PROJECT REPORT

TEAM ID	PNT2022TMID29000
PROJECT NAME	INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

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INTRODUCTION

1.1 PROJECT OVERVIEW

Inventory management information system is high performance software, which speeds up the business operation of the organization. Every organization, which deals with the raw materials, puts its great effort in the efficient utilization of its raw material according to its need and requirement. The organization must perform number of tasks and operations in order to run its business in manual system

- Estimation of new raw material required.
- Preparation of purchase order.
- Preparation of inward sale invoice

This Software “Inventory Management System”, is used for recording the information about the day-to-day transaction of stock of an organization. It stores purchase information of the products with credit/debit information from the supplier. Similarly, it stores sales information with credit/debit about the customer. If a product is purchased, then the related information is stored in stocks, that is, stocks are up to date. Another part is I prepare a sales report after the product is sold. in the sales information, the information about who sold the product is also kept, so there is no problem for misunderstandings in future.

The Inventory Management System is developed and designed for recording and managing the inventory of an organization. It can also be used for different institutions with fewer modifications as per requirement. the system can be easily updated as the other institutional requirements may not be integrated on our project. After the continuous effort, testing and debugging the current system is ready to be implemented in an organization. The System development Project has developed the ability to implement theoretical Knowledge.

Some of the lessons that we had learned from the project are: - Sharpen the knowledge of working cooperating in a working organizational environment and workplace. Know the value of time and disciple. Work in a group and make group decisions. Learnt communication skill, leadership, quality and to make good public relation

1.2 PURPOSE

The aim of this research is to optimize the total cost / total profit of the inventory models for deteriorating and expiry products under the consideration of lead time in different business environments. A lot of research has been done, related to expiry products. But most of the researchers ignored lead time and considered deterioration as a constant. For effective inventory management, consideration to deterioration and lead time is essential. So any study done, ignoring this concept cannot be accurate. Hence, in our study, we tried to develop models with deterioration and lead time, while considering the expiry products.

- To support the armed forces, meet their strategic needs by committed, dedicated and cost-effective development and sustenance of the infrastructure.

- To achieve international levels of quality excellence and time consciousness in a diversified sphere of construction activity in a cost-effective manner.

- Optimize potential and expertise through increased involvement in agency, transnational and national development projects.

- To attain leadership in development, adoption, assimilation, and use of state-of-the-art technology.

- To create the environment for accurate, real time and effective decision making through optimizing use of information technology.

- Through a focus on core competencies; ensure the highest level of skill and proficiency in construction activity.

- To sustain a sense of values in the Organization that will ensure a high level of self-esteem in each individual and immeasurable synergy in the Organization.

- To help enrich the quality of life of the community and ensure all rough growth.

LITERATURE SURVEY

Products are considered as the business resources for the organization. This includes managing the product with appropriate ways to review any time as per the requirement. Therefore, it is important to have a computer-based IMS which can generate reports, maintain the balance of the stock, and details about the purchase and sales in the organization. Before developing this application, we came up with 2 Inventory Management Systems existing in the market, which helps to give the knowledge for the development of our project. This application software is only used by the large organization but so we came up with the application which can be used by the small company for the management of their stock in the production houses. After analyzing the other inventory management system, we decided to include some of the common and key features that should be included in every inventory management system. So, we decided to include those things that help the small organization in away or other.

2.1 EXISTING SYSTEM

As We Know the manual processing is quite tedious, time consuming less accurate in comparison to computerized processing Obviously the present system is not is exception consultant encountering all the above problems.

- Time Consuming.
- It is very tedious.
- All information is not placed separately
- Lot of paperwork
- Slow data processing
- Not a frequent user.
- It is difficult to find records due to the file management system.

Current system is a manual one in which users are maintaining ledgers, books etc to store the information like supplier details, inwards, deliveries and returns of items in all go downs, customer details as well as employee details. It is very difficult to maintain historical data. Also regular investments need to purchase stationary every year In the existing system, the inventory

management is handled manually, which is highly tedious. Some of the important business operations are estimating the requirement of new raw material, dealing in the production of Purchase order, purchase invoice, sales invoice and debit note. All these operations are performed by a team of skilled members which are prompt in financial calculations and have a sharp memory. The operations are handled in an effective way, but the process is time taking and subjected to human errors.

2.2 REFERENCES

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[3] James Gosling. Java (Programming Language), http://www.java.com

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[5] James Gosling, Welcome to java world.com: how-to feature and columns by Java expert; news; Java applets; sample code; tips, http://www.javaworld.com

[6] Pressman, Roger S.” Software Engineering a Practitioner’ Approach”

[7] John Osborn, JavaBeans: Developing Component Software in Java

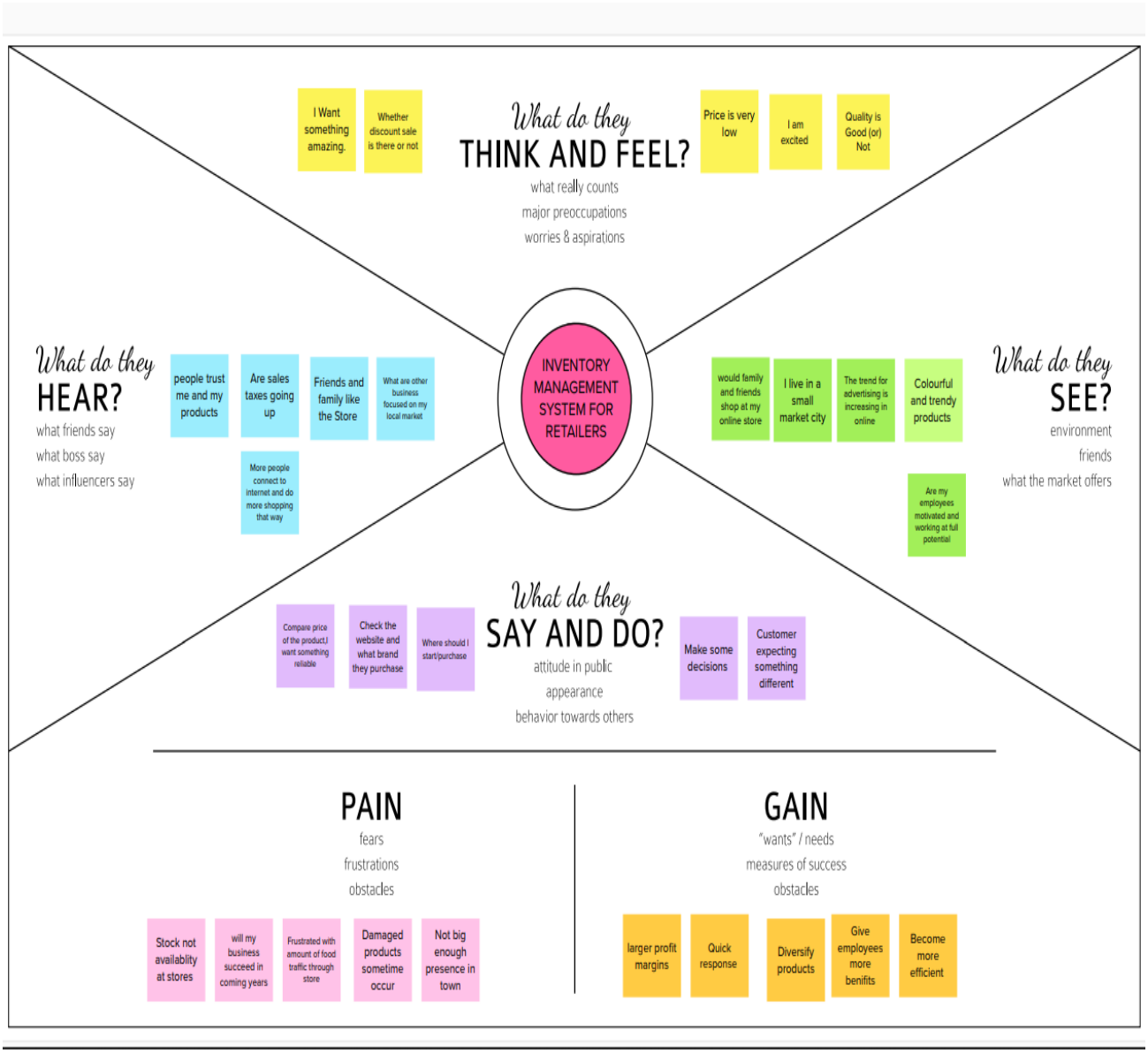
[8] Doug Lea Concurrent Programming in Java: Design Principles and Pattern, Addison-Wesley, November,1996

2.3 PROBLEM STATEMENT DEFINITION

The problem faced by the retailers is that they do not have any system to record and keep their inventory data. It is difficult for the owner to record the inventory data quickly and safely because they only keep it in the logbook and not properly organized.

IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

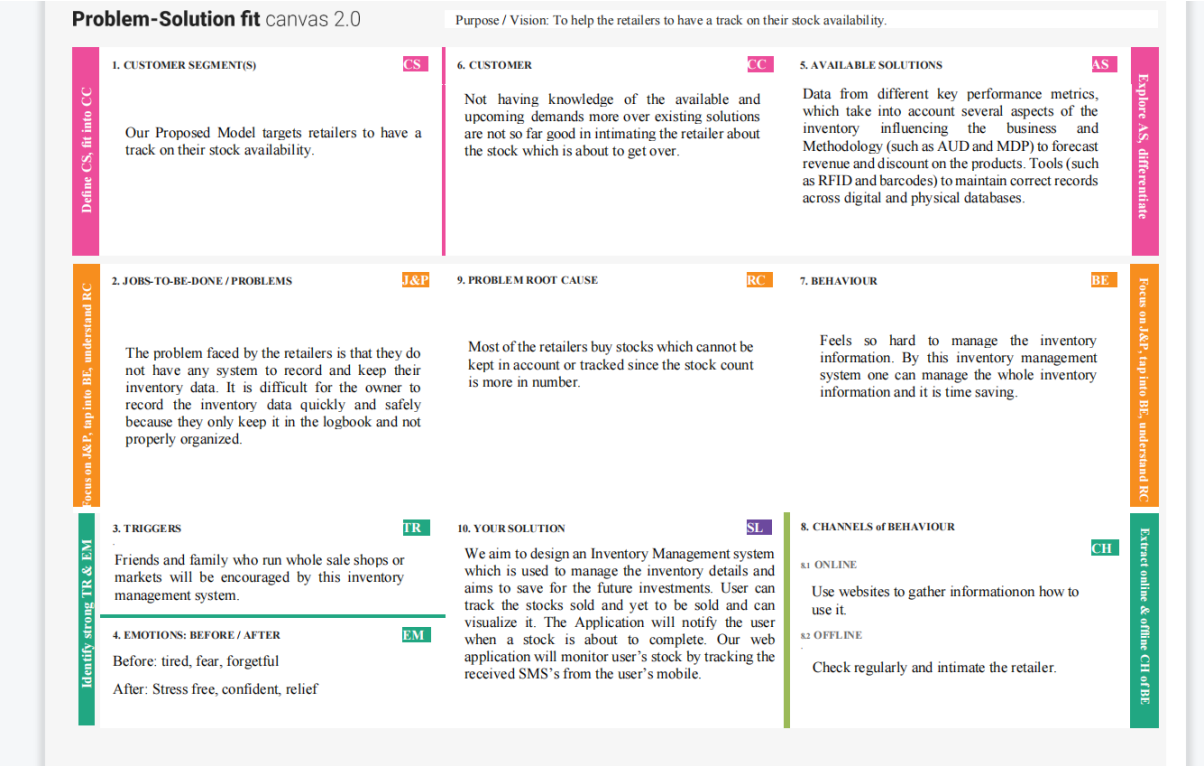


3.2 IDEATION AND BRAINSTORMING

3.3 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem faced by the retailers is that they do not have any system to record and keep their inventory data. It is difficult for the owner to record the inventory data quickly and safely because they only keep it in the logbook and not properly organized.
2.	Idea / Solution description	We aim to design an Inventory Management system which is used to manage the inventory details and aims to save for the future investments. User can track the stocks sold and yet to be sold and can visualize it. The Application will notify the user when a stock is about to complete. Our web application will monitor user's stock by tracking the received SMS's from the user's mobile.
3.	Novelty / Uniqueness	Retailers get notified when the stock is about to get over and intimates the user to buy more stock. Providing Key Performance Indicator for analysing stock. Demand based advanced stock pre-order.
4.	Social Impact / Customer Satisfaction	Encourages user to track stock availability and increase profit. It helps to make a better budget that he will have a financial control.
5.	Business Model (Revenue Model)	The low cost requirement for designing this proposed model makes it more reliable and user friendly.
6.	Scalability of the Solution	With efficient usage of IBM cloud, this proposed model will be able to handle a large number of user data. This makes a huge number of users to easily access and efficiently use it.

3.4 PROBLEM SOLUTION FIT



1. CUSTOMER SEGMENT:

Our Proposed Model targets retailers to have a track on their stock availability.

2. JOBS-TO-BE-DONE / PROBLEMS:

The problem faced by the retailers is that they do not have any system to record and keep their inventory data. It is difficult for the owner to record the inventory data quickly and safely because they only keep it in the logbook and not properly organized.

3. TRIGGERS:

Friends and family who run whole sale shops or markets will be encouraged by this inventory management system.

4. EMOTIONS: BEFORE / AFTER:

Before: tired, fear, forgetful After: Stress free, confident, relief

5. AVAILABLE SOLUTIONS:

Data from different key performance metrics, which consider several aspects of the inventory influencing the business and Methodology (such as AUD and MDP) to forecast

revenue and discount on the products. Tools (such as RFID and barcodes) to maintain correct records across digital and physical databases.

6. CUSTOMER:

Not having knowledge of the available and upcoming demands more over existing solutions are not so far good in intimating the retailer about the stock which is about to get over.

7. BEHAVIOR:

Feels so hard to manage the inventory information. By this inventory management system one can manage the whole inventory information and it is time saving.

8. CHANNELS of BEHAVIOR:

8.1 ONLINE: Use websites to gather information on how to use it.

8.2 OFFLINE: Check regularly and intimate the retailer.

9. PROBLEM ROOT CAUSE:

Most of the retailers buy stocks which cannot be kept in account or tracked since the stock count is more in number.

10. YOUR SOLUTION:

We aim to design an Inventory Management system which is used to manage the inventory details and aims to save for the future investments. User can track the stocks sold and yet to be sold and can visualize it. The Application will notify the user when a stock is about to complete. Our web application will monitor user's stock by tracking the received SMS from the user's mobile.

4.REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through Email Account
FR-2	User Confirmation	Confirmation via Email
FR-3	Calendar	Personal expense tracker application must allow user to add the data to their expenses.
FR-4	Graphical Representation	This application should graphically represent the expense in the form of report.
FR-5	Report Generation	Graphical representation of report must be generated.
FR-6	Category	This application shall allow users to add categories of their expenses.

4.2 NON-FUNCTIONAL REQUIREMENTS:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Helps to keep an accurate record and track of their income and expenses easily.
NFR-2	**Security**	We save the password in the encrypted form so it will add more secure to the application user.
NFR-3	**Reliability**	Each data record is stored on a well-built efficient database schema. There is no risk of data loss.
NFR-4	**Performance**	Expense kinds include categories and an option. The system's throughput is boosted because to the lightweight database support.
NFR-5	**Availability**	User can able to access the application with the help of the internet throw the web browser.
NFR-6	**Scalability**	The ability to appropriately handle increasing demands.

PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS:

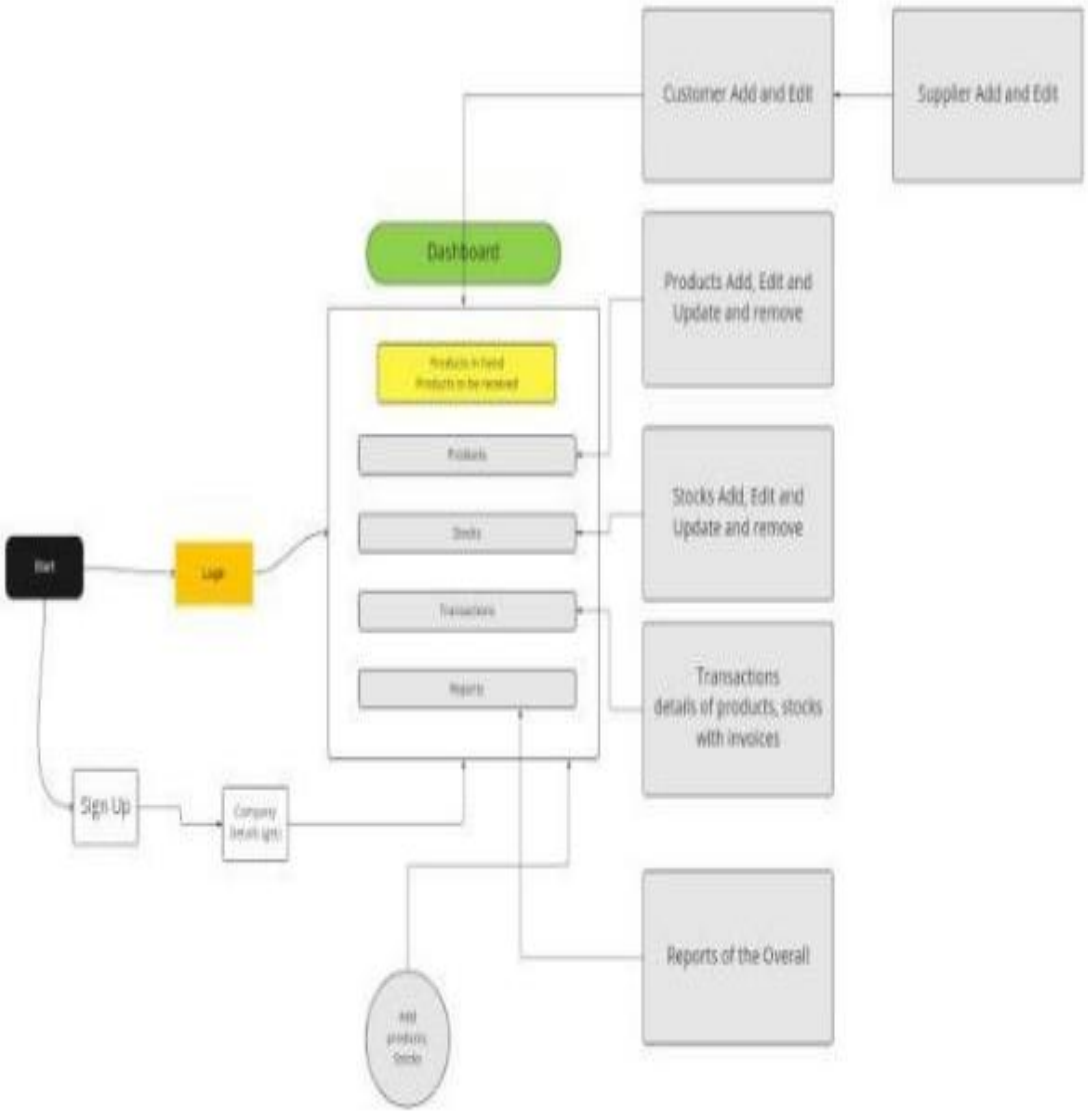


Fig: Data flow diagram

5.2 SOLUTION & TECHNICAL ARCHITECTURE:

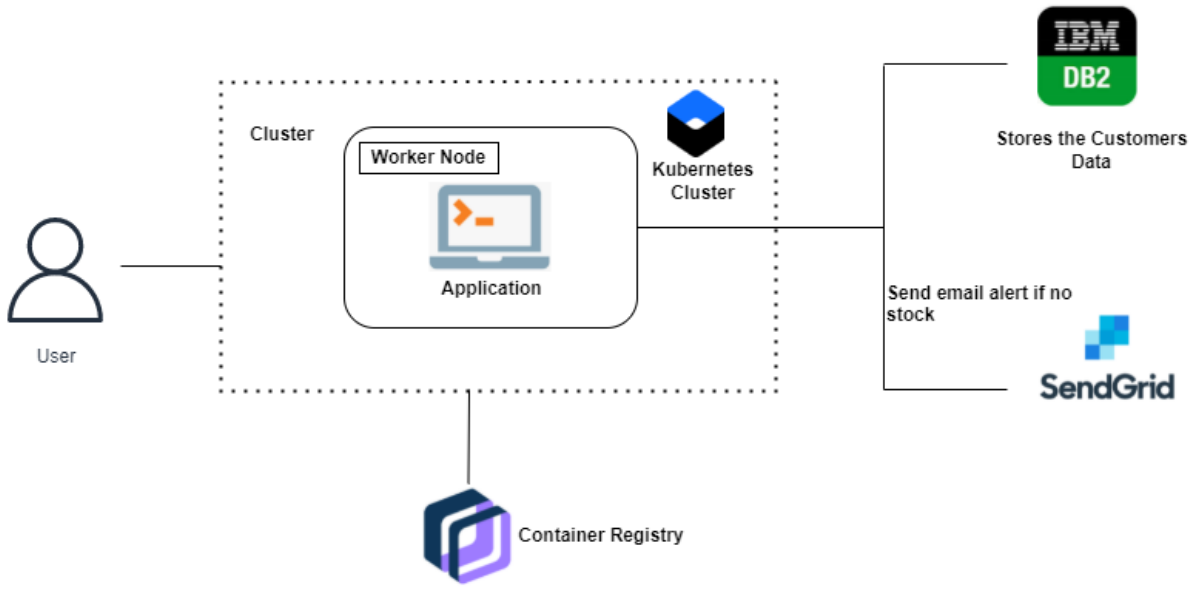


Fig: Technical architecture

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
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	Medium
	Login	USN-3	As a user, I can log into the application by entering email & password	I can access the application	High
	Dashboard	USN-4	As a user I can enter my expense, income and budget details	View my daily Expenses	High
Customer (Web user)	Alert message	USN-5	As the user if you exceed the budget the user should get the alert message	I get the Alert Message	High
Customer Care Executive	Support	USN-6	As a customer care executive, I can solve the log in issues and other issues of the application.	I can provide 24/7 solution support	Medium

Fig: User Stories

PROJECT PLANNING AND SCHEDULING

6.1 SPRINT PLANNING AND ESTIMATION:

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by using my email & password and confirming my login credentials.	3	High	Giridharan D Someshwaran C Ishadharshini T Nareshkumar R
Sprint-1		USN-2	As a user, I can login through my E-mail.	3	Medium	Giridharan D Someshwaran C Ishadharshini T Nareshkumar R
Sprint-1	Confirmation	USN-3	As a user, I can receive my confirmation email once I have registered for the application.	2	High	Giridharan D Someshwaran C Nareshkumar R Ishadharshini T
Sprint-1	Login	USN-4	As a user, I can log in to the authorized account by entering the registered email and password.	3	Medium	Giridharan D Someshwaran C Nareshkumar R Ishadharshini T
Sprint-2	Dashboard	USN-5	As a user, I can view the products that are available currently.	4	High	Giridharan D Someshwaran C Nareshkumar R Ishadharshini T
Sprint-2	Stocks update	USN-6	As a user, I can add products which are not available in the inventory and restock the products.	3	Medium	Giridharan D Someshwaran C Ishadharshini T Nareshkumar R
Sprint-3	Sales prediction	USN-7	As a user, I can get access to sales prediction tool which can help me to predict better restock management of product.	6	Medium	Giridharan D Someshwaran C Ishadharshini T Nareshkumar R
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	Giridharan D Nareshkumar R Someshwaran C Ishadharshini T
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	Giridharan D Nareshkumar R Someshwaran C Ishadharshini T

Fig: Sprint Planning and estimation

6.2 SPRINT DELIVERY SCHEDULE:

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	11	6 Days	24 Oct 2022	29 Oct 2022	11	29 Oct 2022
Sprint-2	7	6 Days	31 Oct 2022	05 Nov 2022	7	05 Nov 2022
Sprint-3	6	6 Days	07 Nov 2022	12 Nov 2022	6	12 Nov 2022
Sprint-4	7	6 Days	14 Nov 2022	19 Nov 2022	7	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)

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

Our velocity should be:

$$AV = \frac{(11+7+6+7)}{24} = \frac{31}{24} = 1.29$$

Fig: Sprint Delivery Schedule

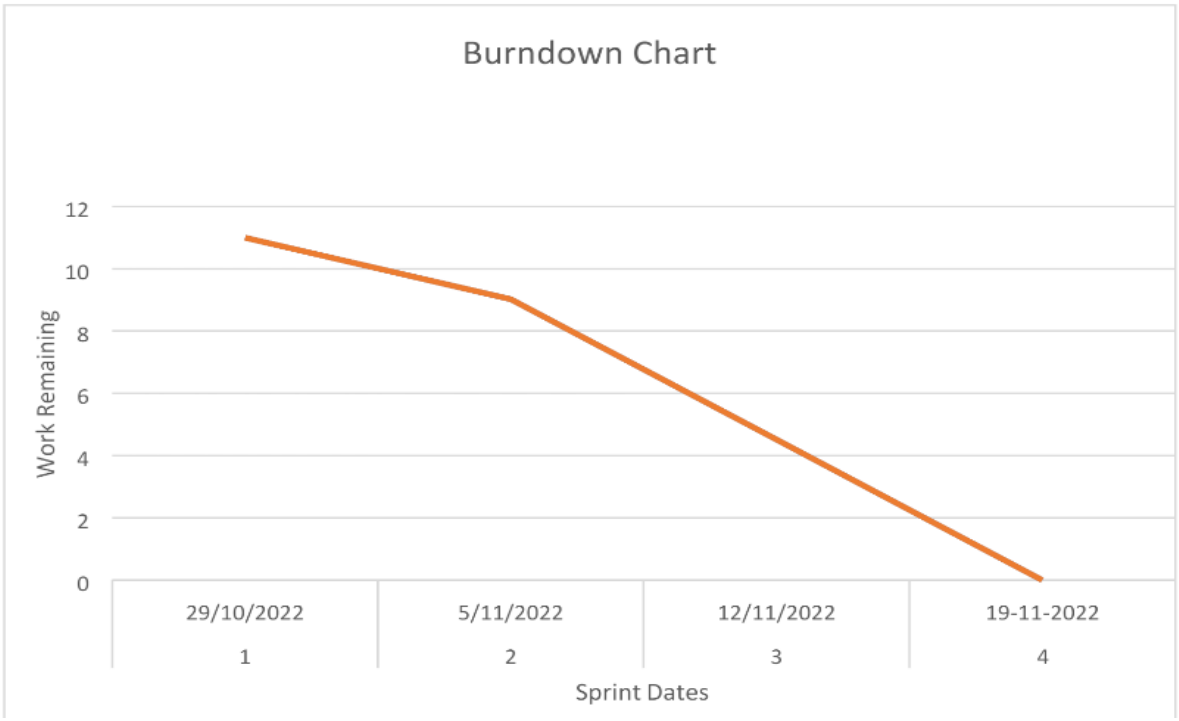


Fig: Burndown Chart

6.3 REPORTS FROM JIRA:

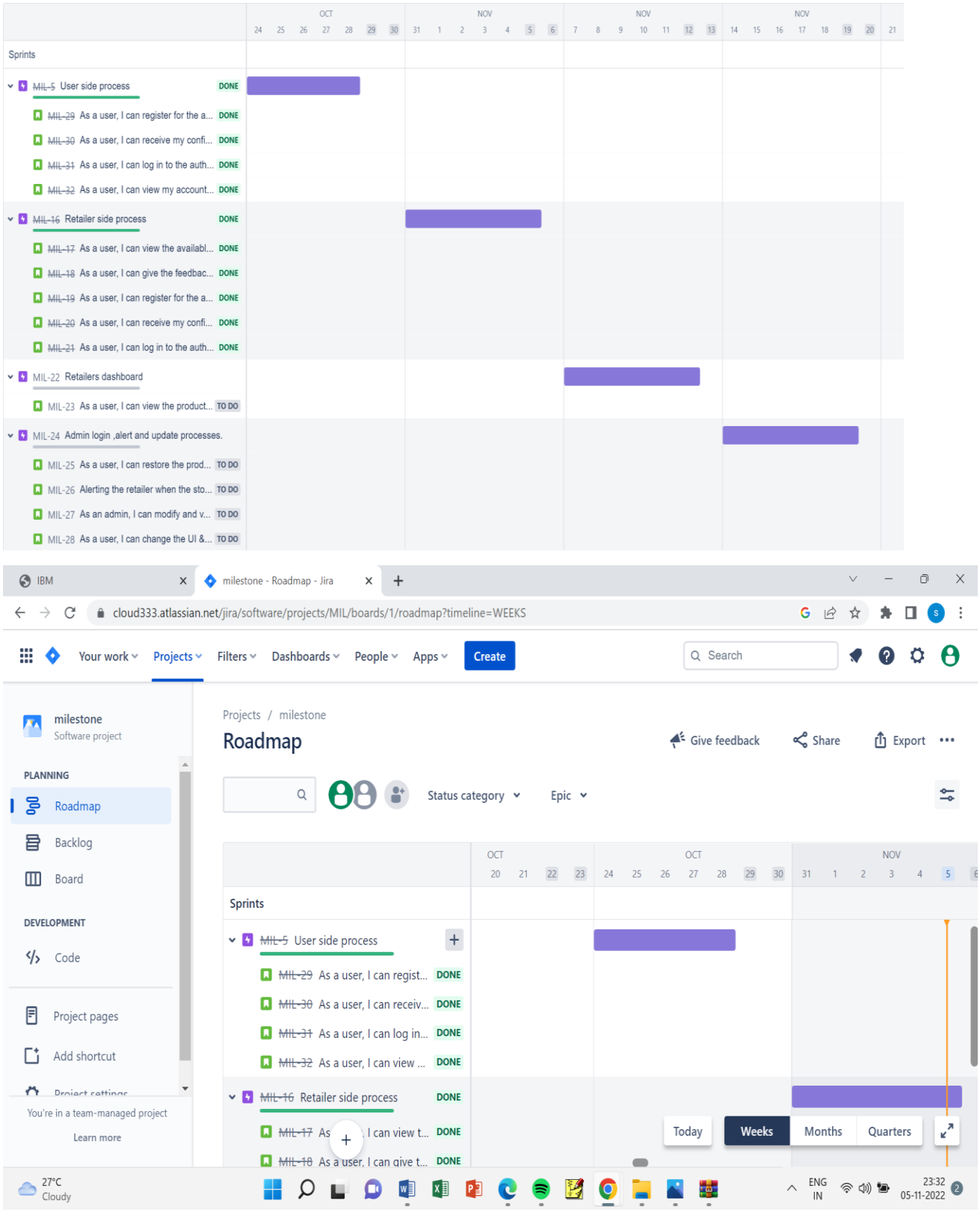


Fig: Reports from Jira

CODING AND SOLUTIONING

7.1 FEATURE 1:

CENTRALISED INVENTORY MANAGEMENT:

The software must enable you to manage your business inventory in a centralized manner. Good inventory management software is not about a bunch of single modules operating separately. It is about ensuring that all modules are interconnected so that information is available in one centralized place.

REPORTING OF BUSINESS ACTIVITIES:

One of the major functions of inventory management software is its ability to generate meaningful reports that give you a clear picture of inventory. Reports play a key role in decision making which can help cut costs, increase productivity, and improve profits. Inventory management reports allow you to improve overall efficiency of inventory management.

AUTOMATION:

An inventory management software must have the automation feature whereby you can delegate tasks to the system. Even if you believe that you can handle inventory tasks manually in the beginning, it will not take long before your inventory becomes complex and you need to rely on a software solution to manage it all.

7.2 FEATURE 2:

FLEXIBLE:

When talking about inventory, it is vital that one of the functions of inventory management software is to be flexible to suit your business requirements. No two business functions are alike and similarly, the inventory management system must enable you to customize and define parameters as per your needs.

OPTIMUM INVENTORY LEVELS:

A must-have feature of inventory management software is the ability to always manage the

right level of inventories. For example, you need to know when the stock levels are low and when they need replenishment. The right inventory management system will have features in place whereby you can get to know when the stock falls below a certain level. This allows you to place orders on the raw materials or other components as and when required.

FUNCTIONAL AND ACCESSIBLE ON EVERY DEVICE:

The functions of inventory management software include its ability to access business information on the go. Chances are low that you will always access you through your business computer only. When you need to get access to the software from the comfort of your home or when you are travelling, you should be able to do so without any issue.

CONTROL OVER USER ACCESS AND PERFORMANCE:

The inventory management system must have the feature to control whereby you can set access permissions to your employees. Not every employee needs access to every part of the inventory. While some may need access to just the stock levels, others may require it to the costs, and so on.

7.3 DATABASE SCHEMA:

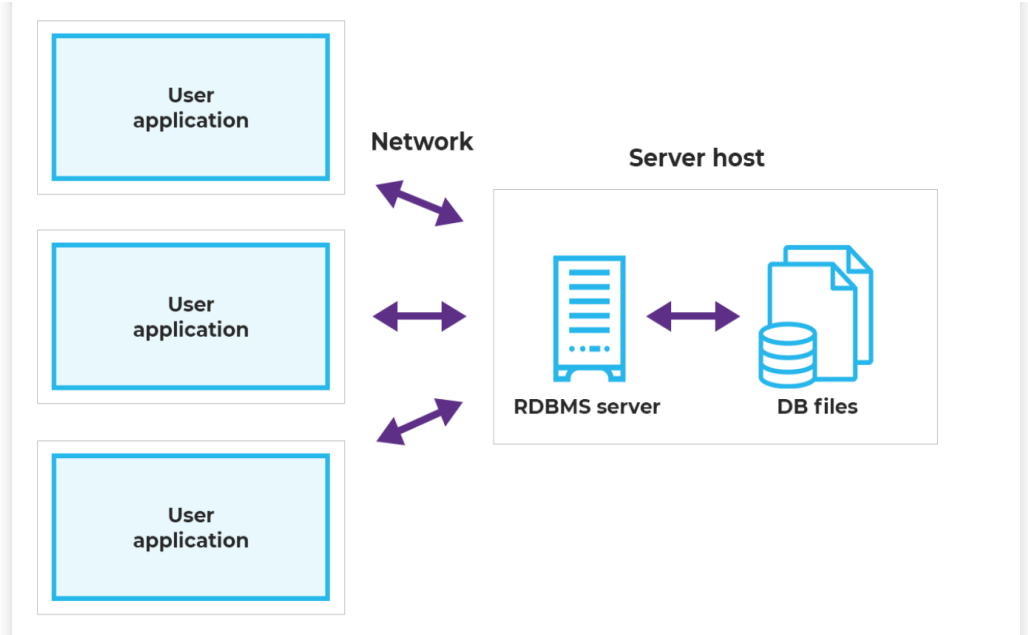


Fig: Database schema

USER APPLICATION:

In the Users application, you create and manage user records. User records contain user names, passwords, and security profiles that determine the applications, options, and data to which a user can access. A user record can be associated with only one person record.

RDBMS (RELATIONAL DATABASE MANAGEMENT SYSTEM):

All modern database management systems like SQL, MS SQL Server, IBM DB2, ORACLE, My-SQL, and Microsoft Access are based on RDBMS. It is called Relational Database Management System (RDBMS) because it is based on the relational model introduced by E.F. Codd.

DB FILES:

A file with dB extension is a generic database file to store data. There are no official specifications to be followed for such a database file. Data is organized in a structured format inside the file in the form tables, fields, data types, and field values.

WORKING PRINCIPLE:

User Data will be connected to RDBMS via network, The data that are stored in RDBMS are related to each file formats after the data are related to each other they will saved in DATABASE FILES

TESTING

8.1 TEST CASES:

				Date	09-Nov-22						
				Team ID	PNT2022TMID29000						
				Project Name	Project - Inventory Management System For Retaile						
				Maximum Marks	4 marks						
Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	https://shopenzer.com/						
LoginPage_TC_001	Functional	Home Page	Verify user is able to see the Login/Signup popup when user clicked on My account button		1.Enter URL and click go 2.Click on My Account dropdown button 3.Verify login/Singup popup displayed or not	https://shopenzer.com/	Login/Signup popup should display	Working as expected	Pass		
LoginPage_TC_002	UI	Home Page	Verify the UI elements in Login/Signup popup		1.Enter URL and click go 2.Click on My Account dropdown button 3.Verify login/Singup popup with below UI elements: a.email text box b.password text box c.Login button d.New customer? Create account link e.Last password? Recovery password link	https://shopenzer.com/	Application should show below UI elements: a.email text box b.password text box c.Login button with orange colour d.New customer? Create account link e.Last password? Recovery password link	Working as expected	Pass	Steps are not clear to follow	
LoginPage_TC_003	Functional	Home page	Verify user is able to log into application with Valid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: gins@gmail.com password: test123	User should navigate to user account homepage	Working as expected	Pass		
LoginPage_TC_004	Functional	Login page	Verify user is able to log into application with InValid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter InValid username/email in Email text box 4.Enter valid password in password text box 5.Click on login button	Username: gins@gmail password: Testing123	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass		
LoginPage_TC_004	Functional	Login page	Verify user is able to log into application with InValid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter Valid username/email in Email text box 4.Enter Invalid password in password text box 5.Click on login button	Username: gins@gmail.com password: Testing12367868678687687 6	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass		
LoginPage_TC_005	Functional	Login page	Verify user is able to log into application with InValid credentials		1.Enter URL(https://shopenzer.com/) and click go 2.Click on My Account dropdown button 3.Enter InValid username/email in Email text box 4.Enter Invalid password in password text box 5.Click on login button	Username: gins password: Testing12367868678687687 6	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass		

Fig: Test cases

8.2 USER ACCEPTANCE TESTING

3. Purpose of Document

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

2.Defect Analysis

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

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	10	4	2	3	20
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	5	2	1	8
Totals	24	14	13	26	77

Fig: Defect analysis

3.Test Case Analysis

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

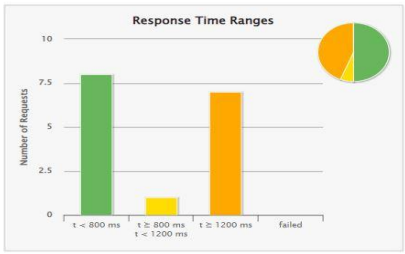
Section	Total Cases	Not Tested	Fail	Pass
Print Engine	7	0	0	7
Client Application	51	0	0	51
Security	2	0	0	2
Outsource Shipping	3	0	0	3
Exception Reporting	9	0	0	9
Final Report Output	4	0	0	4
Version Control	2	0	0	2

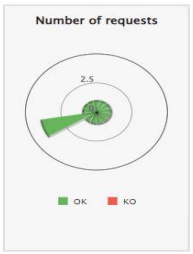
Fig: Test case Analysis

RESULTS

PERFORMANCE METRICS

InventoryManagementSystem





Gatling Version

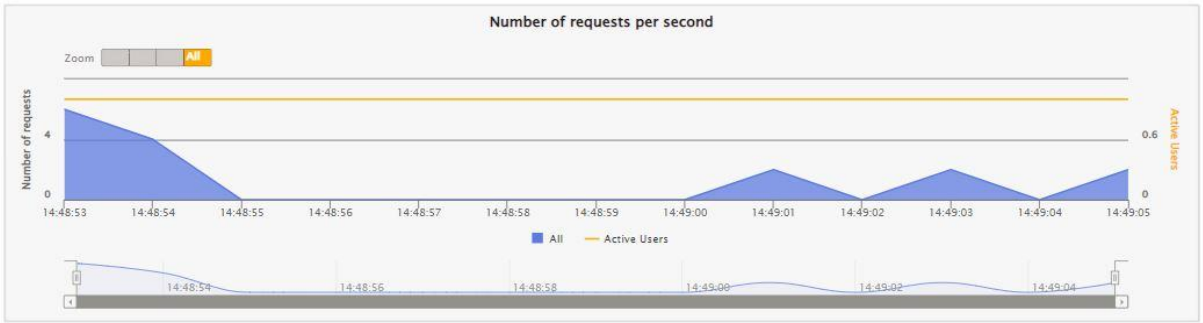
Version: 3.8.4
Released: 2022-09-13

Run Information

Date: 2022-11-17 09:18:53 GMT
Duration: 12s
Description:
abc

Expand all groups | Collapse all groups

Requests	Executions					Response Time (ms)							
	Total	OK	KO	% KO	Cnt/s	Min	50th pct	75th pct	95th pct	99th pct	Max	Mean	Std Dev
All Requests	16	16	0	0%	1.231	7	511	3668	5021	5288	5355	1722	2032
request_0	1	1	0	0%	0.077	25	25	25	25	25	25	25	0
jquery.min.js	1	1	0	0%	0.077	3518	3518	3518	3518	3518	3518	3518	0
request_3	1	1	0	0%	0.077	5355	5355	5355	5355	5355	5355	5355	0
font-awesome.min.css	1	1	0	0%	0.077	996	996	996	996	996	996	996	0
request_1	1	1	0	0%	0.077	4910	4910	4910	4910	4910	4910	4910	0
bootstrap.min.css	1	1	0	0%	0.077	4119	4119	4119	4119	4119	4119	4119	0
bootstrap.bundle.min.js	1	1	0	0%	0.077	1546	1546	1546	1546	1546	1546	1546	0
request_2	1	1	0	0%	0.077	2208	2208	2208	2208	2208	2208	2208	0
request_4	1	1	0	0%	0.077	4808	4808	4808	4808	4808	4808	4808	0
fav.png	4	4	0	0%	0.308	7	10	12	18	19	19	12	5
request_5	1	1	0	0%	0.077	9	9	9	9	9	9	9	0
request_10	1	1	0	0%	0.077	8	8	8	8	8	8	8	0
request_15	1	1	0	0%	0.077	9	9	9	9	9	9	9	0



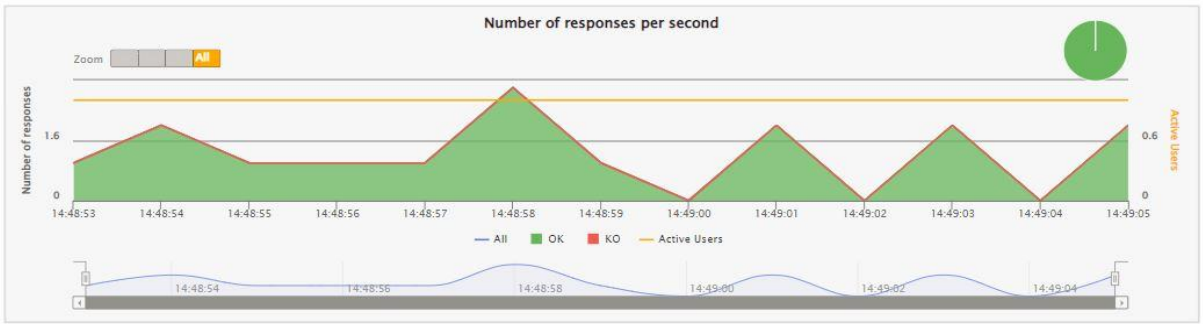


Fig: Performance Metrics

ADVANTAGES & DISADVANTAGES

ADVANTAGES

1. It helps to maintain the right amount of stocks
2. It leads to a more organized warehouse
3. It saves time and money
4. Improves efficiency and productivity
5. A well-structured inventory management system leads to improved customer retention
6. Avoid lawsuits and regulatory fines
7. Schedule maintenance
8. Reduction in holding costs
9. Flexibility

DISADVANTAGES

1. Bureaucracy
2. Impersonal touch
3. Production problem
4. Increased space is needed to hold the inventory
5. Complexity
6. High implementation costs
7. Even with an efficient inventory management method, you can control but not eliminate business risk.
8. The control of inventory is complex because of the many functions it performs. It should thus be viewed as a shared responsibility.
9. Holding inventory can result to a greater risk of loss to devaluation (changes in price).

CONCLUSION

The Inventory Management System is developed and designed for recording and managing the inventory of an organization. It can also be used for different institutions with fewer modifications as per requirement. the system can be easily updated as the other institutional requirements may not be integrated on our project. After the continuous effort, testing and debugging the current system is ready to be implemented in an organization.
The System development Project has developed the ability on us to implement the theoretical Knowledge we have gained during BIM study in the real-life scenario. Some of the lesson that we had learned from the project are: -

- Sharpen the knowledge of working cooperating in a working organizational environment and workplace.
- Know the value of time and disciple.
- Work in a group and make group decisions.
- Learned communication skill, leadership, quality and to make good public relations.

FUTURE SCOPE

1. The Fourth Industrial Revolution will continue to drive technological change that will impact the way that we manage inventories.

2. Successful companies will view inventory as a strategic asset, rather than an aggravating expense or an evil to be tolerated.

3. Collaboration with supply chain partners, coupled with a holistic approach to supply chain management, will be key to effective inventory management.

4. The nature of globalization will change, impacting inventory deployment decisions dramatically.

APPENDIX

Source code

```python
@app.route('/updatepass', methods=['GET', 'POST'])
def updatepass():
    if request.method == 'POST':
        uname = request.form['username']
        oldpass = request.form['password']
        pass1 = request.form['pass1']
        pass2 = request.form['pass2']

        if pass1 != pass2:
            msg = 'New password not matched!'
            return render_template('passwordupdate.html', my_msg=msg)

        cursor = mysql.connection.cursor()
        cursor.execute('SELECT username, password, email from users where username = %s', (uname,))
        mysql.connection.commit()
        user_data = cursor.fetchone()
        cursor.close()

        if user_data:
            if oldpass == user_data[1]:
                cursor = mysql.connection.cursor()
                cursor.execute('UPDATE `users` SET `password`=%s WHERE `username`=%s', (uname, pass1))
                mysql.connection.commit()
                cursor.close()
                msg = 'Password updated successfully'
                print('***********password updated successfully***************')
                return render_template('login.html', msg=msg)
        else:
            msg = 'Username or Password is Incorrect'
            return render_template('passwordupdate.html', my_msg=msg)
    return render_template('passwordupdate.html', my_msg='')


# Running flask App
if __name__ == '__main__':
    app.run(host='0.0.0.0', port=8080, debug=True)
```

```python
@app.route('/')
def index():
    # A route to home page
    notify_stock()
    return render_template('index.html')


@app.route('/contact', methods=['GET', 'POST'])
def contact():
    # A page where anyone can contact the IMS admin
    if request.method == 'POST':
        name = request.form['name']
        email = request.form['email']
        subject = request.form['subject']
        message = request.form['message']
        date = datetime.now()

        # Validating Data
        if len(name) < 3:
            msg = 'Length of name must be grater than 2 characters.'
            return render_template('contact.html', msg=msg)
        elif len(subject) < 10:
            msg = 'Subject must be grater than 10 characters'
            return render_template('contact.html', msg=msg)
        elif len(message) < 10:
            msg = 'Message must be grater than 10 characters'
            return render_template('contact.html', msg=msg)
        else:
            cursor = mysql.connection.cursor()
            cursor.execute('INSERT INTO contacts (name, email, subject, messsage, date) VALUES (%s, %s, %s, %s, %s)',
                           (name, email, subject, message, date))
            mysql.connection.commit()
            cursor.close()
            msg = 'We have successfully received your request.'
            return render_template('index.html', msg=msg)

```

Inventory Management System For Retailers > app.py > ...

```python
from flask import Flask, render_template, request, url_for, redirect, session
from flask_mysqldb import MySQL
import MySQLdb.cursors
from re import match
from datetime import datetime


app = Flask(__name__)

app.secret_key ='hello'

# Remote MySQL Configuration

app.config['MYSQL_HOST'] = 'sql12.freemysqlhosting.net'
app.config['MYSQL_USER'] = 'sql12577529'
app.config['MYSQL_PASSWORD'] = 'zQawPfchIJ'
app.config['MYSQL_DB'] = 'sql12577529'


mysql = MySQL(app)

# Stock Notification


def notify_stock():
    # This function sends you a notification of stock shortage
    print('**********Running Notify**********')
    if 'username' in session:
        print('**********Executing Notify**********')
        cursor = mysql.connection.cursor()
        cursor.execute('SELECT * FROM shop;')
        mysql.connection.commit()
        items = cursor.fetchall()
        cursor.close()
```

```python
    # A function to register new users
    msg = None
    data = None
    if request.method == 'POST':
        username = request.form['username']
        name = request.form['name']
        mail = request.form['mail']
        contact = request.form['contact']
        password = request.form['password']
        confirmPassword = request.form['confirmPassword']
        check = request.form.get('t&c')

        # Check if user already exists
        cursor = mysql.connection.cursor()
        cursor.execute('SELECT * FROM users WHERE username = % s', (username, ))
        account = cursor.fetchone()
        if account:
            msg = f'User with username {username} already exists. Please select another username.'
            return render_template('register.html', msg=msg, valid=False)

        if check == 'on':
            check = True
        else:
            check = False

        # Validation of data
        if len(name) < 3:
            msg = 'Name must be greater than 2 characters'
            return render_template('register.html', msg=msg, valid=False)

        if len(username) < 8:
            msg = 'Username must be greater than 8 chars'
            return render_template('register.html', msg=msg, valid=False)

        regex = "^(?=.{8, 20}$)(?![_.])(?!.*[_.]{2})[a-zA-Z0-9._]+(?<![_.])$"
        if match(regex, username):
            msg = 'Only aA-Zz, 0-9, _ . allowed.'
```

GitHub & Project Demo Link

https://github.com/IBM-EPBL/IBM-Project-11629-1659336517