Project Report

SMART FASHION RECOMMENDATION FOR RETAILERS

1. **INTRODUCTION**

1.1 Project Overview

- Online shopping is the process whereby consumers directly buy goods or services from a seller in real-time, without an intermediary service, over the Internet.
- It is a form of electronic commerce. This project is an attempt to provide the advantages of online shopping to customers of a real shop.
- It helps buying the products in the shop anywhere through internet by using the internet. Thus the customer will get the service of online shopping and home delivery from his favorite shop

1.2 Purpose

- The central concept of the application is to allow the customer to shop virtually using the Internet and allow customers to buy the items and articles of their desire from the store.
- The information pertaining to the products are stores on an RDBMS (Database) at the server side (store).

- The Server process the customers and the items are shipped to the address submitted by them. The application was designed into two modules first is for the customers who wish to buy the articles.

- Second is for the storekeepers who maintains and updates the information pertaining to the articles and those of the customers. The end user of this product is a shopping store where the application is hosted on the web and the administrator maintains the database.

- The application which is deployed at the customer database, the details of the items are brought forward from the database for the customer view based on the selection through the menu and the database of all the products are updated at the end of each transaction.

2. **LITERATURE SURVEY**
2.1 **Existing problem**

Whenever a customer using an Ecommerce sites like Amazon, Flipkart etc, he may face issues which may trouble him. It takes time for the customer support to resolve the customer issues since billions of people are using those platforms and reporting issues regularly.

This bot will be useful for filtering the products from whatever the ecommerce sites it has been incorporated it with here the own site developed, which runs in local server as other ecommerce api procurement is taking much time than expected and also replying to some of the issues before they get to the customer call center.

Overcoming Key word Problem

Software bots. Leboeuf developed a taxonomy of software bots Følstad and Brandtzæg argue that HCI may transition from graphical to conversational interfaces via chatbots

They also conducted a survey of chatbot users, finding that the most common reason, by far, was productivity (68%)

Pharo. Pharo is an open source programming language, with a strong community concentrated in Discord (a chat platform service) and a mailing list.

The chatbot identifies source code artifact names (key-concepts) in user messages, e.g., in "Who is GLMAction class expert?", the key-concept is "GLMAction".

More Variety

The choices online are amazing. You can find almost any brand or item you're looking for. You can get in on the latest international trends without spending money on airfare. You can shop from retailers in other parts of the state, country, or even the world instead of being limited to your own geography. A far greater selection of colors and sizes than you will find locally are at your disposal.

Easy Price Comparisons

Comparing and researching products and their prices is so much easier online. If you're shopping for appliances, for example, you can find consumer reviews and product comparisons for all the options on the market, with links to the best prices.

We can research first hand experience, ratings, and reviews for most products and retailers.

Shop From Anywhere

You can shop from the comfort of your own home, your workplace, or virtually anywhere. All you need is a device that's connected to the internet and a convenient address where you can receive the goods that you order.

Bargains

You can make some big savings by shopping online. Big retailers often price products cheaper online than they do in their bricks and mortar stores. Many items can also be bought at bargain prices through online auction sites such as eBay. There are also plenty of coupons, and other ways to save.

No Transport Issues

Unless you opt for in-store collection, online shopping means that the ordered goods are delivered straight to your door. You don't have to worry about driving to a destination, paying for gas, parking, or waiting in a line to be served.

Refurbished Options

In traditional stores, the choice is normally new or nothing, but online you often get the option of purchasing used or refurbished products, which can save you money.

2.2 References

- ICTD(Information Communication Technology and Doing Business)

- Hindawi.com/journalists (March 2021)
- Turkish Journal of Computer and Mathematics Education(may 2020)

- https://www.tandfonline.com/loi/tfdt20 (November 2021)

2.3 Problem Statement Definition

We have come up with a new innovative solution through which you can directly do your online shopping based on your choice without any search. It can be done by using the chatbot.

In this project you will be working on two modules :
1. Admin and
2. User

Admin:

The role of the admin is to check out the database about the stock and have a track of all the things that the users are purchasing.

User :

The user will login into the website and go through the products available on the website. Instead of navigating to several screens for booking products online, the user can directly talk to Chatbot regarding the products. Get the recommendations based on information provided by the user.

Features of Chatbot :
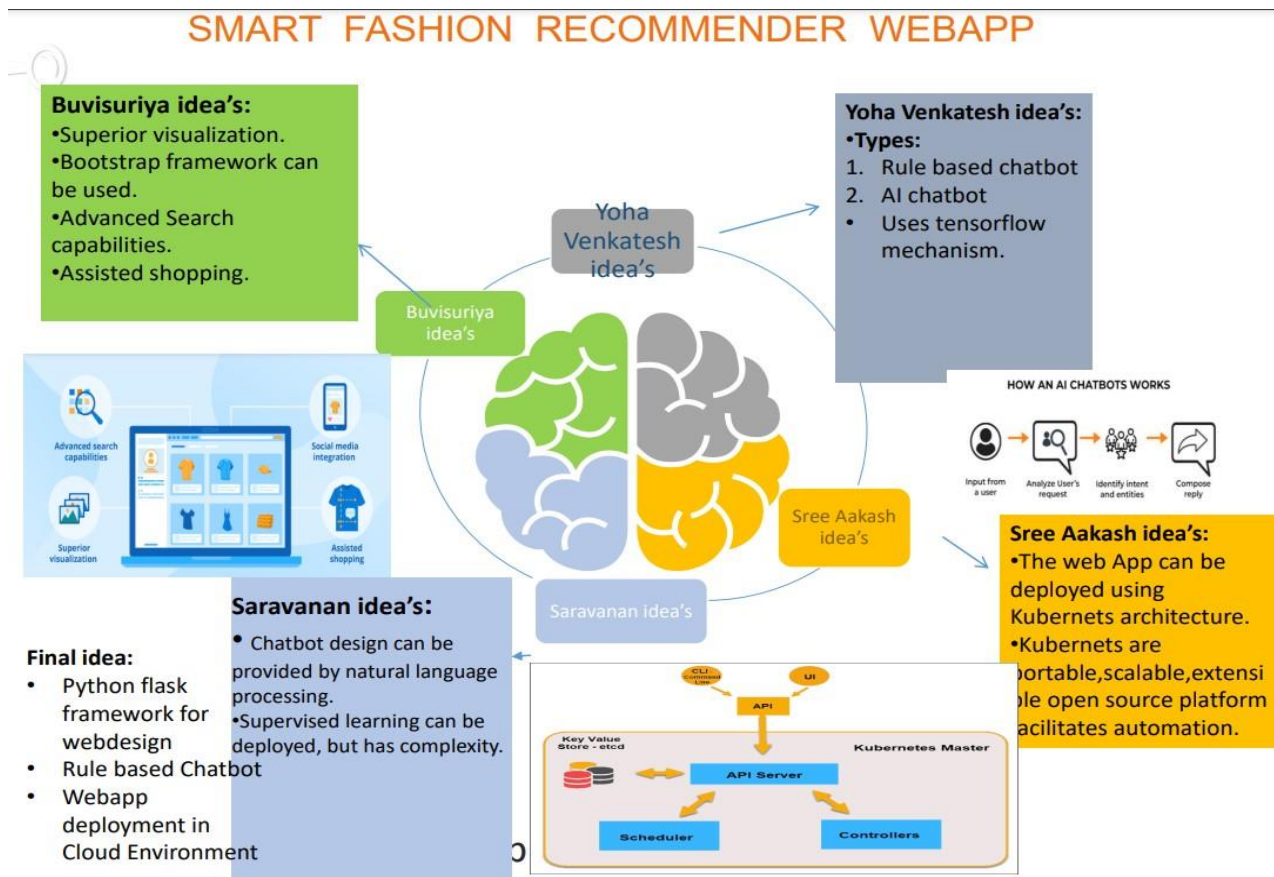
- Using chatbot we can manage user's choices and orders.
- The chatbot can give recommendations to the users based on their interests.
- It can promote the best deals and offers on that day.
- It will store the customer's details and orders in the database.
- The chatbot will send a notification to customers if the order is confirmed.
- Chatbots can also help in collecting customer feedback.

2.4 Empathy Map Canvas

Title:SmartFashion App Recommender Team id: PNT2022TMID23067

Modules Used Admin User

Problem Statement A new Online shopping Application Based on Choice Using Chatbot

What do they THINK AND FEEL?
what really counts
major preoccupations
worries & aspirations

The Application is Simple in Design and Accessibility of the app is easier to all People

Users Fell Easy to Interact with the App

Telegram Chatbot ,Discord,Messanger app

What do they HEAR?
what friends say
what boss say
what influe   ay

Role of User Searching Products With the Help of Chatbot

Role of Admin is to Check the database for the availability of Stock

List of Products will be displayed like Flipkart,amazon websites

What do they SEE?
environment
friends
what the market offers

Smart Fashion Recommender Application

Chatbot Sends the Notifcation Once the Order is Placed

Chatbot Stores the Customer Details in Database Promotes Best Deals for Users

What do they SAY AND DO?
attitude in public
appearance
behavior towards others

Chatbots Helps the User Naviagate to the Searched Product

WebApp Design Templates will be similar to Flipart ,Amazon,Ajio etc

PAIN
fears
frustrations
obstacles

Chatbot Lags in Decision Making Skills

Limited Availaiblity of Data and Self Updation is Required

Requires Huge Amount of Storage to Process Data

GAIN
"wants" / needs
measures of success
obstacles

Reduces Customer's Valuable Time

Chatbots are smart,Intelligent in handling user's Queries

Chatbot Increases Productivity of the Website

2.5 Ideation & Brainstorming

SMART FASHION RECOMMENDER WEBAPP

Buvisuriya idea's:
•Superior visualization.
•Bootstrap framework can be used.
•Advanced Search capabilities.
•Assisted shopping.

Yoha Venkatesh idea's:
•**Types:**
1. Rule based chatbot
2. AI chatbot
• Uses tensorflow mechanism.

HOW AN AI CHATBOTS WORKS

Sree Aakash idea's:
•The web App can be deployed using Kubernets architecture.
•Kubernets are portable,scalable,extensible open source platform facilitates automation.

Saravanan idea's:
• Chatbot design can be provided by natural language processing.
•Supervised learning can be deployed, but has complexity.

Final idea:
• Python flask framework for webdesign
• Rule based Chatbot
• Webapp deployment in Cloud Environment

2.6 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	A new innovative solution through which users can directly do online shopping based on the choice without any search. It can be done using a chatbot. Modules Used: • Admin The role of the admin is to check out the database about the stock and have a track of all the things that the user are purchasing. • User The user will login into the website and go through the products available on the website .Instead of navigating to several screens for booking products online ,The user can directly talk to the chatbot regarding the product.

2.	Idea / Solution description	The idea mainly focus on the designing the chatbot using AI algorithms like NLP(Natural Language Processing) which makes the user friendly environment instead of searching the product.The Chatbot gives recommendation of the user's product and suggests available offers of the product. The introduction of chatbot makes an interactive website and boosts the productivity of the product.
3.	Novelty / Uniqueness	Many online shopping application is mainly based on the search engine while this project make use of interactive chatbot like alexa,siri etc
4.	Social Impact / Customer Satisfaction	This project uses chatbots that converse with the users and ask questions that encourage them to make a purchase. If a customer is searching for a product, they need not leave the website to know more about it. Chatbots pop up and deliver the information to the users effortlessly.
5.	Business Model (Revenue Model)	There are many systesm available in the recommendation systems.Our Project will focus on improving customer experience in online shopping by embedding an interactive chatbot in it which will improve the productivity and boosts the economy.
6.	Scalability of the Solution	Our project solution is platform independent.In future various machine learning algorithms can be applied on the chatbot and UI interfaces of webapp can be developed and modified .

2.7 Problem Solution fit

Project Title: Smart Fashion Recommender Web Application **Project Design Phase-I - Solution Fit Template** **Team ID: PNT2022TMID23067**

Define CS, fit into CC	1. CUSTOMER SEGMENT(S) CS	6. CUSTOMER CONSTRAINTS CC	5. AVAILABLE SOLUTIONS AS	Explore AS, differentiate
	• Customer will go through the website for shopping. • There will be a chatbot that will guide the customer to the recommended product • Customer can give the constraint to the chatbot and chatbot will filter and display the required product.	• Customers are bound to search on the available products in the website . • Recommending a product becomes unobvious when customer keeps on changing the search items.	• Voice Assistants can be in use when Chatbots fails. • Customer can make use of Search box to search the product. • We can use personal recommendatory system based on the customer needs. • Image Recognition method can be incorporated	

Focus on J&P, tap into BE, understand RC	2. JOBS-TO-BE-DONE / PROBLEMS J&P	9. PROBLEM ROOT CAUSE RC	7. BEHAVIOUR BE	Focus on J&P, tap into BE, understand RC
	• Designing the webpage using python flask web framework. • For Data Storage IBM DB2 is used. • Kubernetes Cluster is used for containerize the application • Building a chatbot using ibm Watson assistant.	If we go through the other's recommender app there will be no chatbot interaction with customer and to make customer satisfaction and user friendly surfing chatbot is deployed in this app.	• While using the app , if customer faces any issues he can rise a ticket and make a report of the problem. • Suggestions will be handled by the chatbot	

Identify strong TR & EM	3. TRIGGERS TR	10. YOUR SOLUTION SL	8.CHANNELS of BEHAVIOUR CH	Identify strong TR & EM
	• User Friendly website interaction and triggers customers to recommend this website. • Varities of Clothing Products are available for customers . • Searching for the products feels easier. **4. EMOTIONS: BEFORE / AFTER EM** • If the Searched item is not available that will create negative impact for the customer. • Another problem is that if the chatbot doesnot respond properly customer will not be satisfied. • Cloud,Database Management and frequent updation and maintenance should be done.	• Webapp can be desgined using python web framework. • IBM Db2 Database can be used for data storage. • IBM Watson assistant can be used for chatbot interaction. • The developed product will be platform independent.	**8.1 ONLINE** Customer can search products ,modify the cart,order the products during online with chatbot **8.2 OFFLINE** Chatbot will recommend the customer's product in offline mode	

3. REQUIREMENT ANALYSIS

3.1 Functional requirement

FUNCTIONAL REQUIREMENTS:

The project was developed as a web application, the web site functional requirements were mentioned below:

Registration Page:

➢ User can register through the registration page

➢ User must provide the username and password to login to the system.

Login Page:

➢ User can login into the system.

➢ If the given details is valid, then the user is redirected to products page for online shopping.

Main Page:

➢ Displays the available clothes with discounts and offers when enter into this page.

➢ It also displays the reviews of the product

➢ Chatbot is integrated with main page to make user friendly environment.

Add Items to cart :

➢ User adds their favourite dress in to the shopping cart

➢ They can also add/remove the products from cart if they change theird mind.

The total price is displayed at bottom of the cart

Confirmation Page:

➢ After purchasing user is redirected to confirm the order

➢ It displays the order details and the arrival of the product. User has a facility to know about the product through sendgrid python email services.

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Account Creation	Creation through Google Creation through the company website Creation through Email Creation through LinkedIN Creation through Github
FR-2	User Confirmation	Confirmation via Email
FR-3	Successful Log in	User goes to main page and purchases the products.
FR-4	Update stock details	Admin is provided with the access rights to update the stock details through ibm db2 database.
FR-5	Adding the products	By shopping cart.

FR-6	Order Confirmation	Alert notification through Email

3.2 Non-Functional requirements

NON FUNCTIONAL REQUIREMENTS:
The Non Functional Requirements of the project mentioned below:

Usability:
We should provide our business analysis model to be supported in any devices like Laptop , Mobiles , PC's and also in computer . Hence it is more flexible to use.

Security:
The security requirements deal with the primary security. The software should be handled only by the administrator and authorized users. Only the administrator has right to create new accounts and generating inventory. Only authorized users can access the system with username and password of administration.

Availability:
The software will be available only to administrator of the organization and the product as well as customer details will be recorded by him. He can add customers, update and delete them as well as add new products and manage them.

Performance:
The system must be capable of handling multiple users at a time flexibly without causing any errors.

Reliability:

Stocks can be balanced exactly without having any fluctuations in terms of excess flow or under flow of stocks. We can ensure accurate inventory
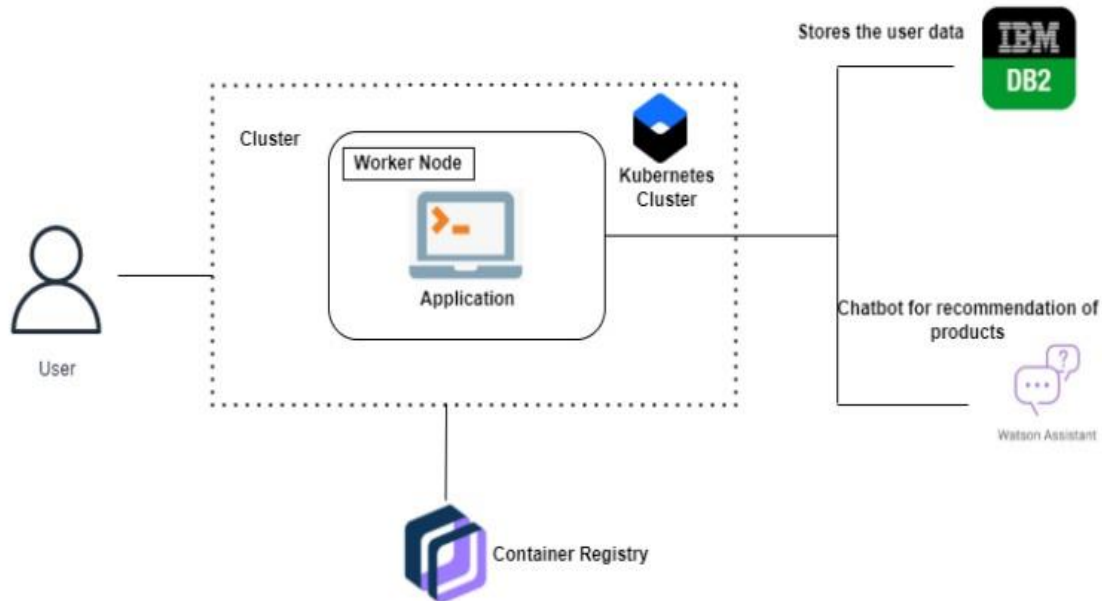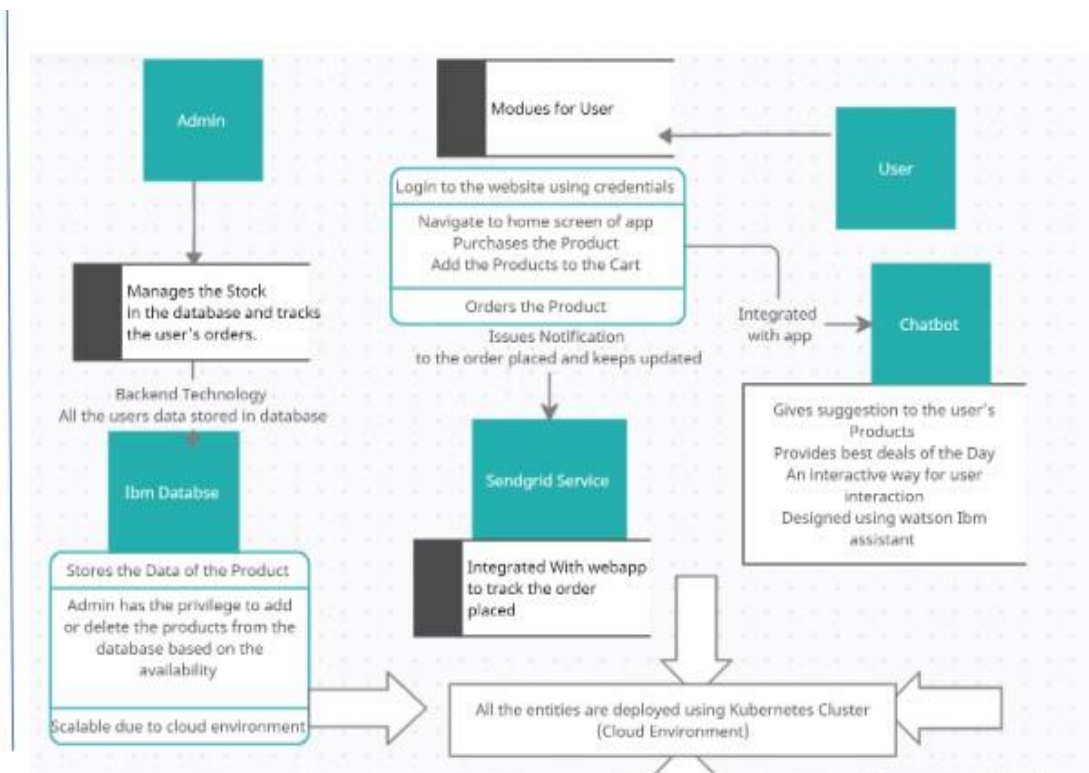

valuation.

4. PROJECT DESIGN

4.1 Data Flow Diagrams
4.2 Solution & Technical Architecture

5. PROJECT PLANNING & SCHEDULING

5.1 Sprint Planning & Estimation

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

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	13	High	R.Duraipandi S.Jegadeshpathy E.Arjun S.Sri Ram Prabu
Sprint-1	Confirmation	USN-2	As a user, I will receive confirmation email oncel have registered for the application	13	High	R.Duraipandi S.Jegadeshpathy E.Arjun S.Sri Ram Prabu
Sprint-2	Registration through Google account	USN-3	As a user, I can register for the applicationthrough Google account	8	Low	R.Duraipandi S.Jegadeshpathy E.Arjun S.Sri Ram Prabu
Sprint-1	Login	USN-4	As a user, I can log into the application byentering email & password	13	High	R.Duraipandi S.Jegadeshpathy E.Arjun S.Sri Ram Prabu
Sprint-2	Dashboard	USN-5	As a user, I can log in into the application andview the dashboard for Inventory information	8	Medium	R.Duraipandi S.Jegadeshpathy E.Arjun S.Sri Ram Prabu
Sprint-2	Notification	USN-6	As a user, I can get notifications after registering their Inventory	13	High	R.Duraipandi S.Jegadeshpathy E.Arjun S.Sri Ram Prabu

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-3	Database	USN-7	Admin can access, view, modify, update alldetails of the Inventory	20	High	R.Duraipandi S.Jegadeshpathy E.Arjun S.Sri Ram Prabu
Sprint-4	Software testing and deployment	USN-8	As user want to access the application withoutany drawbacks, we need to test the software before release.	13	High	R.Duraipandi S.Jegadeshpathy E.Arjun S.Sri Ram Prabu

5.2 Sprint Delivery Schedule

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

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

Velocity:
Sprint 1(AV) =3.34
Sprint 2(AV) =3.34
Sprint 3(AV) =3.34
Sprint 4(AV) =3.34

Burndown Chart:
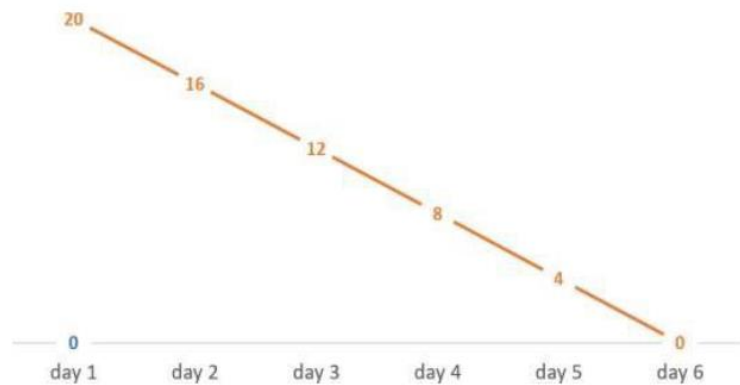
6. CODING & SOLUTIONING (Explain the features added in the project along with code)

6.1 Feature 1

The custom user interface of smart fashion recommender web application allows person to register in the website and have access to purchase the products available in the website.
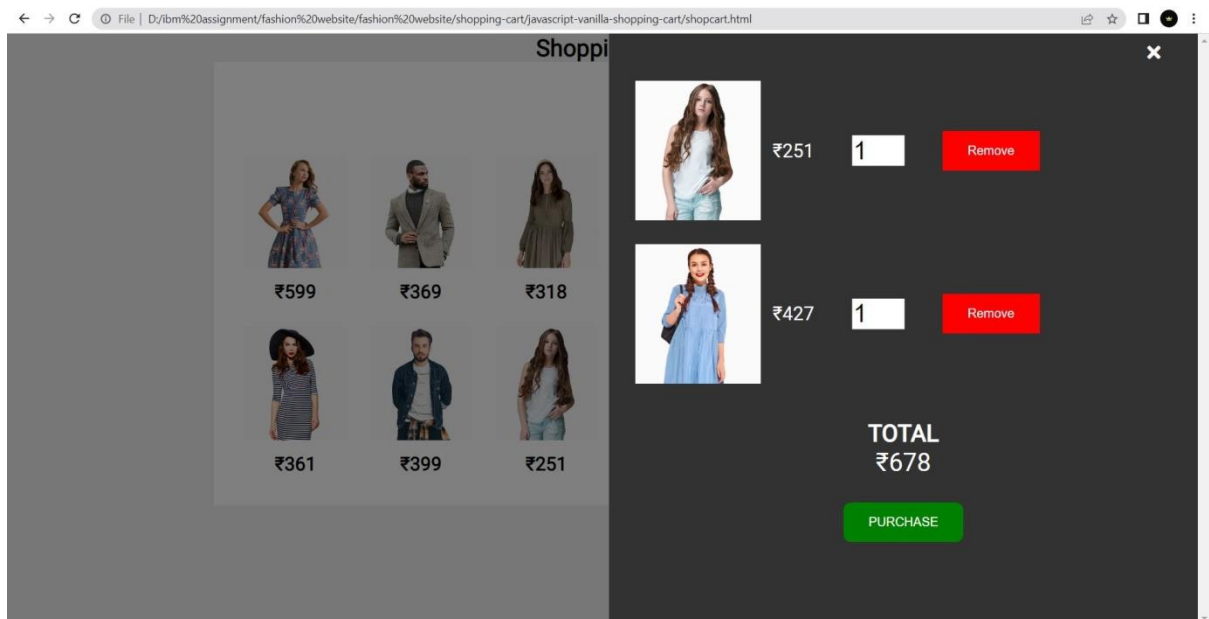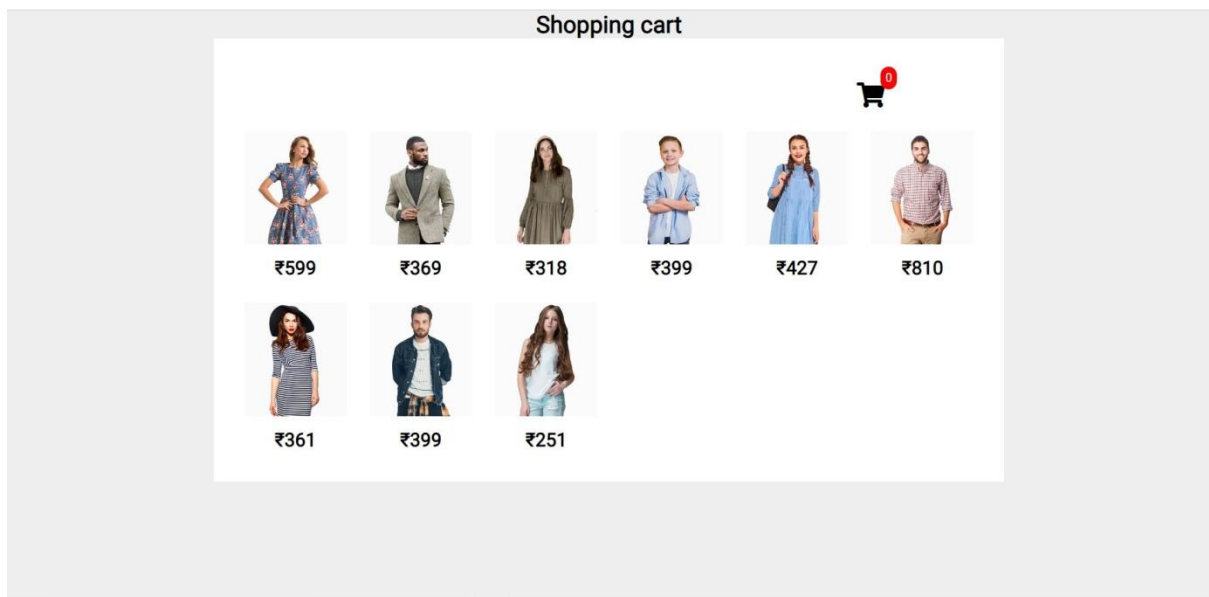
6.2 Feature 2

The software has an In-built "Chat Bot" which can help assist with ongoing queries and provide fast and effective solutions to user problems which may occur and also redirect to management attention if need be there any complications the customer service will be available 24*7 to assist in case of any controversial issues arise
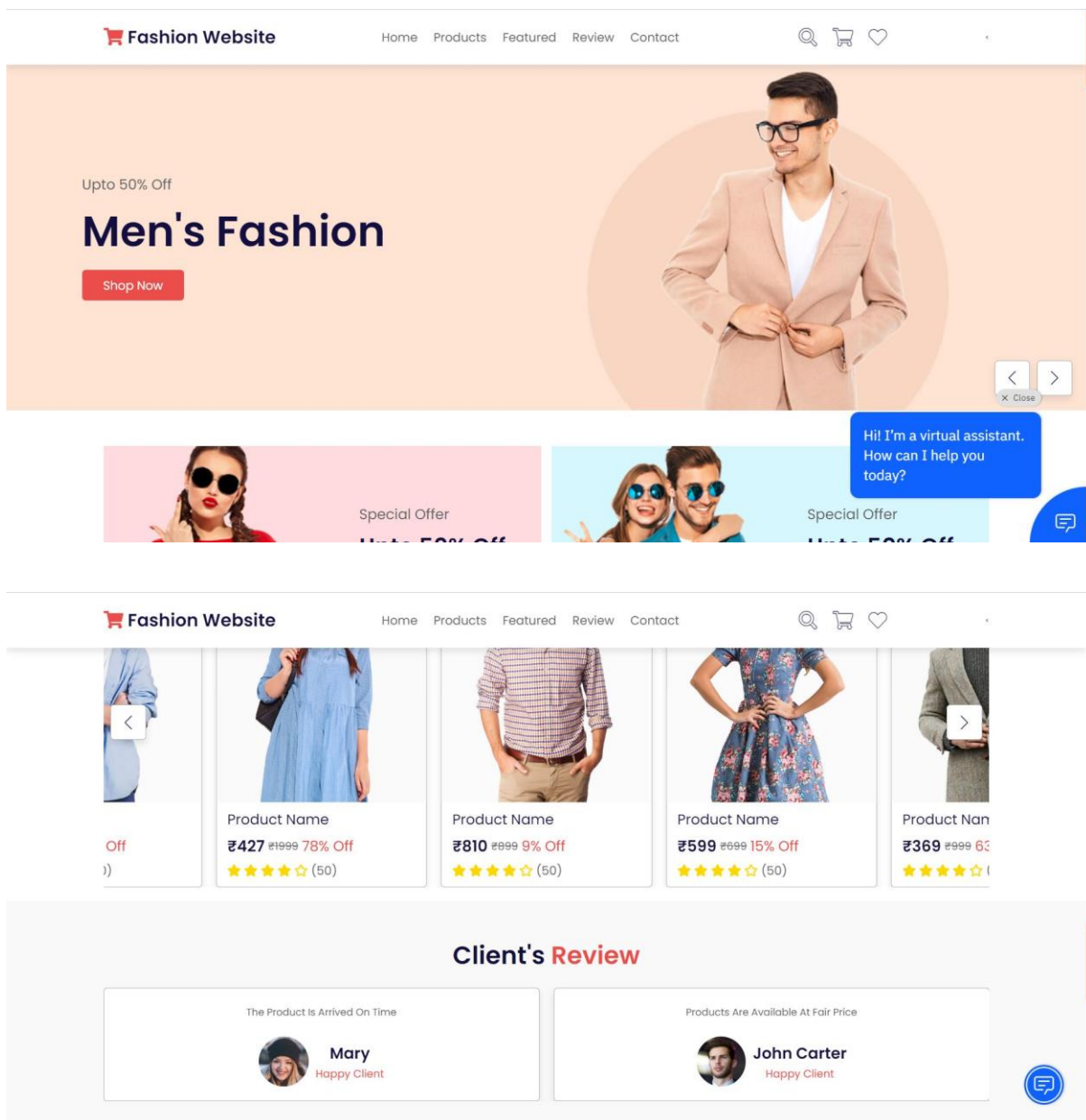
Shopping cart:

7. TESTING

7.1 User Acceptance Testing

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).

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	12	4	3	2	21
Duplicate	4	0	3	0	4
External	3	5	0	1	8
Fixed	12	2	4	21	39
Not Reproduced	0	0	1	0	1
Skipped	0	0	2	1	3
Won't Fix	0	4	1	2	7
Totals	22	12	14	21	69

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	8	0	0	8
Client Application	47	0	0	47

Security	3	0	0	3
Outsource Shipping	4	0	0	4
Exception Reporting	7	0	0	7
Final Report Output	5	0	0	5
Version Control	3	0	0	3

8. ADVANTAGES & DISADVANTAGES

Advantages of inventory management

1. Faster buying process

Customers can spend less time shopping for what they want. They can easily browse through many items at a time and buy what they like. When online, customers can find items that are available in physical stores far away from them or not found in their locality.

Advantages of e-business include helping one to choose from a wide range of products and get the order delivered too. Searching for an item, seeing the description, adding to cart – all steps happen in no time at all. In the end, the buyer is happy because he has the item and didn't have to travel far.

2. Store and product listing creation

A product listing is what the customer sees when they search for an item. This is one advantage in ecommerce meant for the seller. This online business plus point is that you can personalise your product listing after creating them. The best part? Creating a listing takes very little time, all you require is your product name or codes like EAN, UPC, ISBN or ASIN.

Sellers can add many images, a description, product category, price, shipping fee and delivery date. So, in just one step you can tell the customer many things about the item. Creating your listing shows the buyers what you have.

4. Affordable advertising and marketing

Sellers don't have to spend a lot of money to promote their items. The world of ecommerce has several affordable, quick ways to market online. Ecommerce marketplaces are visual channels and sellers can really show off their product. For example, Amazon sellers can use Advertising tools to add videos, infographics, good quality resolution images.

5. Flexibility for customers

An important advantage of ecommerce to business is that sellers can provide flexibility to customers. One highlight is that the product and services are ready 24x7. The result is that seller can offer his item any place, any time.

Customers are always present on an ecommerce marketplace - They are likely to return for repeat purchases online because of the conveniences they get. These conveniences include free shipping (usually on a minimum cart value), express order delivery, deals and discounts, subscription advantages.

Disadvantages:

1. No One Can Buy During a Site Crash

The worst of the ecommerce disadvantages is when no one can buy from your store if your site crashes. That's why it's important to ensure your website is hosted on the right platform.

For example, if you're paying the minimum hosting fee and get a surge in traffic from a high converting ad or a television shout-out like Shark Tank, your site will likely crash.

2.Shipping Times Can Be Lengthy

Customers consider shipping times to be one of the worst ecommerce disadvantages. When a customer shops in person, she can take the product home right away. But, with online shopping, most customers receive their products in a week or more.

3.**Customers Can't Try Before They Buy**

When the customers do offline shopping they can buy the products by seeing it. But with online shopping we can't have access to the demo so this is the big disadvantage while doing online shopping.

Github link for source code:

https://github.com/IBM-EPBL/IBM-Project-926-1658331074.git

Demo video link:

https://drive.google.com/file/d/16gVYjOZXTZtnjMBsH-v_ShRL0oRGTIqF/view?usp=share_link