RMK ENGINEERING COLLEGE

(An Autonomous Institution)

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PROJECT

INVENTORY MANAGEMENT SYSTEM FOR RETAILERS

DONE BY

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Project Report Format

1. Introduction

1.1 Project Overview

The project Inventory Management System is a complete desktop-based application designed on .Net technology using Visual Studio Software. The main aim of the project is to develop Inventory Management System Model software in which all the information regarding the stock of the organization will be presented. It is an internet-based desktop application which has admin component to manage the inventory and maintenance of the inventory system. This desktop application is based on the management of stock of an organization. The application contains general organization profile, sales details, Purchase details and the remaining stock that are presented in the organization. There is a provision of updating the inventory also. This application also provides the remaining balance of the stock as well as the details of the balance of transaction. Each new stock is created and entitled with the named and the entry date of that stock and it can also be update any time when required as per the transaction or the sales is returned in case. Here the login page is created in order to protect the management of the stock of organization in order to prevent it from the threads and misuse of the inventory.

1.2 Purpose

Inventory Management System (IMS) is targeted to the small or medium organization which doesn't have many warehouses i.e., only to those organization that has single power of authority. Some of the scopes are:

1. Only one person is responsible in assigning the details or records
2. It is security driven.
3. Warehouse can be added as per the requirement.

2. Literature Review

Abramovitz and Modigliani (1957)

They highlighted the relationship between capacity utilization and inventory investment. Existing stock of inventories was expected to adjust to the desired levels. Thus the variable, existing stock of inventories, was essential to be negatively related with the desired stock. The result was that there is a positive relation among the ratio of inventory to sales and inventory investment. High ratio of stocks to sales in the past suggests the requirement of high levels of inventories in the past and promising high investment in inventories in the current period also.

Krishna Murthy (1964)

Study was aggregative and dealt with inventories in the private sector of Indian economy as a whole for the period 1948-61. This study used sales to represent demand for the product and suggested the importance of accelerators. Short Term rate of interest had also been found to be significant.

R.S. Chadda (1964)

Study had been made on inventory management practices of Indian companies. The analysis suggested application of modern scientific inventory control techniques like operations research. These modern scientific techniques furnish opportunities for the companies. Companies can minimize their investment in inventory but there is continuous flow of production. He argued that industrially advanced countries, like, USA, were engaged in developing highly sophisticated mathematical models and techniques for modernizing and redefining the existing tools of inventory investment.

National Council of Applied Economic Research (NCAER) (1966)

Conducted a study in 1966 regarding working capital management of three industries namely cement, fertilizer and sugar. This study mainly devoted to ratio analysis of composition, utilization and financing of working capital for the period of 1959 to 1963. The study reveals that inventory constituted a major portion of working capital i.e. 74.06 per cent in the sugar industry followed by cement industry (63.1%) and fertilizer industry (59.58%). It was observed that inventory had not been managed properly. So far as the utilization of working capital was concerned, the cement and fertilizer industry had better implementation of working capital. The sugar industry had huge accumulation of stocks so there was inefficient utilization of working capital heavily.

Krishnamurty and Sastry (1970)

It is the most comprehensive study on manufacturers' inventories. They used the CMI data and the consolidated balance sheet data of public limited companies published by the RBI, in order to analyse each of the major components, like the raw materials, goods-in-process and finished goods, for 21 industries over the period ranging from 1946-62. The study was a time series one although there were some inter-industry cross-section analyses that were carried out in the analysis. The Accelerator represented by change in sales, bank finance and short-term interest

rate was found to be an important determinant. The utilization of productive capacity and price anticipations was also found to be relevant in the study.

George (1972)

It was the study on cross section analysis of balance sheet data of 52 public limited companies for the period of 1967- 70. Accelerator, internal and external finance variables were considered in the formulation of equations for raw materials including goods-in-process inventories. However, equations for finished goods inventories conceive only output variable. Deliberation was given on accelerator and external finance variables.

Mishra (1975)

It is the study of six major public sector enterprises. He concluded that (i) inventory constitutes the most important component of working capital of public enterprises (ii) efficiency of working capital funds employed in receivables is terribly low in the selected enterprises and (iii) In all units both the current assets and the quick ratios are greater than their standards. Enterprises need proper control on receivables.

Lambrix and Singhvi (1979)

Adopted working capital cycle approach in working capital management, also suggested that investment in working capital can be optimized and cash flows can be improved by reducing the time frame of physical flow starting from the receipt of raw material to the shipment of finished goods, i.e. inventory management, and by improving the terms and conditions on which firm sells goods as well as receipt of cash.

Lal (1981)

He studied Modi Steels Limited as a case study, his study focused on inventory management. He originated a model which involved price variables in inventory management; earlier price variables in inventory were not considered in that company. The analysis recommended solid policies, which would look after internal and external factors, ultimately it would help in bringing in efficient working capital management.

Farzaneh (1997)

Presented a mathematical model, to assist the companies in their decision to switch from EOQ to JIT purchasing policy. He defines JIT as “to produce and deliver finished goods just in time to be sold, sub-assemblies just in time to be assembled in goods and purchased material just in time to be transformed into fabricated parts”. He highlights that the EOQ model focuses on minimizing the inventory costs rather than minimizing the inventory. Under the ideal condition where all the conditions meet, it is economically better off to choose the JIT over the EOQ because it results in purchase price, ordering cost.

Rich Lavely (1998)

Asserts that inventory means “Piles of Money” on the shelf and the profit for the firm. However, he notices that 30% of the inventory of most retail shops is dead. Therefore, he argues that the inventory control facilitates the shop operations by reducing rack time and thus increases profit. He also elaborates the two types of inventory calculations that determine the inventory level required for profitability. The two calculations are “cost to order” and “cost to keep”. Finally, he proposes seven steps to inventory control.

Dave Piasecki (2001)

He focused on the inventory model for calculating the optimal order quantity that used the Economic Order Quantity method. He points out that many companies are not using the EOQ model because of poor results resulting from inaccurate data input. He says that EOQ is an accounting formula that determines the point at which the combination of order costs and inventory costs are the least. He highlights that the EOQ method would not conflict with the JIT approach. He further elaborates the EOQ formula that includes the parameters such as annual usage in unit, order cost and carrying cost. Finally, he proposes several steps to follow in implementing the EOQ model. The limitation of this literature is that it does not elaborate further on the relationship between EOQ and JIT. It does not associate the inventory turns with the EOQ formula and fails to mention the profit gain with the quantity calculated.

Gaur, Fisher and Raman (2005)

In their study examined firm-level inventory behaviour among retailing companies. They took a sample of 311 public-listed retail firms for the years 1987–2000 to examine the relationship of inventory turnover with gross margin, capital intensity and sales surprise. They observed that inventory turnover for retailing firms was positively related to capital intensity and sales surprise while inversely associated with gross margins. They also suggested models that yield an alternative metric of inventory productivity, adjusted inventory turnover that can be used in study of performance analysis and managerial decision-making.

S. Singh (2006)

Analysed the inventory control practices of a single fertilizer company named IFFCO. He statistically examined the inventory system with consumption, sales and other variables along with growth of these variables and inventory patterns. He concluded that an increase in components of inventory lead to an increase in the proportion of inventory in current assets. A special focus was made on stores and spares in order to calculate excess purchases resulting in loss of profit.

Pradeep singh (2008)

In his study made an attempt to examine the inventory and working capital management of Indian Farmers Fertilizer Cooperative Limited (IFFCO) and National Fertilizer Limited (NFL). He concluded that the overall position of the working capital of IFFCO and NFL is satisfactory. But there is a need for improvement in inventory in case of IFFCO. However, inventory was not properly utilized and maintained by IFFCO during the study period. The management of the NFL must try to properly utilize the inventory and try to maintain the inventory as per the requirements. So that liquidity will not interrupt.

Capkun, Hameri and Weiss (2009)

Statistically analysed the relationship between inventory performance and financial performance in manufacturing companies using the financial information of a large sample of US-based manufacturing firms over a 26-year period, that is, 1980 to 2005. They inferred that a significant relationship existed between inventory performance along with the performance of its components and profitability. Raw material inventory performance was highly correlated to gross profit and operating profit. Work in progress inventory was highly correlated to gross profit measures while finished goods inventory performance was more correlated with operating profit measures.

Gaur and Bhattacharya (2011)

Attempted to study the linkage between the performance of the components of inventory such as raw material, work in progress and finished goods and financial performance of Indian manufacturing firms. The study revealed that finished goods inventory was inversely associated with business performance while raw material inventory and work in progress did not have much effect on the same. They emphasized that instead of focusing on total inventory, an attempt should be made to concentrate on individual components of inventory so as to adequately manage the same. They concluded that managers not paying heed to inventory performance may become weak in combating competitors.

Eneje et al (2012)

Investigated the effects of raw materials inventory management on the profitability of brewery firms in Nigeria using a cross sectional data from 1989 to 2008 which was gathered for the analysis from the annual reports of the sampled brewery firms. Measures of profitability were examined and related to proxies for raw materials inventory management by brewers. The Ordinary Least Squares (OLS) stated in the form of a multiple regression model was applied in the analysis. The study revealed that the local variable raw materials inventory management designed to capture the effect of efficient management of raw material inventory by a company on its profitability is significantly strong and positive and influences the profitability of the brewery firms in Nigeria. They concluded that efficient management of raw material inventory is a major factor to be contained by Nigerian brewers in enhancing or boosting their profitability.

Nyabwanga and Ojera (2012)

They Highlighted the association between inventory management practices and business performance of small-scale enterprises (SSEs), in Kisii Municipality, Kisii County, Kenya. They used a cross-sectional survey study based on a small sample size of 79 SSEs. The study inferred that inventory comprised the maximum portion of working capital, and improper management of working capital was one of the major reasons of SSE failures. The empirical results disclosed that a positive significant relationship existed between business performance and inventory management practices with inventory budgeting having the maximum influence on business performance ensued by shelf-space management. The study suggested that by following effective inventory management practices business performance can be enhanced.

Sahari, Tinggi and Kadri (2012)

Empirically analysed the relationship between inventory management and firm performance along with capital intensity. For the purpose they took a sample of 82 construction firms in Malaysia for the period 2006–2010. Using the regression and correlation analysis methods, they deduced that inventory management is positively correlated with firm performance. In addition, the results indicate that there is a positive link between inventory management and capital intensity.

Soni (2012)

Made an in-depth study of practices followed in regard to inventory management in the engineering goods industry in Punjab. The analysis used a sample of 11 companies for a period of five years, that is, 2004–2009 and was done using a panel data set. The adequate and timely flow of inventory determines the success of an industry. She concluded that the size of inventory enhanced marginally over the period as compared to a hike in current assets and net working capital. Inventories constituted half of the working capital which was due to overstocking of inventory

as a result of low inventory turnover especially for finished goods and raw materials. Rise in sales and favourable market conditions lead to a rise in inventory levels. It was also inferred that sales increased more as compared to inventory.

Lwiki et al (2013)

A survey conducted on all the eight (8) sugar manufacturing firms in Kenya established that there is generally positive correlation between each of inventory management practices. Specific performance indicators were proved to depend on the level of inventory management practices. They established that Return on Equity had a strong correlation with lean inventory system and strategic supplier partnerships. As such, they concluded that the performance of sugar firms could therefore be stated as being a function of their inventory management practices

Edwin Sitienei and Florence Memba(2015)

Conducted a study on Effect of Inventory Management on profitability of Cement Manufacturing Companies in Kenya. The study concluded that Gross profit margin is negatively correlated with the inventory conversion period, increase in sales, which denotes the firm size enriches the firm's inventory levels, which pushes profits upwards due to optimal inventory levels. It is also noted that firms inventory systems must maintain appropriate inventory levels to enhance profitability and reduce the inventory costs associated with holding excessive stock in warehouses.

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2.2 Problem statement definition

The main problem every inventory stock manager face is to keep a track of how much stock is purchased and how much stock is spent out. The stock admin does not have an easy way to manage and see stocks that is purchased and is dispatched out in the organization. At present this is done, where manager has to manually keep the reports in hand and calculate the costs eventually. The organization admin also does not have any easy way to look at the details and the amount of stock that is being purchased and dispatched. The cost that is spent on the food items is also not known exactly to the college admins.

Usually, Inventory Management systems are limited and fixed to a selected range of items and cannot be modified and extended based on the customer's needs. The Inventory Management System focuses on making it expandable and usable easily by the end user and with constant customer support to alter the user interface as needed, separate login credentials are provided for the manager and the organization to insert and manage the stock and view the same respectively. Unlike, other software's that provide similar kind of functionalities, Inventory Management System focuses on making it easier by adding additional functionalities like vendor details and allowing to take attendance and keep a count of number of members belonging to that organization.

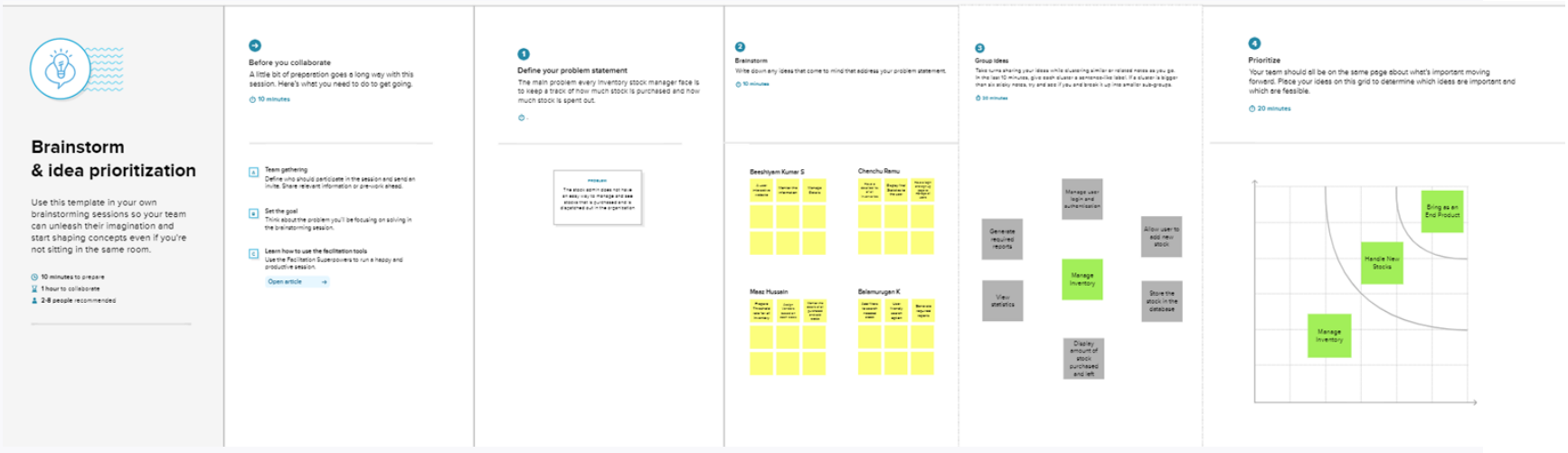
3. Ideation & Proposed solution

3.1 Empathy Map Canvas

An empathy map is used to gain deeper insightson the customer's interaction withthe system.It gives an idea on what the user feels and experiences while using the system,what fears the user has respective to the system, etc. It also specifies how supportive the system environment is and what the users are likely to hear from the people around them regarding the usage of the system.

3.2Ideation & Brainstorming

Ideation and Brainstorming are performed to generate ideas and solutions. Brainstormingis a group activity unlike ideation.



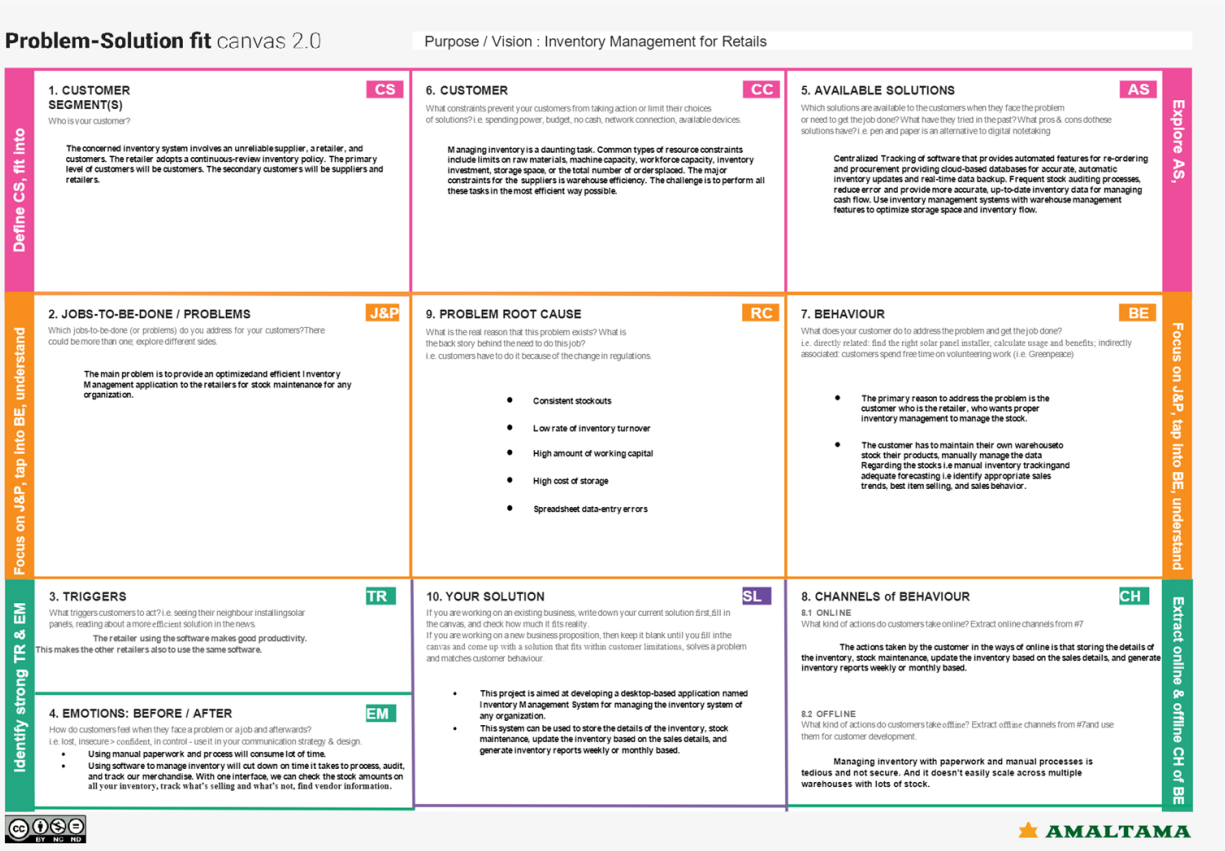
3.3 Proposed solution

This project is aimed at developing a desktop-based application named Inventory Management System for managing the inventory system of any organization. This system can be used to store the details of the inventory, stock maintenance, update the inventory based on the sales details, and generate inventory reports weekly or monthly based.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	How to provide Inventory Management application to the retailers for stock maintenance?
2.	Idea / Solution description	The solution can be brought by using IBM Cloud that can be used to store the details of the inventory, stock maintenance, update the inventory based on the sales details, and Generate inventory reports weekly or monthly based.
3.	Novelty / Uniqueness	Providing a user-friendly environment to maintain the stock by § Graph analysis § Mail notification when the minimum stock limit is reached § Display of Dashboard containing stock details § Report on weekly or monthly basis
4.	Social Impact / Customer Satisfaction	Making inventory management simple for retailers by sending out frequent mail notifications, performing graph analysis, and producing reports.
5.	Business Model (Revenue Model)	By introducing Paid membership, In-app advertisements, ecommerce (Sponsoring the products of a brand associated with various industry).
6.	Scalability of the Solution	1.Being very adaptive to the inputs 2.Providing regular updates and upgradation 3.Ensuring the easy accessibility to the data base

3.4 Problem Solution Fit

The Problem-Solution Fit means the solution that is realized can actually solve the problem that the customer faces.



4. Requirements Analysis

4.1 Functional Requirements

The Suggested Solution's functional requirements are listed below

FR. NO.	Functional Requirements (Epic)	Sub Requirements (Story/Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail
FR-2	User Confirmation	Confirmation via Email
FR-3	User Login	Authentication
FR-4	Dashboard	List of all items purchased and the stock which is needed For the user
FR-5	Navigation Side Menu	Nav buttons to all modules, Sign out, Settings and profile module
FR-6	Inventory Management Module	Add Stock, Update Stock, Delete Stock & Manage all the Stock details
FR-7	Remainders Module	Add Remainder when stock is less
FR-8	Reports Module	Generate monthly and daily reports for the manager with all the stocks that are present
FR-9	User Profile Module	Edit User Profile
FR-10	Settings Module	Edit settings

4.2 Non-Functional Requirements

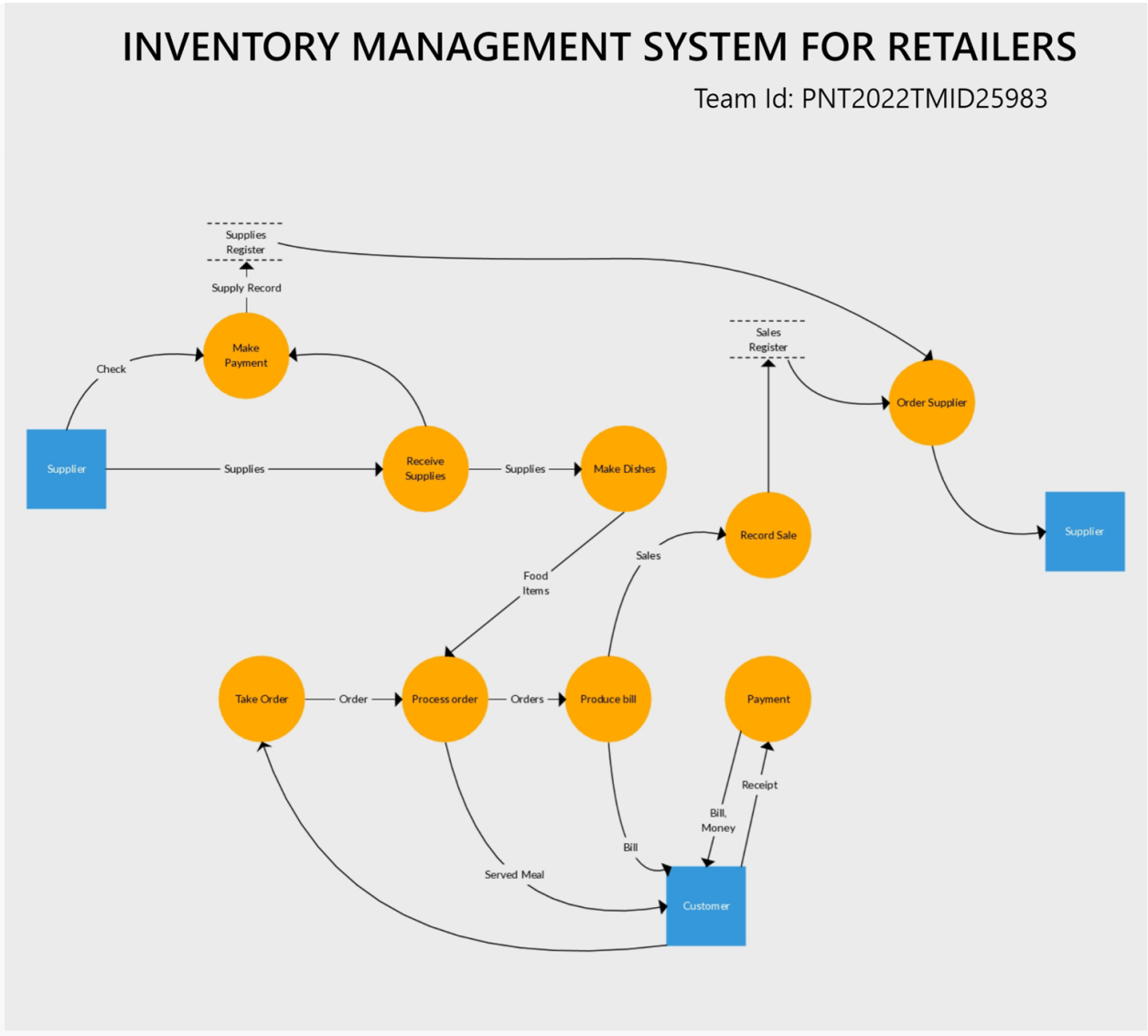
The non-functional requirements of the proposed solution are as follows

NFR-NO.	Non-Functional Requirements	Description
NFR-1	Usability	The solution is easy to use as the UI is made to be accessible and user-friendly. Easy navigation is provided through an integrated side menu and chatbot assistance.
NFR-2	Security	Application is highly secure as all data is encrypted using a secure encryption algorithm and user data is accessible only on authentication
NFR-3	Reliability	Application is highly reliable as it is deployed with IBM cloud assistance.
NFR-4	Performance	Performance is stable and smooth as it is very light weight application built with flask.
NFR-5	Availability	It is available easily as it is deployed on the internet.
NFR-6	Scalability	Application is scalable as it uses IBM cloud resources and microservices architecture. Extensions and modifications are done easily

5. Project Design

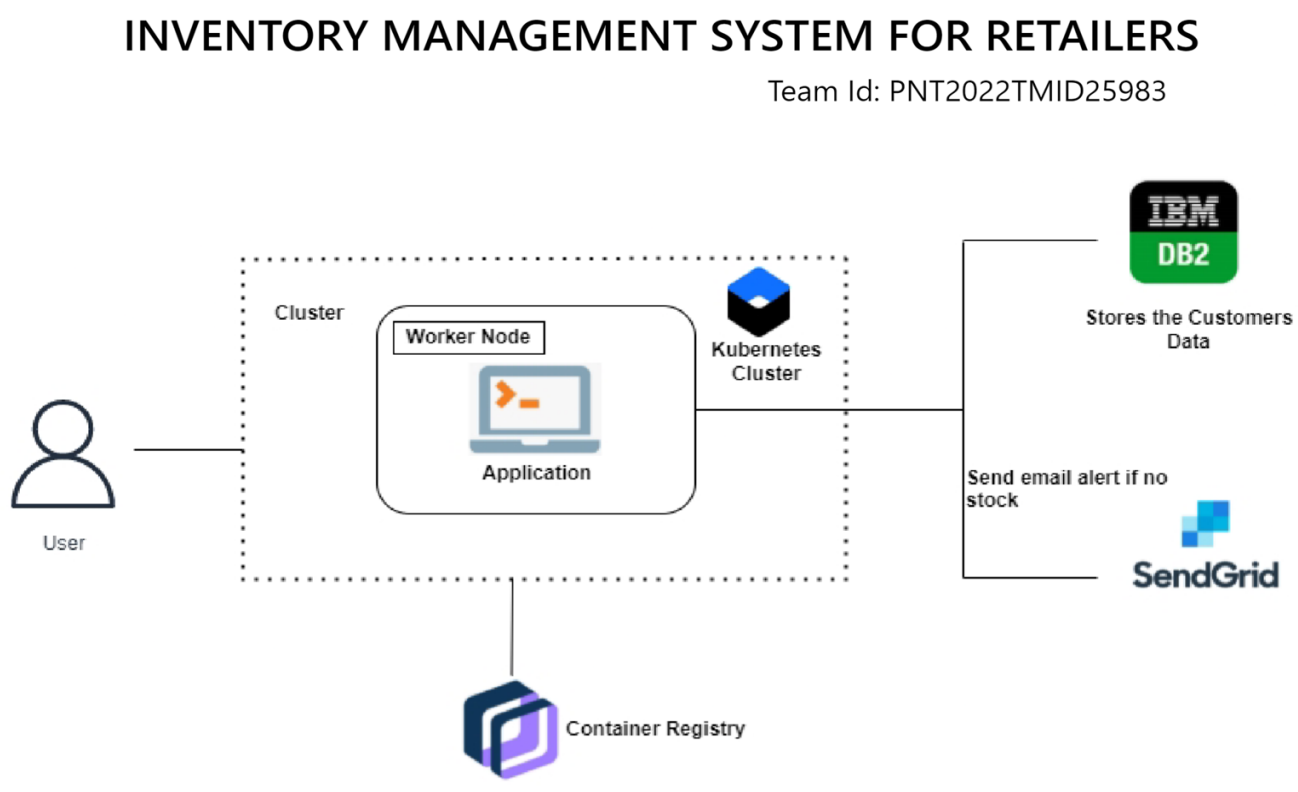
5.1 Data Flow Diagrams

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



5.2 Technical Architecture

The Deliverable shallinclude the architectural diagram as below and the informationas per the table1 & table 2



5.3 User Stories

An informal, generic explanation of a software feature written from the viewpoint of the end useris known as a user story. Its objective is to explainhow a software feature will benefit the user.

User Type	Functional Requirement (Epic)	User StoryNumber	User Story/ Task	Acceptance criteria	Priority	Release
Customer (Web user and Mobile User)	Registration	USN – 1	As a user, I can register for the application by entering my email, password, and confirming mypassword.	I can access my account view the dashboard.	High	Sprint – 1
	Registration Confirmation	USN – 2	As a user, I willreceive confirmation email I have registered for the application.	Ican receive confirmation email &click confirm.	High	Sprint – 1
	Login	USN – 3	As a user, I can log into the application by entering email & password.	I must also have the feature of resetting the password.	High	Sprint – 1
	Dashboard	USN – 4	As a user, I must have the scoring details and demo steps to use the portal.	I must have a clear explanation for using the website.	High	Sprint – 1
	Login	USN – 5	As a user, I need to have the access the same as that of the laptop or desktop the same feel in mobile.	I must not have any discomfort and easy to use in the mobile phone also.	Medium	Sprint – 2
Administrator	Monitoring	USN – 6	As an administrator, I must have the authentication for the website to know about the data that are been stored by the user.	I need to maintain to make the user to use the website with ease for the user every time they login.	High	Sprint – 1

Administrator	Database Update	USN – 7	As an administrator, I should update the database as an when a user registers or sets the new password as a rest.	I need a regular update of the database so that the users can access the website without any problems.	High	Sprint – 3
	Update of Dataset	USN – 8	As a admin, I need to analyse the search and entry of product details by the users and need to make an update if the users are not finding the exact details or prediction expected by them.	I need to prepare on an analysis on the basis of the users search on the college names and scores for avoiding any loss of the customers.	Low	Sprint – 4
Customer Care Experience	Contact Details	USN – 9	As a user, I must be able to contact the developer team to enquire about any problems.	I need to see the contact details for the communication with the team at any time.	Medium	Sprint – 2
	Feedback	USN – 10	As a customer, when I my problems in feedback form it must reach the development team.	I need the team to made the updates before the next time using of the website.	Medium	Sprint – 3
Deployment	Maintenance	USN – 11	As a part of maintenance, the maintenance of the server during the times of more users using the website.	I need to aware of the server capacity so that the interruption of service may not occur.	Medium	Sprint – 2

6.Project Planning and Scheduling

6.1 Sprint Planning and Estimation

The purpose of sprint planning is to define what can be deliveredin the sprint and how that work willbe achieved. Sprint planning is donein collaboration with the whole team.

Sprint	**Functional Requirement (Epic)**	**User Story Number**	**User Story / Task**	**Story Points**	**Priority**	**Team Members**
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	4

Sprint-1		USN-2	As a user, I can register for the application through Email	1	Medium	4
Sprint-1	Confirmation	USN-3	As a user, I will receive confirmation email once I have registered for the application	2	Medium	
Sprint-1	Login	USN-4	As a user, I can log into the application by entering email & password	2	High	4
Sprint-2	Dashboard	USN-5	As a user, I can view the products which are available	4	High	4
Sprint-2	Product Details - CRUD	USN-6	As a user, I	2	Me	4

			can add the products I wish to buy to the carts.		d i u m	
Sprint-3	Stock Update	USN-7	As a user, I can add products which are not available in the dashboard to the stock list.	2	M e d i u m	4
Sprint 3	SendGrid Integration	USN-8	As a user, I receive notification s via e-mail.	2	M e d i u m	4
Sprint-4	Feedback	USN-9	As a user, I can contact the Customer Care Executive and request any services I want from the customer care.		L o w	4
Sprint-4	Maintenance	USN-10	I can be able to report any difficulties I	5	M e d i u m	4

			experience as a report			

6.2 Sprint Delivery Schedule

Agile sprints typically last from one week to one month. The goal of sprints is to put pressureon teams to innovate and deliver more quickly, hence the shorter the sprint,the better.

Sprint	Total Story Points	Duration	Sprint start date	Sprint End Date	Story points completed	Sprint Release date
Sprint-1	7	6 days	24 oct 2022	29 Oct 2022	7	29 Oct 2022
Sprint-2	9	6 days	31 oct 2022	05 Nov 2022	9	05 Nov 2022
Sprint-3	5	6 days	07 Nov 2022	12 Nov 2022	5	12 Nov 2022
Sprint-4	10	6 days	14 Nov 2022	19 Nov 2022	10	19 Nov 2022

6.3 Reports from JIRA

7.Coding and Solution (Explain the feature added in the project with the code)

Final Deliverables > Invento - Inventory Management System > Inventory Management System > app.py > ...

```python
import ibm_db
from flask import Flask, redirect, render_template, request, session, url_for
from markupsafe import escape

conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=815fa4db-dc03-4c70-869a-a9cc13f33084.bs2io90l08kqb1od8lcg.databases.appdomain.cloud;PORT=30367;SEC

app = Flask(__name__)
app.secret_key='a'


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

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

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

@app.route('/home')
def home():
    global userid
    msg = session['username']
    userid=session['id']
    msg = 'Welcome'+" "+session['username']+"!!"
    results = []
```

```
FROM python:3.10.8
LABEL maintainer="Maaz Hussain, maazhussain43@gmail.com"
RUN apt-get update
RUN mkdir /app1
WORKDIR /app1
COPY . /app1
RUN pip install -r requirements.txt
EXPOSE 5000
ENTRYPOINT [ "python" ]
CMD [ "app.py" ]
```

```
<link
    rel="stylesheet"
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</head>

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        <button
            class="navbar-toggler"
            type="button"
```

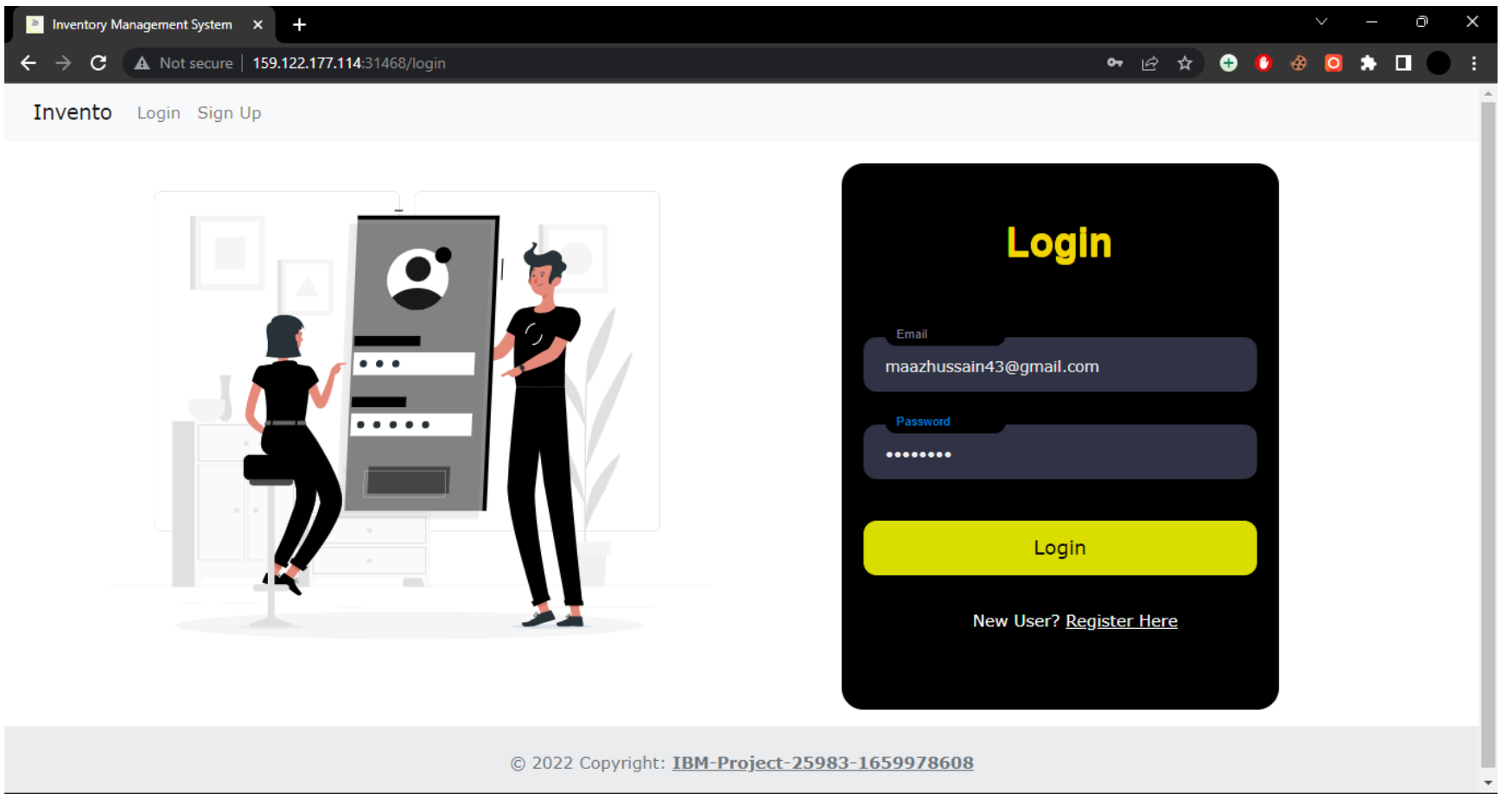
Inventory Management System

Not secure | 159.122.177.114:31468

Invento Login Sign Up

Invento

We build technology solutions that work on making easy and comfortable access for managing the stock for any user.


Inventory Management System
Not secure | 159.122.177.114:31468/login
Invento
Login
Sign Up
Login
Email
maazhussain43@gmail.com
Password
Login
New User? Register Here
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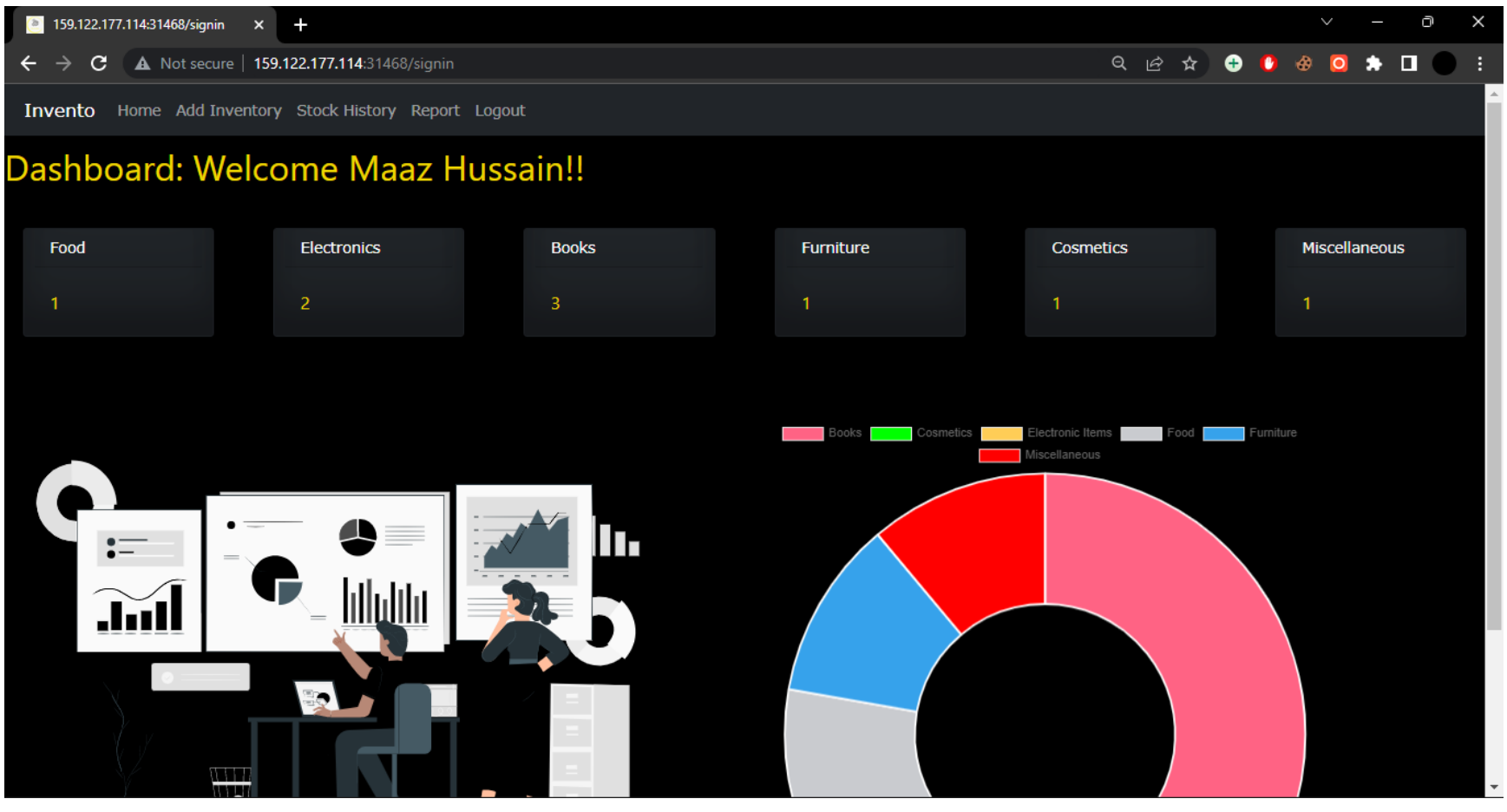
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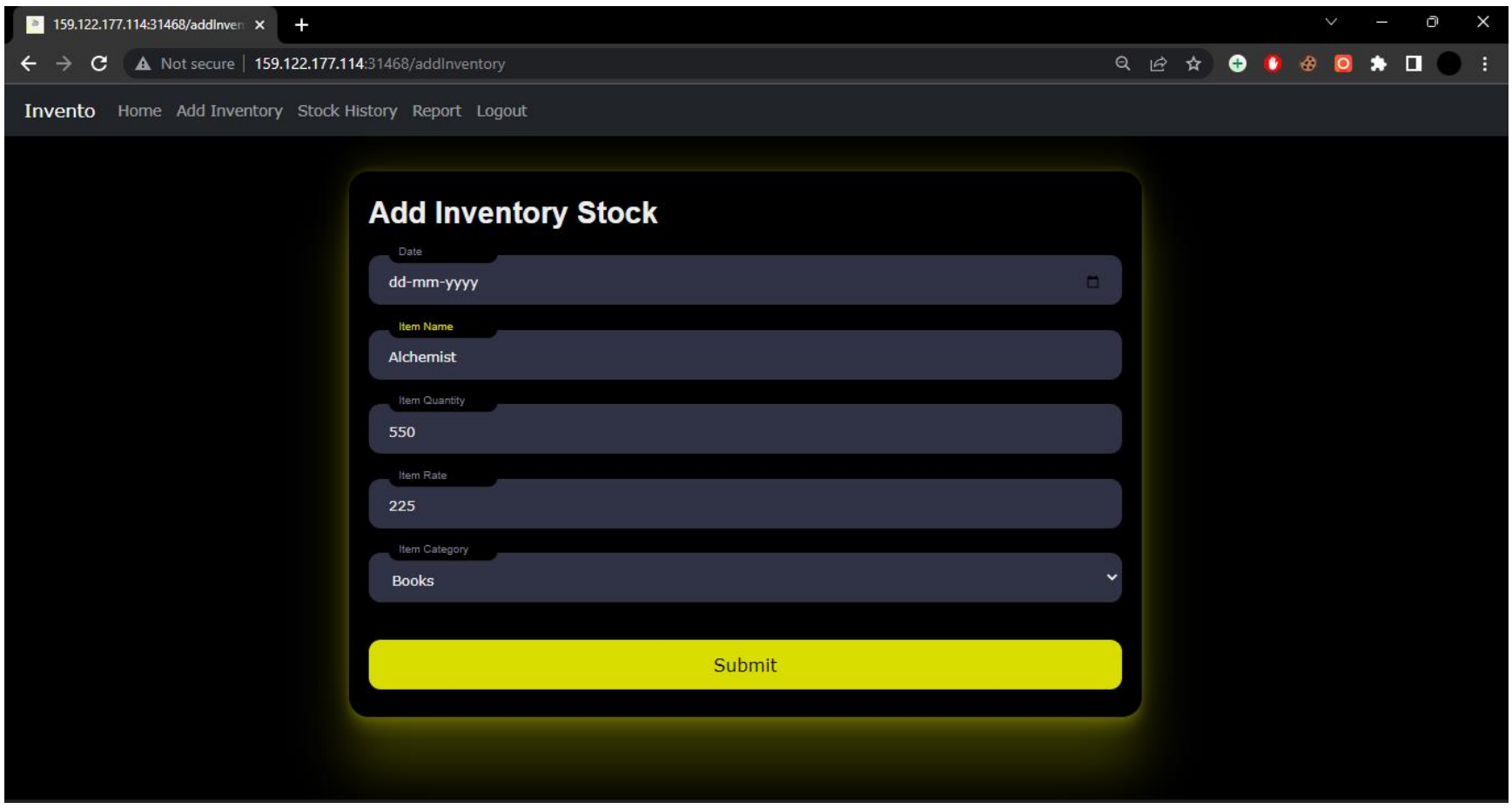
Invento
Home
Add Inventory
Stock History
Report
Logout
Dashboard: Welcome Maaz Hussain!!
Food
1
Electronics
2
Books
3
Furniture
1
Cosmetics
1
Miscellaneous
1
Books
Cosmetics
Electronic Items
Food
Furniture
Miscellaneous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Invento
Home
Add Inventory
Stock History
Report
Logout
Add Inventory Stock
Date
dd-mm-yyyy
Item Name
Alchemist
Item Quantity
550
Item Rate
225
Item Category
Books
Submit

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Invento Home Add Inventory Stock History Report Logout

Date	Item Name	Item Category	Item Quantity	Item Rate	Total
2022-11-19	Wide-Wayed Voyage	books	500	199	99500
2022-11-19	True Colors	books	1000	499	499000
2022-11-18	Basmati Rice	food	125	160	20000
2022-11-19	IPhone 14	electronicitems	60	89000	5340000
2022-11-20	Sofa	furniture	20	40000	800000
2022-11-20	Genral Stuffs	miscellaneous	50	200	10000
2022-11-17	Make Up Kit	cosmetics	2000	5000	10000000
2022-11-19	Da Vince Code	books	200	599	119800
2022-11-19	chocolate	food	10	100	1000
2022-11-19	Samsung Mobile	electronicitems	500	25000	12500000
2022-11-19	Apple Note Book	books	1000	25	25000
2022-11-20	Alchemist	books	550	225	123750

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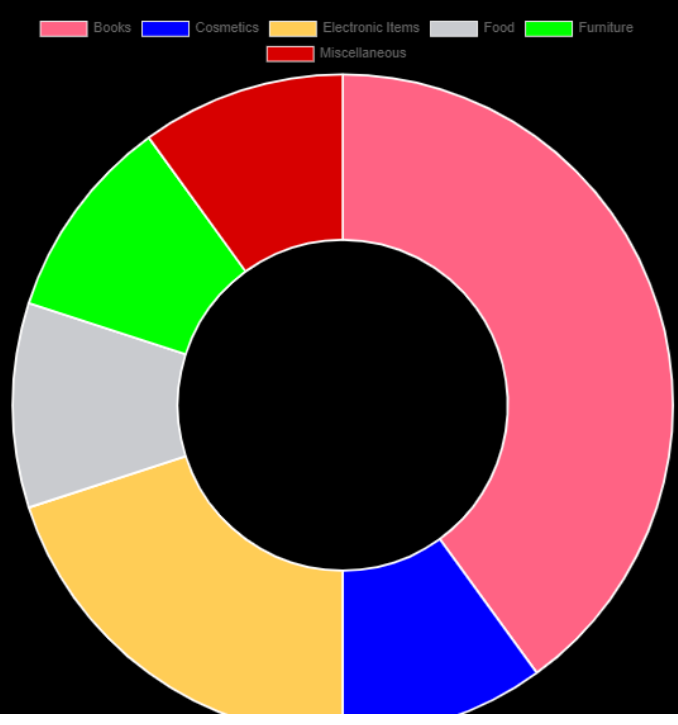
Invento Home Add Inventory Stock History Report Logout

Inventory Breakdown By Category

Food	10.0 %
Electronic Items	20.0 %
Books	40.0 %
Wide-Wayed Voyage True Colors Apple Note Book Alchemist	
Furniture	10.0 %
Cosmetics	10.0 %
Miscellaneous	10.0 %
Total	100.0 %



Inventory Management System

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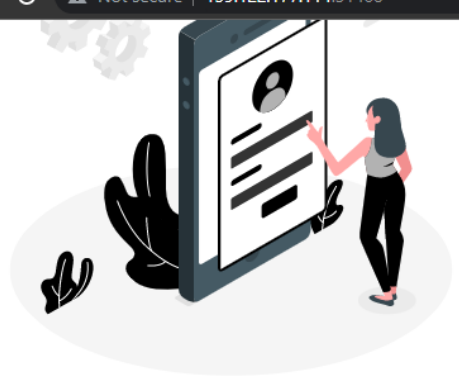


Register your Organization

We understand that not all organisations are the same. That's why our solutions come with a range of fully customisable options, to enhance your customers' experience, as well as meet your business and brand objectives.

INVENTO

We build technology solutions that work on making easy and comfortable access for managing the stock for any user.

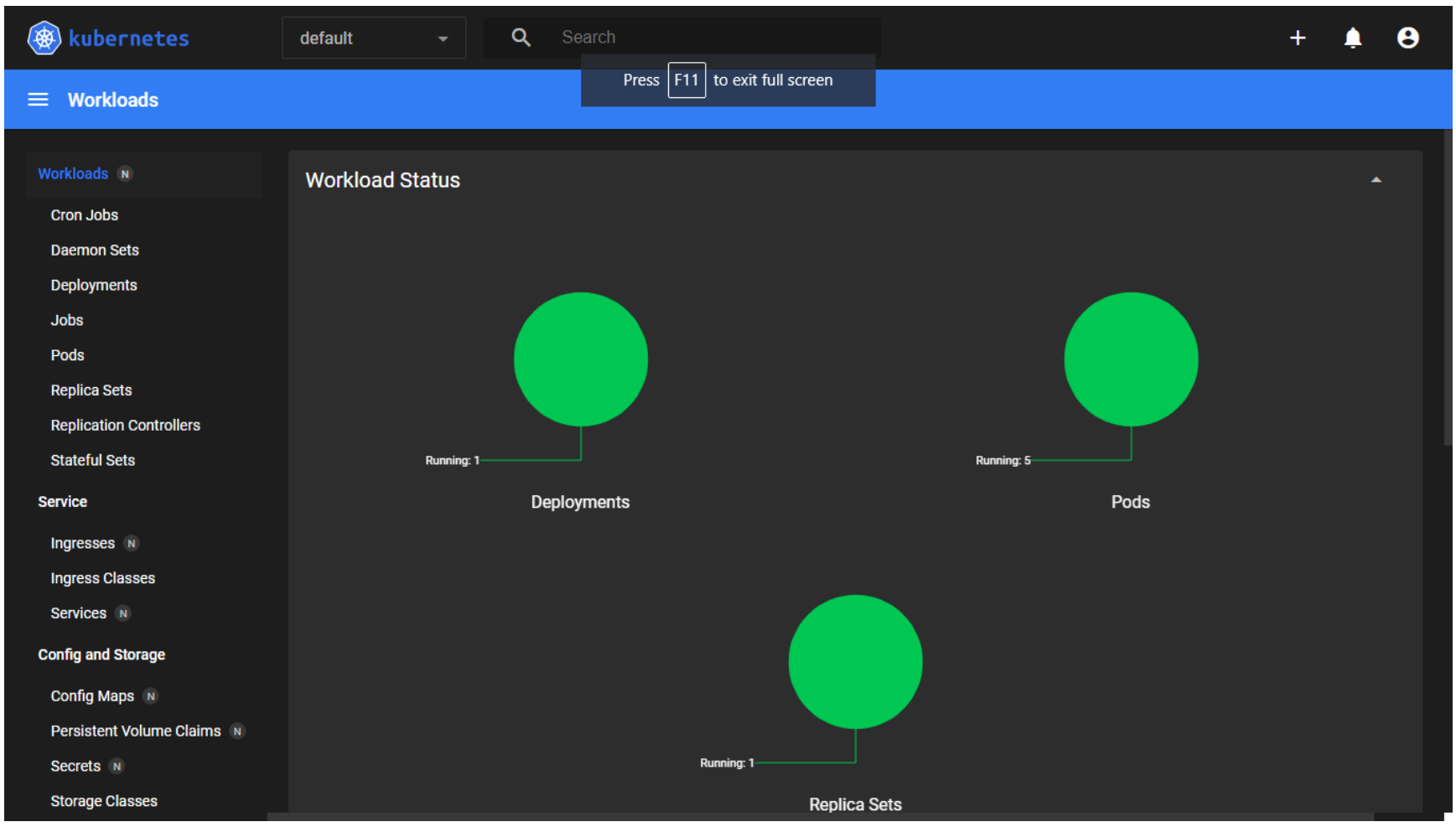
USEFUL LINKS

Login

Register

TEAM MEMBERS

- Beeshiyam Kumar S
- Chenchu Ramu R
- Balamurugan K
- Maaz Hussain


kubernetes
default
Search
Press F11 to exit full screen
Workloads
Workloads N
Cron Jobs
Daemon Sets
Deployments
Jobs
Pods
Replica Sets
Replication Controllers
Stateful Sets
Service
Ingresses N
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Services N
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Deployments
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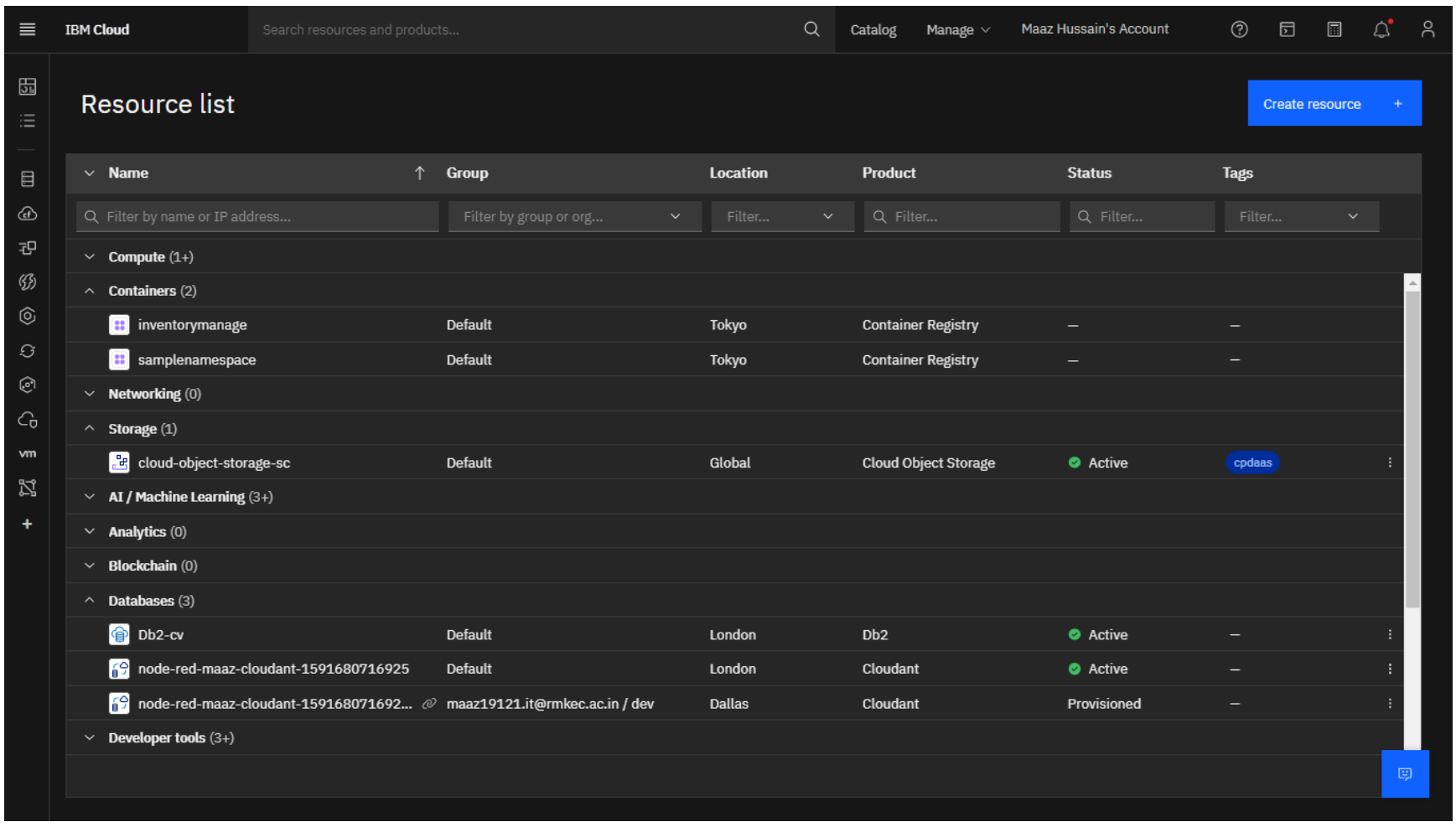
Replica Sets


IBM Cloud
Search resources and products...
Catalog
Manage
Maaz Hussain's Account
Resource list
Create resource
Name
Group
Location
Product
Status
Tags
Filter by name or IP address...
Filter by group or org...
Compute (1+)
Containers (2)
inventorymanage Default Tokyo Container Registry
samplenamespace Default Tokyo Container Registry
Networking (0)
Storage (1)
cloud-object-storage-sc Default Global Cloud Object Storage Active cpdaas
AI / Machine Learning (3+)
Analytics (0)
Blockchain (0)
Databases (3)
Db2-cv Default London Db2 Active
node-red-maaz-cloudant-1591680716925 Default London Cloudant Active
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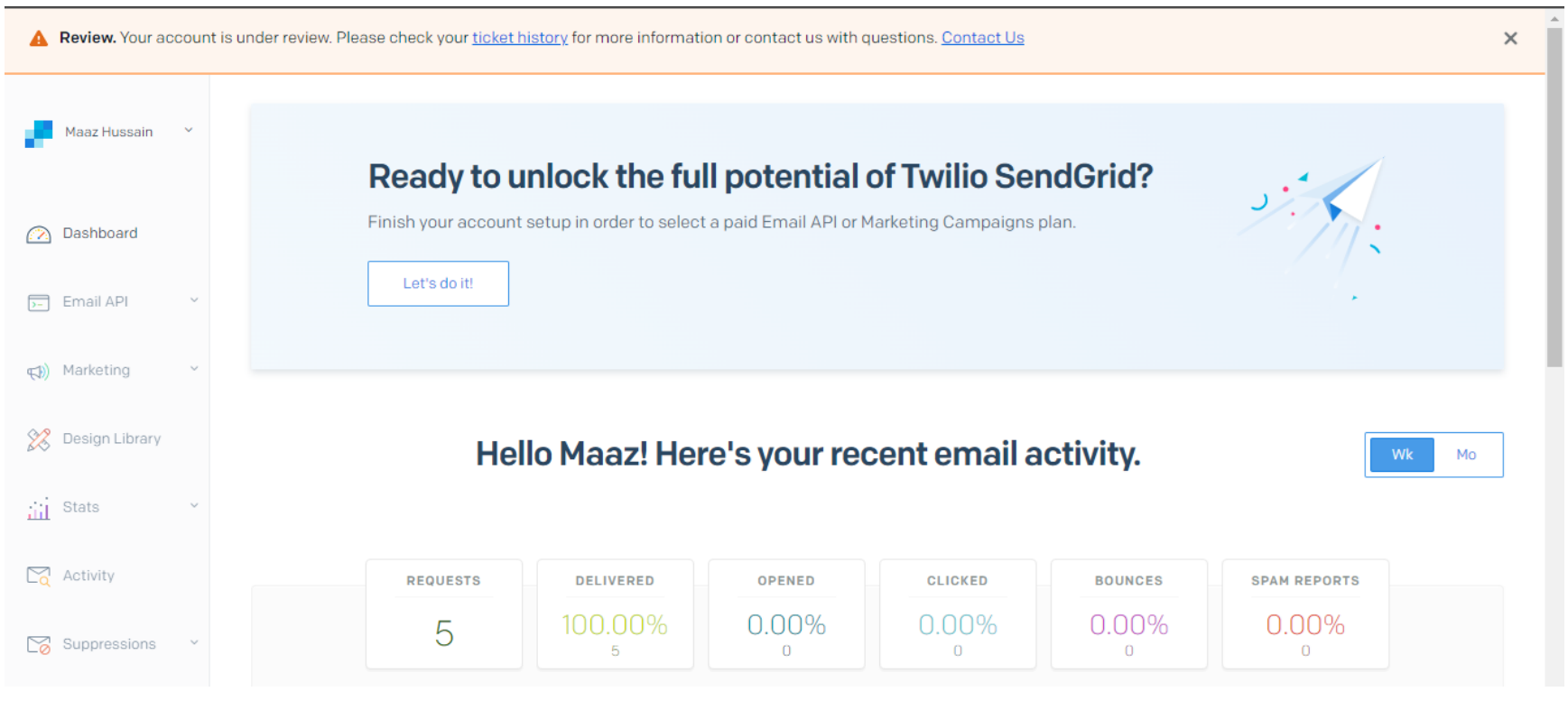
Developer tools (3+)


Review. Your account is under review. Please check your ticket history for more information or contact us with questions. Contact Us
Maaz Hussain
Dashboard
Email API
Marketing
Design Library
Stats
Activity
Suppressions
Ready to unlock the full potential of Twilio SendGrid?
Finish your account setup in order to select a paid Email API or Marketing Campaigns plan.
Let's do it!
Hello Maaz! Here's your recent email activity.
Wk
Mo
REQUESTS
5
DELIVERED
100.00%
5
OPENED
0.00%
0
CLICKED
0.00%
0
BOUNCES
0.00%
0
SPAM REPORTS
0.00%
0

8.Testing

8.1 Test Case

Test cases are a set of actions performed on a system to determineif it satisfies softwarerequirements and functions correctly as it claimed to perform.

8.2 User Acceptance Testing

Before deployingthe software application to a production environment the end user or client performs a type of testing known as user acceptance testing, or UAT to ensurewhether the software functionalities serve the purpose of development.

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the [INVENTORY MANAGEMENT SYSTEM FOR RETAILERS APPLICATION] 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	3	1	2	16
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	13	12	25	74

Exception Reporting	8	0	0	8
Final Report Output	4	0	0	4
Version Control	2	0	0	2

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	10	0	0	10
Client Application	50	0	0	50
Security	1	0	0	1
Outsource Shipping	3	0	0	3

9.Results

9.1 Performance Metrices

10. Advantages & Disadvantages

10.1 Advantages

It saves time and money: an effective inventory management system can translate to time and money saved on the part of the business. By keeping track of the product that you already have at hand, you can save yourself the hassles of having to do an inventory recount in order to ensure your records are accurate. It also allows you to save cash that would have otherwise been spent on slow moving products.

Improves efficiency and productivity: inventory management devices like bar code scanners and inventory management software can help to greatly increase the efficiency and productivity of a business. They do this by eliminating the manual way of doing things thus allowing employees to do other more important things for the business.

A well-structured inventory management system leads to improved customer retention: for customers to keep patronizing you, you will need to always have the goods they want, at the amount they want, and at the time they want it. Inventory management helps you to meet up this demand by allowing you to have the right products all the times so that you and your customers are never stranded.

Avoid lawsuits and regulatory fines: like mentioned previously, inventory management allows you to keep your warehouse or facility in order. If it is not kept in order, it can result in lawsuits, injury and fines associated with not following regulatory guidelines and rules. In addition, proper inventory management (including keeping records of your staff activities) helps document your actions in the event of an undesirable situation.

Schedule maintenance: once you get hold of a new appliance, you can begin to schedule routine and preventative maintenance, issue work order to your staff and track that the maintenance was actually carried out. This will help to elongate the life span of that particular asset.

10.2 Disadvantages

- **Bureaucracy:** even though inventory management allows employees at every level of the company to read and manipulate company stock and product inventory, the infrastructure required to build such a system adds a layer of bureaucracy to the whole process and the business in general. In instances where inventory control is in-house, this includes the number of new hires that are not present to regulate the warehouse and facilitate transactions. In instances where the inventory management is in the hands of a third party, the cost is a subscription price and a dependence on another separate company to manage its infrastructure. No matter the choice you go for, it translates to a higher overhead cost and more layers of management between the owner and the customer. From the view point of the customer, a problem that requires senior management to handle will take a longer period of time before it will be trashed out.

- **Impersonal touch:** another disadvantage of inventory management is a lack of personal touch. Large supply chain management systems make products more accessible across the globe and most provide customer service support in case of difficulty, but the increase in infrastructure can often mean a decrease in the personal touch that helps a company to stand out above the rest. For instance, the sales manager of a small manufacturing company that sells plumbing supplies to local plumbers can throw in an extra box of washers or elbows at no charge to the customer without raising any alarms. This is done for the sake of customer relations and often makes the customer feel like he is special. While free materials can also be provided under inventory management, processing time and paper work make obtaining the material feel more like a chore for the customer or even an entitlement.

- **Production problem:** even though inventory management can reveal to you the amount of stock you have at hand and the amount that you have sold off, it can also hide production problems that could lead to customer service disasters. Since the management places almost all of its focus on inventory management to the detriment of quality control, broken or incorrect items that would normally be discarded are shipped along with wholesome items.

- **Increased space is need to hold the inventory:** in order to hold inventory, you will need to have space so unless the goods you deal in are really small in size, then you will need a warehouse to store it. In addition, you will also need to buy shelves and racks to store your goods, forklifts to move around the stock and of course staff. The optimum level of inventory for a business could still be a lot of goods and they will need space to be stored in and in some cases additional operational costs to manage the inventory. This will in turn increase cost and impact negatively on the amount of profit the business makes.

11. Conclusion

To conclude, Inventory Management System is a simple desktop based application basically suitable for small organization. It has every basic items which are used forthe small organization. Our team is successful in making the application where we canupdate, insert and delete the item as per the requirement. This application also provides a simple report on daily basis to know the daily sales and purchase details.This application matches for small organization where there small limited if godwoms.

Through it has some limitations, our team strongly believes that the implementation of this system will surely benefit the organization.

12. Future Scope

Since this project was started with very little knowledge about the InventoryManagement System, we came to know about the enhancement capability during the process of building it. Some of the scope we can increase for the betterment andeffectiveness oar listed below:

- ➤ Interactive user interface design.
- ➤ Manage Stock Godown wise.
- ➤ Use of Oracle as its database.
- ➤ Online payment system can be added.
- ➤ Making the system flexible in any type.
- ➤ Sales and purchase return system will be added in order to make return of products.
- ➤ Lost and breakage