INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

A PROJECT REPORT

Submitted by

BABU R	**732119205009**
ARUN M	**732119205007**
LATHA S	**732119205025**
SURIYAKALA B	**732119205049**

TEAM ID : PNT2022TMID32248

NANDHA COLLEGE OF TECHNOLOGY, ERODE - 5

vaikalmedu, perundhurai - 638 052

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1 . INTRODUCTION

1.1 : Project Overview

✔ Inventory management system is designed for the retailers to record the information about the day to day transaction of stock of an organization.

✔ This serve as the central database where information is updated as items are scanned,updating the quantity of items.

1.2 : Purpose

The Purpose of this project is

✔ To help the business for managing the order,stock,storage in an easy

and efficient manner by usage of inventory.

✔ By the effective management ,the retailers can easily know the items which are in stock and where it is located.

✔ To reduce the work of the retailers

✔ By the way,it 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

2.1Existing Problem :

➤ Data from different key performance metrics,which take into account several aspects of the inventory influencing the business.

➤ 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.

References :

☆ **iVentRetail**

Reference Link: https://ivend.com/retail-inventory-management-software/

- **Zoho Inventory**

Reference Link: https://www.zoho.com/in/inventory/

- **Inventory management for retail companies: A literature reviewand current trends**

Reference Link: https://www.researchgate.net/publication/352235223_Inventory_managem ent_for_retail_companies_A_literature_review_and_current_trends

- **Development of inventory management system**

Reference Link: https://ieeexplore.ieee.org/document/5478077

2.3 Problem Statement definition :

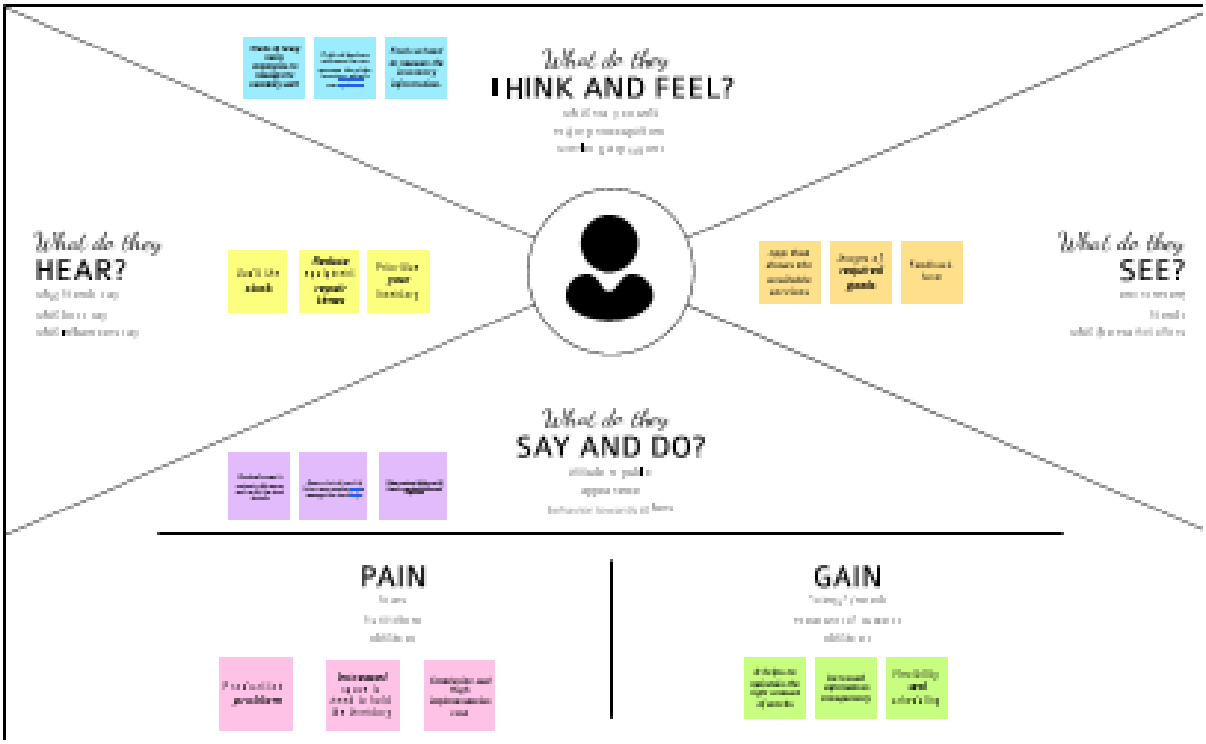
●The problem faced by the retailers is that they do not have any system to record and keep their inventory data.

●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.

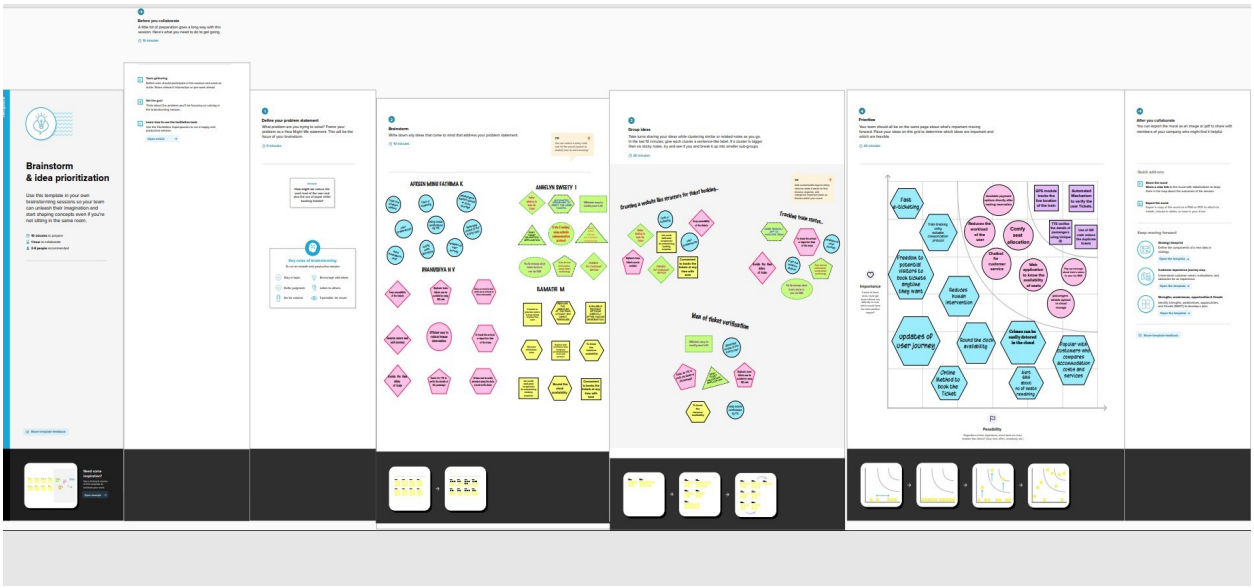
● To avoid shortages,managers often maintain a safety stock in a inventory management system.

3.IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS



3.2 Ideation & Brainstorming



3.3 Proposed Solution

Project team shall fill the following information in proposed solutiontemplate.

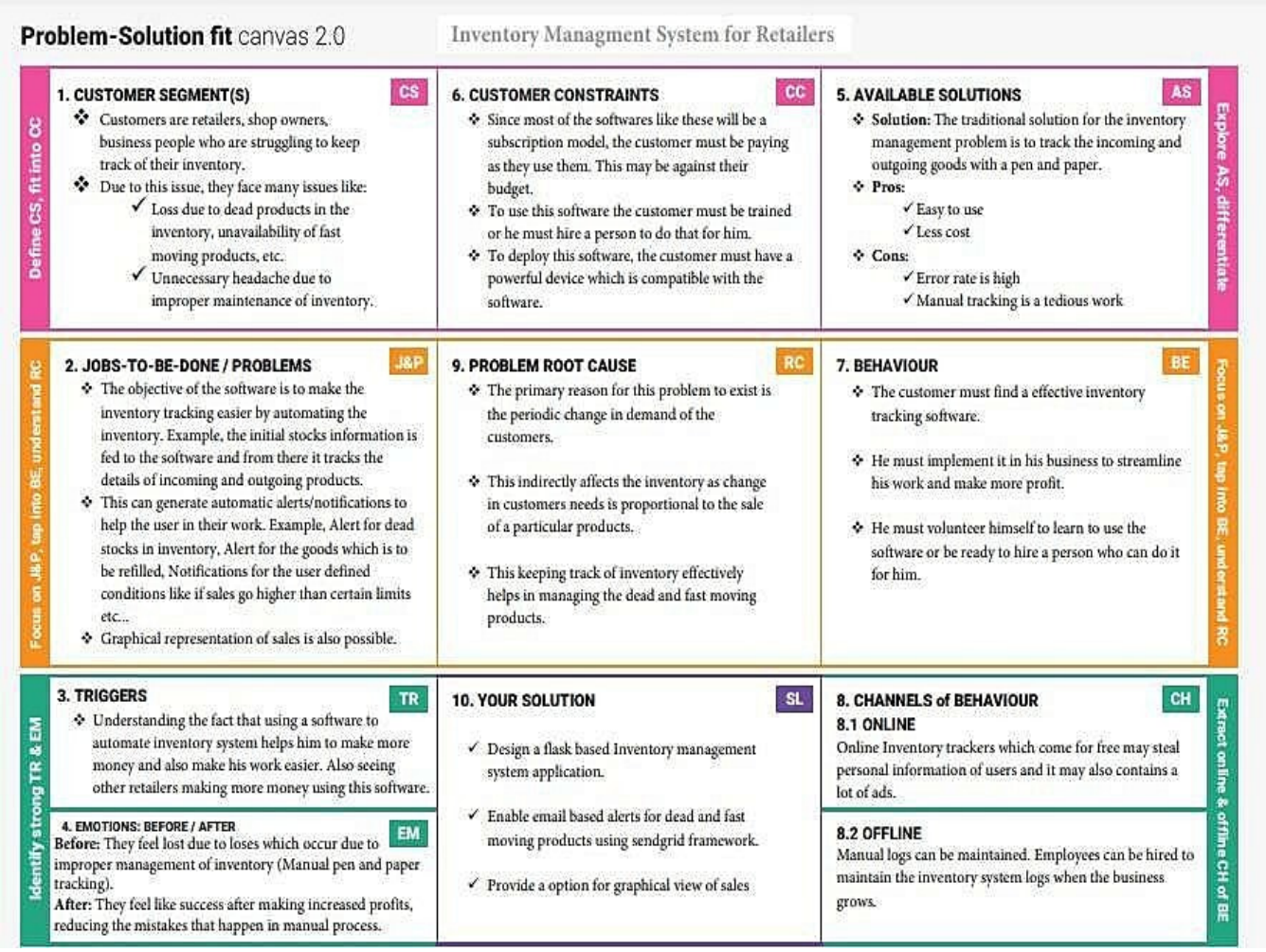
S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	· The customers are not satisfied with the retailers storesince it doesn'thave enough supplements and the deliveries were notmade on time
2.	Idea / Solution description	• The product availability is tracked dailyandan alert system in again kept on to indicate those products which falls below the threshold limit. • All the customers can register their accounts afterwhich they willbe given a logincredentials which they can use whenever they feel like buyingthe stocks. . The application allows the customers to

		know all the presenttime available stocksand also when the new stock will be available on the storefor them to buy
3.	Novelty / Uniqueness	· Prediction of the best selling brand of all certain products based on their popularity, priceand customer trustand satisfaction willbe implemented.
4.	Social Impact / Customer Satisfaction	· The customer satisfaction will be improved for getting appropriate response from the retailers and that too immediately.

5.	Business Model(Revenue Model)	ML algorithms for all the prediction purposesusing all the past dataset since datasets are undoubtedly available in huge amounts. Can deploythe most appropriate business advertising models

6.	Scalability of the Solution	Daily and Eachtime purchase updation of thestockfor preventing inventory shrinkage

3.4 Problem Solutionfit



4. REQUIREMENT ANALYSIS

4.1 Functional requirement

The functional requirements of the proposed solution are as follows,

FR. No.	Functional Requirement (Epic)	Sub Requirement (Story/Sub-Task)
FR-1	User Registration	Registration through registration form. Registration through One-Tap Google Sign-in.

FR-2	User Authentication and Confirmation	Authentication via Google Authentication. Confirmation via Email.Confirmation via OTP.
FR-3	Productmanagement	Easily track productinformation. Quickly produce reports for singleormultiple products. Track information of dead and fast-movingproducts. Track information of suppliers andmanufacturers of the product.
FR-4	Audit Monitoring	The technique of tracking crucial data isknownas audit tracking. Monitor the financial expenses carried outthroughout the whole time(from receivingorder of the product to delivery of the product).
FR-5	Historical Data	Specify the amount of storage you need tohandle this expansion. Data of everything shouldbe stored foranalytics and forecasting.

R – 6	CRM(Customer Relationship Management)	Track the customer experience via ratingsgiven by them. Get customer reviewsregularly or atleastatthe time of product delivery to work on customer satisfaction. User-friendly GUI to increase the customerbasefrom only techies to normal people. Special offers for regular customers has to be provided through credits in the web-appitself.
FR - 7	Security Policy	User data collected must be as secure aspossible. User data must not be misused. They can only be used for user preferred advertisingpurposes.

4.2 Non-Functional Requirements:

The non-functional requirements of the proposed solutionare as follows,

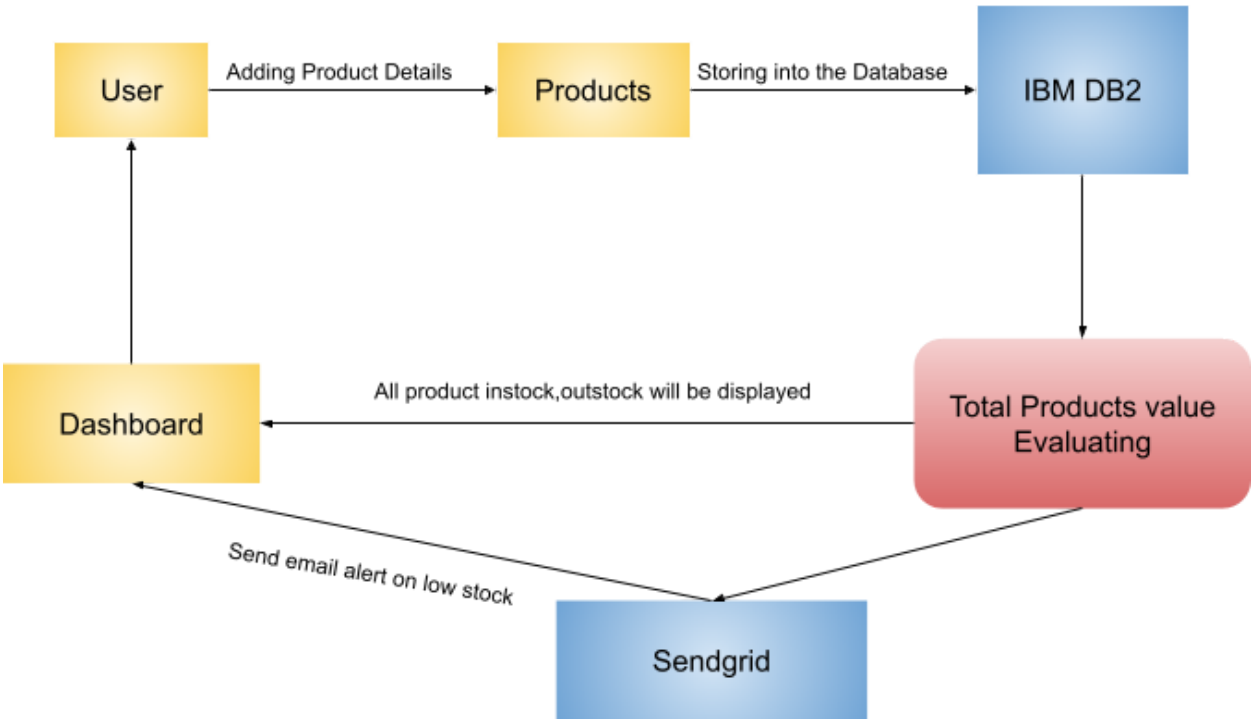
FR No.	**Non-Functional Requirement**	**Description**
NFR-1	Usability	The UI should be accessible to everybody despite of there diversity in languages. People with some impairments should also be able to use theapplication with ease.(Example, integrate google assistant so that blind people can use it). The app and UI should be platform and device independent. It should be compatible withwide range of devicespossible.

NFR-2	Security	The security requirements deal with the primary security. Only authorized userscan access the system withtheir credentials. Administrator or the concerned security team shouldbe alerted on any unauthorized access or data breaches so as to rectifyit immediately.
NFR-3	Reliability	The software should be able to connect to the database in the event of theserver being down due toa hardwareor software failure.

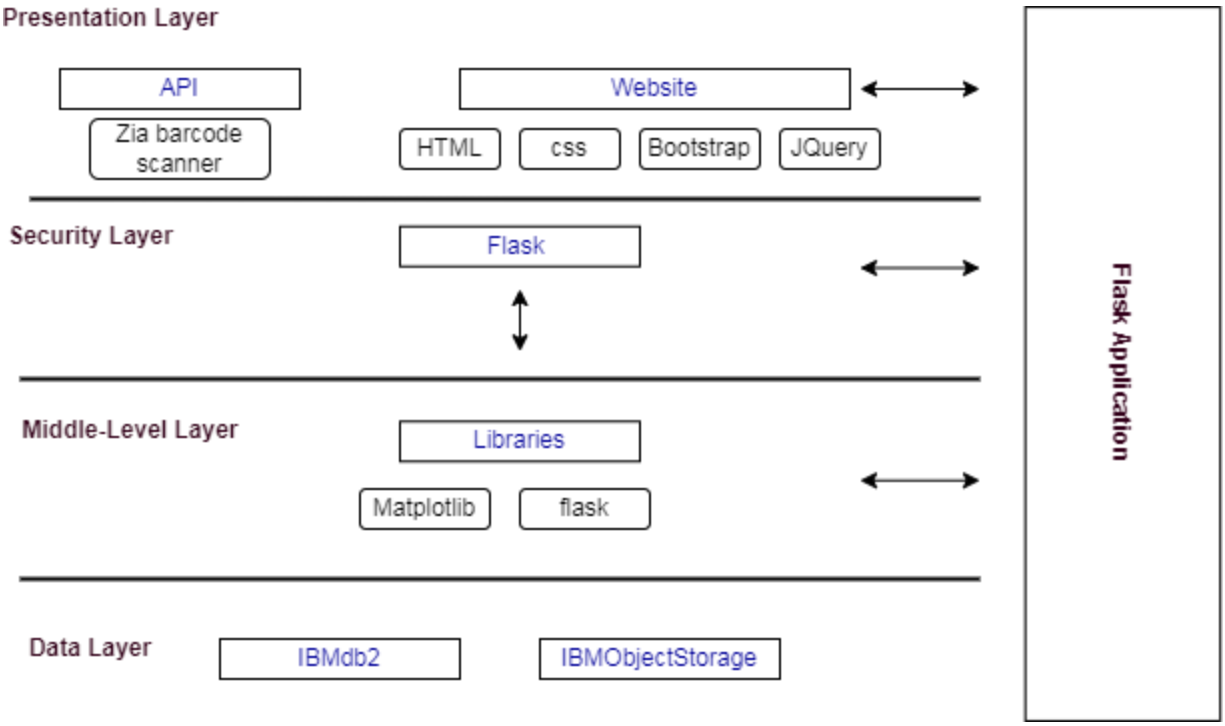
NFR-4	Performance	Performance of the app should be reliable withhigh-end servers on which the software is running.
NFR-5	Availability	The software should be available to the users 24/7with all functionalities working. New moduledeployment should not impact theavailability of existing modules and their functionalities.
NFR-6	Scalability	The wholesoftware deployed must be easilyscalableas the customer base increases.

5 PROJECT DESIGN

5.1 Data Flow Diagram



5.2 Technical Architecture



5.3 User Stories

User Type	Functional Requirement(Epic)	User Story Number	User Story/ Task	Acceptance criteria	Priority	Release
Retailer(Webuser)	Registration	USN-1	As a user,I can register for the application by entering my email, password, and confirmingmy password.	I will be redirected to loginpage	High	Sprint-1
		USN-2	As a user, I will receive confirmation emailonceI have registered for the application	I canreceive confirmation email& click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access thedashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user,I can register for the application through Gmail	I can verifyt he OTP number	Medium	Sprint-1
	Login	USN-5	As a user, I can loginto 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 & outcount details	Updation can be made through barcode scanning	High	Sprint -2

	Dashboard	USN-7	As a user, Ican check the low stockdetails through alertmessage	Alert message can be received by registered mail	High	Sprint -1
		USN-8	As a user, I can check thetotal product details	I can viewthe value of total products in the stock	Medi um	Sprint -2
		USN-9	As a user, I can check the highdema ndproduct details	I can update salesdetailsof the products	High	Sprint -2
		USN-10	As a user, I can generate the invoice details	I can add incoming stockdetails	High	Sprint -1

6. ROJECT PLANNING& SCHEDULING

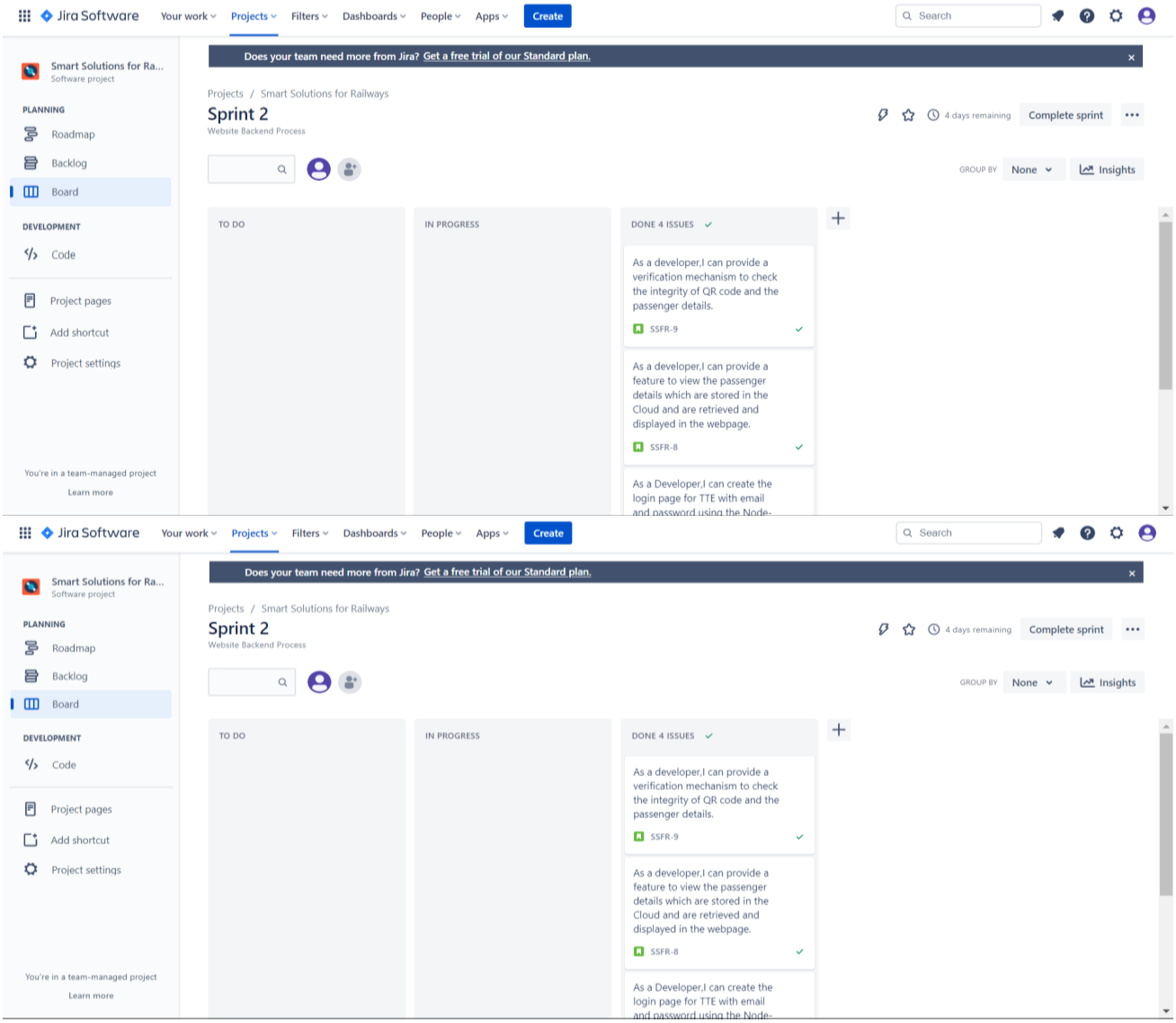
6.1 Sprint Planning & Estimation

Sprint	Functional Requirement (Epic)	User Story Num ber	User Story / Task	Story Points	Priorit y	Team Members
Sprint-1	Retailer	USN-1	The retailer can search for the stocks whatever he/she want and order them based on his/her requirement.	2 0	High	BABU R LATHA S SURIYA KALA B ARUN M
Sprint-2	Inventory Manager	USN-2	The role of the inventory manager is to check out the database about the stock and have a track of all the things that the users are purchasing.	2 0	High	BABU R LATHA S SURIYA KALA B ARUN M
Sprint-3	Chatbot	USN-3	The retailers can directly talk with the chatbot regarding the stocks available in the inventory.Getthe recommendations based on information provided by the retailer.	2 0	High	BABU R LATHA S SURIYA KALA B ARUN M
Sprint-4	Final delivery	USN-4	Container of the applications using docker, Kubernetes and deployment of the application.	2 0	High	BABU R LATHA S

6.2 Sprint Delivery Schedule:

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story PointsCompleted (as onPlanned End Date)	Sprint ReleaseDate (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	07 Oct 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	10 Oct 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	15 Oct 2022

6.3 Reports from JIRA



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Dashboards
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Apps
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Roadmap
Backlog
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Add shortcut
Project settings
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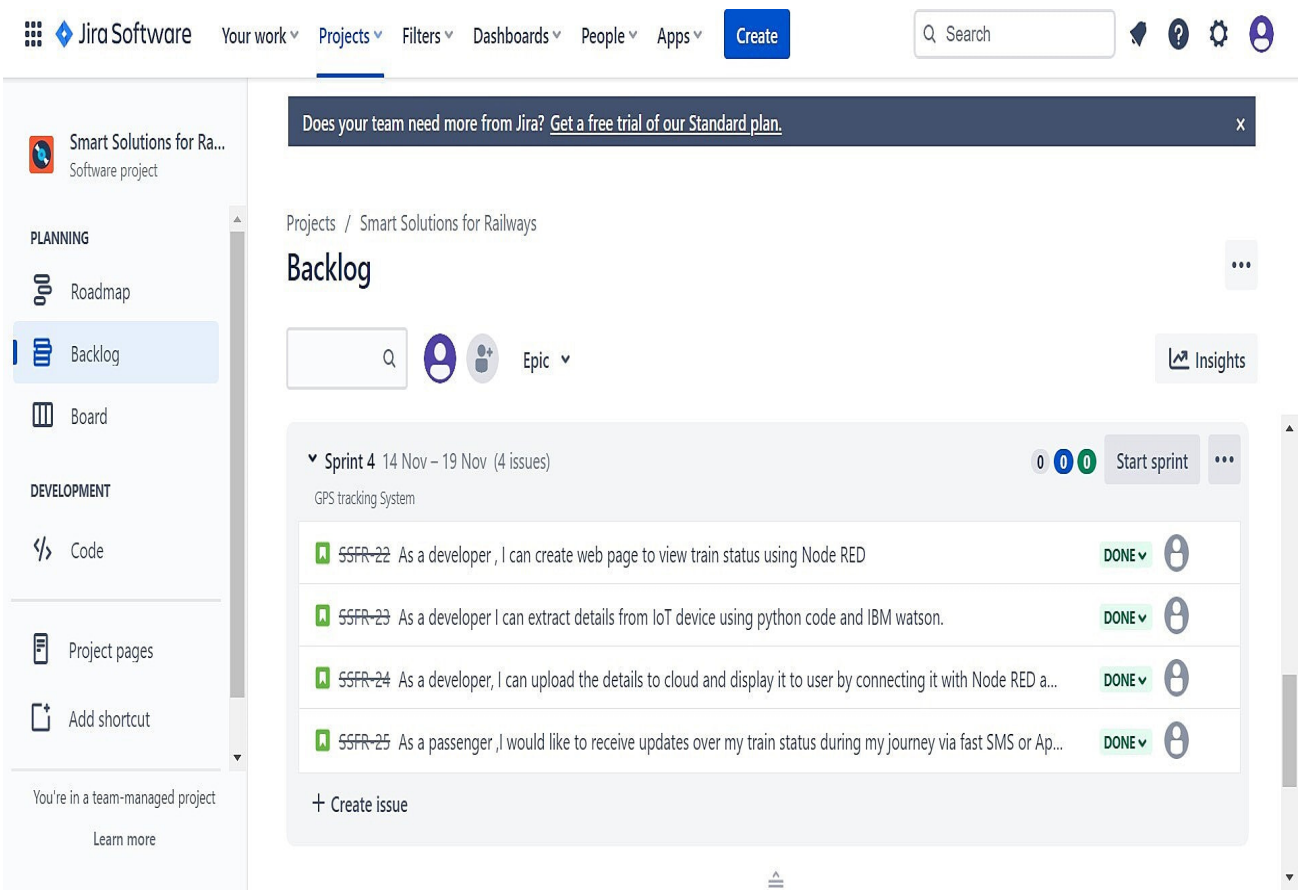
Website Backend Process
4 days remaining
Complete sprint
GROUP BY
None
Insights
TO DO
IN PROGRESS
DONE 4 ISSUES
As a developer,I can provide a verification mechanism to check the integrity of QR code and the passenger details.
SSFR-9
As a developer,I can provide a feature to view the passenger details which are stored in the Cloud and are retrieved and displayed in the webpage.
SSFR-8
As a Developer,I can create the login page for TTE with email
and password using the Node-



Source code link:

IBM-EPBL/IBM-Project-15852-1659605407

Demo link:

https://drive.google.com/file/d/1urdDho9FxhCY8Njh-arZiLVe5wGFsrg9/view?usp=drivesdk