INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

1 INTRODUCTION

1.1 Project overview

Inventory management is essentially a variety of techniques, tools and technologies that a business uses to manage and control their inventory. The way that it's utilized and implemented ranges from simple right through to complex. It depends on the needs and scope of the business and the capabilities and functionality of the management software used.

The following provides information about how the Inventory Management system integrates with general accounting and other distribution systems.

- General Accounting
- Inventory Management
- Bulk Stock Control
- Procurement
- Sales Order Management
- Address Book

The Inventory Management system stores item information for the Sales Order Management, Procurement, and manufacturing systems. It also stores sales and purchasing costs and quantities available by location and places holds on locations from which you do not sell items.

You update the general ledger inventory account balances with any change in inventory valuation, count variances, or movement.

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

When your inventory becomes hard to find, you have inventory visibility problems. Lack of visibility is one of the most common inventory management problems. Locating the correct item in the right place as quickly as possible is essential to inventory. If the hard to find inventory is part of the supply chain for manufacturing, it can impact the operations of the entire manufacturing process. If the inventory stock is being accessed for shipping and cannot be located, it leads to

incomplete or wrong shipments and severely impacts customer satisfaction. Either way inventory visibility problems have a severe impact on the performance of the business and is one of the symptoms of poor inventory management.

Not Measuring Your Business's Performance

Being able to measure various parameters, such as the amount of stock, customer satisfaction ratings, working capital, and sale cycles can tell you much about your business. Yet, you can't do that without high-powered reporting software.

Putting Inventory in the Wrong Spot

When you don't have a way to manage your inventory, items will be placed in the wrong spot. When this happens, the wrong items could be pulled for shipments. The supply chain gets disrupted. Customers are upset. Therefore, inventory needs to be put in its proper place every single time

2.2 References

https://www.visual-paradigm.com/scrum/scrum-burndown-chart/

https://www.atlassian.com/agile/tutorials/burndown-charts

Reference: https://www.atlassian.com/agile/project-management

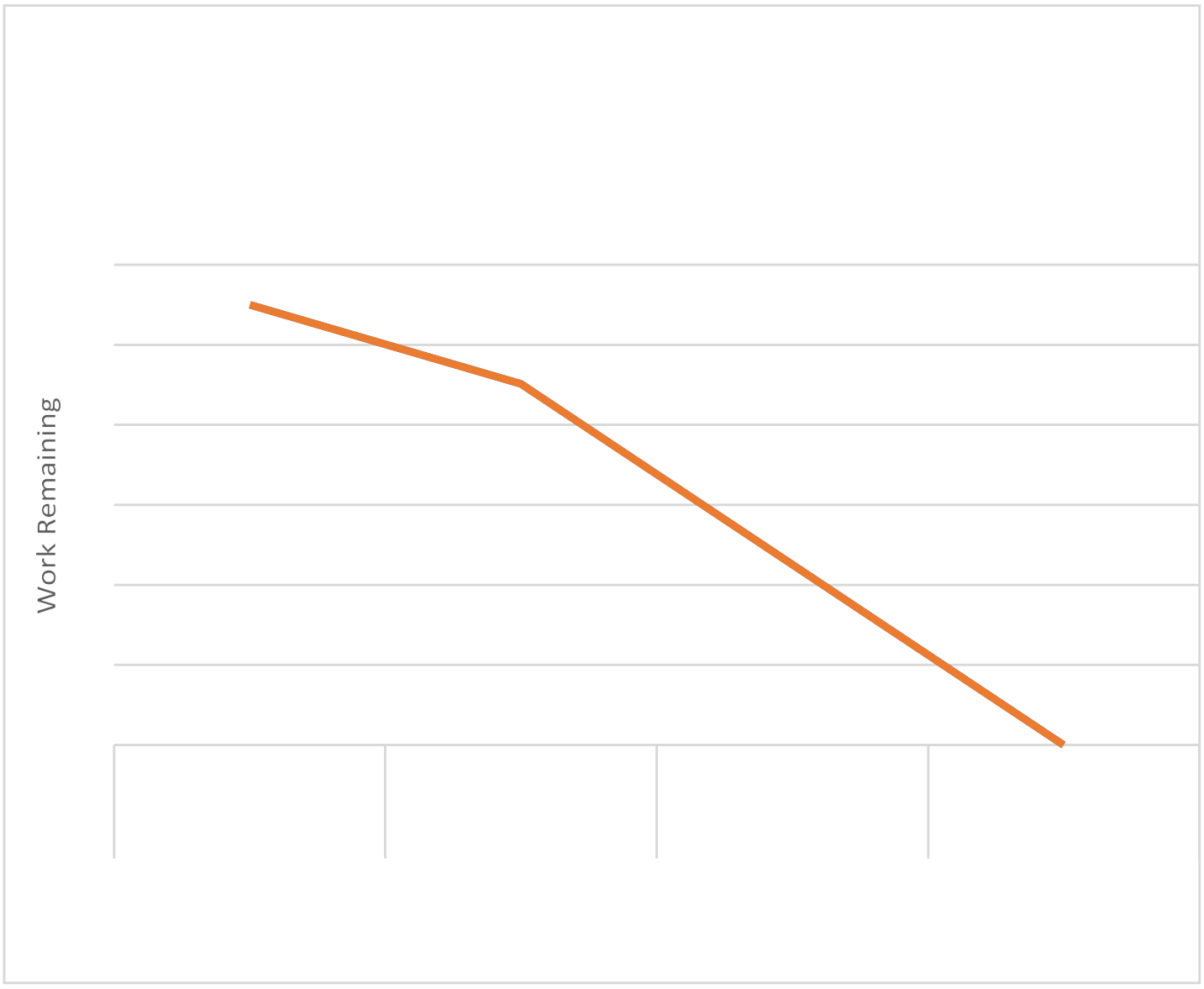
https://www.atlassian.com/agile/tutorials/how-to-do-scrum-with-jira- software

https://www.atlassian.com/agile/tutorials/epics https://www.atlassian.com/agile/tutorials/sprints

https://www.atlassian.com/agile/project-management/estimation

https://www.atlassian.com/agile/tutorials/burndown-charts

https://careereducation.smartinternz.com/Student/guided_project_workspa ce/47838



2.3 Problem Statement Definition

The two basic inventory decisions that managers face are:

- How much additional inventory to order or produce
- When to order or produce it

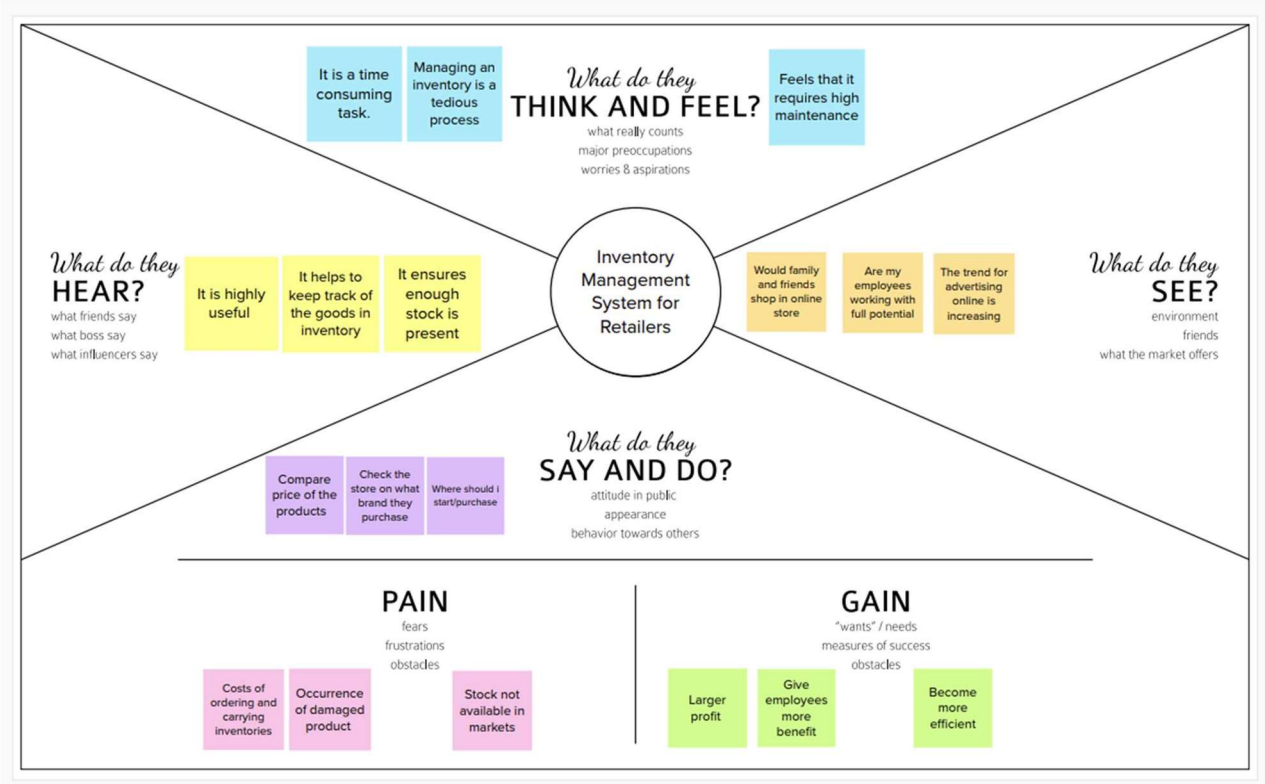
Although it is possible to consider these two decisions separately, they are so closely related that a simultaneous solution is usually necessary. Typically, the objective is to minimize total inventory costs. Total inventory costs typically include holding, ordering, shortage, and purchasing costs.

In a continuous review system, managers continuously monitor the inventory position. Whenever the inventory position falls at or below a level R, called the reorder point, the manager orders Q units, called the order quantity. (Notice that the reorder decision is based on the inventory position including orders and not the inventory level. If managers used the inventory level, they would place orders continuously as the inventory level fell below R until they received the order.) When you receive the order after the lead-time, the inventory level jumps from zero to Q, and the cycle repeats.

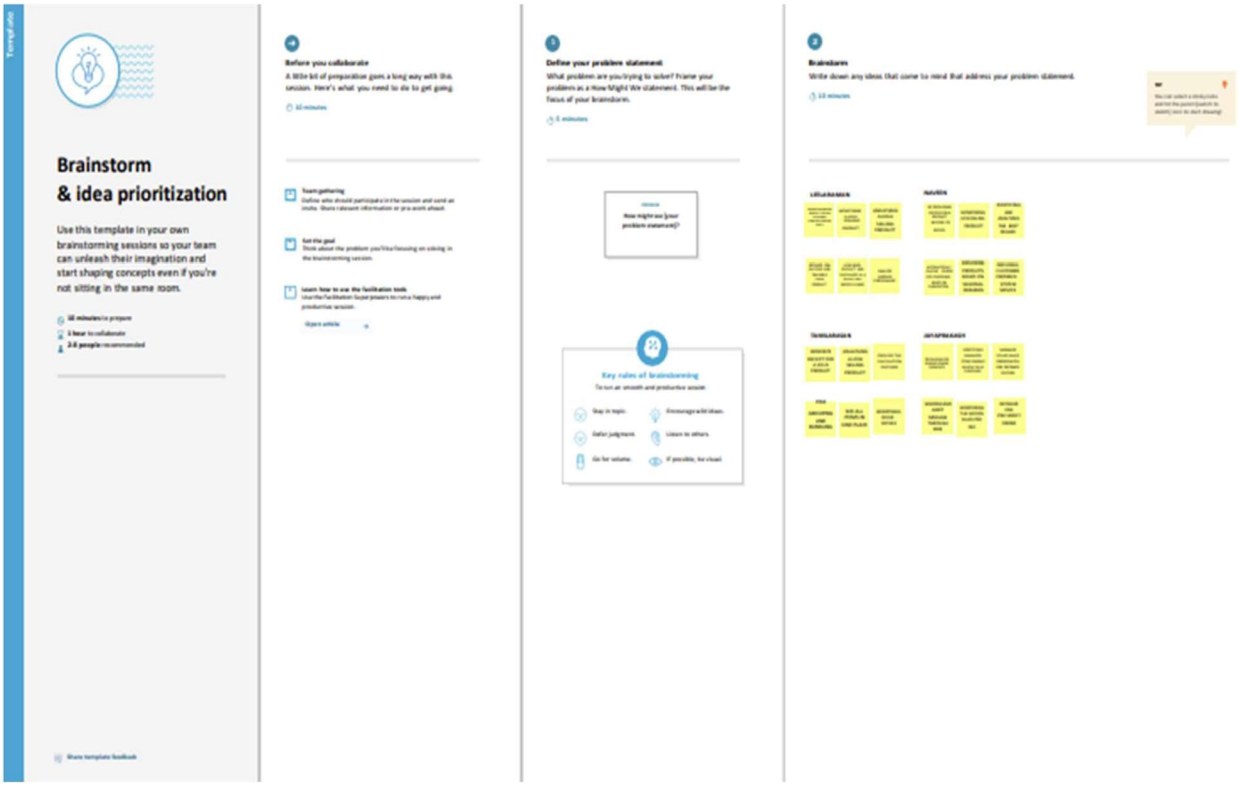
In inventory systems, demand is usually uncertain, and the lead-time can also vary. To avoid shortages, managers often maintain a safety stock. In such situations, it is not clear what order quantities and reorder points will minimize expected total inventory cost. Simulation models can address this question.

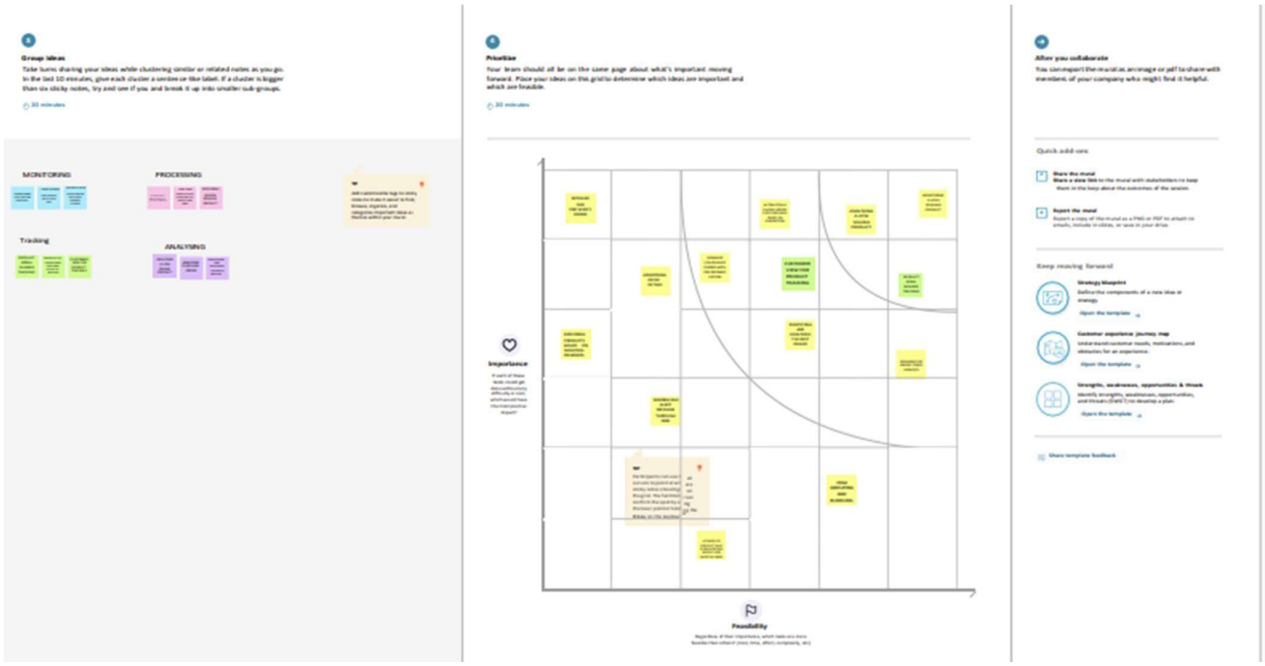
3 IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas



3.2 Ideation & Brainstorming





3.3 Proposed Solution

S.NO	PARAMETERS	DESCRIPTION
1.	Problem statement (problems to be solved	Raman is a retailer facing problem on how much inventory should he carry, so that he could make happy customers and doesn't undergo Capital costs due to excess inventory.
2.	Idea/solution description	Our goal is to make interactive dashboard using the sales dataset to analyze how much Inventory should be carried.
3.	Novelty/Uniqueness	The visualization charts can be filtered based on his requirement to get the overall sales View.
4.	Social Impact/Customer satisfaction	The customers will be happy with their required products been available for sales and retailer doesn't make loss of money due to too much Inventory.
5.	Business Model (Revenue)	Free of cost. Can be used to visualize large datasets..
6.	Scalability of the solution	The visualization of sales data makes the retailer to estimate accurate inventory to be maintained.

3.4 Problem Solution fit

4 REQUIREMENT ANALYSIS

4.1 Functional requirement

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Utilizing a Form for Registration signing up with Gmail Using a username and password to register
FR-2	User Confirmation	Email confirmation required Reassurance via OTP
FR-3	Sign In	Log in to the program using your Gmail account, username, and password.
FR-4	Dashboard	can see product information.
FR-5	Ordering	Put necessary items in a cart first and then place an order for them.
FR-6	Restocking	increasing product orders when the supply is low.

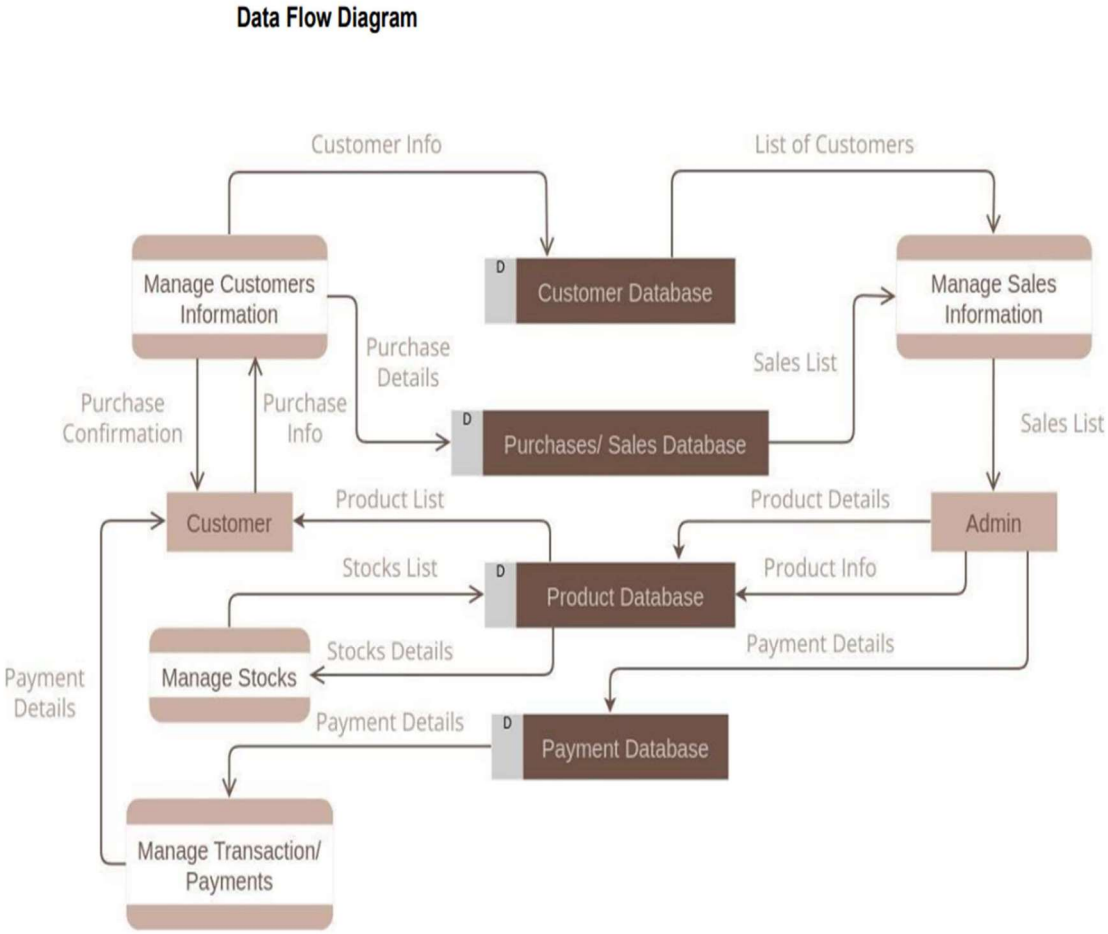
4.2 Non-functional Requirements:

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

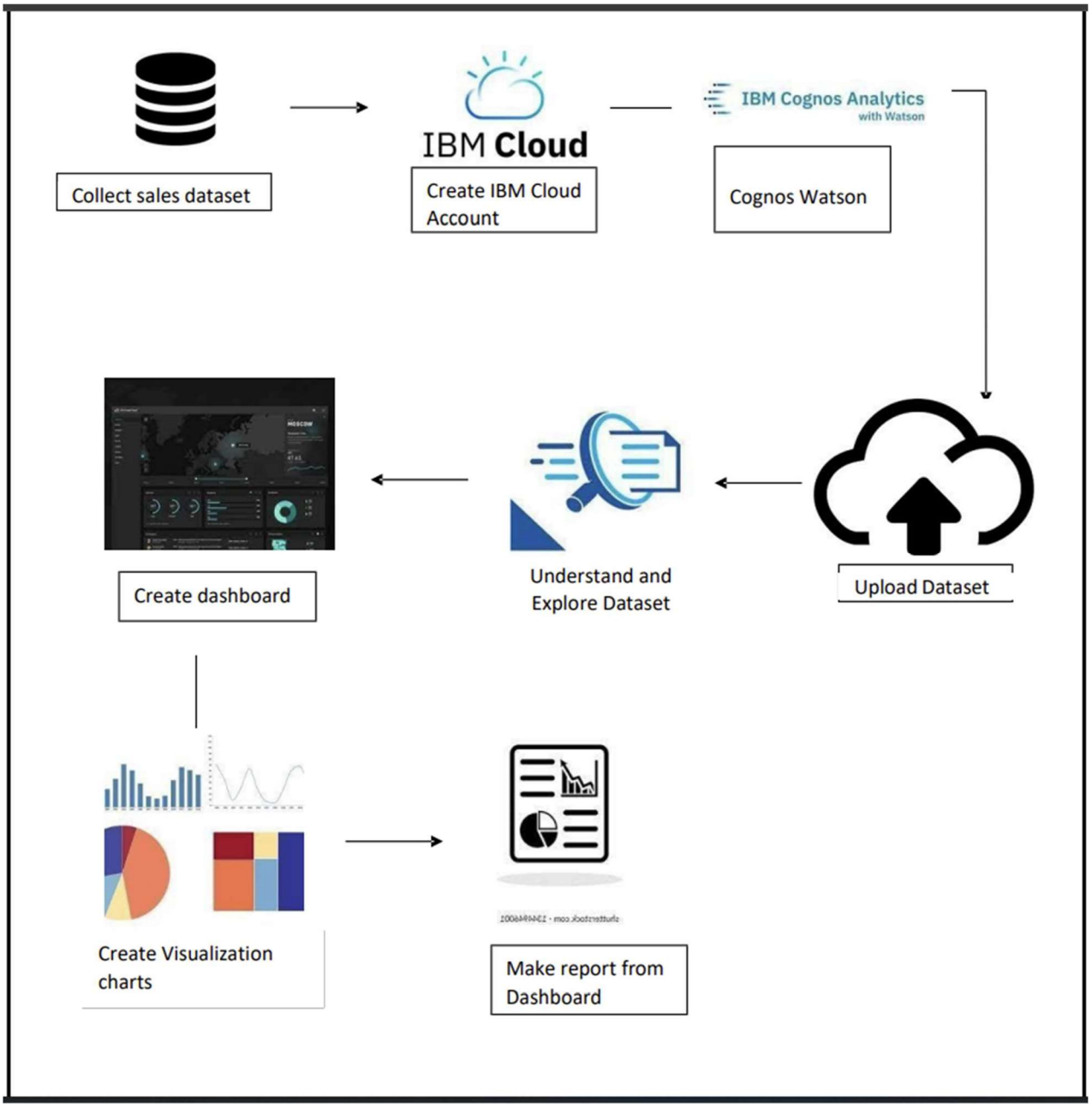
FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	creating a learning curve into the site's design and development. having a user-friendly, straightforward website. Beautiful-looking website. making the website responsive for consumers on both desktops and mobile devices.
NFR-2	**Security**	Strong security is necessary to prevent hackers from accessing the accounts or data of authorized users. To demonstrate authentication and authorization, log in systems are utilized. Utilizing OTP can improve security. Cookies-based security mechanism for user authentication and enhanced website user experience.
NFR-3	**Reliability**	When the website is active, it should be able to manage the necessary number of users without slowing or causing any inconvenience to the user. While running the apps, there should be few mistakes. should be accessible even during disasters.
NFR-4	**Performance**	This has the advantage of cutting down on the time needed for aisle and product searches, among other conveniences. It decreases expenses, saves time during restocking, and forecasts the top-selling goods. Due to the business's streamlined management system, it is more productive and profitable.
NFR-5	**Availability**	To provide high availability of database servers and performances, this employs IBM DB2.
NFR-6	**Scalability**	As DB2 is highly scalable, the coding can be produced and developed efficiently and new features can be introduced easily. Reusing the code can be done to add any new features. IBM Container in Docker registry is used which is highly scalable.

5 PROJECT DESIGN

5.1 Data Flow Diagrams



5.2 Solution & Technical Architecture



5.3 User Stories

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Retailer (Web user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I will be redirected to login page	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail	I can verify the OTP number	Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password	I can access my account / dashboard	High	Sprint-1
	Dashboard	USN-6	As a user, I can update stock in & out count details	Updation can be made through barcode scanning	High	Sprint -2
	Dashboard	USN-7	As a user, I can check the low stock details through alert message	Alert message can be received by registered mail	High	Sprint -1
		USN-8	As a user, I can check the total product details	I can view the value of total products in the stock	Medium	Sprint -2
		USN-9	As a user, I can check the high demand product details	I can update sales details of the products	High	Sprint -2
		USN-10	As a user, I can generate the invoice details	I can add incoming stock details	High	Sprint -1

6 PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

TITLE	DESCRIPTION	DATE
Literature Survey & Information Gathering	Gathering Information by referring the technical papers, research publications etc.	25 OCTOBER 2022
Prepare Empathy Map	To capture user pain and gains Prepare List of Problem Statement	26 OCTOBER 2022

Ideation Brain Storming	Prioritize a top 3 ideas based on feasibility and Importance	2 NOVEMBER 2022
Proposed Solution	Solution include novelty, feasibility, business model, social impact and scalability of solution	3 NOVEMBER 2022
Problem Solution Fit	Solution fit document	4 NOVEMBER 2022
Solution Architecture	Solution Architecture	5 NOVEMBER 2022
Customer Journey	To Understand User Interactions and experiences with application	6 NOVEMBER 2022

Functional Requirement	Prepare the functional Requirement	7 NOVEMBER 2022
Data Flow Diagrams	Data flow diagrams	9 NOVEMBER 2022
Technology Architecture	Technology architecture diagram.	11 NOVEMBER 2022
Milestone & Sprint Delivery Plan	Activity what we done &further plans.	12 NOVEMBER 2022
Project Development - Delivery of Sprint-1, 2, 3 & 4	Develop & submit the developed code by testing it.	14 NOVEMBER 2022 – 19 OVEMBER 2022

6.2 Sprint Delivery Schedule

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 using my email & password and confirming my login credentials.	3	High	JAYAPRAKASH P
Sprint-1		USN-2	As a user, I can login through my E-mail.	3	Medium	LEELARAMAN C
Sprint-1	Confirmation	USN-3	As a user, I can receive my confirmation email once I have registered for the application.	2	High	NAVEEN N
Sprint-2	Login	USN-4	As a user, I can log in to the authorized account by entering the registered email and password.	3	Medium	TAMILARASAN S JAYAPRAKASH P LEELARAMAN C NAVEEN N
Sprint-2	Dashboard	USN-5	As a user, I can view the products that are available currently.	4	High	JAYAPRAKASH P
Sprint-3	Stocks update	USN-6	As a user, I can add products which are not available in the inventory and restock the products.	3	Medium	TAMILARASAN S LEELARAMAN C
Sprint-4	Request for customer care	USN-8	As a user, I am able to request customer care to get in touch with the administrators and enquire the doubts and problems.	4	Medium	JAYAPRAKASH S
Sprint-4	Giving feedback	USN-9	As a user, I am able to send feedback forms reporting any ideas for improving or resolving any issues I am facing to get it resolved.	3	Medium	NAVEEN N

7 CODING & SOLUTIONING

```
import re
import ibm_db
from flask import Flask, redirect, render_template, request, session, url_for

app = Flask(__name__)

hostname = "ea286ace-86c7-4d5b-8580-3fbfa46b1c66.bs2io90l08kqb1od8lcg.databases.appdomain.cloud"
uid = "cfp74886"
```

```
pwd = 'Qwlbzl5B5dRZ5jjj'
driver = "{lBM DB2 ODBC DRlVER}"
db_name = 'bludb'
port = '31505'
protocol = 'TCPlP'
cert = "C:/Users/Tamil/Desktop/lBM/TEST/certi.crt"

dsn = (
    "DATABASE ={0};"
    "HOSTNAME ={1};"
    "PORT ={2};"
    "UlD ={3};"
    "SECURlTY=SSL;"
    "PROTOCOL={4};"
    "PWD ={6};"
).format(db_name, hostname, port, uid, protocol, cert, pwd)
connection = ibm_db.connect(dsn, "", "")
print()
# query = "SELECT username FROM users WHERE username=?"
# stmt = ibm_db.prepare(connection, query)
# ibm_db.bind_param(stmt, 1, username)
# ibm_db.execute(stmt)
# username = ibm_db.fetch_assoc(stmt)
# print(username)
app.secret_key = 'a'


@app.route('/register', methods=['GET', 'POST'])
def register():
    msg = " "
    if request.method == 'POST':
        username = request.form['uname']
        email_id = request.form['email']
        phone_no = request.form['phone_no']
        password = request.form['pass']
        query = "SELECT * FROM users WHERE username=?;"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, username)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        if (account):

            msg = "Account already exists!"
```

```
            return render_template('register.html', msg=msg)
        # elif not re.match(r'[^@]+@[^@]+\.[^@]+', email_id):
        #     msg = "Invalid email addres"
        # elif not re.match(r'[A-Za-z0-9+', username):
        #     msg = "Name must contain only characters and numbers"
        else:
            query = "INSERT INTO users values(?,?,?,?)"
            stmt = ibm_db.prepare(connection, query)
            ibm_db.bind_param(stmt, 1, username)
            ibm_db.bind_param(stmt, 2, email_id)
            ibm_db.bind_param(stmt, 3, phone_no)
            ibm_db.bind_param(stmt, 4, password)
            ibm_db.execute(stmt)
            msg = 'You have successfully Logged In!!'
            return render_template('login.html', msg=msg)
    else:
        msg = 'PLEASE FILL OUT OF THE FORM'
        return render_template('register.html', msg=msg)

@app.route('/', methods=['GET', 'POST'])
@app.route('/login', methods=['GET', 'POST'])
def login():
    global userid
    msg = ' '
    if request.method == "POST":
        username = request.form['uname']
        password = request.form['pass']
        query = "select * from users where username=? and password=?"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, username)
        ibm_db.bind_param(stmt, 2, password)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        print(account)
        if account:
            session['Loggedin'] = True
            session['id'] = account['USERNAME']
            session['username'] = account['USERNAME']
            msg = 'Logged in Successfully'
            return redirect(url_for("dashboard"))
```

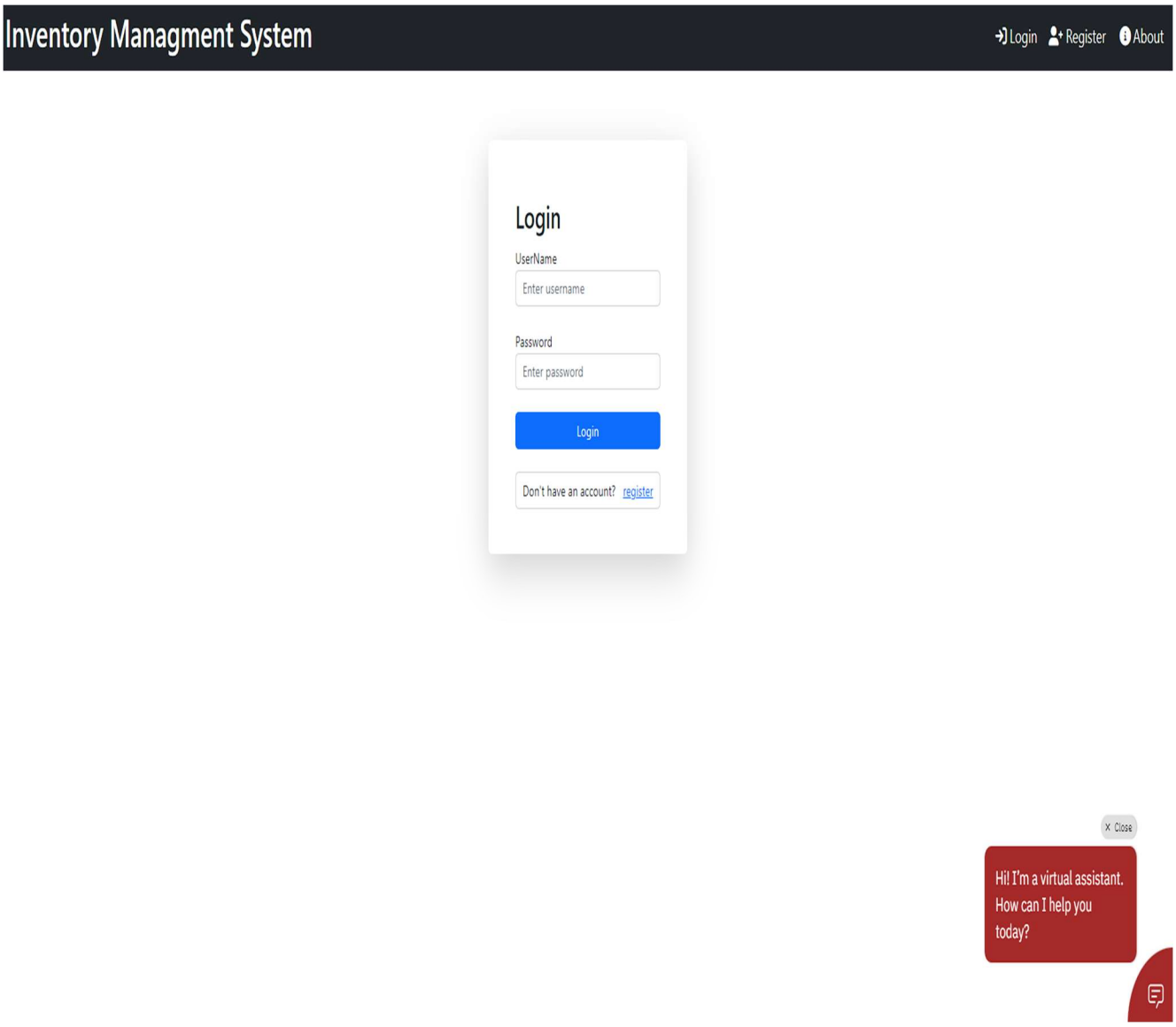
```
98.             else:
99.                 msg = 'Incorrect Username or Password'
100.                return render_template('login.html', msg=msg)
101.        else:
102.            msg = 'PLEASE FILL OUT OF THE FORM'
103.            return render_template('login.html', msg=msg)
104.
105. @app.route('/welcome', methods=['GET', 'POST'])
106. def welcome():
107.        if request.method == 'POST':
108.            username = request.form['uname']
109.            print(username)
110.            return render_template('welcome.html',
     username=username)
111.        else:
112.            return render_template('welcome.html',
     username=username)
113.
114. @app.route('/about')
115. def about():
116.        return render_template('about.html')
117.
118. @app.route('/product', methods=['GET', 'POST'])
119. def product():
120.        msg = " "
121.        if request.method == 'POST':
122.            pid = request.form['pid']
123.            pname = request.form['pname']
124.            rate = request.form['rate']
125.            quantity = request.form['quantity']
126.            brand = request.form['brand']
127.            category = request.form['category']
128.            img = request.form['img']
129.
130.            query = "SELECT * FROM INVENTORYITEMS WHERE
     productID=?;"
131.            stmt = ibm_db.prepare(connection, query)
132.            ibm_db.bind_param(stmt, 1, int(pid))
133.            ibm_db.execute(stmt)
134.            account = ibm_db.fetch_assoc(stmt)
135.            if (account):
136.                msg = "Product ID already exists!"
137.                #_____________-
```

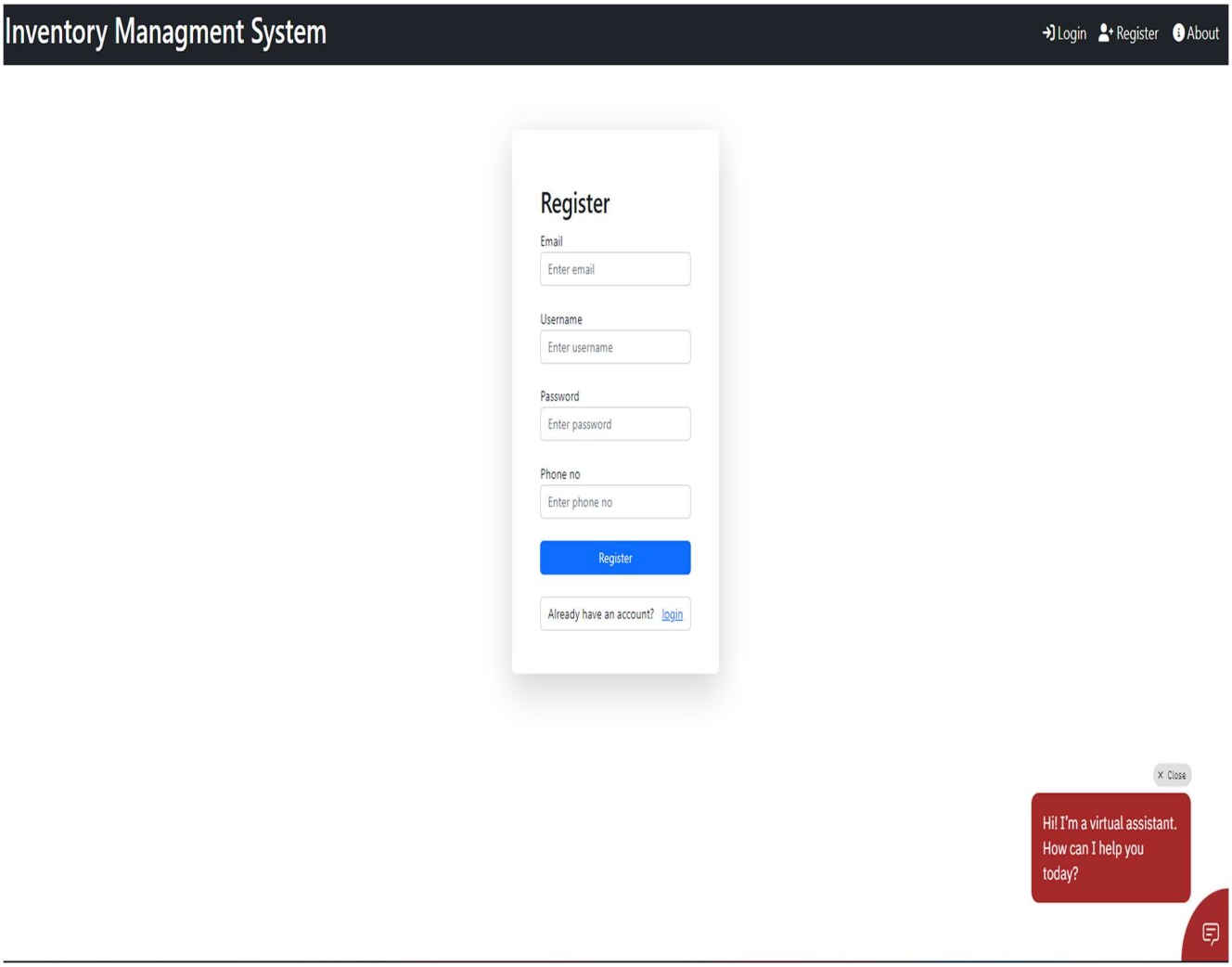
```
        else:
            query = "INSERT INTO INVENTORYITEMS values(?,?,?,?,?,?,?)"
            stmt = ibm_db.prepare(connection, query)
            ibm_db.bind_param(stmt, 1, int(pid))
            ibm_db.bind_param(stmt, 2, pname)
            ibm_db.bind_param(stmt, 3, float(rate))
            ibm_db.bind_param(stmt, 4, int(quantity))
            ibm_db.bind_param(stmt, 5, brand)
            ibm_db.bind_param(stmt, 6, category)
            q = int(quantity)

            if(q > 0):
                ibm_db.bind_param(stmt, 7, True)
            else:
                ibm_db.bind_param(stmt, 7, False)

            ibm_db.execute(stmt)
            msg = 'You have successfully Added!'
            items = GetInventoryItems()
            return render_template('product.html',items=items, msg=msg )
    else:
        msg = 'PLEASE FILL OUT OF THE FORM'
        items = GetInventoryItems()
        return render_template('product.html', items=items)


@app.route('/dashboard', methods=['GET', 'POST'])
def dashboard():
    items = GetInventoryItems()
    items.reverse()
    pcount = len(items)
    orderlist = GetOrderList()
    orderlist.reverse()
    ocount = len(orderlist)
    return render_template('dashboard.html', items=items, pcount=pcount,orderlist=orderlist,ocount=ocount)

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

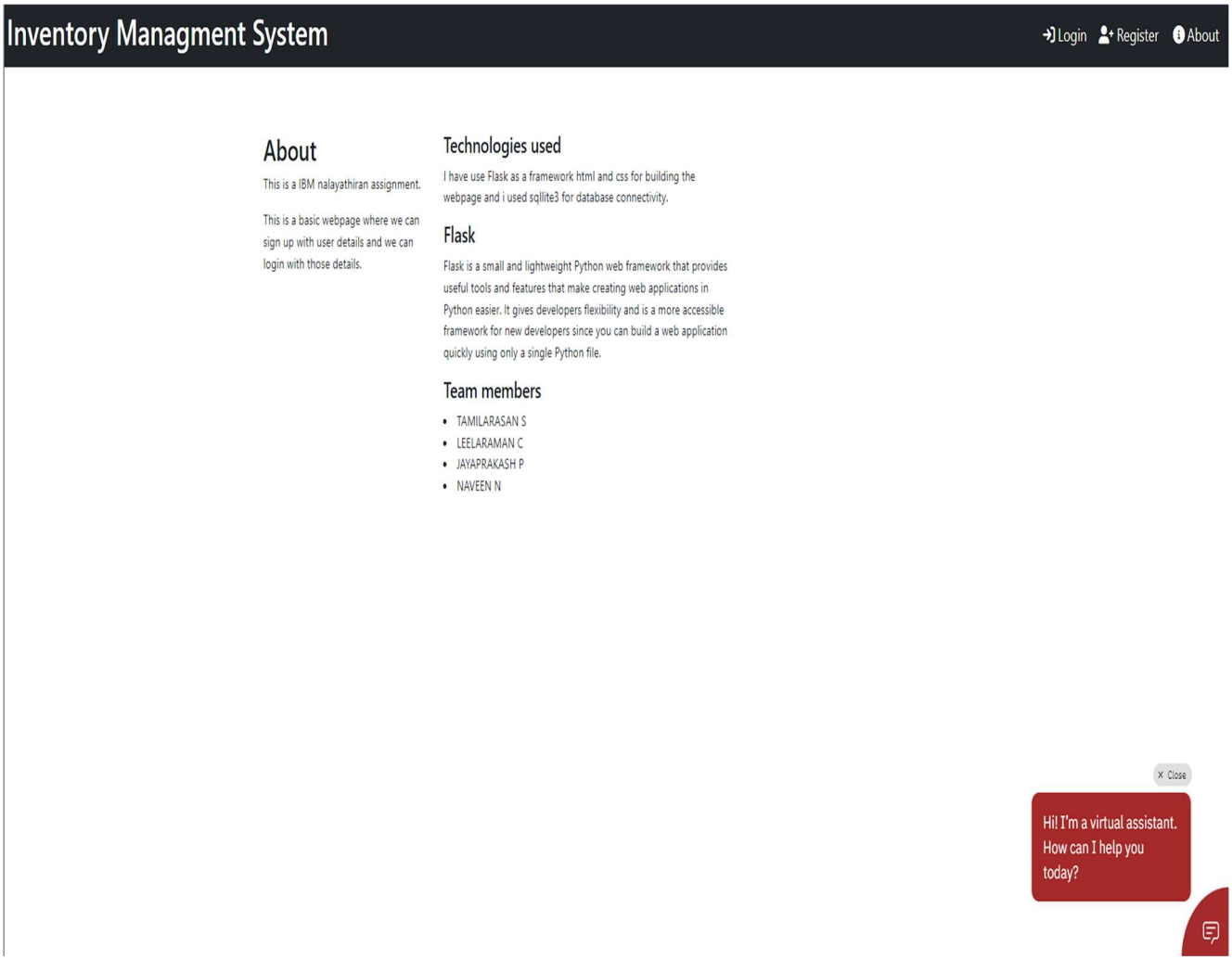
```
178.         cname = request.form['cname']
179.         cno = request.form['cno']
180.         odate = request.form['odate']
181.         pname = request.form['pname']
182.         nitems = request.form['items']
183.         discount = request.form['discount']
184.         status = request.form['status']
185.         data = GetProductAmount(pname)
186.         amount = abs(((float(discount) / 100) *
  float(data['RATE'])) - float(data['RATE']))
187.
188.         query = "INSERT INTO Orders
  values(?,?,?,?,?,?,?,?,?)"
189.         stmt = ibm_db.prepare(connection, query)
190.         ibm_db.bind_param(stmt, 1, oid)
191.         ibm_db.bind_param(stmt, 2, odate)
192.         ibm_db.bind_param(stmt, 3, cname)
193.         ibm_db.bind_param(stmt, 4, cno)
194.         ibm_db.bind_param(stmt, 5, pname)
195.         ibm_db.bind_param(stmt, 6, nitems)
196.         ibm_db.bind_param(stmt, 7, discount)
197.         ibm_db.bind_param(stmt, 8, amount)
198.         ibm_db.bind_param(stmt, 9, status)
199.
200.         ibm_db.execute(stmt)
201.         msg = 'You have successfully Added!'
202.         items = GetOrderList()
203.         data = GetProductName()
204.         return render_template('order.html',items=items,
  data=data)
205.     else:
206.         msg = 'PLEASE FILL OUT OF THE FORM'
207.         items = GetOrderList()
208.         data = GetProductName()
209.         return render_template('order.html',items=items,
  data=data)
210.
211. @app.route('/index')
212. def index():
213.     return render_template('index.html')
214.
215. def GetInventoryItems():
216.     itemsdata = []
217.     query = "SELECT * FROM INVENTORYITEMS"
```

```
    stmt = ibm_db.prepare(connection, query)
    ibm_db.execute(stmt)
    items = ibm_db.fetch_assoc(stmt)
    i = 0
    while items != False:

        itemsdata.append(items)
        items = ibm_db.fetch_assoc(stmt)
        i = i+1
    return itemsdata

def GetOrderList():
    itemsdata = []
    query = "SELECT * FROM Orders"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.execute(stmt)
    items = ibm_db.fetch_assoc(stmt)
    i = 0
    while items != False:
        itemsdata.append(items)
        items = ibm_db.fetch_assoc(stmt)
        i = i+1

    return itemsdata

def GetProductAmount(pname):
    query = "select * from INVENTORYITEMS WHERE
productName=?"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.bind_param(stmt, 1, pname)
    ibm_db.execute(stmt)
    return ibm_db.fetch_assoc(stmt)

def GetProductName():

    query = "SELECT productName FROM INVENTORYITEMS;"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.execute(stmt)
    return ibm_db.fetch_tuple(stmt)

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

Output:

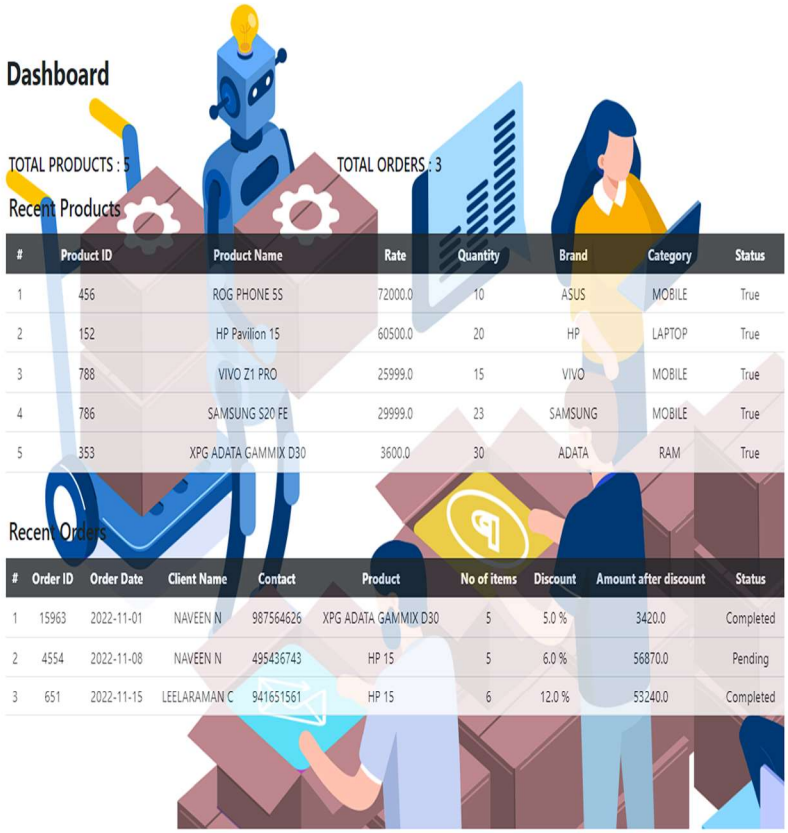

Inventory Managment System
Login
Register
About
Login
UserName
Enter username
Password
Enter password
Login
Don't have an account? register
× Close
Hi! I'm a virtual assistant. How can I help you today?


Inventory Managment System
Login
Register
About
Register
Email
Enter email
Username
Enter username
Password
Enter password
Phone no
Enter phone no
Register
Already have an account? login
Close
Hi! I'm a virtual assistant. How can I help you today?


Inventory Managment System
Login
Register
About
About
This is a IBM nalayathiran assignment.
This is a basic webpage where we can sign up with user details and we can login with those details.
Technologies used
I have use Flask as a framework html and css for building the webpage and i used sqllite3 for database connectivity.
Flask
Flask is a small and lightweight Python web framework that provides useful tools and features that make creating web applications in Python easier. It gives developers flexibility and is a more accessible framework for new developers since you can build a web application quickly using only a single Python file.
Team members
TAMILARASAN S
LEELARAMAN C
JAYAPRAKASH P
NAVEEN N
Close
Hi! I'm a virtual assistant. How can I help you today?

Inventory Managment System

Dashboard Product Order Signout



Dashboard

TOTAL PRODUCTS : 5

TOTAL ORDERS : 3

Recent Products

#	Product ID	Product Name	Rate	Quantity	Brand	Category	Status
1	456	ROG PHONE 5S	72000.0	10	ASUS	MOBILE	True
2	152	HP Pavilion 15	60500.0	20	HP	LAPTOP	True
3	788	VIVO Z1 PRO	25999.0	15	VIVO	MOBILE	True
4	786	SAMSUNG S20 FE	29999.0	23	SAMSUNG	MOBILE	True
5	353	XPG ADATA GAMMIX D30	3600.0	30	ADATA	RAM	True

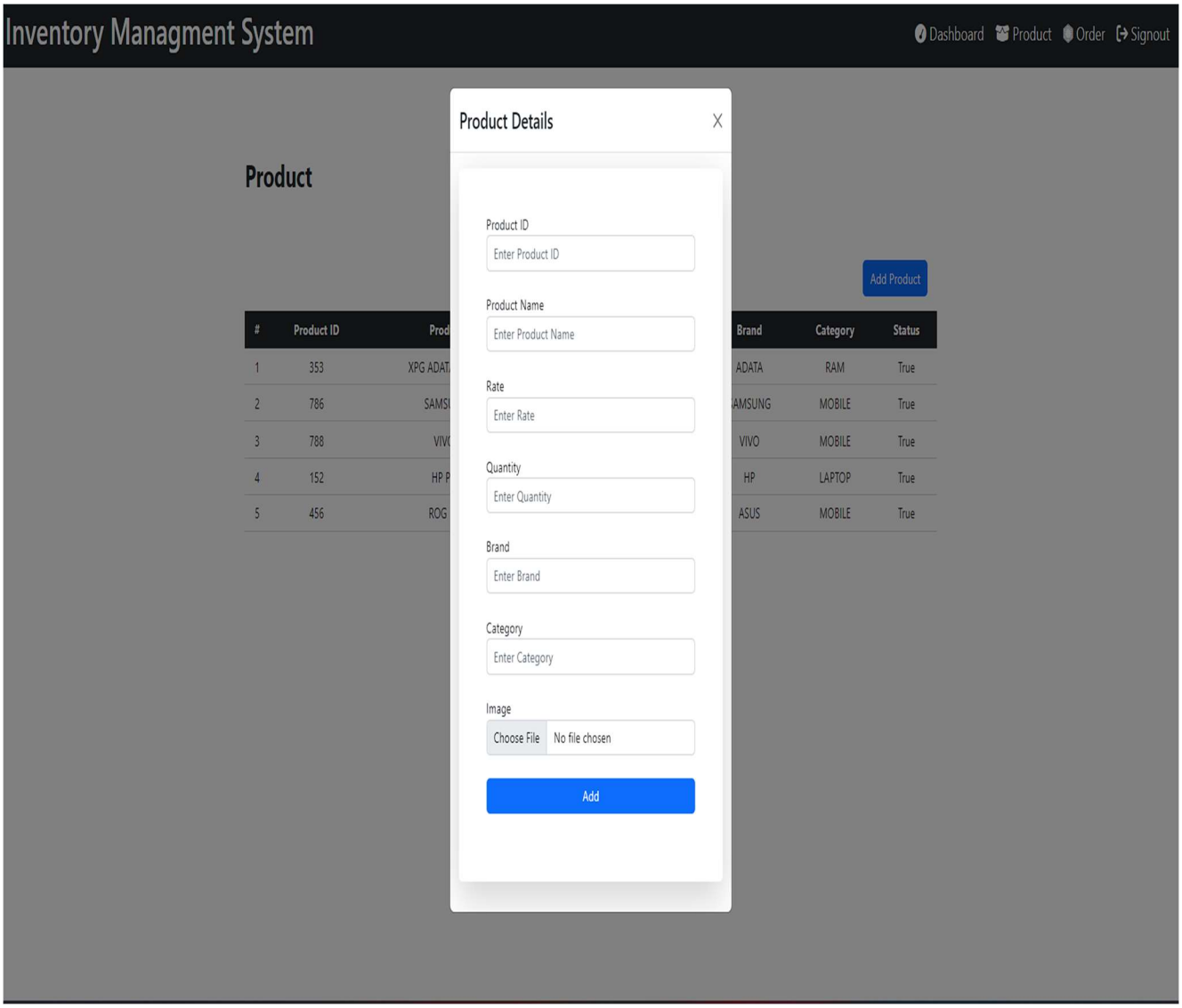
Recent Orders

#	Order ID	Order Date	Client Name	Contact	Product	No of items	Discount	Amount after discount	Status
1	15963	2022-11-01	NAVEEN N	987564626	XPG ADATA GAMMIX D30	5	5.0 %	3420.0	Completed
2	4554	2022-11-08	NAVEEN N	495436743	HP 15	5	6.0 %	56870.0	Pending
3	651	2022-11-15	LEELARAMAN C	941651561	HP 15	6	12.0 %	53240.0	Completed

Product

Add Product

#	Product ID	Product Name	Rate	Quantity	Brand	Category	Status
1	353	XPG ADATA GAMMIX D30	3600.0	30	ADATA	RAM	True
2	786	SAMSUNG S20 FE	29999.0	23	SAMSUNG	MOBILE	True
3	788	VIVO Z1 PRO	25999.0	15	VIVO	MOBILE	True
4	152	HP Pavilion 15	60500.0	20	HP	LAPTOP	True
5	456	ROG PHONE 5S	72000.0	10	ASUS	MOBILE	True


Inventory Managment System
Dashboard
Product
Order
Signout
Product
Add Product
Product ID Prod Brand Category Status
1 353 XPG ADAT ADATA RAM True
2 786 SAMS AMSUNG MOBILE True
3 788 VIV VIVO MOBILE True
4 152 HP P HP LAPTOP True
5 456 ROG ASUS MOBILE True
Product Details
X
Product ID
Enter Product ID
Product Name
Enter Product Name
Rate
Enter Rate
Quantity
Enter Quantity
Brand
Enter Brand
Category
Enter Category
Image
Choose File
No file chosen
Add

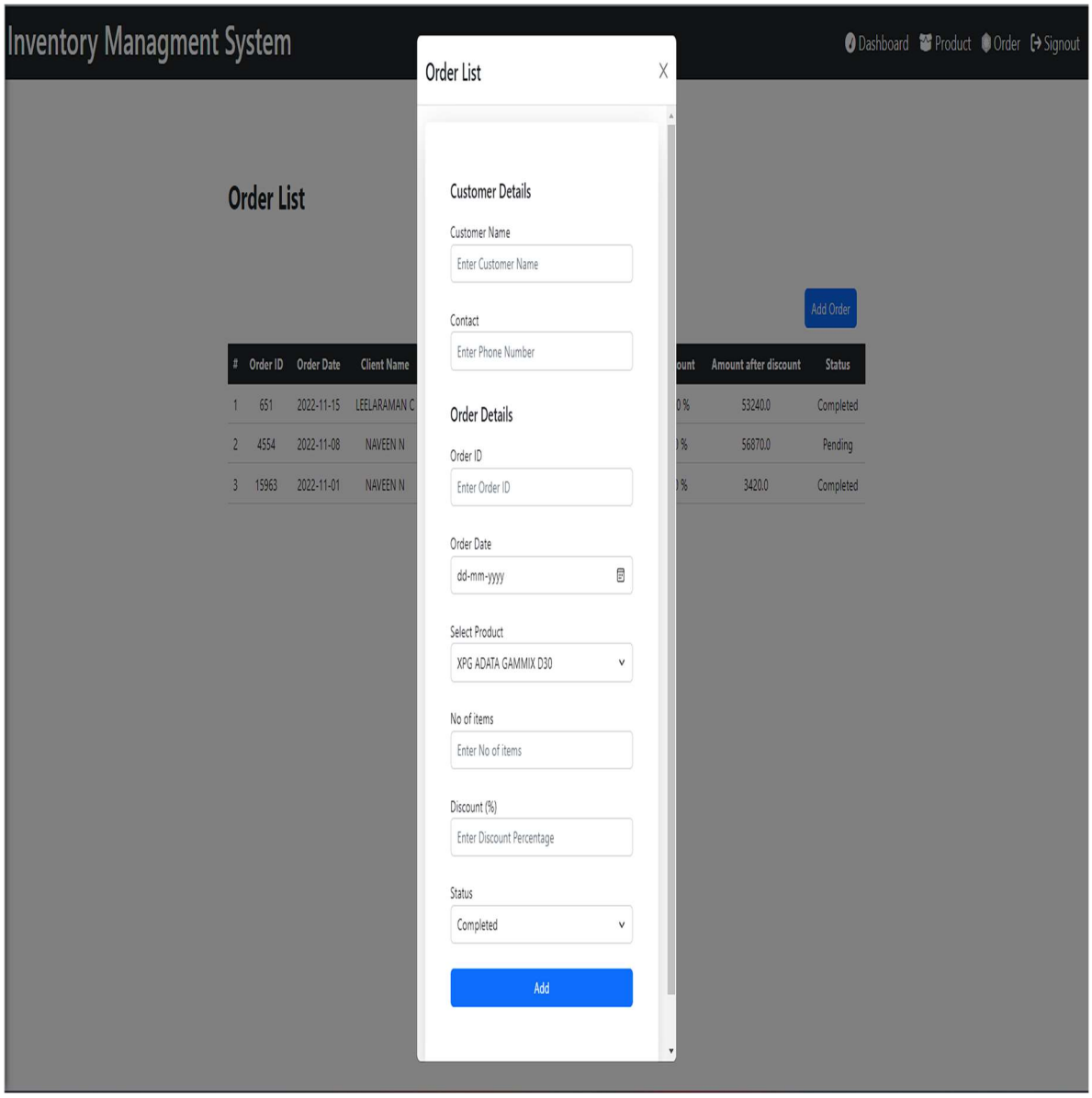
Inventory Managment System

Dashboard Product Order Signout

Order List

Add Order

#	Order ID	Order Date	Client Name	Contact	Product	No of items	Discount	Amount after discount	Status
1	651	2022-11-15	LEELARAMAN C	941651561	HP 15	6	12.0 %	53240.0	Completed
2	4554	2022-11-08	NAVEEN N	495436743	HP 15	5	6.0 %	56870.0	Pending
3	15963	2022-11-01	NAVEEN N	987564626	XPG ADATA GAMMIX D30	5	5.0 %	3420.0	Completed



Result:

Inventory management system for retailors using cloud is developed and executed at the level of completed progress .

8 ADVANTAGES & DISADVANTAGES

Advantages:-

- Each material can be procured in the most economical quantity.
- Purchasing and inventory control people automatically gives their attention to those items which are required only when are needed.
- Positive control can easily be handled to maintain the inventory investment at the desired level only by calculating the predetermined maximum and minimum values.

Disadvantages:-

- Sometimes, the orders are placed at the irregular time periods which may not be convenient to the producers or the suppliers of the materials.
- The items cannot be grouped and ordered at a time since the reorder points occur irregularly.
- If there is a case when the order placement time is very high, there would be two to three orders pending with the supplier each time and there is likelihood that he may supply all orders at a time.
- EOQ may give an order quantity which is much lower than the supplier minimum and there is always a probability that the order placement level for a material has been reached but not noticed in which case a stock out may occur.
- The system assumes stable usage and definite lead time. When these change significantly, a new order quantity and a new order point should be fixed, which is quite cumbersome.

9 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.

10 FUTURE SCOPE

- **Manage Inventory**: Inventory management helps to manage the stock of the company. it provides proper details of the products what kind of raw material, what are the sizes we require and etc. to the purchasing department.
- **Less Storage**: When the inventory management provides proper information to management, they buy according to them which helps the company to store fewer products.
- **Improve Productivity:** Inventory management helps to improve the productivity of the machines and manpower. Employees are aware of stocks and the quantity that require to produce.
- **Increase Profits:** Inventory management helps to improve the profits of the company. it helps to provide proper information about stocks, that saves the unnecessary expenses on stocks.

11 APPENDIX

Source Code

App.py

```
 import re
import ibm_db
from flask import Flask, redirect, render_template, request,
session, url_for

app = Flask(__name__)

hostname = 'ea286ace-86c7-4d5b-8580-
3fbfa46b1c66.bs2io90l08kqb1od8lcg.databases.appdomain.cloud'
uid = 'cfp74886'
pwd = 'QwlbzlSB5dRZ5jjj'
driver = "{lBM DB2 ODBC DRlVER}"
db_name = 'bludb'
port = '31505'
protocol = 'TCPlP'
cert = "C:/Users/Tamil/Desktop/lBM/TEST/certi.crt"

dsn = (
    "DATABASE ={0};"
    "HOSTNAME ={1};"
    "PORT ={2};"
    "UlD ={3};"
    "SECURlTY=SSL;"
    "PROTOCOL={4};"
```

```
    "PWD ={6};"
).format(db_name, hostname, port, uid, protocol, cert, pwd)
connection = ibm_db.connect(dsn, "", "")
print()
# query = "SELECT username FROM users WHERE username=?"
# stmt = ibm_db.prepare(connection, query)
# ibm_db.bind_param(stmt, 1, username)
# ibm_db.execute(stmt)
# username = ibm_db.fetch_assoc(stmt)
# print(username)
app.secret_key = 'a'



@app.route('/register', methods=['GET', 'POST'])
def register():
    msg = " "
    if request.method == 'POST':
        username = request.form['uname']
        email_id = request.form['email']
        phone_no = request.form['phone_no']
        password = request.form['pass']
        query = "SELECT * FROM users WHERE username=?;"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, username)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        if (account):

            msg = "Account already exists!"
            return render_template('register.html', msg=msg)
        # elif not re.match(r'[^@]+@[^@]+\.[^@]+', email_id):
        #     msg = "Invalid email addres"
        # elif not re.match(r'[A-Za-z0-9+', username):
        #     msg = "Name must contain only characters and
numbers"
        else:
            query = "INSERT INTO users values(?,?,?,?)"
            stmt = ibm_db.prepare(connection, query)
            ibm_db.bind_param(stmt, 1, username)
            ibm_db.bind_param(stmt, 2, email_id)
            ibm_db.bind_param(stmt, 3, phone_no)
            ibm_db.bind_param(stmt, 4, password)
            ibm_db.execute(stmt)
            msg = 'You have successfully Logged In!!'
            return render_template('login.html', msg=msg)
```

```
    else:
        msg = 'PLEASE FILL OUT OF THE FORM'
        return render_template('register.html', msg=msg)

@app.route('/', methods=['GET', 'POST'])
@app.route('/login', methods=['GET', 'POST'])
def login():
    global userid
    msg = ''
    if request.method == "POST":
        username = request.form['uname']
        password = request.form['pass']
        query = "select * from users where username=? and
password=?"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, username)
        ibm_db.bind_param(stmt, 2, password)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        print(account)
        if account:
            session['Loggedin'] = True
            session['id'] = account['USERNAME']
            session['username'] = account['USERNAME']
            msg = 'Logged in Successfully'
            return redirect(url_for("dashboard"))
        else:
            msg = 'Incorrect Username or Password'
            return render_template('login.html', msg=msg)
    else:
        msg = 'PLEASE FILL OUT OF THE FORM'
        return render_template('login.html', msg=msg)


@app.route('/welcome', methods=['GET', 'POST'])
def welcome():
    if request.method == 'POST':
        username = request.form['uname']
        print(username)
        return render_template('welcome.html',
username=username)
    else:
        return render_template('welcome.html',
username=username)

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

```
def about():
    return render_template('about.html')

@app.route('/product', methods=['GET', 'POST'])
def product():
    msg = " "
    if request.method == 'POST':
        pid = request.form['pid']
        pname = request.form['pname']
        rate = request.form['rate']
        quantity = request.form['quantity']
        brand = request.form['brand']
        category = request.form['category']
        img = request.form['img']

        query = "SELECT * FROM INVENTORYITEMS WHERE
productID=?;"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, int(pid))
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        if (account):
            msg = "Product ID already exists!"
            #_________________-
        else:
            query = "INSERT INTO INVENTORYITEMS
values(?,?,?,?,?,?,?)"
            stmt = ibm_db.prepare(connection, query)
            ibm_db.bind_param(stmt, 1, int(pid))
            ibm_db.bind_param(stmt, 2, pname)
            ibm_db.bind_param(stmt, 3, float(rate))
            ibm_db.bind_param(stmt, 4, int(quantity))
            ibm_db.bind_param(stmt, 5, brand)
            ibm_db.bind_param(stmt, 6, category)
            q = int(quantity)

            if(q > 0):
                ibm_db.bind_param(stmt, 7, True)
            else:
                ibm_db.bind_param(stmt, 7, False)

            ibm_db.execute(stmt)
            msg = 'You have successfully Added!'
            items = GetInventoryItems()
            return render_template('product.html',items=items,
msg=msg )
```

```
    else:
        msg = 'PLEASE FILL OUT OF THE FORM'
        items = GetInventoryItems()
        return render_template('product.html', items=items)



@app.route('/dashboard', methods=['GET', 'POST'])
def dashboard():
    items = GetInventoryItems()
    items.reverse()
    pcount = len(items)
    orderlist = GetOrderList()
    orderlist.reverse()
    ocount = len(orderlist)
    return render_template('dashboard.html', items=items,
pcount=pcount,orderlist=orderlist,ocount=ocount)

@app.route('/order', methods=['GET', 'POST'])
def order():
     msg = " "
     if request.method == 'POST':
        oid = request.form['oid']
        cname = request.form['cname']
        cno = request.form['cno']
        odate = request.form['odate']
        pname = request.form['pname']
        nitems = request.form['items']
        discount = request.form['discount']
        status = request.form['status']
        data = GetProductAmount(pname)
        amount = abs(((float(discount) / 100) *
float(data['RATE'])) - float(data['RATE']))

        query = "INSERT INTO Orders values(?,?,?,?,?,?,?,?,?)"
        stmt = ibm_db.prepare(connection, query)
        ibm_db.bind_param(stmt, 1, oid)
        ibm_db.bind_param(stmt, 2, odate)
        ibm_db.bind_param(stmt, 3, cname)
        ibm_db.bind_param(stmt, 4, cno)
        ibm_db.bind_param(stmt, 5, pname)
        ibm_db.bind_param(stmt, 6, nitems)
        ibm_db.bind_param(stmt, 7, discount)
        ibm_db.bind_param(stmt, 8, amount)
        ibm_db.bind_param(stmt, 9, status)
```

```
        ibm_db.execute(stmt)
        msg = "You have successfully Added!"
        items = GetOrderList()
        data = GetProductName()
        return render_template('order.html',items=items,
data=data)
    else:
        msg = "PLEASE FILL OUT OF THE FORM"
        items = GetOrderList()
        data = GetProductName()
        return render_template('order.html',items=items,
data=data)

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

def GetInventoryItems():
    itemsdata = []
    query = "SELECT * FROM INVENTORYITEMS"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.execute(stmt)
    items = ibm_db.fetch_assoc(stmt)
    i = 0
    while items != False:

        itemsdata.append(items)
        items = ibm_db.fetch_assoc(stmt)
        i = i+1
    return itemsdata

def GetOrderList():
    itemsdata = []
    query = "SELECT * FROM Orders"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.execute(stmt)
    items = ibm_db.fetch_assoc(stmt)
    i = 0
    while items != False:
        itemsdata.append(items)
        items = ibm_db.fetch_assoc(stmt)
        i = i+1

    return itemsdata

def GetProductAmount(pname):
```

```
    query = "select * from INVENTORYITEMS WHERE productName=?"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.bind_param(stmt, 1, pname)
    ibm_db.execute(stmt)
    return ibm_db.fetch_assoc(stmt)

def GetProductName():

    query = "SELECT productName FROM INVENTORYITEMS;"
    stmt = ibm_db.prepare(connection, query)
    ibm_db.execute(stmt)
    return ibm_db.fetch_tuple(stmt)

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

Templates

About.html:

```
{% extends "_Layout.html" %}
{% block body %}
<div class="container py-5">
    <div class="row">
        <div class="col-md-3 col-sm-6 col-xs-12">
            <div class="aboutus">
                <h2 class="aboutus-title">About</h2>
                <p class="aboutus-text">This is a IBM
nalayathiran assignment.</p>
                <p class="aboutus-text">This is a basic webpage
where we can sign up with user details and we can login with
those details.
                </p>
            </div>
        </div>

        <div class="col-md-5 col-sm-6 col-xs-12">
            <div class="feature">
                <div class="feature-box">
                    <div class="clearfix">
                        <div class="iconset">
                            <span class="glyphicon glyphicon-
cog icon"></span>
                        </div>
                        <div class="feature-content">
                            <h4>Technologies used</h4>
                            <p>I have use Flask as a framework
html and css for building the webpage and i used sqllite3 for
database connectivity.</p>
                        </div>
                    </div>
                </div>
                <div class="feature-box">
                    <div class="clearfix">
                        <div class="iconset">
                            <span class="glyphicon glyphicon-
cog icon"></span>
                        </div>
                        <div class="feature-content">
                            <h4>Flask</h4>
                            <p>Flask is a small and lightweight
Python web framework that provides useful tools and features
```

```
that make creating web applications in Python easier. It gives
developers flexibility and is a more accessible framework for
new developers since you can build a web application quickly
using only a single Python file.</p>
                        </div>
                    </div>
                </div>
                <div class="feature-box">
                    <div class="clearfix">
                        <div class="iconset">
                            <span class="glyphicon glyphicon-
cog icon"></span>
                        </div>
                        <div class="feature-content">
                            <h4>Team members</h4>
                            <li>TAMILARASAN S</li>
                            <li>LEELARAMAN C</li>
                            <li>JAYAPRAKASH P</li>
                            <li>NAVEEN N</li>
                        </div>
                    </div>
                </div>
            </div>
        </div>
    </div>
</div>
{% endblock %}
```

Base.html:

DashboardLayout.html:

```
<html>
<head>
<title>Inventory Managment System for Retailers</title>
<link href="css/Bootstrap/css/bootstrap.min.css"
rel="stylesheet">
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/boo
tstrap.min.css" rel="stylesheet">
<link href="css/style.css" rel="stylesheet">
<meta name='viewport' content='width=device-width, initial-
scale=1'>
```

```
<link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.1.1/css/all.min.css">
<link href="css/Bootstrap/css/bootstrap.min.css"
rel="stylesheet">
<link rel="stylesheet"
href="https://fonts.googleapis.com/css2?family=Material+Symbols
+Outlined:opsz,wght,FILL,GRAD@20..48,100..700,0..1,-50..200" />
<link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.1.1/css/all.min.css">
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/boo
tstrap.min.css" rel="stylesheet" integrity="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTR
i" crossorigin="anonymous"/>

</head>

<body class="body p-5">

  <!-- Fixed Nav Bar-->
  <div class="navbar fixed-top row bg-dark">
    <div class="px-3 col-sm-5  text-white">
      <h1 class="head">Inventory Managment System</h1>
    </div>
   <div class="col-sm-7 m-auto align-items-center text-end
text-white">
    <a class="px-0 navbar-brand text-white" href="/dashboard">
      <i class="fa fa-tachometer"></i> Dashboard</a>

      <a class="px-0 navbar-brand text-white" href="/product">
        <i class="fas fa-box-open"></i> Product</a>

    <a class="px-0 navbar-brand text-white" href="/index">
      <i class="fas fa-sign-out"></i> Signout</a>
   </div>


  </div>

  <!-- Render Body -->
<div class="container p-5">
    {% block body %}

    {% endblock %}
```

```
</div>
<script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd
/popper.min.js" integrity="sha384-
lQsoLXl5PlLFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwPtgFTxbJ8NT4GN1R8
p" crossorigin="anonymous"></script>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boots
trap.min.js" integrity="sha384-
cVKlPhGWiC2Al4u+LWgxfKTRlcfu0JTxR+EQDz/bgldoEyl4H0zUF0QKbrJ0EcQ
F" crossorigin="anonymous"></script>
<script src="JS/Script.js"></script>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.
min.js"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstr
ap.min.js"></script>
  </body>

</html>
```

Layout.html:

```
<html>
<head>
<title>Inventory Managment System for Retailers</title>
<link href="css/Bootstrap/css/bootstrap.min.css"
rel="stylesheet">
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/boo
tstrap.min.css" rel="stylesheet">
<link href="css/style.css" rel="stylesheet">
<meta name='viewport' content='width=device-width, initial-
scale=1'>
<link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.1.1/css/all.min.css">
<link href="css/Bootstrap/css/bootstrap.min.css"
rel="stylesheet">
<link rel="stylesheet"
href="https://fonts.googleapis.com/css2?family=Material+Symbols
+Outlined:opsz,wght,FILL,GRAD@20..48,100..700,0..1,-50..200" />
```

```
<link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.1.1/css/all.min.css">
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/boo
tstrap.min.css" rel="stylesheet" integrity="sha384-
Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTR
i" crossorigin="anonymous"/>

</head>

<body class="body p-5">

  <!-- Fixed Nav Bar-->
  <div class="navbar fixed-top row bg-dark">
    <div class="px-3 col-sm-5  text-white">
      <h1 class="head">Inventory Managment System</h1>
    </div>
   <div class="col-sm-7 m-auto align-items-center text-end
text-white">

    <a class="px-0 navbar-brand text-white" href="/login">
      <i class="fa-solid fa-sign-in "></i>
      Login</a>
    <a class="px-0 navbar-brand text-white" href="/register">
      <i class="fa-solid  fa-user-plus"></i>
      Register</a>
    <a class="px-0 navbar-brand text-white" href="/about">
      <i class="fa-solid fa-circle-info px-1"></i>About</a>
   </div>


  </div>

  <!-- Render Body -->
<div class="container p-5">
    {% block body %}

    {% endblock %}
</div>
<script>
  window.watsonAssistantChatOptions = {
    integrationID: "2d044b92-023d-4987-95b1-17d700546d4a", //
The ID of this integration.
    region: "jp-tok", // The region your integration is hosted
in.
```

```
    serviceInstanceID: "1e45b316-4478-47ea-954e-6548b7dc66ae",
// 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>
<script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd
/popper.min.js" integrity="sha384-
lQsoLX15PILFhosVNubq5LC7Qb9DXgDA9i+tQ8Zj3iwWAwPtgFTxbJ8NT4GN1R8
p" crossorigin="anonymous"></script>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/boots
trap.min.js" integrity="sha384-
cVKIPhGWiC2Al4u+LWgxfKTRIcfu0JTxR+EQDz/bgldoEyl4H0zUF0QKbrJ0EcQ
F" crossorigin="anonymous"></script>
<script src="JS/Script.js"></script>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.
min.js"></script>
  <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstr
ap.min.js"></script>
  </body>

</html>
```

dashboard.html:

```
{% extends "_DashboardLayout.html" %}
{% block body %}

<div class="py-5" style="background-image:
url('../static/images/dashboardbg.png');" >
  <h2  style="font-weight: 700;">Dashboard</h2>
    <center class="py-5">
```

```
    <div class="p-1 container text-start">
      <div class="row">
        <div class="col-sm-5">
          <h5>TOTAL PRODUCTS : {{pcount}}</h5>

        </div>
        <div class="col-sm-5">
          <h5>TOTAL ORDERS : {{ocount}}</h5>
        </div>
      </div>

    </div>

      <div class="p-1 text-start">
       <h4>Recent Products</h4>
      </div>


          <table class="table " style="opacity:0.8;">
              <thead class="table-dark">
                  <tr class="text-center">
                      <th scope="col">#</th>
                      <th scope="col">Product ID</th>
                      <th scope="col">Product Name</th>
                      <th scope="col">Rate</th>
                      <th scope="col">Quantity</th>
                      <th scope="col">Brand</th>
                      <th scope="col">Category</th>
                      <th scope="col">Status</th>
                  </tr>
              </thead>

              <tbody class="text-center bg-white">
                {% for item in items %}
                  <tr>
                    <!-- # -->
                    <td> {{items.index(item) + 1}} </td>
                    <!-- Product ID -->
                    <td> {{item['PRODUCTID']}} </td>
                    <!-- Product Name -->
                    <td> {{item['PRODUCTNAME']}} </td>
                    <!-- Rate -->
                    <td> {{item['RATE']}} </td>
                    <!-- Quantity -->
                    <td> {{item['QUANTITY']}} </td>
                    <!-- Brand -->
```

```
                    <td> {{item['BRAND']}} </td>
                    <!-- Category -->
                    <td> {{item['CATEGORY']}} </td>
                    <!-- Status -->
                    <td> {{item['STATUS']}} </td>
                  </tr>
                {% endfor %}
              </tbody>
            </table>
<br>
            <div class="p-1 text-start">
              <h4>Recent Orders</h4>
             </div>

             <table class="table" style="opacity:0.8;">
              <thead class="table-dark">
                  <tr class="text-center">
                    <th scope="col">#</th>
                    <th scope="col">Order ID</th>
                    <th scope="col">Order Date</th>
                    <th scope="col">Client Name</th>
                    <th scope="col">Contact</th>
                    <th scope="col">Product</th>
                    <th scope="col">No of items</th>
                    <th scope="col">Discount</th>
                    <th scope="col">Amount after
discount</th>
                    <th scope="col">Status</th>
                  </tr>
              </thead>
              <tbody class="text-center bg-white">
                {% for item in orderlist %}
                  <tr>
                    <!-- # -->
                    <td> {{orderlist.index(item) + 1}} </td>
                    <!-- ORDER_ID -->
                    <td> {{item['ORDER_ID']}} </td>
                    <!-- ORDER_DATE -->
                    <td> {{item['ORDER_DATE']}} </td>
                    <!-- CLIENT_NAME -->
                    <td> {{item['CLIENT_NAME']}} </td>
                    <!-- CONTACT_NO -->
                    <td> {{item['CONTACT_NO']}} </td>
                    <!-- PRODUCT -->
                    <td> {{item['PRODUCT']}} </td>
                    <!-- NO_OF_ITEMS -->
```

```
                    <td> {{item["NO_OF_ITEMS"]}} </td>
                    <!-- DISCOUNT -->
                    <td> {{item["DISCOUNT"]}} %</td>
                    <!-- AMOUNT -->
                    <td> {{item["AMOUNT"]}}</td>
                    <!-- Status -->
                    <td> {{item["STATUS"]}}</td>
                  </tr>
                {% endfor %}
              </tbody>

          </table>
    </center>
</div>


{% endblock %}
```

product.html

```
{% extends "_DashboardLayout.html" %}
{% block body %}

<div class="py-5">
  <h2  style="font-weight: 700;">Product</h2>
    <center class="py-5">

        <div class="p-3 text-end">
         <button type="button" class="btn btn-primary" data-bs-
toggle="modal" data-bs-target="#myModal">Add Product</button>
        </div>

        <div class="modal fade" id="myModal">
          <div class="modal-dialog modal-dialog-centered modal-
dialog-scrollable">
            <div class="modal-content">

              <div class="modal-header">
                <h4 class="modal-title">Product Details</h4>
                <button type="button" class="btn-close" data-
bs-dismiss="modal"></button>
```

```
            </div>

            <div class="modal-body">
              <form class="center"
action='{{url_for("dashboard")}}' method="post">
                <div class="shadow-lg p-5 bg-white rounded">
                <div class="form-group text-start">
                <label >Product ID</label>
                <br>
                <input class="form-control" type="number"
name="pid" placeholder="Enter Product ID"/>
                <br>
                <label>Product Name</label>
                <br>
                <input class="form-control" type="text"
name="pname" placeholder="Enter Product Name"/>
                <br>
                <label>Rate</label>
                <br>
                <input class="form-control" type="text"
name="rate" placeholder="Enter Rate"/>
                <br>
                <label>Quantity</label>
                <br>
                <input class="form-control" type="number"
name="quantity" placeholder="Enter Quantity"/>
                <br>
                <label>Brand</label>
                <br>
                <input class="form-control" type="text"
name="brand" placeholder="Enter Brand"/>
                <br>
                <label>Category</label>
                <br>
                <input class="form-control" type="text"
name="category" placeholder="Enter Category"/>
                <br>
                <label>Image</label>
                <br>
                <input class="form-control" type="file"
name="img"/>
                <br>

                <input type="submit" value="Add"  class="btn
btn-primary mb-4" style="width:100%"/>
              </div>
```

```
            </div>

        </form>
          </div>

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




        <table class="table">
            <thead class="table-dark">
                <tr class="text-center">
                    <th scope="col">#</th>
                    <th scope="col">Product ID</th>
                    <th scope="col">Product Name</th>
                    <th scope="col">Rate</th>
                    <th scope="col">Quantity</th>
                    <th scope="col">Brand</th>
                    <th scope="col">Category</th>
                    <th scope="col">Status</th>
                </tr>
            </thead>
            <tbody class="text-center">
              {% for item in items %}
                <tr>
                  <!-- # -->
                  <td> {{items.index(item) + 1}} </td>
                  <!-- Product ID -->
                  <td> {{item['PRODUCTID']}} </td>
                  <!-- Product Name -->
                  <td> {{item['PRODUCTNAME']}} </td>
                  <!-- Rate -->
                  <td> {{item['RATE']}} </td>
                  <!-- Quantity -->
                  <td> {{item['QUANTITY']}} </td>
                  <!-- Brand -->
                  <td> {{item['BRAND']}} </td>
                  <!-- Category -->
                  <td> {{item['CATEGORY']}} </td>
                  <!-- Status -->
                  <td> {{item['STATUS']}} </td>
                </tr>
```

```
                    {% endfor %}
                </tbody>

            </table>

    </center>
</div>


{% endblock %}
```

register.html

```
{% extends "_Layout.html" %}
{% block body %}

<div class="p-5">
    <form class="center"
action="http://localhost:5000/register" method="post">
  <div class="shadow-lg p-5 bg-white rounded">
    <label class="py-2" style="font-weight:500;font-size:xx-
large;">Sign up</label>
  <div class="form-group">
  <label >Email</label>
  <br>
  <input class="form-control" type="text" name="email"
placeholder="Enter email"/>
  <br>
  <label >Username</label>
  <br>
  <input class="form-control" type="text" name="uname"
placeholder="Enter username"/>
  <br>
  <label>Password</label>
  <br>
  <input class="form-control" type="password" name="pass"
placeholder="Enter password"/>
  <br>
  <label>Phone no</label>
  <br>
  <input class="form-control" type="number" name="phone_no"
placeholder="Enter phone no"/>
  <br>
```

```
  <input type="submit" value="Sign up"  class="btn btn-primary
mb-4" style="width:100%"/>
 <span class="form-control">
  <center>
    Already have an account?  
    <a href="/login">login</a>
  </center>
 </span>

</div>

  </form>
  </div>

{% endblock %}
```

login.html:

```
{% extends "_Layout.html" %}
{% block body %}

<div class="p-5 d-flex align-items-center justify-content-
center">
    <form class="center" action='{{url_for("login")}}'
method="post">
  <div class="shadow-lg p-5 bg-white rounded">
    <label class="py-2" style="font-weight:500;font-size:xx-
large;">Login</label>
  <div class="form-group">
  <label >UserName</label>
  <br>
  <input class="form-control" type="text" name="uname"
placeholder="Enter username"/>
  <br>
  <label>Password</label>
  <br>
  <input class="form-control" type="password" name="pass"
placeholder="Enter password"/>
  <br>
```

```
  <input type="submit" value="Login"  class="btn btn-primary
mb-4" style="width:100%"/>
  <span class="form-control">
    <center>
     Don't have an account?  
      <a href="/register">register</a>
    </center>
   </span>
</div>


  </form>
  </div>

  {% endblock %}
```

Order.html:

```
{% extends "_DashboardLayout.html" %}
{% block body %}

<div class="py-5">
  <h2  style="font-weight: 700;">Order List</h2>
    <center class="py-5">

        <div class="p-3 text-end">
         <button type="button" class="btn btn-primary" data-bs-
toggle="modal" data-bs-target="#myModal">Add Order</button>
        </div>

        <div class="modal fade" id="myModal">
          <div class="modal-dialog modal-dialog-centered modal-
dialog-scrollable">
            <div class="modal-content">

              <div class="modal-header">
                <h4 class="modal-title">Order List</h4>
                <button type="button" class="btn-close" data-
bs-dismiss="modal"></button>
              </div>

              <div class="modal-body">
                <form class="center"
action='{{url_for("order")}}' method="post">
                  <div class="shadow-lg p-5 bg-white rounded">
                  <div class="form-group text-start">
                    <h5 class="py-2">Customer Details</h5>
```

```
                    <label >Customer Name</label>
                    <br>
                    <input class="form-control" type="text"
name="cname" placeholder="Enter Customer Name"/>
                    <br>
                    <label>Contact</label>
                    <br>
                    <input class="form-control" type="number"
name="cno" placeholder="Enter Phone Number"/>
                    <br>
                    <h5 class="py-2">Order Details</h5>
                    <label>Order ID</label>
                    <br>
                    <input class="form-control" type="number"
name="oid" placeholder="Enter Order ID"/>
                    <br>
                    <label>Order Date</label>
                    <br>
                    <input class="form-control" type="date"
name="odate" placeholder="Enter Order Date"/>
                    <br>
                    <label>Select Product</label>
                    <br>

                    <select class="form-select" aria-
label="Select Product Name" name="pname">
                      {% for item in data %}
                      <option value="{{item}}">{{item}}</option>
                      {% endfor %}
                    </select>

                    <br>
                    <label>No of items</label>
                    <br>
                    <input class="form-control" type="number"
name="items" placeholder="Enter No of items"/>
                    <br>
                    <label>Discount (%) </label>
                    <br>
                    <input class="form-control" type="text"
name="discount" placeholder="Enter Discount Percentage"/>
                    <br>
                    <label>Status</label>
                    <br>
```

```
                    <select class="form-select" aria-
label="status" name="status">
                      <option selected
value="Completed">Completed</option>
                      <option value="Pending">Pending</option>
                    </select>
                    <br>

                    <input type="submit" value="Add"  class="btn
btn-primary mb-4" style="width:100%"/>
                  </div>
                  </div>

              </form>
                </div>

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




              <table class="table">
                  <thead class="table-dark">
                      <tr class="text-center">
                          <th scope="col">#</th>
                          <th scope="col">Order ID</th>
                          <th scope="col">Order Date</th>
                          <th scope="col">Client Name</th>
                          <th scope="col">Contact</th>
                          <th scope="col">Product</th>
                          <th scope="col">No of items</th>
                          <th scope="col">Discount</th>
                          <th scope="col">Amount after
discount</th>
                          <th scope="col">Status</th>
                      </tr>
                  </thead>
                  <tbody class="text-center">
                    {% for item in items %}
                      <tr>
                        <!-- # -->
                        <td> {{items.index(item) + 1}} </td>
                        <!-- ORDER_ID -->
```

```
                        <td> {{item["ORDER_ID"]}} </td>
                        <!-- ORDER_DATE -->
                        <td> {{item["ORDER_DATE"]}} </td>
                        <!-- CLIENT_NAME -->
                        <td> {{item["CLIENT_NAME"]}} </td>
                        <!-- CONTACT_NO -->
                        <td> {{item["CONTACT_NO"]}} </td>
                        <!-- PRODUCT -->
                        <td> {{item["PRODUCT"]}} </td>
                        <!-- NO_OF_ITEMS -->
                        <td> {{item["NO_OF_ITEMS"]}} </td>
                        <!-- DISCOUNT -->
                        <td> {{item["DISCOUNT"]}} %</td>
                        <!-- AMOUNT -->
                        <td> {{item["AMOUNT"]}}</td>
                        <!-- Status -->
                        <td> {{item["STATUS"]}}</td>
                    </tr>
                   {% endfor %}
                </tbody>

            </table>

    </center>
    <div class="alert alert-white text-center" role="alert">
      {{msg}}
    </div>
</div>


{% endblock %}
```

Welcome.html:

```
{% extends "_Layout.html" %}
{% block body %}
<h1>Welcome {{username}}</h1>
{% endblock %}
```

Style.css:

```
@media (max-width: 768px) {
    .carousel-inner .carousel-item > div {
      display: none;
    }
    .carousel-inner .carousel-item > div:first-child {
      display: block;
    }
```

```
  }

  .carousel-inner .carousel-item.active,
  .carousel-inner .carousel-item-start,
  .carousel-inner .carousel-item-next,
  .carousel-inner .carousel-item-prev {
    display: flex;

  }

  @media (min-width: 768px) {
    .carousel-inner .carousel-item-right.active,
    .carousel-inner .carousel-item-next,
    .carousel-item-next:not(.carousel-item-start) {
      transform: translateX(25%) !important;
    }

    .carousel-inner .carousel-item-left.active,
    .carousel-item-prev:not(.carousel-item-end),
    .active.carousel-item-start,
    .carousel-item-prev:not(.carousel-item-end) {
      transform: translateX(-25%) !important;
    }

    .carousel-item-next.carousel-item-start, .active.carousel-
item-end {
      transform: translateX(0) !important;
    }

    .carousel-inner .carousel-item-prev,
    .carousel-item-prev:not(.carousel-item-end) {
      transform: translateX(-25%) !important;
    }
  }

  .text-center
  {
    text-align: center;
  }

  .icon
  {
  margin-left:15%;
  }
.center
{
```

```
position: relative;
left:40%;
margin-top:10%;
width: 25%;
}
@media only screen and (max-width: 800px) {
.center {
  left:50%;
  margin-top:10%;
  width:50%;

}
}
body{
  background-color: #7E57C2;
}

.mt-100{
  margin-top: 200px;
}
.progress {
  width: 150px;
  height: 150px !important;
  float: left;
  line-height: 150px;
  background: none;
  margin: 20px;
  box-shadow: none;
  position: relative;
}
.progress:after {
  content: "";
  width: 100%;
  height: 100%;
  border-radius: 50%;
  border: 12px solid #fff;
  position: absolute;
  top: 0;
  left: 0;
}
.progress>span {
  width: 50%;
  height: 100%;
  overflow: hidden;
  position: absolute;
  top: 0;
```

```
  z-index: 1;
}
.progress .progress-left {
  left: 0;
}
.progress .progress-bar {
  width: 100%;
  height: 100%;
  background: none;
  border-width: 12px;
  border-style: solid;
  position: absolute;
  top: 0;
}
.progress .progress-left .progress-bar {
  left: 100%;
  border-top-right-radius: 80px;
  border-bottom-right-radius: 80px;
  border-left: 0;
  -webkit-transform-origin: center left;
  transform-origin: center left;
}
.progress .progress-right {
  right: 0;
}
.progress .progress-right .progress-bar {
  left: -100%;
  border-top-left-radius: 80px;
  border-bottom-left-radius: 80px;
  border-right: 0;
  -webkit-transform-origin: center right;
  transform-origin: center right;
  animation: loading-1 1.8s linear forwards;
}
.progress .progress-value {
  width: 90%;
  height: 90%;
  border-radius: 50%;
  background: #000;
  font-size: 24px;
  color: #fff;
  line-height: 135px;
  text-align: center;
  position: absolute;
  top: 5%;
  left: 5%;
```

```
}
.progress.blue .progress-bar {
  border-color: #049dff;
}
.progress.blue .progress-left .progress-bar {
  animation: loading-2 1.5s linear forwards 1.8s;
}
.progress.yellow .progress-bar {
  border-color: #fdba04;
}
.progress.yellow .progress-right .progress-bar {
  animation: loading-3 1.8s linear forwards;
}
.progress.yellow .progress-left .progress-bar {
  animation: none;
}
@keyframes loading-1 {
  0% {
    -webkit-transform: rotate(0deg);
    transform: rotate(0deg);
  }
  100% {
    -webkit-transform: rotate(180deg);
    transform: rotate(180deg);
  }
}
@keyframes loading-2 {
  0% {
    -webkit-transform: rotate(0deg);
    transform: rotate(0deg);
  }
  100% {
    -webkit-transform: rotate(144deg);
    transform: rotate(144deg);
  }
}
@keyframes loading-3 {
  0% {
    -webkit-transform: rotate(0deg);
    transform: rotate(0deg);
  }
  100% {
    -webkit-transform: rotate(135deg);
    transform: rotate(135deg);
  }
}
```

GitHub

https://github.com/IBM-EPBL/IBM-Project-7686-1658895980

Project demo link

As of now we couldn’t able to complete the project on due time ,

Lots of works are in under process ,so we are not able provide the demo link.