IBM – NALAIYA THIRAN PROJECT

SMART FASHION RECOMMENDER APPLICATION

INDUSTRY MENTOR : KRISHNA CHAITANYA

FACULTY MENTOR   : P. SRIDHAR

TEAM ID   : PNT2022TMID39797

TEAM LEAD   : UVENDHAN H

TEAM MEMBER : SANTHOSH R

TEAM MEMBER : ENBA KUMAR R

TEAM MEMBER : ARUN KUMAR V

ABSTRACT

Fashion is perceived as a meaningful way of self-expressing that people use for different purposes. It seems to be an integral part of every person in modern societies, from everyday life to exceptional events and occasions. Fashionable products are highly demanded, and consequently, fashion is perceived as a desirable and profitable industry. Although this massive demand for fashion products provides an excellent opportunity for companies to invest in fashion-related sectors, it also faces different challenges in answering their customer needs.

In recent years, the textile and fashion industries have witnessed an enormous amount of growth in fast fashion. On e-commerce platforms, where numerous choices are available, an efficient recommendation system is required to sort, order, and efficiently convey relevant product content or information to users. Smart Fashion Recommender Application have attracted a huge amount of attention from fast fashion retailers as they provide a personalized shopping experience to consumers. Smart Fashion Recommender Application have been introduced to address these needs.

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1. INTRODUCTION

1.1 PROJECT OVERVIEW:

The Fashion industry is one of the larger industries around the world. Initially, this cloth was worn as protection from the harsh climates of those ages. Later on, as we humans learned to fend for ourselves from the unforgiving climates, the cloth started to serve a different purpose. Fashion these days showcases the individuality of the person. There are many things that can be said about a person based on their fashion sense.

1.2 PURPOSE:

There is currently no existing system that is capable of recommending clothes based on the occasion. Different occasions call for different clothing. Moreover, a lot of fashion is based on the color combinations of outfits. A person with no or little fashion sense will have a hard time to decide on clothes that leave a lasting impression. The proposed Fashion Recommendation System is intended to be used by individual users in order to store images of the clothes that they own in what is called a digital wardrobe and also to get recommendations by the system on what clothes to wear for a given occasion. The main aim of the project is to recommend the most appropriate clothes for a given occasion based on the clothes existing in the user's wardrobe to relieve the user of the burden of making decisions about what clothing to wear. Such a system should be capable of helping someone who has no fashion sense to wear clothes that leave a good impression on others. The system should be such that it is easily accessible and easy to take advantage of the various features that it provides. One of the features should be the ability to store images that the user uploads into a wardrobe. A wardrobe is a very useful entity that the user can use to view and manage the images of clothes that they have uploaded. This feature can also be used by the recommendation algorithm to recommend the clothes. Another feature is the classification of the type and color of the clothing that is uploaded by the user. The system should be capable of handling the 4 basic clothing types: Shirt, T-Shirt, Pants and Shoes.

2.   LITERATURE SURVEY

2.1 EXISTING PROBLEM:

In existing system only simple web application and their rating has been implemented in existing system, An ecommerce product recommendation engine is a piece of technology that displays recommended products to shoppers throughout your store. It uses machine learning to get smarter and show increasingly relevant products to shoppers based on their interests and previous browsing behavior .

2.2 REFERENCES & 2.3 PROBLEM STATEMENT DEFINETION

S.NO:	TITLE [Type here]	AUTHOR	YEAR OF PUBLICATION	PROBLEM IDENTIFIED	TECHNIQUE USED	DRAWBACKS
1.)	Open source Chat Bot development Framework-RASA	J.Praveen GUjjar and V. Neven kumar	2022	1.) The machine learning Chat Bot is data driven and predictive in nature. 2.) Machine learning Chat Bot is designed in such a way that chat bot can learn from the previous experience.	1.)Chat Bot uses open Source framework 2.)Artificial intelligence,deep learning, Chat bot,NLU,RASA 3.)Rasa has two building blocks are rasa NLU and RASA NLU core	1.)Rasa is a NLU based machine learning Chat Bot and developer can develop the Chat bot by writing the customized python code in action.py file
2.)	A survey of designing tools for chatbot	Bhagyashree Deshpande , et.al	2022	1.)Address customer queries instantly without the need for a support Agent.	1.)Rule based chat bot, 2.)AI based chat bot 3.)Hybrid chat bot	1.)Chat bot have limited response, so they are not often able to answer multipart question. 2.)AI Chat bot is a technology that makes interaction between man and machine using natural language possible.
3.)	A chat bot system for multi-dimensional Datasets	Maria Halena Franciscatto , et.al	2022	1.)Finding information may be complex task for end user	1.)Chatbot can be used for allowing the user to "talk to data" by adding metrics and dimensions to a query	1.)We showcase the potential limitations that multisource variability may have for covid-19 ML research on large international DRNS
4.)	Automatic Generation of business Intelligence chat bot for organisations	Mahdi Sanisharif , et.al	2022	1.)There accessibility and usability are still issues organisational structure, developing a chat bot is complex	1.)They developing interactive BI chat bot according to various organisational needs	1.)To alleviate these issues, organizations use chat bot
5.)	A survey of recommendation system: Recommendation models, techniques and application fields.	Hye young ko, et.al…	2022	1.)Improve the performance of recommendation model and recommendations systems technology	1.)In this technology the recommendation system is largely divided into a data mining part that performed analysis based on data collected about item and user	1.)In this technology, the recommendation system is largely divided into a data moving part that performed analysis based on data collected about item and user.
6.)	Chat bot design and approaches	AR.D.B. Landim , et.al…	2021	1.)Chat bots can bring innovation	1.)Dialog system 2.)Virtual assistant	In the use of chat bot, the literature review was carried out

2.3 Define the problem statements:

SMART FASHION RECOMMENDER APPLICATION

I AM
- CUSTOMERS ARE THE EARGER PERSONS
- THEY REQUIRE THEIR PRODUCTS WITHIN A CERTAIN PERIOD OF TIME
- THEY ALWAYS REQUIRE QUALITY PRODUCTSD.
- THEY NEED A RESPONSE AND ATTENTION.

I'M TRYING TO DO
- NEED TO FULLFILL THE CUSTOMER REQUIREMENT WITHIN A GIVEN TIME
- GIVE A GOOD RESPONCE AND MAKE THEM TRUST US

BUT
- DIFFERENT TYPES OF SOLUTIONS REQUIRES LONG TIME PERIOD
- SOME SOLUTION REQUIRE LOT OF SKILLED PERSONS AND THAT NEED MORE MONEY FUNDING

BECAUSE
- SOME SOLUTIONS ARE FAR BEYOND US .
- SOME SOLUTIONS REQUIRES MORE NEW TECHNOLOGY
- SOME SOLUTIONS MAY NOT EXIST

WHICH MAKES ME FEEL
- THE UNEXPECTED RESULTS
- THE PRODUCT DELIEVERED NOT WITHIN A GIVEN TIME

3. IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS:

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes. It is a useful tool to helps teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges. An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers.

SMART FASHION RECOMMENDER APPLICATION

3.2 IDEATION AND BRAINSTORMING:

A group problem-solving technique that involves the spontaneous contribution of ideas from all members of the group.

The mulling over of ideas by one or more individuals in an attempt to devise or find a solution to a problem.

3.3 PROPOSED SOLUTION:

S.NO	PARAMETERS	DESCRIPTION
1.)	Problem statement	Delivery of fake products
2.)	Idea / solution description	1.) To record the videos of products while packing.
3.)	Novelty/ Uniqueness	1.) Making the recordings of video as an option. 2.) Customer can request video of packing while purchasing order.
4.)	Social impact / Customer satisfaction	1.) This can be a good impact in the market system 2.) Due to offering packing videos, lot of people will trust our products and use our application
5.)	Business Model	1.) Company can make the offer for
		subscribers for genuine service
6.)	Scalability of the solution	1.) Requires high processing and there will be a great change in the market world.

3.4 PROBLEM SOLUTION FIT:

Project Title: SMART RECOMMENDER APPLICATION

Team ID: PNT2022TMID39797

Project Design Phase-I - Solution Fit Template

Define CS, fit into CC			
1. CUSTOMER SEGMENT(S) CS User of the recommender system application.	**6. CUSTOMER CONSTRAINTS** CC Have a google account, Network connection and available devices.	**5. AVAILABLE SOLUTIONS** AS System already programmed by the algorithm, but chat slang is varied .so, we use recognition module to collecting the unrecognition chat.	Explore AS, different

Focus on J&P, tap into BE, understand RC			
2. JOBS-TO-BE-DONE / PROBLEMS Customers chatting slang cannot be recognized by the chatbot.	**9. PROBLEM ROOT CAUSE** RC Way of the chatting is main cause in the chatbot.	**7. BEHAVIOUR** BE People use different application for recommendation system. The chat bot does not give the proper answer for the	Focus on J&P, tap into BE, understand RC

3. TRIGGERS TR People want to make their life easier and feel comfortable for using. Easy to handle and give more offers	**10. YOUR SOLUTION** SL We can provide a recognition module by collecting the unrecognition chat and update it with an answer for future use on monthly basis. The method can make the	**8. CHANNELS of BEHAVIOUR** CH 8.1 ONLINE Social media videos made by the user and the attracted the people. 8.2 OFFLINE	
4. EMOTIONS: BEFORE / AFTER EM People did not feel attracted by the application and functionalities. The user lose the hope and confident of products.	chatbot highly intelligent day by day.	Word of mouth among others.	

4. REQUIREMENT ANALYSIS:

4.1   FUNCTIONAL & NON FUNCTIONAL REQUIREMENT:

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Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Mail-ID Registration through google Registration through phone number
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Authentication	Authenticate by verifying Mobile number Authenticate using Email
FR-4	Reporting	Report error and bugs

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Providing recommendation link by using customer preference.
NFR-2	Security	We will recommend user to create a strong password and with firewall
NFR-3	Reliability	The database update process must roll back all related updates when any update fails.
NFR-4	Performance	The loading speed of the page is quicker and faster. This application should perform better for user.
NFR-5	Availability	Stands for the system's reliability and accessibility to the user.
NFR-6	Scalability	The website traffic limit must be scalable enough to support 1000,000 users at a time.

5. PROJECT DESIGN:

5.1   DATA FLOW DIAGRAM:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.
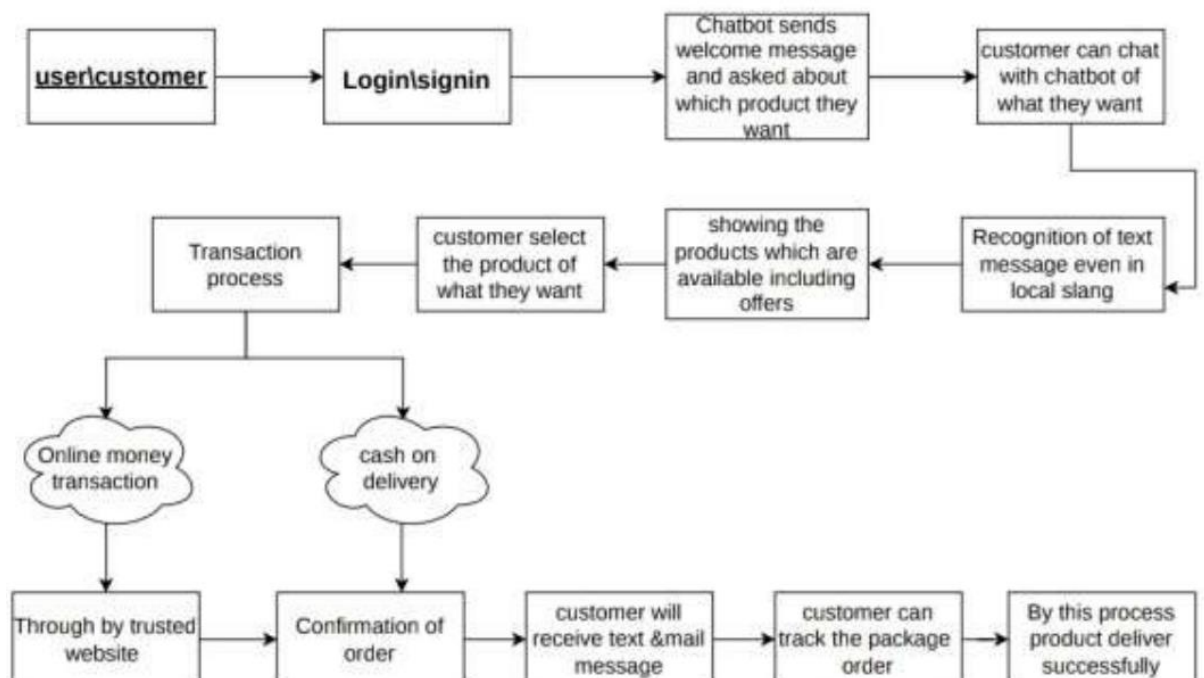
5.2   SOLUTION AND TECHNICAL ARCHITECTURE:

We have developed 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:

• Admin

• User

Instead of searching for products in the search bar and navigating to individual products to find required preferences, this project leverages the use of chatbots to gather all required preferences and recommend products to the user. The solution is implemented in such a way as to improve the interactivity between customers and applications. The chatbot sends messages periodically to notify offers and preferences. For security concerns, this application uses a token to authenticate and authorize users securely. The token has encoded user id and role. Based on the encoded information, access to the resources is restricted to specific users.

Technical Architecture:
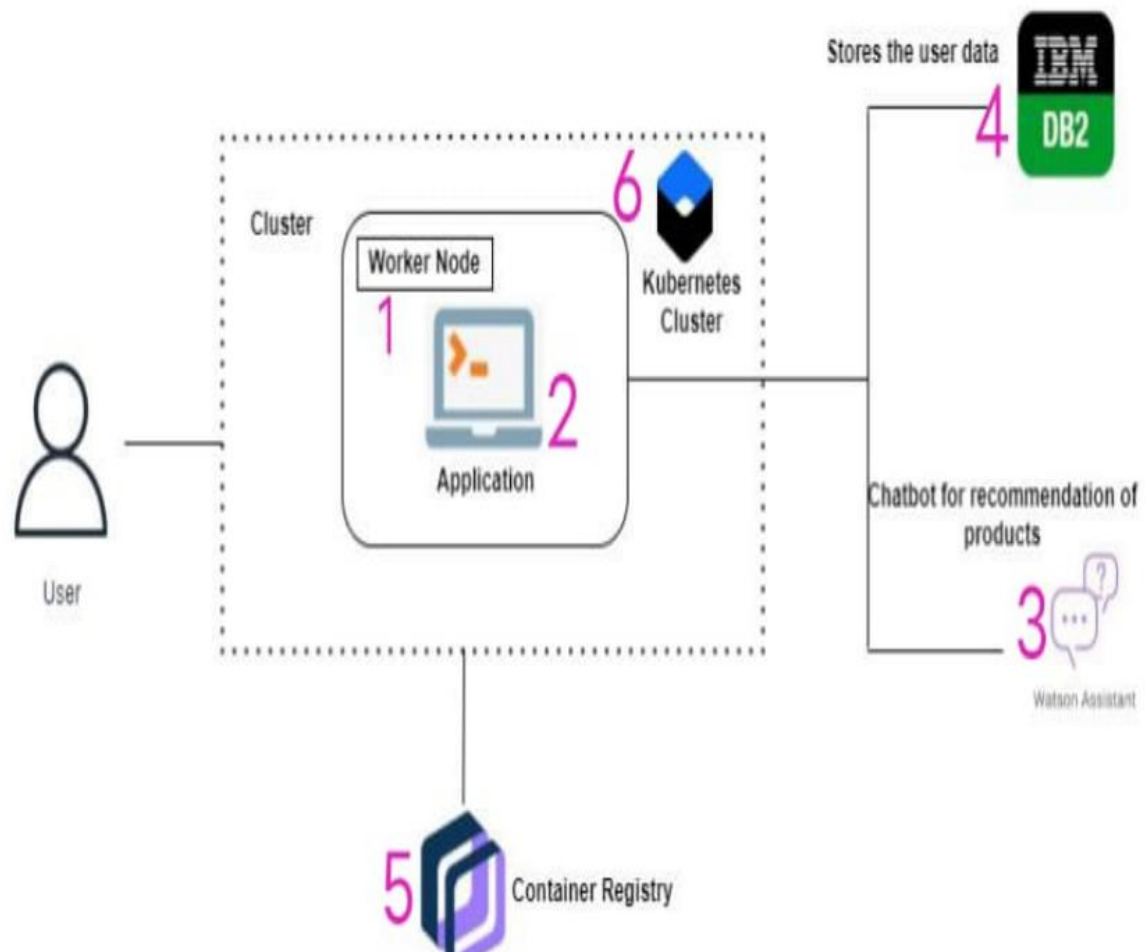
5.3   USER STORIES:

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	Release
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	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail		Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password	I can access my data by login	High	Sprint-1
	Dashboard	USN-6	As a user , I can view the dashboard and by products		High	Sprit -2
Customer (Web user)	Registration / Login	USN-7	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard		Sprint -1
Customer Care Executive	Contact with Customers	USN-8	As a Customer customers care executive, I solve the customer Requirements and feedback	I can receive calls from customers	High	Sprint-1

Administrator	Check stock and Price , orders	USN_9	As a Administrator , I can Check the database And stock details and buying and selling prices	I am the administrator of the company	High	Sprint -2

6. PROJECT PLANNING & SCHEDULE

6.1   SPRINT PLANNING AND ESTIMATION:

Milestone & Activity List:

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a Customer, I can register for the application by entering Mobile Number, password, and confirming my password.	10	Medium	Arun kumar.V
Sprint-1	Login	USN-3	As a Customer, I can log into the application by Mobile Number & password.	10	Medium	Arun kumar.V
Sprint-2		USN-4	As a webhost, I can log into the IBM cloud object storage by using account ID & Password.	8	Medium	Santhosh.R
Sprint-2	Dashboard	USN-5	As a Customer, I must able to see the products details.	8	Medium	Santhosh.R
Sprint-2	Inventory	USN-6	As a Website host, I should able to upload the products and delete the products using IBM cloud	4	Low	Santhosh.R

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint 4	Maintenance	USN-1	As a website host, I should be able to edit details of the App.	20	High	Uvendhan.H
Sprint 3	Feedback	USN-1	I should able to get the Feedback from the Users.	10	Medium	Enba kumar.R
Sprint 3		USN-2	As a webhost , I can response feedback from customers through Chatbot	10	Medium	Enba kumar.R

6.2   SPRINT DELIVERY SCHEDULE:

Project Tracker, Velocity & Burndown Chart:

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:
It will be updated after the first week of work is completed.

$$\text{SPRINT VELOCITY} = (\text{SPRINT PLANNING}) / (\text{VELOCITY}) = 20/6 = \mathbf{3.33}$$

BURNDOWN CHART :

Feature	Initial Estimate	Week 1	Week 2	Week 3	Week 4	Hours Left
Categories	60	20	8	5	1	26
Synchronization	60	10	5	2	2	41
Accounts	60	5	8	2	10	35
Reminders	60	10	12	2	3	33

6.3 REPORTS FROM JIRA:

Burndown Chart:

Sprints	OCT 24-30	NOV 31-6	NOV 7-13	NOV 14-23
	SFRA Sprint 1	SFRA Sprint 2	SFRA Sprint 3	SFRA Sprint 4
SFRA-1 Creating Register/login page				
SFRA-2 home page of e-commerce website				
SFRA-3 Creating buying products page				
SFRA-4 Creating Cart page				
SFRA-5 Create Database For products and user det...				
SFRA-6 Completing the User panel				
SFRA-7 Creating UI for Admin Panel				
SFRA-8 Creating database connection for admin pa...				
SFRA-9 Completing the Admin panel				
SFRA-10 Creating chatbot for application				
SFRA-11 Adding Features of Chatbot				
SFRA-12 integrate ChatBot with Web site				
SFRA-13 Completing Chatbot				
SFRA-14 Testing And Debugging The application				
SFRA-15 Container of applications				
SFRA-16 deploy the application				

7. CODING AND SOLUTIONING

7.1 FEATURE-1:

HOME PAGE.HTML:

```html
<!DOCTYPE html>
<html lang="zxx">

<head>
    <meta charset="UTF-8">
    <meta name="description" content="FASION-BOT">
    <meta name="keywords" content="Male_Fashion, unica, creative,
html">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <meta http-equiv="X-UA-Compatible" content="ie=edge">
    <title>Fashion-BOT</title>

    <!-- Google Font -->
    <link
href="https://fonts.googleapis.com/css2?family=Nunito+Sans:wght@300;400
;600;700;800;900&display=swap"
    rel="stylesheet">

    <!-- Css Styles -->
    <link rel="stylesheet" href="css/bootstrap.min.css"
type="text/css">
    <link rel="stylesheet" href="css/font-awesome.min.css"
type="text/css">
    <link rel="stylesheet" href="css/elegant-icons.css"
type="text/css">
    <link rel="stylesheet" href="css/magnific-popup.css"
type="text/css">
    <link rel="stylesheet" href="css/nice-select.css" type="text/css">
    <link rel="stylesheet" href="css/owl.carousel.min.css"
type="text/css">
    <link rel="stylesheet" href="css/slicknav.min.css" type="text/css">
    <link rel="stylesheet" href="css/style.css" type="text/css">
</head>

<body>
    <!-- Page Preloder -->
    <div id="preloder">
        <div class="loader"></div>
```

```html
    </div>

    <!-- Offcanvas Menu Begin -->
    <div class="offcanvas-menu-overlay"></div>
    <div class="offcanvas-menu-wrapper">
        <div class="offcanvas__option">
            <div class="offcanvas__links">
                <a href="login1.html">Sign in</a>
                <a href="#">FAQs</a>
            </div>
            <div class="offcanvas__top__hover">
                <span>Usd <i class="arrow_carrot-down"></i></span>
                <ul>
                    <li>USD</li>
                    <li>INR</li>
                    <li>USD</li>
                </ul>
            </div>
        </div>
        <div class="offcanvas__nav__option">
            <a href="#" class="search-switch"><img
src="img/icon/search.png" alt=""></a>
            <a href="#"><img src="img/icon/heart.png" alt=""></a>
            <a href="#"><img src="img/icon/cart.png" alt="">
<span>0</span></a>
            <div class="price">   RS 0.00</div>
        </div>
        <div id="mobile-menu-wrap"></div>
        <div class="offcanvas__text">

        </div>
    </div>
    <!-- Offcanvas Menu End -->

    <!-- Header Section Begin -->
    <header class="header">
        <div class="header__top">
            <div class="container">
                <div class="row">
                    <div class="col-lg-6 col-md-7">
                        <div class="header__top__left">

                        </div>
                    </div>
                    <div class="col-lg-6 col-md-5">
                        <div class="header__top__right">
```

```html
                              <div class="header__top__links">
                                  <a href="login1.html">Sign in</a>
                                  <a href="#">FAQs</a>
                              </div>
                              <div class="header__top__hover">
                                  <span>Usd <i class="arrow_carrot-
down"></i></span>

                                  <ul>
                                      <li>USD</li>
                                      <li>INR</li>
                                      <li>USD</li>
                                  </ul>
                              </div>
                          </div>
                      </div>
                  </div>
              </div>
              <div class="container">
                  <div class="row">
                      <div class="col-lg-3 col-md-3">
                          <div class="header__logo">
                              <a href="./index.html"><img src="img/logo.jpg"
alt=""></a>
                          </div>
                      </div>
                      <div class="col-lg-6 col-md-6">
                          <nav class="header__menu mobile-menu">
                              <ul>
                                  <li class="active"><a
href="./index.html">Home</a></li>
                                  <li><a href="./shop.html">Shop</a></li>
                                  <li><a href="#">Pages</a>
                                      <ul class="dropdown">
                                          <li><a href="./about.html">About
Us</a></li>
                                          <li><a href="./shop-
details.html">Shop Details</a></li>
                                          <li><a href="./shopping-
cart.html">Shopping Cart</a></li>
                                          <li><a href="./checkout.html">Check
Out</a></li>
                                          <!-- <li><a href="./blog-
details.html">Blog Details</a></li> -->
                                      </ul>
                                  </li>
```

```html
                            <!-- <li><a
href="./blog.html">Blog</a></li> -->
                            <li><a
href="./contact.html">Contacts</a></li>
                        </ul>
                    </nav>
                </div>
                <div class="col-lg-3 col-md-3">
                    <div class="header__nav__option">
                        <a href="#" class="search-switch"><img
src="img/icon/search.png" alt=""></a>
                        <a href="#"><img src="img/icon/heart.png"
alt=""></a>
                        <a href="#"><img src="img/icon/cart.png"
alt=""> <span>0</span></a>
                        <div class="price">   RS 0.00</div>
                    </div>
                </div>
            </div>
            <div class="canvas__open"><i class="fa fa-bars"></i></div>
        </div>
    </header>
    <!-- Header Section End -->

    <!-- Hero Section Begin -->
    <section class="hero">
        <div class="hero__slider owl-carousel">
            <div class="hero__items set-bg" data-setbg="img/hero/hero-
1.jpg">
                <div class="container">
                    <div class="row">
                        <div class="col-xl-5 col-lg-7 col-md-8">
                            <div class="hero__text">
                                <h6>Summer Collection</h6>
                                <h2>Fall - Winter Collections 2030</h2>
                                <p>A specialist label creating luxury
essentials. Ethically crafted with an unwavering
                                commitment to exceptional quality.</p>
                                <a
href="https://www.flipkart.com/numero-uno-self-design-high-neck-casual-
men-brown-
sweater/p/itm5a7c0ab7e6877?pid=SWTFU3ZGJFQFNNZH&cmpid=product.share.pp&
_refId=PP.7b8e75ba-5747-42bf-8ffb-
268fa9afc13c.SWTFU3ZGJFQFNNZH&_appId=WA" class="primary-btn">Shop now
<span class="arrow_right"></span></a>
                                <!-- <div class="hero__social">
```

```
                                        <a href="#"><i class="fa fa-
facebook"></i></a>
                                        <a href="#"><i class="fa fa-
twitter"></i></a>
                                        <a href="#"><i class="fa fa-
pinterest"></i></a>
                                        <a href="#"><i class="fa fa-
instagram"></i></a>
                                    </div> -->
                                </div>
                            </div>
                        </div>
                    </div>
                    <div class="hero__items set-bg" data-setbg="img/hero/hero-
2.jpg">
                        <div class="container">
                            <div class="row">
                                <div class="col-xl-5 col-lg-7 col-md-8">
                                    <div class="hero__text">
                                        <h6>Summer Collection</h6>
                                        <h2>Fall - Winter Collections 2030</h2>
                                        <p>A specialist label creating luxury
essentials. Ethically crafted with an unwavering
                                        commitment to exceptional quality.</p>
                                        <a
href="https://www.hm.com.cn/en_cn/0556957003.html" class="primary-
btn">Shop now <span class="arrow_right"></span></a>
                                        <div class="hero__social">
                                            <a href="#"><i class="fa fa-
facebook"></i></a>
                                            <a href="#"><i class="fa fa-
twitter"></i></a>
                                            <a href="#"><i class="fa fa-
pinterest"></i></a>
                                            <a href="#"><i class="fa fa-
instagram"></i></a>
                                        </div>
                                    </div>
                                </div>
                            </div>
                        </div>
                    </div>
                </div>
            </div>
        </section>
        <!-- Hero Section End -->
```

```html
<!-- Banner Section Begin -->
<section class="banner spad">
    <div class="container">
        <div class="row">
            <div class="col-lg-7 offset-lg-4">
                <div class="banner__item">
                    <div class="banner__item__pic">
                        <img src="img/banner/banner-1.jpg" alt="">
                    </div>
                    <div class="banner__item__text">
                        <h2>Clothing Collections 2022</h2>
                        <a href="hoody.html">Shop now</a>
                    </div>
                </div>
            </div>
            <div class="col-lg-5">
                <div class="banner__item banner__item--middle">
                    <div class="banner__item__pic">
                        <img src="img/banner/banner-2.jpg" alt="">
                    </div>
                    <div class="banner__item__text">
                        <h2>Accessories</h2>
                        <a href="Accessories.html">Shop now</a>
                    </div>
                </div>
            </div>
            <div class="col-lg-7">
                <div class="banner__item banner__item--last">
                    <div class="banner__item__pic">
                        <img src="img/banner/banner-3.jpg" alt="">
                    </div>
                    <div class="banner__item__text">
                        <h2>Shoes Spring 2022</h2>
                        <a href="SHOES.html">Shop now</a>
                    </div>
                </div>
            </div>
        </div>
    </div>
</section>
<!-- Banner Section End -->

<!-- Product Section Begin -->
<section class="product spad">
    <div class="container">
```

```html
            <div class="row">
                <div class="col-lg-12">
                    <ul class="filter__controls">
                        <li class="active" data-filter="*">Best
Sellers</li>
                        <li data-filter=".new-arrivals">New
Arrivals</li>
                        <li data-filter=".hot-sales">Hot Sales</li>
                    </ul>
                </div>
            </div>
            <div class="row product__filter">
                <div class="col-lg-3 col-md-6 col-sm-6 col-md-6 col-sm-
6 mix new-arrivals">
                    <div class="product__item">
                        <div class="product__item__pic set-bg" data-
setbg="img/product/product-1.jpg">
                            <span class="label">New</span>
                            <ul class="product__hover">
                                <li><a href="#"><img
src="img/icon/heart.png" alt=""></a></li>
                                <li><a href="#"><img
src="img/icon/compare.png" alt=""> <span>Compare</span></a></li>
                                <li><a href="#"><img
src="img/icon/search.png" alt=""></a></li>
                            </ul>
                        </div>
                        <div class="product__item__text">
                            <h6>Zara Men Combined leather sneakers</h6>
                            <a href="https://www.amazon.ae/Zara-
Combined-leather-sneakers-2224/dp/B0846LCKW8" class="add-cart">BUY
NOW</a>
                            <div class="rating">
                                <i class="fa fa-star-o"></i>
                                <i class="fa fa-star-o"></i>
                                <i class="fa fa-star-o"></i>
                                <i class="fa fa-star-o"></i>
                                <i class="fa fa-star-o"></i>
                            </div>
                            <h5>   RS 875.24</h5>
                            <style>
                                .btn {
                                  border: none;
                                  background-color: inherit;
                                  padding: 14px 28px;
                                  font-size: 16px;
```

```
                                    cursor: pointer;
                                    display: inline-block;
                                }

                                .btn:hover {background: #eee;}

                                .SOLDOUT {color: orange;}
                                </style>
                                </head>
                                <body>


                                <button class="btn
SOLDOUT">SOLDOUT</button>


                            <div class="product__color__select">
                                <label for="pc-1">
                                    <input type="radio" id="pc-1">
                                </label>
                                <label class="active black" for="pc-2">
                                    <input type="radio" id="pc-2">
                                </label>
                                <label class="grey" for="pc-3">
                                    <input type="radio" id="pc-3">
                                </label>
                            </div>
                        </div>
                    </div>
                </div>
                <div class="col-lg-3 col-md-6 col-sm-6 col-md-6 col-sm-
6 mix hot-sales">
                    <div class="product__item">
                        <div class="product__item__pic set-bg" data-
setbg="img/product/product-2.jpg">
                            <ul class="product__hover">
                                <li><a href="#"><img
src="img/icon/heart.png" alt=""></a></li>
                                <li><a href="#"><img
src="img/icon/compare.png" alt=""> <span>Compare</span></a></li>
                                <li><a href="#"><img
src="img/icon/search.png" alt=""></a></li>
                            </ul>
                        </div>
                        <div class="product__item__text">
                            <h6>Toogood x Carhartt shirt jacket</h6>
```

```
                                    <a
href="https://www.farfetch.com/in/shopping/men/toogood-x-carhartt-
shirt-jacket-item-18519254.aspx?size=22&storeid=9983" class="add-
cart">BUY NOW</a>
                                    <div class="rating">
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                    </div>
                                    <h5>   $403-500</h5>
                                    <div class="product__color__select">
                                        <label for="pc-4">
                                            <input type="radio" id="pc-4">
                                        </label>
                                        <label class="active black" for="pc-5">
                                            <input type="radio" id="pc-5">
                                        </label>
                                        <label class="grey" for="pc-6">
                                            <input type="radio" id="pc-6">
                                        </label>
                                    </div>
                                </div>
                            </div>
                        </div>
                        <div class="col-lg-3 col-md-6 col-sm-6 col-md-6 col-sm-
6 mix new-arrivals">
                            <div class="product__item sale">
                                <div class="product__item__pic set-bg" data-
setbg="img/product/product-3.jpg">
                                    <span class="label">Sale</span>
                                    <ul class="product__hover">
                                        <li><a href="#"><img
src="img/icon/heart.png" alt=""></a></li>
                                        <li><a
href="https://www.amazon.ae/Zara-Combined-leather-sneakers-
2224/dp/B0846LCKW8"><img src="img/icon/compare.png" alt="">
<span>Compare</span></a></li>
                                        <li><a href="https://m.media-
amazon.com/images/I/71+QTxLGa3L._AC_SX342_.jpg"><img
src="img/icon/search.png" alt=""></a></li>
                                    </ul>
                                </div>
                                <div class="product__item__text">
                                    <h6>Black Snekers For Men</h6>
```

```
                              <a
href="https://www.camper.com/en_AU/men/shoes/peu/camper-peu_touring-
K100479-011" class="add-cart">BUY NOW</a>
                                <div class="rating">
                                    <i class="fa fa-star"></i>
                                    <i class="fa fa-star"></i>
                                    <i class="fa fa-star"></i>
                                    <i class="fa fa-star"></i>
                                    <i class="fa fa-star-o"></i>
                                </div>
                                <h5>  $210-310</h5>
                                <div class="product__color__select">
                                    <label for="pc-7">
                                        <input type="radio" id="pc-7">
                                    </label>
                                    <label class="active black" for="pc-8">
                                        <input type="radio" id="pc-8">
                                    </label>
                                    <label class="grey" for="pc-9">
                                        <input type="radio" id="pc-9">
                                    </label>
                                </div>
                            </div>
                        </div>
                    </div>
                    <div class="col-lg-3 col-md-6 col-sm-6 col-md-6 col-sm-
6 mix hot-sales">
                        <div class="product__item">
                            <div class="product__item__pic set-bg" data-
setbg="img/product/product-4.jpg">
                                <ul class="product__hover">
                                    <li><a href="#"><img
src="img/icon/heart.png" alt=""></a></li>
                                    <li><a href="#"><img
src="img/icon/compare.png" alt=""> <span>Compare</span></a></li>
                                    <li><a href="#"><img
src="img/icon/search.png" alt=""></a></li>
                                </ul>
                            </div>
                            <div class="product__item__text">
                                <h6>Mens Solid Color Half Zipper Drawstring
Hem Hoodie With Kangaroo Pocket</h6>
                                <a href="https://www.newchic.in/charmkpr-
hoodies-12200/p-1806378.html" class="add-cart">BUY NOW</a>
                                <div class="rating">
                                    <i class="fa fa-star-o"></i>
```

```html
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                </div>
                                <h5>   RS 2,334.96</h5>
                                <div class="product__color__select">
                                    <label for="pc-10">
                                        <input type="radio" id="pc-10">
                                    </label>
                                    <label class="active black" for="pc-
11">

                                        <input type="radio" id="pc-11">
                                    </label>
                                    <label class="grey" for="pc-12">
                                        <input type="radio" id="pc-12">
                                    </label>
                                </div>
                            </div>
                        </div>
                    </div>
                    <div class="col-lg-3 col-md-6 col-sm-6 col-md-6 col-sm-
6 mix new-arrivals">
                        <div class="product__item">
                            <div class="product__item__pic set-bg" data-
setbg="img/product/product-5.jpg">
                                <ul class="product__hover">
                                    <li><a href="#"><img
src="img/icon/heart.png" alt=""></a></li>
                                    <li><a href="#"><img
src="img/icon/compare.png" alt=""> <span>Compare</span></a></li>
                                    <li><a href="#"><img
src="img/icon/search.png" alt=""></a></li>
                                </ul>
                            </div>
                            <div class="product__item__text">
                                <h6>Black Zara t-shirt</h6>
                                <a
href="https://poshmark.com/listing/Black-Zara-tshirt-
627c9e1b4f1a29a9dcaf3804#utm_source=gdm_unpaid" class="add-cart">BUY
NOW</a>
                                <div class="rating">
                                    <i class="fa fa-star-o"></i>
                                    <i class="fa fa-star-o"></i>
                                    <i class="fa fa-star-o"></i>
                                    <i class="fa fa-star-o"></i>
```

```
                                <i class="fa fa-star-o"></i>
                            </div>
                            <h5>   RS 18.00</h5>
                            <div class="product__color__select">
                                <label for="pc-13">
                                    <input type="radio" id="pc-13">
                                </label>
                                <label class="active black" for="pc-
14">

                                    <input type="radio" id="pc-14">
                                </label>
                                <label class="grey" for="pc-15">
                                    <input type="radio" id="pc-15">
                                </label>
                            </div>
                        </div>
                    </div>
                </div>
                <div class="col-lg-3 col-md-6 col-sm-6 col-md-6 col-sm-
6 mix hot-sales">
                    <div class="product__item sale">
                        <div class="product__item__pic set-bg" data-
setbg="img/product/product-6.jpg">
                            <span class="label">Sale</span>
                            <ul class="product__hover">
                                <li><a href="#"><img
src="img/icon/heart.png" alt=""></a></li>
                                <li><a href="#"><img
src="img/icon/compare.png" alt=""> <span>Compare</span></a></li>
                                <li><a href="#"><img
src="img/icon/search.png" alt=""></a></li>
                            </ul>
                        </div>
                        <div class="product__item__text">
                            <h6>k-j-traders-wool-solid-men-shawl</h6>
                            <a href="https://www.flipkart.com/k-j-
traders-wool-solid-men-
shawl/p/itm10fc252d2d085?pid=SWLFJGTUU7FKBGXH&lid=LSTSWLFJGTUU7FKBGXHYN
KFQZ&marketplace=FLIPKART&cmpid=content_shawl_8965229628_gmc"
class="add-cart">BUY NOW</a>
                            <div class="rating">
                                <i class="fa fa-star"></i>
                                <i class="fa fa-star"></i>
                                <i class="fa fa-star"></i>
                                <i class="fa fa-star"></i>
                                <i class="fa fa-star-o"></i>
```

```
                                    </div>
                                    <h5>   RS 799.00</h5>
                                    <div class="product__color__select">
                                        <label for="pc-16">
                                            <input type="radio" id="pc-16">
                                        </label>
                                        <label class="active black" for="pc-
17">
                                            <input type="radio" id="pc-17">
                                        </label>
                                        <label class="grey" for="pc-18">
                                            <input type="radio" id="pc-18">
                                        </label>
                                    </div>
                                </div>
                            </div>
                        <div class="col-lg-3 col-md-6 col-sm-6 col-md-6 col-sm-
6 mix new-arrivals">
                            <div class="product__item">
                                <div class="product__item__pic set-bg" data-
setbg="img/product/product-7.jpg">
                                    <ul class="product__hover">
                                        <li><a href="#"><img
src="img/icon/heart.png" alt=""></a></li>
                                        <li><a href="#"><img
src="img/icon/compare.png" alt=""> <span>Compare</span></a></li>
                                        <li><a href="#"><img
src="img/icon/search.png" alt=""></a></li>
                                    </ul>
                                </div>
                                <div class="product__item__text">
                                    <h6>HIGH QUALITY LEATHER BAG </h6>
                                    <a href="https://www.nykaafashion.com/aldo-
tan-qiseth220-backpacks/p/5581301" class="add-cart">BUY NOW</a>
                                    <div class="rating">
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                    </div>
                                    <h5>   RS 9,999</h5>
                                    <div class="product__color__select">
                                        <label for="pc-19">
                                            <input type="radio" id="pc-19">
```

```
                                        </label>
                                        <label class="active black" for="pc-
20">

                                            <input type="radio" id="pc-20">
                                        </label>
                                        <label class="grey" for="pc-21">
                                            <input type="radio" id="pc-21">
                                        </label>
                                    </div>
                                </div>
                            </div>
                        </div>
                        <div class="col-lg-3 col-md-6 col-sm-6 col-md-6 col-sm-
6 mix hot-sales">
                            <div class="product__item">
                                <div class="product__item__pic set-bg" data-
setbg="img/product/product-8.jpg">
                                    <ul class="product__hover">
                                        <li><a href="#"><img
src="img/icon/heart.png" alt=""></a></li>
                                        <li><a href="#"><img
src="img/icon/compare.png" alt=""> <span>Compare</span></a></li>
                                        <li><a href="#"><img
src="img/icon/search.png" alt=""></a></li>
                                    </ul>
                                </div>
                                <div class="product__item__text">
                                    <h6>Style Quotient style-quotient-solid-
polo-t-shirt</h6>
                                    <a href="https://www.ajio.com/style-
quotient-solid-polo-t-shirt/p/463562971_navy#gmf" class="add-cart">BUY
NOW</a>
                                    <div class="rating">
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                        <i class="fa fa-star-o"></i>
                                    </div>
                                    <h5>   RS 1499.00</h5>
                                    <div class="product__color__select">
                                        <label for="pc-22">
                                            <input type="radio" id="pc-22">
                                        </label>
                                        <label class="active black" for="pc-
23">
```

```html
                                          <input type="radio" id="pc-23">
                                      </label>
                                      <label class="grey" for="pc-24">
                                          <input type="radio" id="pc-24">
                                      </label>
                                  </div>
                              </div>
                          </div>
                      </div>
                  </div>
          </section>
          <!-- Product Section End -->

          <!-- Categories Section Begin -->
          <section class="categories spad">
              <div class="container">
                  <div class="row">
                      <div class="col-lg-3">
                          <div class="categories__text">
                              <h2>Clothings Hot <br /> <span>Shoe
Collection</span> <br /> Accessories</h2>
                          </div>
                      </div>
                      <div class="col-lg-4">
                          <div class="categories__hot__deal">
                              <img src="img/product-sale.png" alt="">
                              <div class="hot__deal__sticker">
                                  <span>Sale Of</span>
                                  <h5>   RS 29.99</h5>
                              </div>
                          </div>
                      </div>
                      <div class="col-lg-4 offset-lg-1">
                          <div class="categories__deal__countdown">
                              <span>Deal Of The Week</span>
                              <h2>Multi-pocket  Bag Black</h2>
                              <div class="categories__deal__countdown__timer"
id="countdown">
                                  <div class="cd-item">
                                      <span>3</span>
                                      <p>Days</p>
                                  </div>
                                  <div class="cd-item">
                                      <span>1</span>
                                      <p>Hours</p>
```

```
                                            </div>
                                            <div class="cd-item">
                                                <span>50</span>
                                                <p>Minutes</p>
                                            </div>
                                            <div class="cd-item">
                                                <span>18</span>
                                                <p>Seconds</p>
                                            </div>
                                        </div>
                                        <a href="https://www.flipkart.com/mandava-
suede-leather-drawstring-backpack-unisex-sack-cinch-school-college-gym-
bag-14-l/p/itm85904d434b52e" class="primary-btn">Shop now</a>
                                    </div>
                                </div>
                            </div>
                        </div>
                </section>
                <!-- Categories Section End -->

                <!-- Instagram Section Begin -->
                <section class="instagram spad">
                    <div class="container">
                        <div class="row">
                            <div class="col-lg-8">
                                <div class="instagram__pic">
                                    <div class="instagram__pic__item set-bg" data-
setbg="img/instagram/instagram-1.jpg"></div>
                                    <div class="instagram__pic__item set-bg" data-
setbg="img/instagram/instagram-2.jpg"></div>
                                    <div class="instagram__pic__item set-bg" data-
setbg="img/instagram/instagram-3.jpg"></div>
                                    <div class="instagram__pic__item set-bg" data-
setbg="img/instagram/instagram-4.jpg"></div>
                                    <div class="instagram__pic__item set-bg" data-
setbg="img/instagram/instagram-5.jpg"></div>
                                    <div class="instagram__pic__item set-bg" data-
setbg="img/instagram/instagram-6.jpg"></div>
                                </div>
                            </div>
                            <div class="col-lg-4">
                                <div class="instagram__text">
                                    <h2>Instagram</h2>
                                    <p>Lorem ipsum dolor sit amet, consectetur
adipiscing elit, sed do eiusmod tempor incididunt ut
                                        labore et dolore magna aliqua.</p>
```

```html
                    <h3>#Fashion-bot</h3>
                </div>
            </div>
        </div>
    </section>
    <!-- Instagram Section End -->

    <!-- Latest Blog Section Begin -->
    <section class="latest spad">
        <div class="container">
            <div class="row">
                <div class="col-lg-12">
                    <div class="section-title">
                        <span>Latest News</span>
                        <h2>Fashion New Trends</h2>
                    </div>
                </div>
            </div>
            <div class="row">
                <div class="col-lg-4 col-md-6 col-sm-6">
                    <div class="blog__item">
                        <div class="blog__item__pic set-bg" data-
setbg="img/blog/blog-1.jpg"></div>
                        <div class="blog__item__text">
                            <span><img src="img/icon/calendar.png"
alt=""> 16 December 2022</span>
                            <h5>What Curling Irons Are The Best
Ones</h5>
                            <a href="#">Read More</a>
                        </div>
                    </div>
                </div>
                <div class="col-lg-4 col-md-6 col-sm-6">
                    <div class="blog__item">
                        <div class="blog__item__pic set-bg" data-
setbg="img/blog/blog-2.jpg"></div>
                        <div class="blog__item__text">
                            <span><img src="img/icon/calendar.png"
alt=""> 21 December 2022</span>
                            <h5>Eternity Bands Do Last Forever</h5>
                            <a href="#">Read More</a>
                        </div>
                    </div>
                </div>
                <div class="col-lg-4 col-md-6 col-sm-6">
```

```
                    <div class="blog__item">
                        <div class="blog__item__pic set-bg" data-
setbg="img/blog/blog-3.jpg"></div>
                        <div class="blog__item__text">
                            <span><img src="img/icon/calendar.png"
alt=""> 28 December 2022 2022</span>
                            <h5>The Health Benefits Of Sunglasses</h5>
                            <a href="#">Read More</a>
                        </div>
                    </div>
                </div>
            </div>
        </div>
    </section>
    <!-- Latest Blog Section End -->

    <!-- Footer Section Begin -->
    <footer class="footer">
        <div class="container">
            <div class="row">
                <div class="col-lg-3 col-md-6 col-sm-6">
                    <div class="footer__about">
                        <div class="footer__logo">
                            <a href="#"><img src="img/footer-logo.jpg"
alt=""></a>
                        </div>
                        <p>The customer is at the heart of our unique
business model, which includes design.</p>
                        <a href="#"><img src="img/payment.png"
alt=""></a>
                    </div>
                </div>
                <div class="col-lg-2 offset-lg-1 col-md-3 col-sm-6">
                    <div class="footer__widget">
                        <h6>Shopping</h6>
                        <ul>
                            <li><a href="#">Clothing Store</a></li>
                            <li><a href="#">Trending Shoes</a></li>
                            <li><a href="#">Accessories</a></li>
                            <li><a href="#">Sale</a></li>
                        </ul>
                    </div>
                </div>
                <div class="col-lg-2 col-md-3 col-sm-6">
                    <div class="footer__widget">
                        <h6>Shopping</h6>
```
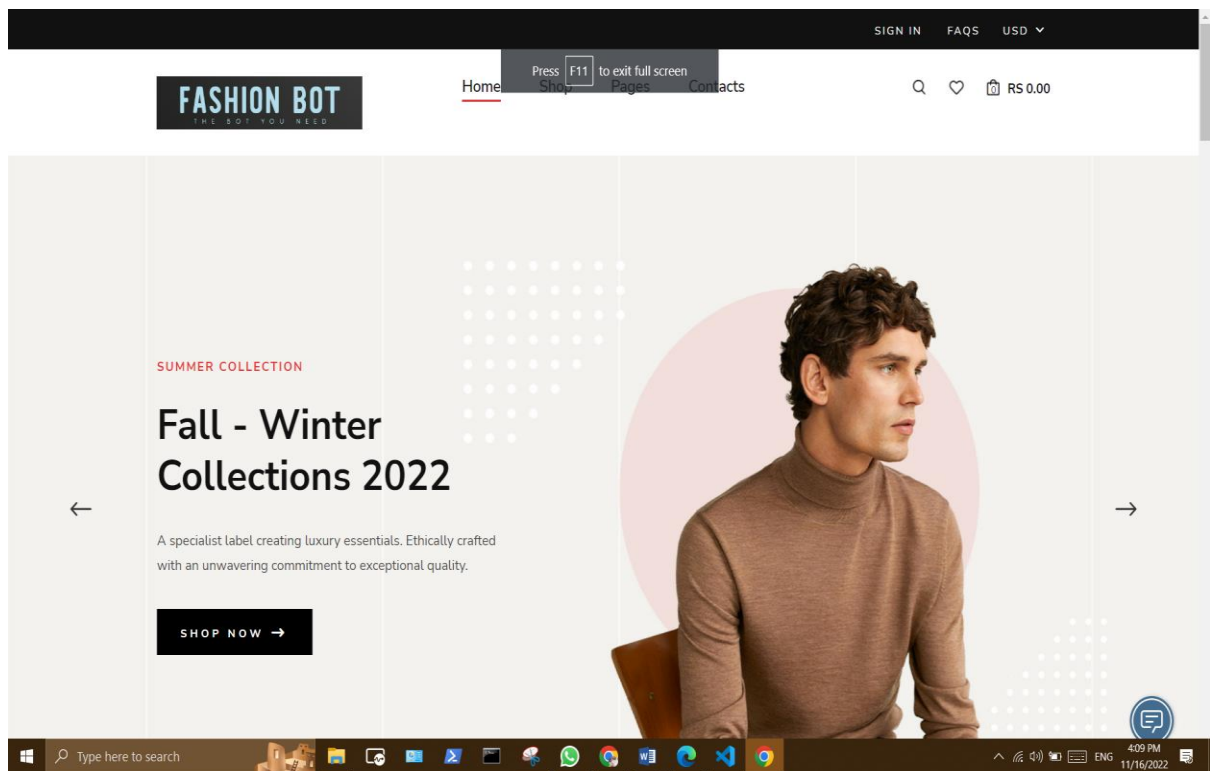
```html
                        <ul>
                            <li><a href="#">Contact Us</a></li>
                            <li><a href="#">Payment Methods</a></li>
                            <li><a href="#">Delivery</a></li>
                            <li><a href="#">Return & Exchanges</a></li>
                        </ul>
                    </div>
                </div>
                <div class="col-lg-3 offset-lg-1 col-md-6 col-sm-6">
                    <div class="footer__widget">
                        <h6>NewLetter</h6>
                        <div class="footer__newslatter">
                            <p>Be the first to know about new arrivals,
look books, sales & promos!</p>
                            <form action="#">
                                <input type="text" placeholder="Your
email">

                                <button type="submit"><span
class="icon_mail_alt"></span></button>
                            </form>
                        </div>
                    </div>
                </div>
            </div>
            <div class="row">
            </div>
        </div>
    </footer>
    <!-- Footer Section End -->

    <!-- Search Begin -->
    <div class="search-model">
        <div class="h-100 d-flex align-items-center justify-content-
center">
            <div class="search-close-switch">+</div>
            <form class="search-model-form">
                <input type="text" id="search-input"
placeholder="Search here.....">
            </form>
        </div>
    </div>
    <!-- Search End -->

<script>
    window.watsonAssistantChatOptions = {
```
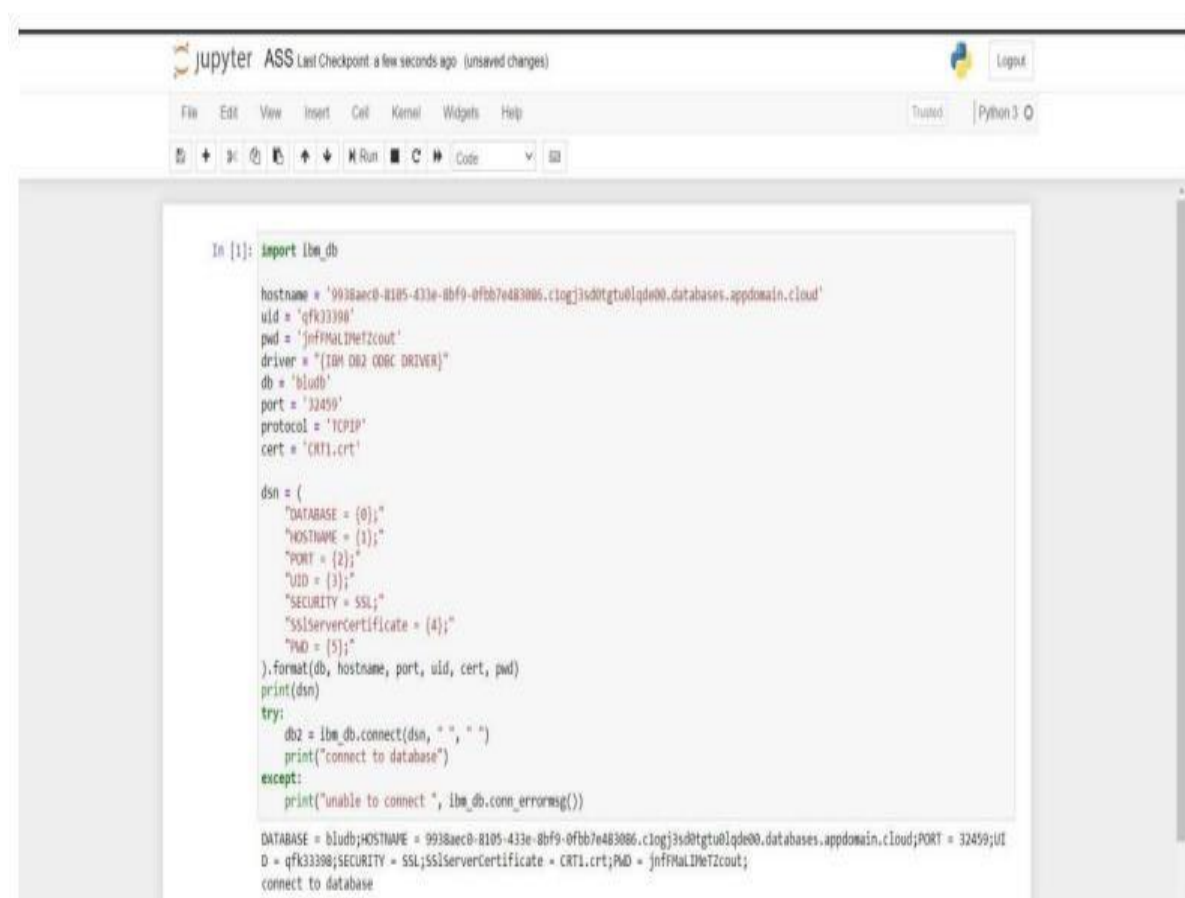
```
    integrationID: "b0b86fb6-9264-4bd3-85a4-8e6f0f9adc8c", // The ID of
this integration.
    region: "jp-tok", // The region your integration is hosted in.
    serviceInstanceID: "c50d6f69-b62f-4ac5-8f7c-c41998e7fe0d", // The
ID of your service instance.
    onLoad: function(instance) { instance.render(); }
  };
  setTimeout(function(){
    const t=document.createElement('script');
    t.src="https://web-
chat.global.assistant.watson.appdomain.cloud/versions/" +
(window.watsonAssistantChatOptions.clientVersion || 'latest') +
"/WatsonAssistantChatEntry.js";
    document.head.appendChild(t);
  });
</script>
    <!-- Js Plugins -->
    <script src="js/jquery-3.3.1.min.js"></script>
    <script src="js/bootstrap.min.js"></script>
    <script src="js/jquery.nice-select.min.js"></script>
    <script src="js/jquery.nicescroll.min.js"></script>
    <script src="js/jquery.magnific-popup.min.js"></script>
    <script src="js/jquery.countdown.min.js"></script>
    <script src="js/jquery.slicknav.js"></script>
    <script src="js/mixitup.min.js"></script>
    <script src="js/owl.carousel.min.js"></script>
    <script src="js/main.js"></script>
</body>
</html>
```
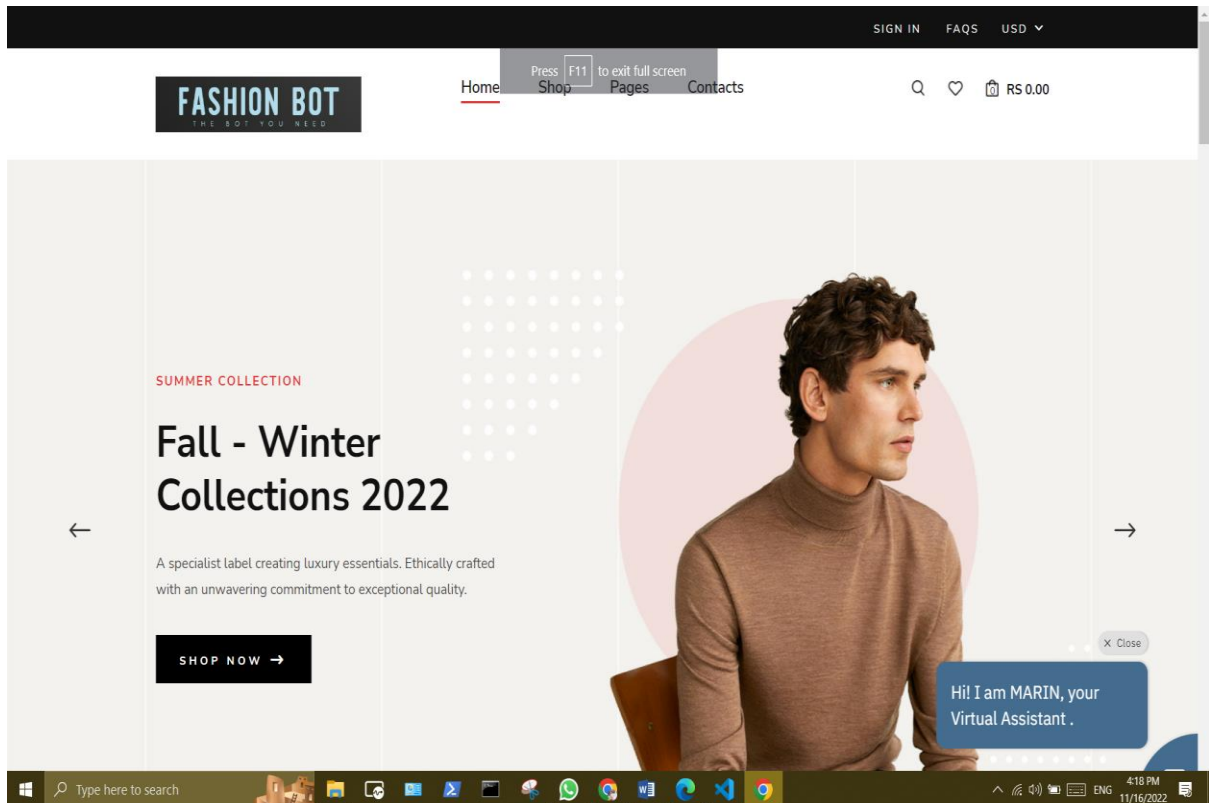
RESULT:

7.2 DATABASE SCHEMA:

8. TESTING

8.1 TEST CASE:
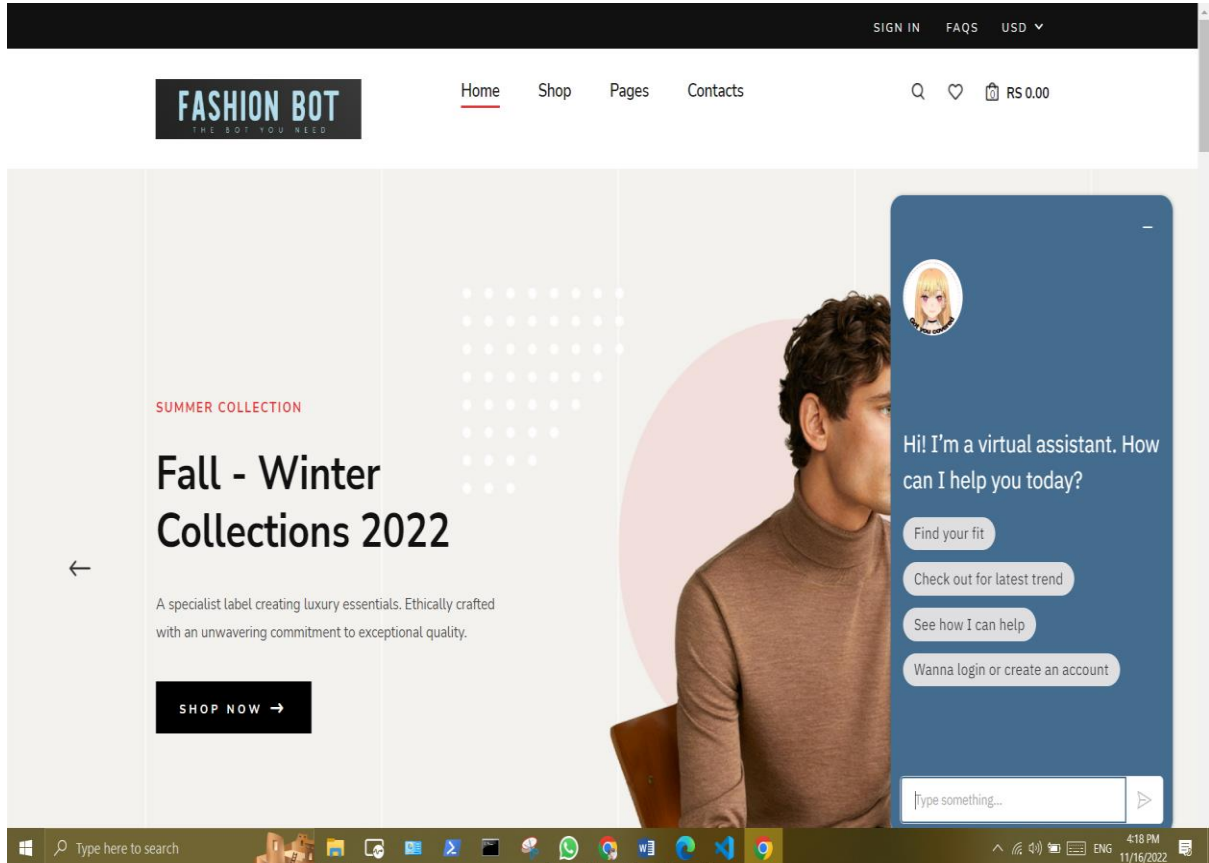
9. RESULT

9.1 PERFORMANCE METRICS:

The performance of a recommendation algorithm is evaluated by using some specific metrics that indicate the accuracy of the system. The type of metric used depends on the type of filtering technique. Root Mean Square Error (RMSE), Receiver Operating Characteristics (ROC), Area Under Cover (AUC), Precision, Recall and F1 score is generally used to evaluate the performance or accuracy of the recommendation algorithms.

Root-mean square error (RMSE). RMSE is widely used in evaluating and comparing the performance of a recommendation system model compared to other models. A lower RMSE value indicates higher performance by the recommendation model. RMSE, as mentioned by [61], can be as represented as follows:

$$RMSE = \sqrt{\frac{1}{N_p} \sum_{u,i} (p_{ui} - r_{ui})^2} \tag{1}$$

where, N_p is the total number of predictions, p_{ui} is the predicted rating that a user u will select an item i and r_{ui} is the real rating.

Precision. Precision can be defined as the fraction of correct recommendations or predictions (known as True Positive) to the total number of recommendations provided, which can be as represented as follows:

$$Precision = \frac{True\ Positive\ (TP)}{True\ Positive\ (TP) + False\ Positive\ (FP)} \tag{2}$$

It is also defined as the ratio of the number of relevant recommended items to the number of recommended items expressed as percentages.

Recall. Recall can be defined as the fraction of correct recommendations or predictions (known as True Positive) to the total number of correct relevant recommendations provided, which can be as represented as follows:

$$Recall = \frac{True\ Positive\ (TP)}{True\ Positive\ (TP) + False\ Negative\ (FN)} \tag{3}$$

It is also defined as the ratio of the number of relevant recommended items to the total number of relevant items expressed as percentages.

F1 Score. F1 score is an indicator of the accuracy of the model and ranges from 0 to 1, where a value close to 1 represents higher recommendation or prediction accuracy. It represents precision and recall as a single metric and can be as represented as follows:

$$F1\ score = 2 \times \frac{Precision * Recall}{Precision + Recall} \tag{4}$$

Coverage. Coverage is used to measure the percentage of items which are recommended by the algorithm among all of the items.

Accuracy. Accuracy can be defined as the ratio of the number of total correct recommendations to the total recommendations provided, which can be as represented as follows:

10.ADVANTAGES & DISADVANTAGES

ADVANTAGES:

- Smart fashion recommender application is the user friendly.

- With the help of chatbot user cand find the products very easily.

- This application used to discover the product based on the user's choice , very easily

  and quickly.

- It have ability to reduce transaction costs for consumers,and increase

  revenue for retailers.

DISADVANTAGES:

- It need active internet connection.

- Privacy concerns.

- Limited collection .

- Improvement in chatbot.
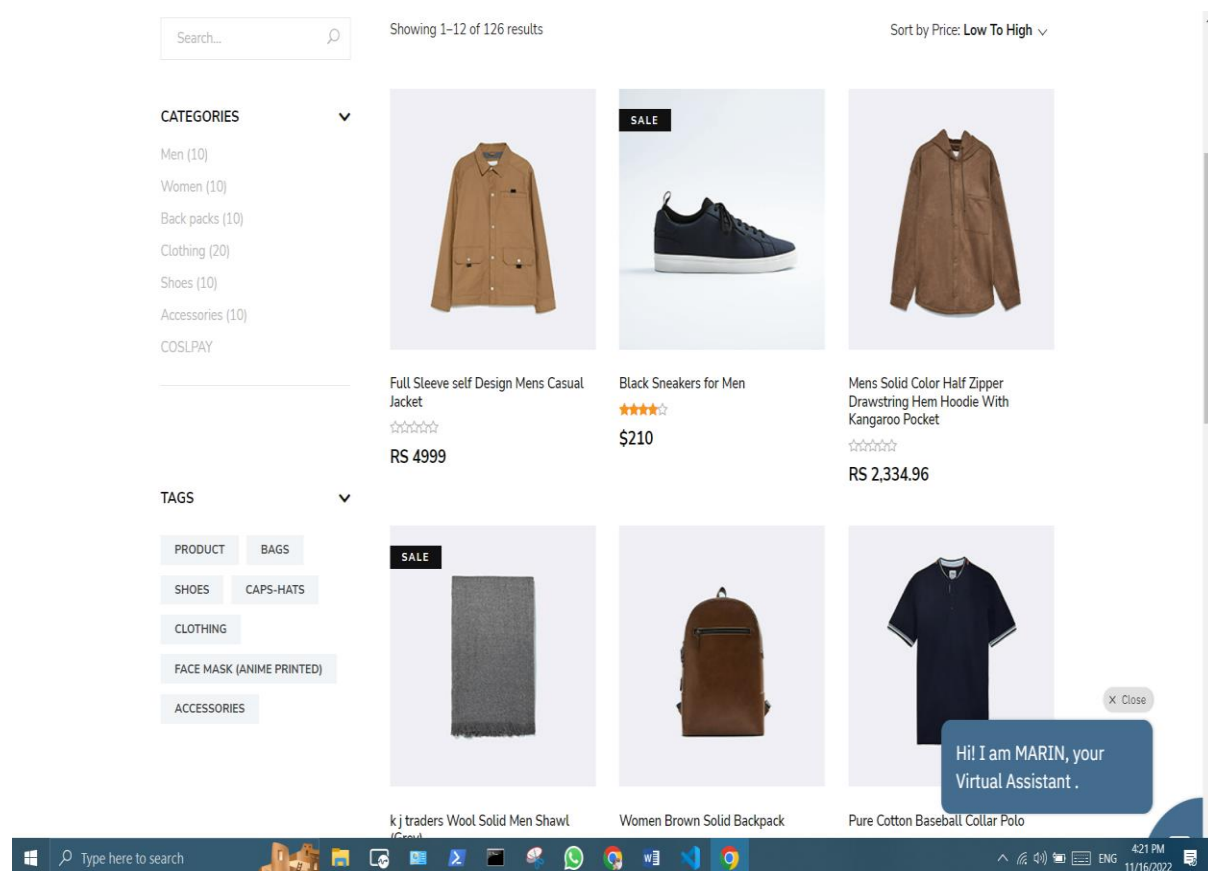
11. CONCLUSION

The Fashion Recommendation System is mainly used to recommend the best possible outfit combinations to a user who has no fashion sense based on their wardrobe . It may not always provide the best possible outfit to wear for an occasion as the system is dependent completely on the clothes present in the user's wardrobe. Also another reason is that fashion is highly dependent on the time period. However the system does a great job in inculcating a fashion sense among the users and can provide the best recommendations based on the user's wardrobe. Since the system is implemented as a website, it is very easy for the end users to access as well as use. The scope of this system can be expanded by including the ability to detect the various design and patterns on clothing, and to increase the number of occasions.

12. FUTURE SCOPE

In the future, to implement this recommendation system to be extended to include male and non-binary fashion items including apparel, footwear, accessories etc. This work can further be enhanced to predict fashion items based on the skin colour and weather conditions.

Future research should concentrate on including time series analysis and accurate categorization of product images based on the variation in colour, trend and clothing style in order to develop an effective recommendation system. The proposed model will follow brand-specific personalization campaigns and hence it will ensure highly curated and tailored. offerings for users. Hence, this research will be highly beneficial for researchers interested in using augmented and virtual reality features to develop recommendation systems.

13.APPENDIX

SOURCE CODE:

LOGIN PAGE HTML:

```html
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body {font-family: Arial, Helvetica, sans-serif;}

/* Full-width input fields */
input[type=text], input[type=password] {
  width: 100%;
  padding: 12px 20px;
  margin: 8px 0;
  display: inline-block;
  border: 1px solid #ccc;
  box-sizing: border-box;
}

/* Set a style for all buttons */
button {
  background-color: #e382ac;
  color: rgb(21, 76, 101);
  padding: 14px 20px;
  margin: 8px 0;
  border: none;
  cursor: pointer;
  width: 100%;
}

button:hover {
  opacity: 0.8;
}

/* Extra styles for the cancel button */
.cancelbtn {
  width: auto;
  padding: 10px 18px;
  background-color: #e2bfbf;
}

/* Center the image and position the close button */
.imgcontainer {
```

```css
    text-align: center;
    margin: 24px 0 12px 0;
    position: relative;
}

img.avatar {
    width: 40%;
    border-radius: 50%;
}

.container {
    padding: 16px;
}

span.psw {
    float: right;
    padding-top: 16px;
}

/* The Modal (background) */
.modal {
    display: none; /* Hidden by default */
    position: fixed; /* Stay in place */
    z-index: 1; /* Sit on top */
    left: 0;
    top: 0;
    width: 100%; /* Full width */
    height: 100%; /* Full height */
    overflow: auto; /* Enable scroll if needed */
    background-color: rgb(0,0,0); /* Fallback color */
    background-color: rgba(0,0,0,0.4); /* Black w/ opacity */
    padding-top: 60px;
}

/* Modal Content/Box */
.modal-content {
    background-color: #fefefe;
    margin: 5% auto 15% auto; /* 5% from the top, 15% from the bottom and
centered */
    border: 1px solid #888;
    width: 80%; /* Could be more or less, depending on screen size */
}

/* The Close Button (x) */
.close {
    position: absolute;
```

```css
  right: 25px;
  top: 0;
  color: #000;
  font-size: 35px;
  font-weight: bold;
}

.close:hover,
.close:focus {
  color: rgb(211, 163, 163);
  cursor: pointer;
}

/* Add Zoom Animation */
.animate {
  -webkit-animation: animatezoom 0.6s;
  animation: animatezoom 0.6s
}

@-webkit-keyframes animatezoom {
  from {-webkit-transform: scale(0)}
  to {-webkit-transform: scale(1)}
}

@keyframes animatezoom {
  from {transform: scale(0)}
  to {transform: scale(1)}
}

/* Change styles for span and cancel button on extra small screens */
@media screen and (max-width: 300px) {
  span.psw {
     display: block;
     float: none;
  }
  .cancelbtn {
     width: 100%;
  }
}
</style>
</head>
<body>

     <img src="img_avatar2.jpg" class="" alt="Avatar" >
   </div>
```

```html
    <div class="container">
      <label for="uname"><b>Username</b></label>
      <input type="text" placeholder="Enter Username" name="uname"
required>

      <label for="psw"><b>Password</b></label>
      <input type="password" placeholder="Enter Password" name="psw"
required>

      <button type="submit">Login</button>
      <label>
        <input type="checkbox" checked="checked" name="remember">
Remember me
      </label>
    </div>

    <div class="container" style="background-color:#f1f1f1">
      <button type="button"
onclick="document.getElementById('id01').style.display='none'"
class="cancelbtn">Cancel</button><button class="cancelbtn">
        <a type="submit" href="login/register page .html">Sign-
up</a></button>
    </div>
  </form>
</div>

<script>
// Get the modal
var modal = document.getElementById('id01');

// When the user clicks anywhere outside of the modal, close it
window.onclick = function(event) {
    if (event.target == modal) {
        modal.style.display = "none";
    }
}
</script>

</body>
</html>
```

REGISTER PAGE HTML:

```html
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body {
  font-family: Arial, Helvetica, sans-serif;
  background-color: rgb(255, 255, 255);
}

* {
  box-sizing: border-box;
}

/* Add padding to containers */
.container {
  padding: 16px;
  background-color: rgb(73, 140, 176);
}

/* Full-width input fields */
input[type=text], input[type=password] {
  width: 100%;
  padding: 15px;
  margin: 5px 0 22px 0;
  display: inline-block;
  border: none;
  background: #f1f1f1;
}

input[type=text]:focus, input[type=password]:focus {
  background-color: #ddd;
  outline: none;
}

/* Overwrite default styles of hr */
hr {
  border: 1px solid #f1f1f1;
  margin-bottom: 25px;
}

/* Set a style for the submit button */
.registerbtn {
  background-color: #a4467b;
  color: white;
```

```
  padding: 16px 20px;
  margin: 8px 0;
  border: none;
  cursor: pointer;
  width: 100%;
  opacity: 0.9;
}

.registerbtn:hover {
  opacity: 1;
}

/* Add a blue text color to links */
a {
  color: dodgerblue;
}

/* Set a grey background color and center the text of the "sign in"
section */
.signin {
  background-color: #f1f1f1;
  text-align: center;
}
</style>
</head>
<body>

      <img src="img_avatar2.jpg" alt="Avatar" class="avatar">
    </div>

<form action="/action_page.php">
  <div class="container">
    <h1>Register</h1>
    <p>Please fill in this form to create an account.</p>
    <hr>

    <label for="email"><b>Email</b></label>
    <input type="text" placeholder="Enter Email" name="email"
id="email" required>

    <label for="psw"><b>Password</b></label>
    <input type="password" placeholder="Enter Password" name="psw"
id="psw" required>

    <label for="psw-repeat"><b>Repeat Password</b></label>
```

```
    <input type="password" placeholder="Repeat Password" name="psw-
repeat" id="psw-repeat" required>
    <hr>
    <p>By creating an account you agree to our <a href="#">Terms &
Privacy</a>.</p>

    <button type="submit" class="registerbtn">Register</button>
  </div>

  <div class="container signin">
    <p>Already have an account? <a href="./login1.html">Sign
in</a>.</p>
  </div>
</form>

</body>
</html>
```

PROJECT DEMO LINKS:

GITHUB LINK: https://github.com/IBM-EPBL/IBM-Project-13059-1659509277.git

PROJECT DEMO VIDEO LINK:

https://www.dropbox.com/s/eqzw83oijicexky/PROJECT%20DEMO%20VIDEO.mp4?dl=0

FASHION-BOT WEBSITE LINK:

https://fashion-sense-bot.s3.jp-tok.cloud-object-storage.appdomain.cloud/index.html