI</span></span>
                </a>
            </li> -->
            <!-- <li><hr class="hr-horizontal"></li>
            <li class="nav-item static-item">
                <a class="nav-link static-item disabled" href="#" tabindex="-1">
                    <span class="default-icon">Pages</span>
                    <span class="mini-icon">-</span>
                </a>
            </li> -->
            <li class="nav-item">
                <a class="nav-link" data-bs-toggle="collapse" href="#sidebar-special" role="button"
aria-expanded="false" aria-controls="sidebar-special">
                    <i class="icon">
                        <svg width="20" viewBox="0 0 24 24" fill="none"
xmlns="http://www.w3.org/2000/svg">
                        </svg>
                    </i>
                    <span class="item-name">Categories</span>
                    <i class="right-icon">
                        <svg xmlns="http://www.w3.org/2000/svg" width="18" fill="none"
viewBox="0 0 24 24" stroke="currentColor">
                            <path stroke-linecap="round" stroke-linejoin="round" stroke-width="2"
d="M9 5l7 7-7 7" />
                        </svg>
                    </i>
                </a>
                <ul class="sub-nav collapse" id="sidebar-special" data-bs-parent="#sidebar-menu">
                    <li class="nav-item">
                        <a class="nav-link " href="../dashboard/special-pages/billing.html">
                          <i class="icon">
```

```
                        <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                            <g>
                            <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                            </g>
                        </svg>
                    </i>
                    <i class="sidenav-mini-icon"> B </i>
                    <span class="item-name">Categories List</span>
                </a>
            </li>
            <li class="nav-item">
                <a class="nav-link " href="../dashboard/special-pages/calender.html">
                    <i class="icon">
                        <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                            <g>
                            <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                            </g>
                        </svg>
                    </i>
                    <i class="sidenav-mini-icon"> C </i>
                    <span class="item-name">Categories Edit</span>
                </a>
            </li>
            <li class="nav-item">
                <a class="nav-link " href="../dashboard/special-pages/kanban.html">
                    <i class="icon">
                        <svg xmlns="http://www.w3.org/2000/svg" width="10" viewBox="0 0 24
24" fill="currentColor">
                            <g>
```

```
                        <circle cx="12" cy="12" r="8" fill="currentColor"></circle>
                        </g>
                      </svg>
                    </i>
                    <i class="sidenav-mini-icon"> K </i>
                    <span class="item-name"> Add Category</span>
                  </a>
                </div>
              </ul>
            </li>
          <li class="swiper-slide card card-slide">
              <div class="card-body">
                <div class="progress-widget">
                    <svg class="card-slie-arrow " width="24px" height="24px" viewBox="0 0 24
24">
                      <path fill="currentColor"
d="M5,17.59L15.59,7H9V5H19V15H17V8.41L6.41,19L5,17.59Z" />
                    </svg>
                  </div>
                  <div class="progress-detail">
                    <p  class="mb-2">Revenue</p>
                    <h4 class="counter">$742K</h4>
                  </div>
                </div>
              </div>
            </li>
            <li class="swiper-slide card card-slide">
              <div class="card-body">
                <div class="progress-widget">
```

```
                    <svg class="card-slie-arrow " width="24px" height="24px" viewBox="0 0 24
24">
    <script src="../assets/js/charts/widgetcharts.js"></script>
    <script src="../assets/js/charts/vectore-chart.js"></script>
    <script src="../assets/js/charts/dashboard.js" ></script>
    <script src="../assets/js/plugins/fslightbox.js"></script>
    <script src="../assets/js/plugins/setting.js"></script>
    <script src="../assets/js/plugins/slider-tabs.js"></script>
    <script src="../assets/js/plugins/form-wizard.js"></script>
    <script src="../assets/vendor/aos/dist/aos.js"></script
    <script src="../assets/js/hope-ui.js" defer></script>
  </body></html>
```

OUTPUT:

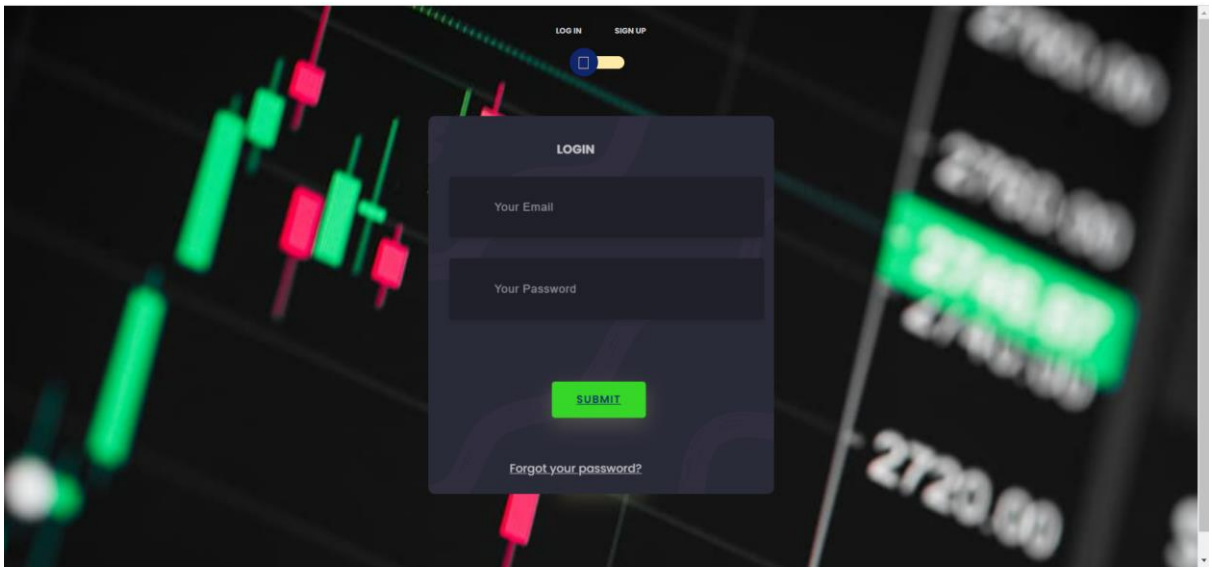

Fig No:7.1

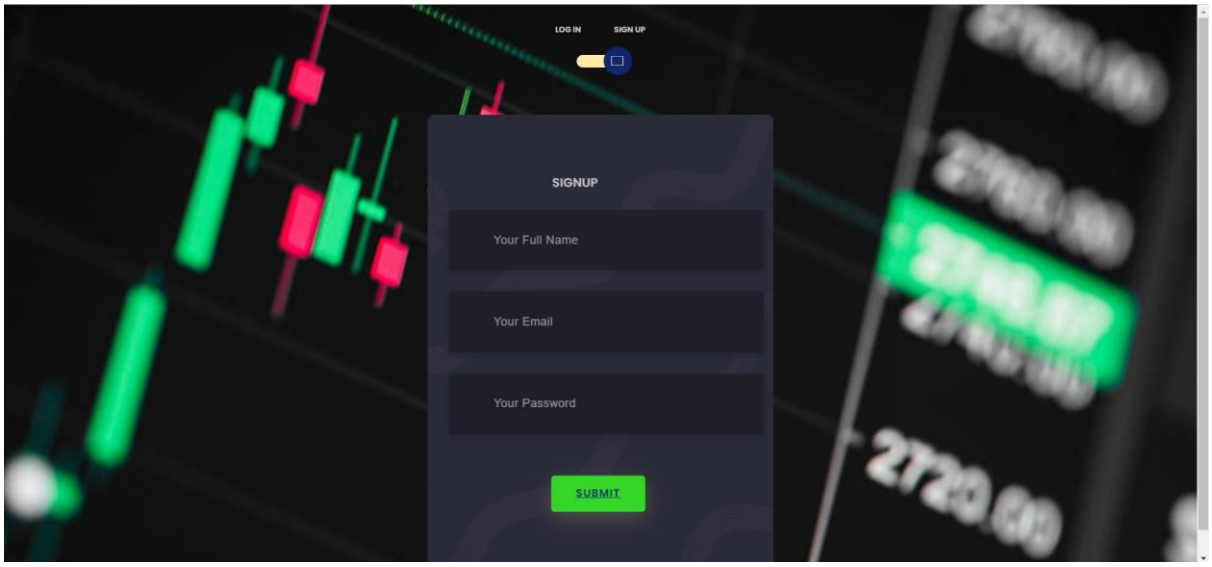

Fig No:7.2

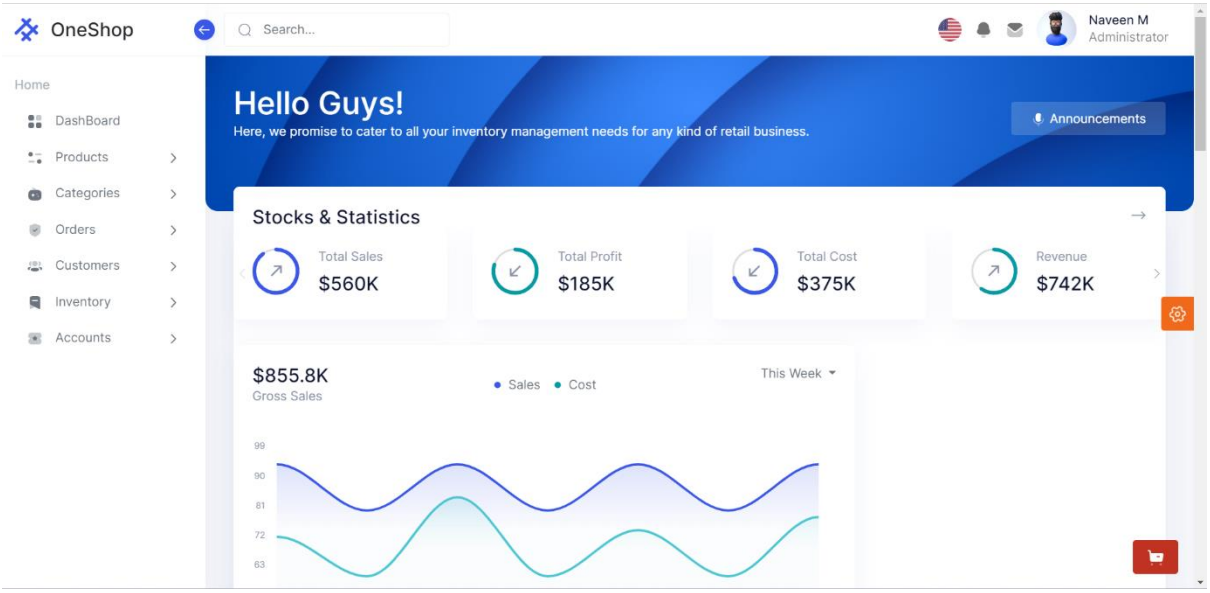

Fig No:7.3

8.TESTING:

8.1 .Login & SignUp Page Testing

Test CaseID	Test Scenario	Test Case Description	Test Inputs	Expected Output	Positive Result	Negative Result
IMS TC_ 01	Site link	To check whether the site link is open or not	Tap the site link	Visiblity of the website	When the website was opened after tap the site means the result as home page	When the website was not opened or error acquiring like 402,505,etc..,
IMS_T C_ 02	Submit button in Login and SignUp page	To check whether the submit is working or not	Tap the button to open the DashBoard page	Move to the DashBoar d page	Successful ly open the DashBoar d Page	When the button was tapped by user error acquiring the front endcode connectivity code problem.

8.2) <u>DASHBOARD PAGE TESTING :</u>

Test CaseID	Test Scenario	Test Case Description	Test Inputs	Expected Output	Results
IMS_TC_01	Search Button	To check search button can be worked or not	Input type is Limited number of products	To Show the particular product can be displayed.	Test Case Will be Pass / Fail
IMS TC_02	Product List option	To check product list option will be working or not	Product List	To display all the product list available in that system.	Test Case Will be Pass / Fail
IMS_TC_03	Add to Cart Button	To check the add to cart button is working or not	Products	To display the products which ever customer can add .	Test Case Will be Pass / Fail
IMS TC_04	Settings Button	To check the settings button is working or not	Lot of options are checked like light mode and dark mode	Particular Options is valid / Not	Test Case Will be Pass / Fail

9.RESULT

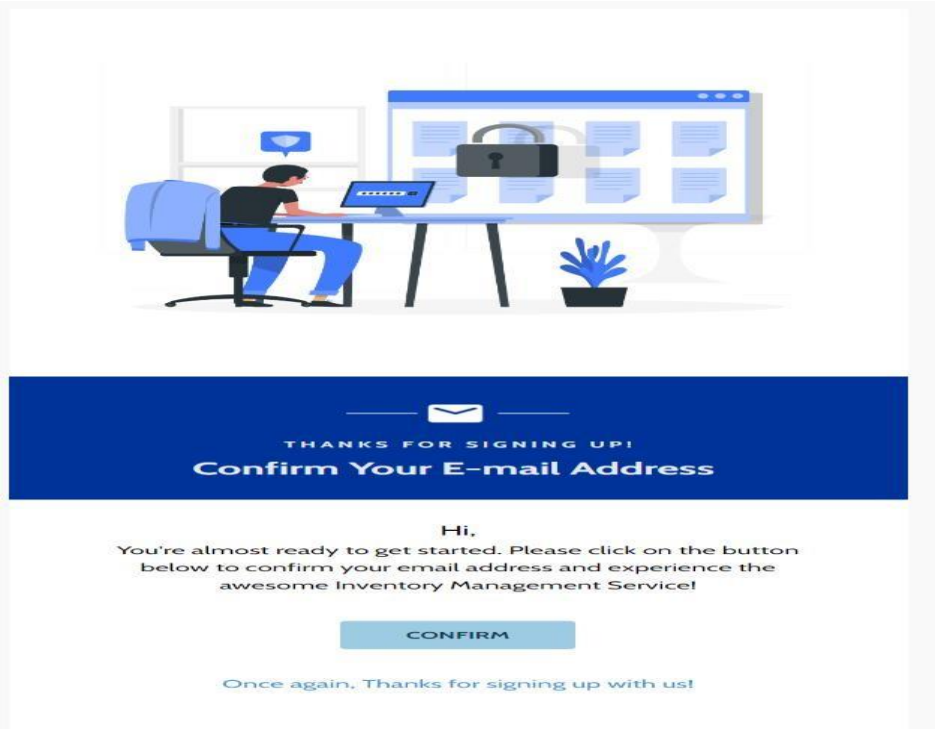

Fig No:7.4

Inventory Management techniques double-check inventory counts, helping retailers avoid stock outages and dead stock. Inventory errors, mistakes and miscounts are prevalent even when using RFID and barcode tagging. Inaccuracies cause inefficiencies, lost sales and budgeting and forecasting difficulties. Also we can use FIFO(First In First Out) or LIFO(Last In First Out), Open to Buy (OTB) and Just in Time (JIT) etc…

Fig No:8.1

9) ADVANTAGES AND DISADVANTAGES:

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 in Inventory management helps track what's in stock and what's on backorder, so you don't oversell products.
- Cost Savings of 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.
- Paper-based retail inventory management can take a lot of time and effort. The retail inventory management software can cut short your in-store inventory process cycles through automation. Automation would give you time to focus on other productive business tasks.

9.1) DISADVANTAGES:

- **System Crash** - One of the biggest problems with any computerized system is the potential for a system crash**.** A corrupt hard drive, power outages and other technical issues can result in the loss of needed data. At the least, businesses are interrupted when they are unable to access data they need. Business owners should back up data regularly to protect against data loss.

- **Malicious Hacks** - Hackers look for any way to get company or consumer information. An inventory system connected to point-of-sale devices and accounting is a valuable resource to hack into in search of potential financial information or personal details of owners, vendors or clients. Updating firewalls and anti-virus software can mitigate this potential issue.

- **Reduced Physical Audits** - When everything is automated, it is easy to forego time-consuming physical inventory audits. They may no longer seem necessary when the computers are doing their work. However, it is important to continue to do regular audits to identify loss such as spoilage or breakage. Audits also help business owners identify potential internal theft and manipulation of the computerized inventory system.

10) 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 .Effective inventory management requires a strategic approach to operate optimally. Inventory management systems are not only used by large companies but also by small and medium sized businesses. Inventory Management is important for keeping costs down,while meeting regulation.Accurately maintaining figures on the finished goods inventory makes it possible to quickly convey information to sales personnel so as to what is available and ready for shipment at any given time by buyer.

10.1) FUTURE SCOPE:

- The future of inventory is going to be flooded with updates in technology. From virtual reality, to artificial intelligence, to digital signage, and even inventory-less stores, there are constant iterations made in this industry to accelerate business and attract customers. And it's only growing from here.

- "Future Vision" is another important aspect of long term vendor reliability-the ability to anticipate development needs in advance of their becoming critical.

- A good Retail management software vendor should demonstrate enough "future vision" to have already committed substantial resources to support new forms of technology such as data synchronization.

APPENDIX:

https://github.com/IBM-EPBL/IBM-Project-9597-1659024850