Smart Fashion Recommender Application

Team ID :

PNT2022TMID27550

Submitted By:

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1.INTRODUCTION

1.1 PROJECT OVERVIEW:

With an increase in the standard of living, people's attention gradually moved towards fashion that is concerned to be a popular aesthetic expression. Humans are inevitably drawn towards something that is visually more attractive. This tendency of humans has led to the development of the fashion industry over the course of time. However, given too many options of garments on the e-commerce websites, has presented new challenges to the customers in identifying their correct outfit. Thus, in this project, we proposed a personalized Smart Fashion Recommender Application that generates recommendations for the user based on an input given. Unlike the conventional systems that rely on the user's previous purchases and history, this project aims at using the input given by the user to generate recommendations since many-a-time people see something that they are interested in and tend to look for products that are similar to their preference.

1.2 PURPOSE:

Clothing is a kind of symbol that represents people’s internal perceptions through their outer appearance. It conveys information about their choices, faith, personality, profession, social status, and attitude towards life. Therefore, clothing is believed to be a non verbal way of communicating and a major part of people’s outer appearance. In recent years, the textile and fashion industries have witnessed an enormous amount of growth in fast fashion. Recent technological advancements have enabled consumers to track current fashion trends around the globe, which influence their choices. The fashion choices of consumers depend on many factors, such as demographics, geographic location, individual preferences, interpersonal influences, age, gender, season, and culture. The combination of fashion preferences and the above-mentioned factors associated with clothing choices could transmit the image features for a better understanding of consumer's preferences. On e-commerce platforms, where such numerous choices are available, an efficient recommendation system is required to sort, order, and efficiently convey relevant product content or information to users. Thus it become the predominant channel for shopping in recent years.

2.LITERATURE SURVEY

2.1 EXISTING PROBLEMS:

According to different studies, e-commerce retailers, such as Amazon, eBay, and Shopstyle, and social networking sites, such as Pinterest, Snapchat, Instagram, Facebook, Chictopia, and Lookbook, are now regarded as the most popular media for fashion advices. Still, there are no current research that presents recent advances in research on fashion recommendation systems.

2.2 REFERENCES:

1] TITLE: A Case Study on Recommendation Systems Based on Big Data
AUTHOR: M. Sandeep Kumar and J. Prabhu
PUBLISHED ON: 2019

2] TITLE: Chatbot for E-Commerce Assistance: based on RASA
AUTHOR NAME: M.Mamatha, C.Sudha
PUBLISHED ON: 2021

3] TITLE: Building an Expert Recommender Chatbot
AUTHOR NAME: Jhonny Cerezo, Juraj Kubelka, Romain Robbe's
PUBLISHED ON:2019

4] **TITLE**: An Ecommerce Website Chatbot
AUTHOR NAME: Siddharth Gupta,Deep Borkar
PUBLISHED ON: 2015

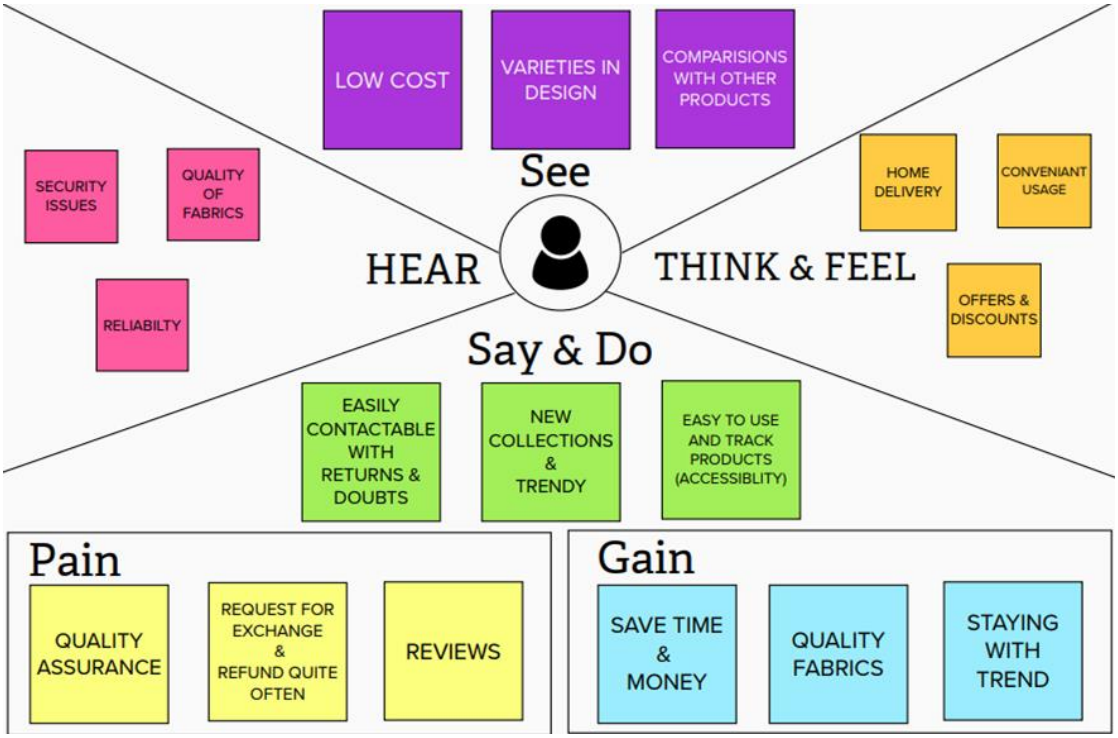
5] TITLE: Implementation of Chatbot in Online Commerce, and Open Innovation
AUTHOR NAME: Maria D. Illescas-Manzano , Noe Vicente Lopez
PUBLISHED ON: 2021

2.3 PROBLEM STATEMENT DEFINITION:

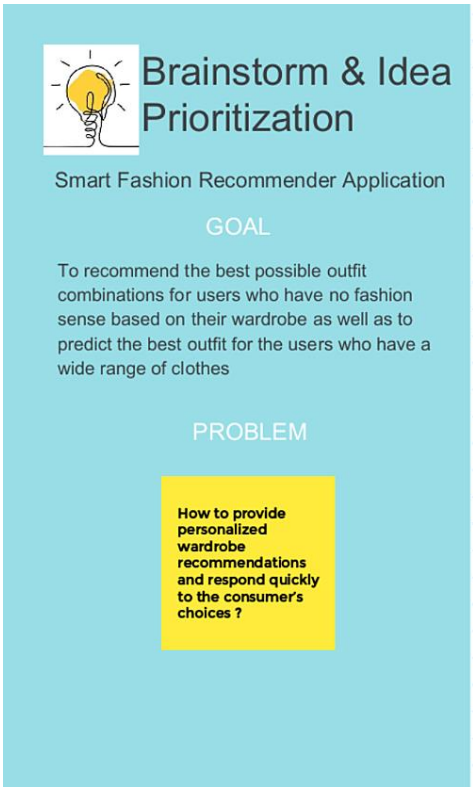
In this project, we are creating a Fashion Recommendation System in order to classify the user's clothes and recommend the most suitable outfit for a given occasion using a recommendation algorithm.The proposed system shows that it can process the user's clothes from the images, identify the type and color of the outfit and finally recommend the most suitable outfit for the given occasion based on the user's existing clothes.

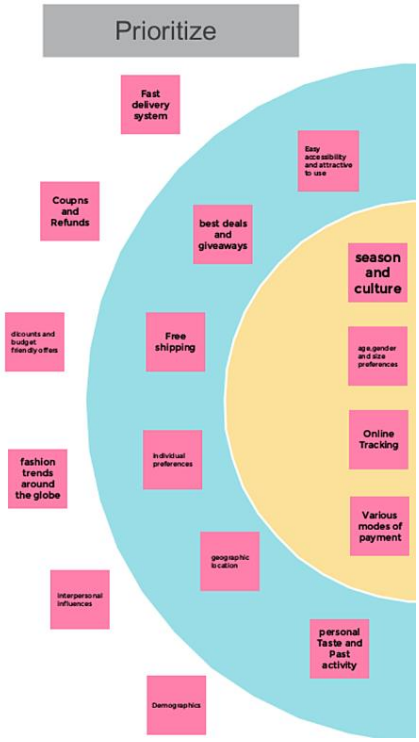
3. IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS:



3.2 IDEATION AND BRAINSTORMING:

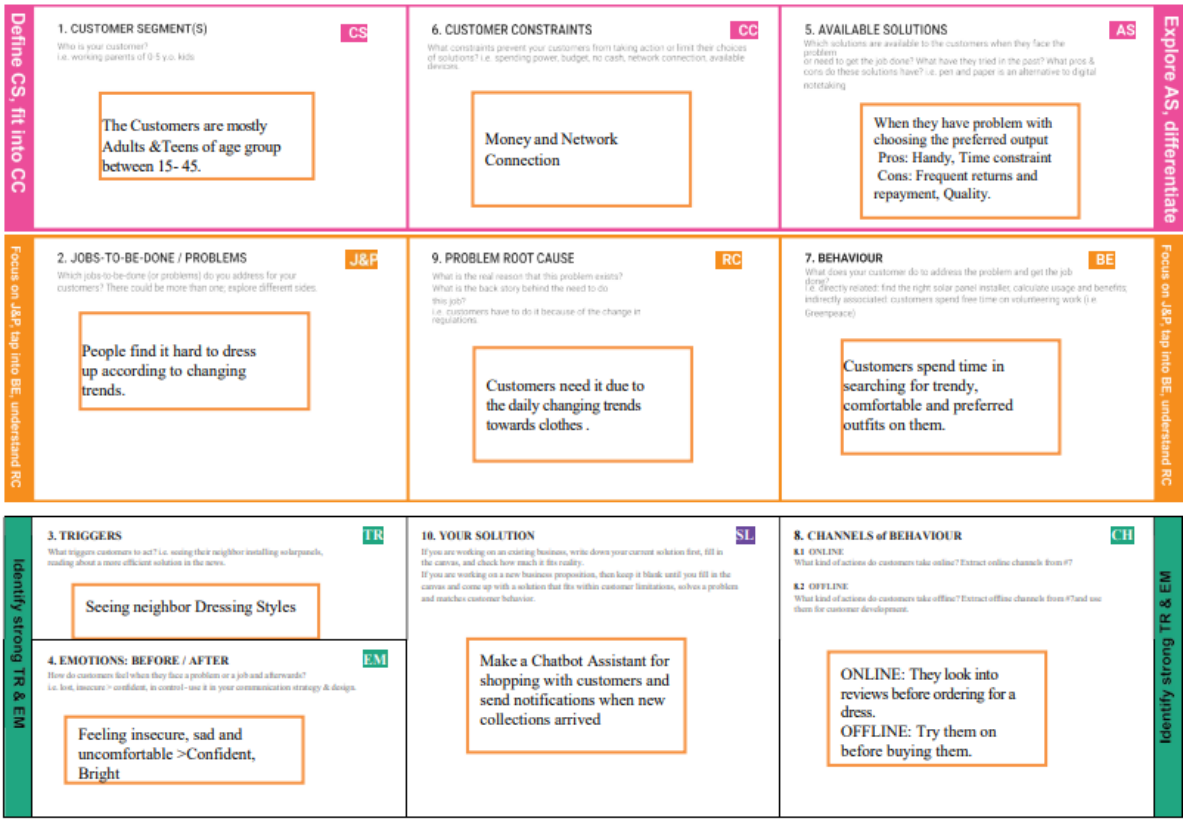




3.3 PROPOSED SOLUTION:

S.No.	Parameter	Description
1.	Problem Statement (Problem to besolved)	Customers find it difficult to search throughmultiple websites in need for fashionable clothes and accessories.
2.	Idea / Solution description	The app provides fashions suited according tothe taste or necessity requested by the customer.
3.	Novelty / Uniqueness	The customer will talk to Chat Bot regarding theProducts. Get the recommendations based on information provided by the user
4.	Social Impact / Customer Satisfaction	User friendly interface. The bot gets inputsfrom the user regarding their needs and provides them with the required output.
5.	Business Model (Revenue Model)	Based on the customer preference, recommendations are made. This yields good revenue to the investor as the demands of the customer is met.
6.	Scalability of the Solution	Expanding the collaboration amongvarious brands.

3.4 PROPOSED SOLUTION FIT:



4. REQUIREMENT ANALYSIS:

4.1 FUNCTIONAL REQUIREMENTS:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story/ Sub-Task)
FR-1	User Registration	Registration throughForm
FR-2	User Interaction	Interaction through the Chat Bot
FR-3	Buying Products	Through theChat Bot Recommendation
FR-4	Track Products	Ask theChat Bot to Track my Orders
FR-5	Return Products	Through the Chat Bot
FR_6	New Collections	Recommended from Chat Bot

4.2 NON FUNCTIONAL REQUIREMENTS:

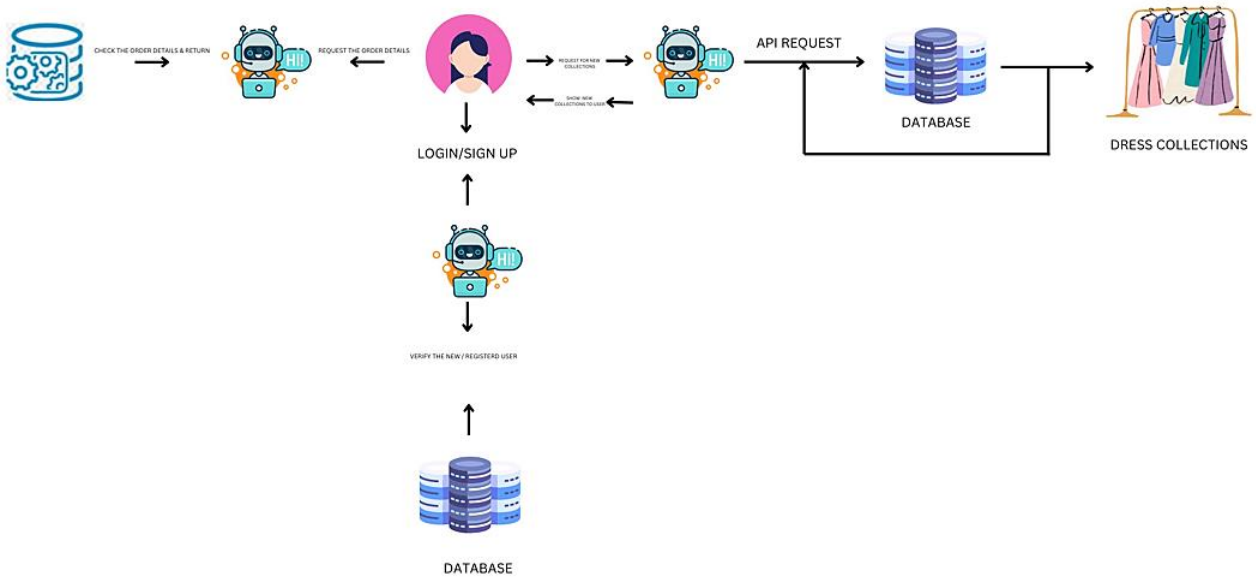
Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Using Android or IOS or windows applications.
NFR-2	**Security**	The user data is stored securely in IBM cloud.
NFR-3	**Reliability**	The Quality of the services are trusted.
NFR-4	**Performance**	Its Provide smooth user experience.
NFR-5	**Availability**	The services are available for 24/7.
NFR-6	**Scalability**	To handle a growing number of users and load.

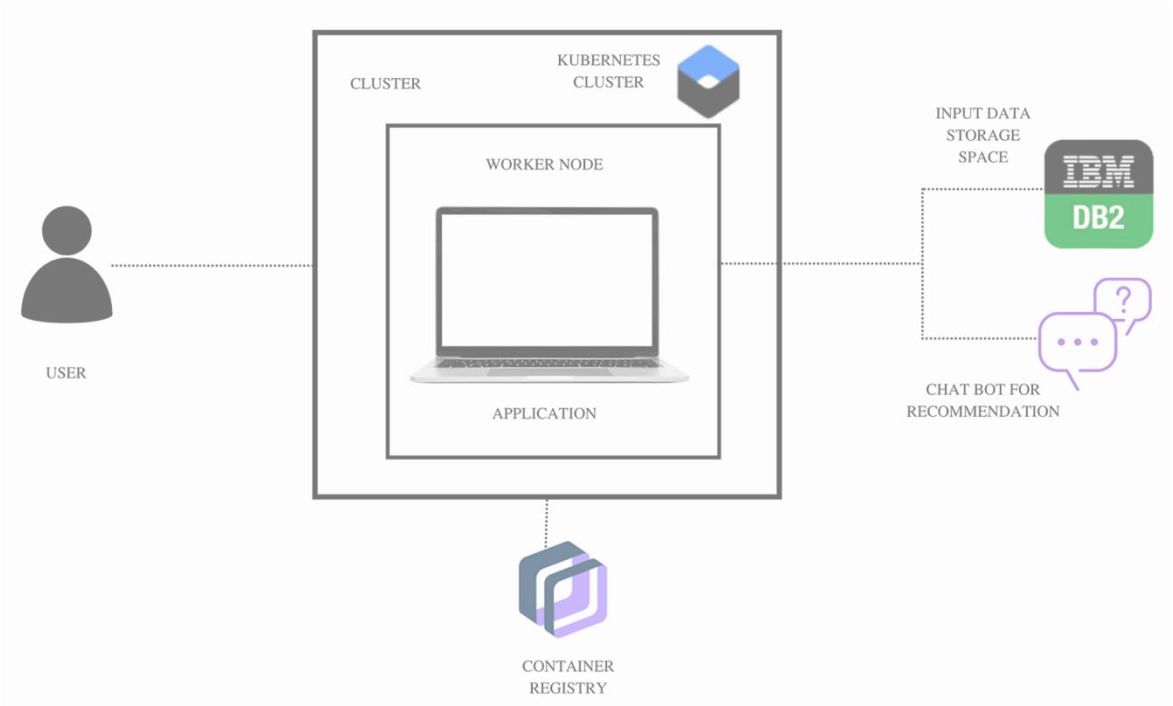
5. PROJECT DESIGN

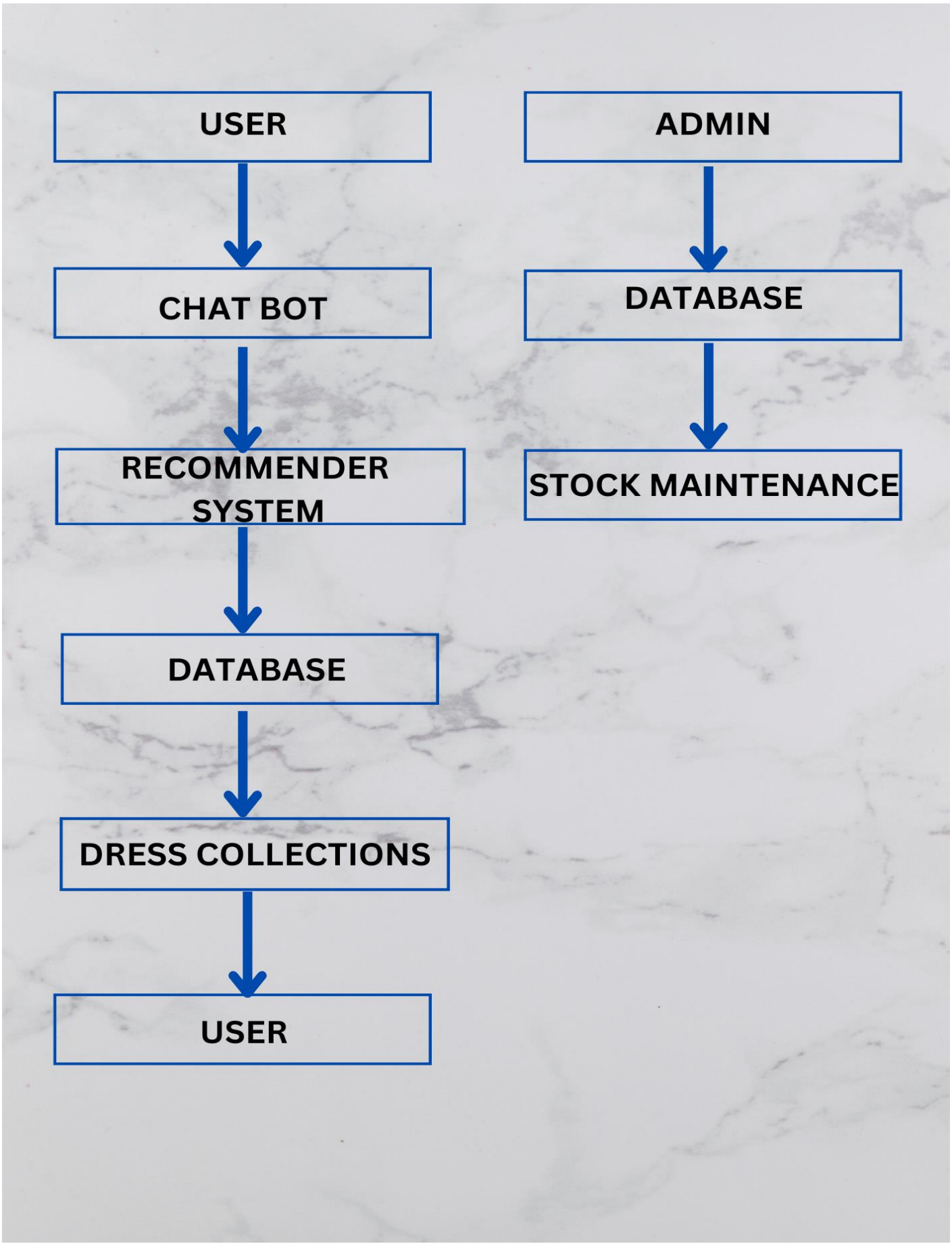
5.1 DATA FLOW DIAGRAM:

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 rightamount 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 & TECHNICAL ARCHITECTURE:




USER
CHAT BOT
RECOMMENDER SYSTEM
DATABASE
DRESS COLLECTIONS
USER
ADMIN
DATABASE
STOCK MAINTENANCE

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 (Mobileuser)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirmingmy 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 applicationthrough Facebook	I can register and access the dashboard with FacebookLogin	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 byentering email& password	I can access my data bylogin	High	Sprint-1
	Dashboard	USN-6	As a user , I can view the dashboard andbuy products		High	Sprint -2
Customer (Webuser)	Registration Login	USN-7	As a user, I can register for the application by entering my email, password, and confirmingmy password.	I can access my account /dashboard		Sprint -1
Customer Care Executive	Contact with Customers	USN-8	As a Customer customers care executive, Isolve the customer Requirements and feedback	I can receive calls from customers	High	Sprint-1
Administrator	Check stock andPrice , orders	USN_9	As a Administrator , I can Check the databaseAnd stock details and buying and selling prices	I am the administrator ofthe company	High	Sprint -2

6. PROJECT PLANNING & SCHEDULING

PRODUCT BACKLOG, SPRINT SCHEDULE, ESTIMATION

Sprint	Functional Requirement	User Story Number	User Story/ Task	Story points	Priority	Team Members
Sprint-1	Setting up App environment	USN-1	As a user, I can register in ICTA Academy and create IBM cloud account.	2	High	Teresa H
Sprint-1		USN-2	As a user, I will create a flask project	1	Low	Gokula Priya R
Sprint-1		USN-3	As a user, I will install IBM Cloud CLI	2	Medium	Mariya Chrispin Sharmina A
Sprint-2	Setting up App environment	USN-4	As a user, I can install Docker CLI	1	Low	Shekinah Dorothy A
Sprint-2		USN-5	As a user,I will Create an account in send grid	2	Medium	Teresa H

Sprint-3	Implementing web application	USN-6	As a user, I Create UI to interact with the application	1	High	Gokula PriyaR
Sprint-3		USN-7	As a user, I Create IBM DB2 and connect withPython	3	High	Shekinah Dorothy A
Sprint-3	Integrating sendgrid service	USN-8	As a user, I will integrating sendgrid with python code	2	High	Mariya Chrispin Sharmina A
Sprint-3	Developing a chatbot	USN-9	As a user, I have to build a chatbot and Integrate to application	1	Medium	Gokula PriyaR
Sprint-4	Development of App in IBM Cloud	USN-10	As a user, I will Containerize the App	1	Low	Mariya Chrispin Sharmina A
Sprint-4		USN-11	As a user, I will upload image to IBM Container registry	2	Medium	Shekinah Dorothy A
Sprint-4		USN-12	As a user, I will deploy App in Kebernetes cluster	3	High	Teresa H

Sprint-4	User panel		As a user 1.Register, Login, Email, Verification 2.Manual Search 3.Order placement, Order Details	3	High	Gokula Priya R

Project Tracker,Velocity & BurndownChart

Sprint	Total Story Points	Duration	Sprint StartDate	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint ReleaseDate (Actual)
Sprint-1	18	6 Days	31 Oct 2022	05 Nov 2022	24	29 Oct 2022
Sprint-2	18	6 Days	09 Oct 2022	15 Nov 2022	24	05 Nov 2022
Sprint-3	18	6 Days	02 Nov 2022	08 Nov 2022	24	12 Nov 2022
Sprint-4	18	6 Days	08 Nov 2022	14 Nov 2022	24	19 Nov 2022

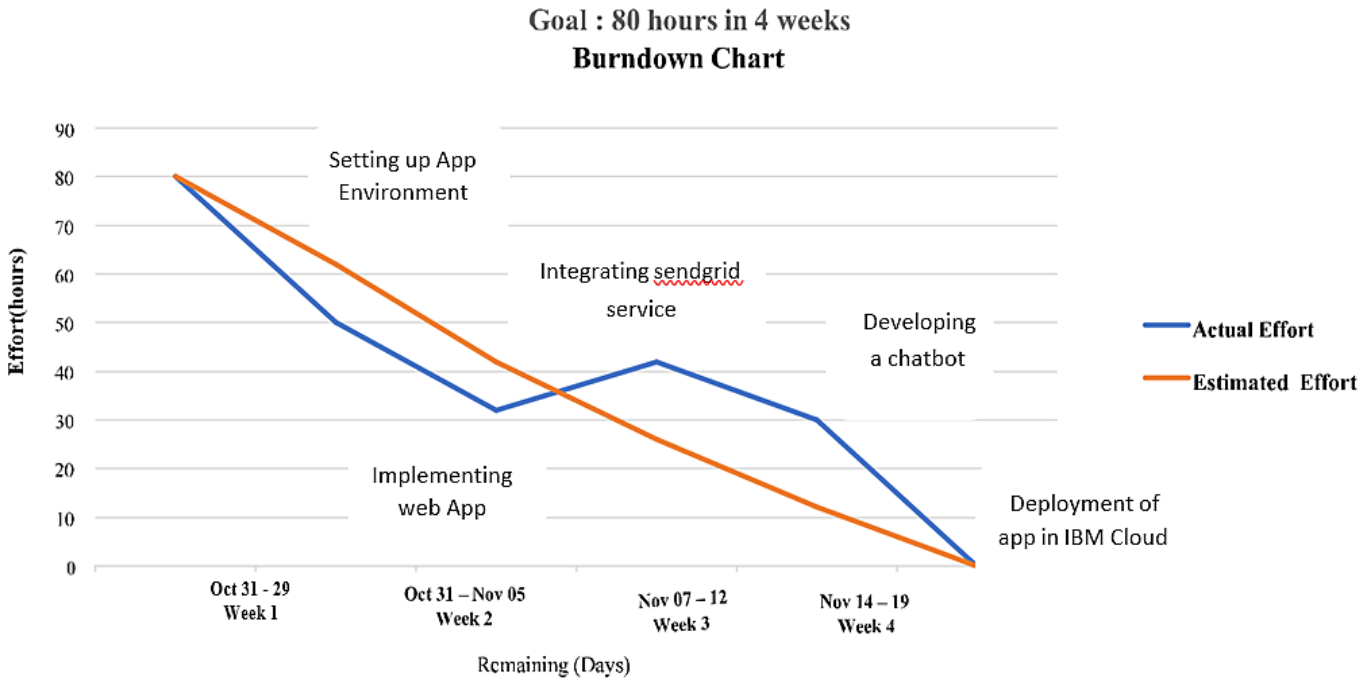
Velocity

Imagine we have a 6-day sprint duration, and the velocity of the team is 18(points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

AV = Sprint Duration/Velocity
AV = 24/6 =4

Burndown Chart:

A burn down chart is a graphical representation of work left to do versus time. It is often used in agilesoftware developmentmethodologies such as Scrum.However, burn down charts can be applied to any project containing measurable progress over time.



7. CODING & SOLUTIONING

LOGIN

```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<title> Login Page </title>
<style>
Body {
  font-family: Calibri, Helvetica, sans-serif;
  background-color: #900C3F;
}
button {
       background-color: ;
       width: 100%;
        color: orange;
        padding: 15px;
        margin: 10px 0px;
        border: none;
        cursor: pointer;
         }
 form {
        border: 3px solid #f1f1f1;
    }
 input[type=text], input[type=password] {
        width: 100%;
        margin: 8px 0;
        padding: 12px 20px;
        display: inline-block;
        border: 2px solid green;
        box-sizing: border-box;
    }
 button:hover {
        opacity: 0.7;
    }
  .cancelbtn {
        width: auto;
        padding: 10px 18px;
```

```
      margin: 10px 5px;
   }
 .container {
      padding: 25px;
      background-color: #581845;
   }
</style>
</head>
<body>
   <center> <h1> User Login</center>
   <form>
      <div class="container">
         <h3><label>Username : </label></h3>
         <input type="text" placeholder="Enter Username" name="username" required>
         <h3><label>Password : </label></h3>
         <input type="password" placeholder="Enter Password" name="password" required>
                                 <button onclick="window.location='file:///C:/Users/v-
judishiah/Desktop/Teresa/index.html'">Submit</button>
         <input type="checkbox" checked="checked"> Remember me
              <button type="button" class="cancelbtn"> Cancel</button>
         Forgot <a href="#"> password? </a>
      </div>
   </form>
</body>
</html>
```

INDEX

```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body {
  margin: 0;
  font-family: Arial, Helvetica, sans-serif;
}
.topnav {
  overflow: hidden;
  background-color: #333;
```

```
}
.topnav a {
  float: left;
  color: #f2f2f2;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
  font-size: 17px;
}
.topnav a:hover {
  background-color: #ddd;
  color: black;
}
.topnav a.active {
  background-color: #04AA6D;
  color: white;
}
p{
            color: white
}
 input {
       display: inline-block;
       background-color: #7b38d8;
       border-radius: 10px;
       border: 4px double #cccccc;
       color: #eeeeee;
       text-align: center;
       font-size: 28px;
       padding: 20px;
       width: 200px;
       -webkit-transition: all 0.5s;
       -moz-transition: all 0.5s;
       -o-transition: all 0.5s;
       transition: all 0.5s;
       cursor: pointer;
       margin: 5px;
     }
</style>
</head>
```

```
<body>
<div class="topnav">
  <a class="active" href="#home">Home</a>
  <a href="products.html">Products</a>
  <a href="about.html">About</a>
  <a href="contact.html">Contact</a>
  <h3><p
align="justify">             &
nbsp;        
               &n
bsp;              &nbs
p;              
        Smart Fashion Recommender</p></h3>
</div>
<div style="padding-left:16px">
        <marquee behaviour="scroll" direction="left">
                <img src="Image/img1.jpg" alt="Trulli" width="1000" height="555">
                <img src="Image/img2.jpg" alt="Trulli" width="1000" height="555">
                <img src="Image/img3.jpg" alt="Trulli" width="1000" height="555">
        </marquee>
</div>
<form action="products.html">
        <input type="submit" value="Shop Now !!!"></input>
</form>
</body>
</html>
```

PRODUCTS

```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body {
  margin: 0;
  font-family: Arial, Helvetica, sans-serif;
}
.topnav {
  overflow: hidden;
```

```
  background-color: #333;
}
.topnav a {
  float: left;
  color: #f2f2f2;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
  font-size: 17px;
}
.topnav a:hover {
  background-color: #ddd;
  color: black;
}
.topnav a.active {
  background-color: #04AA6D;
  color: white;
}
p{
            color: white;
}
.outer-grid {
   display: flex;
   flex-wrap: wrap;
   padding: 0 4px;
}
.inner-grid {
   flex: 25%;
   max-width: 22%;
   padding: 0 4px;
}
.inner-grid img {
   margin-top: 8px;
   width: 100%;
   padding: 10px;
}
@media screen and (max-width: 800px) {
   .inner-grid {
     flex: 50%;
```

```
    max-width: 50%;
  }
}
@media screen and (max-width: 600px) {
  .inner-grid {
    flex: 100%;
    max-width: 100%;
  }
}
</style>
</head>
<body>
<div class="topnav">
  <a href="index.html">Home</a>
  <a class="active" href="#products">Products</a>
  <a href="about.html">About</a>
  <a href="contact.html">Contact</a>
  <h3><p
align="justify">             &
nbsp;         
               &n
bsp;             &nbs
p;              
        Smart Fashion Recommender</p></h3>
</div>
<!-- <div style="padding-left:16px"> -->
<!-- </div> -->
<div class="outer-grid">
        <div class="inner-grid">
                <img src="Image/img4.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 2500</p></b>
                <b><p style="color: black; text-indent: 100px;">Product Rating: 4<progress id="p1"
value="4" max="5"> 4 </progress></p></b>
                <img src="Image/img5.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 1000</p></b>
                <b><p style="color: black; text-indent: 100px;">Product Rating: 5<progress id="p1"
value="5" max="5"> 5 </progress></p></b>
                <img src="Image/img8.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 1500</p></b>
```

```
                <b><p style="color: black; text-indent: 100px;">Product Rating: 3<progress id="p1"
value="3" max="5"> 3 </progress></p></b>
        </div>
        <div class="inner-grid">
                <img src="Image/img9.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 7500</p></b>
                <b><p style="color: black; text-indent: 100px;">Product Rating: 4<progress id="p1"
value="4" max="5"> 4 </progress></p></b>
                <img src="Image/img10.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 5500</p></b>
                <b><p style="color: black; text-indent: 100px;">Product Rating: 5<progress id="p1"
value="5" max="5"> 5 </progress></p></b>
                <img src="Image/img11.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 4000</p></b>
                <b><p style="color: black; text-indent: 100px;">Product Rating: 3.5<progress id="p1"
value="3.5" max="5"> 3.5 </progress></p></b>
        </div>
        <div class="inner-grid">
                <img src="Image/img12.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 2500</p></b>
                <b><p style="color: black; text-indent: 100px;">Product Rating: 4<progress id="p1"
value="4" max="5"> 4 </progress></p></b>
                <img src="Image/img13.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 1500</p></b>
                <b><p style="color: black; text-indent: 100px;">Product Rating: 4<progress id="p1"
value="4" max="5"> 4 </progress></p></b>
                <img src="Image/img14.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 3500</p></b>
                <b><p style="color: black; text-indent: 100px;">Product Rating: 4<progress id="p1"
value="4" max="5"> 4 </progress></p></b>
        </div>
        <div class="inner-grid">
                <img src="Image/img15.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 3500</p></b>
                <b><p style="color: black; text-indent: 100px;">Product Rating: 3.5<progress id="p1"
value="3.5" max="5"> 3.5 </progress></p></b>
                <br><br><br><br>
                <img src="Image/img16.jpg"/>
                <b><p style= "color: black; text-indent: 100px;">Cost: 2500</p></b>
```

```
                    <b><p style="color: black; text-indent: 100px;">Product Rating: 4<progress id="p1"
value="4" max="5"> 4 </progress></p></b>
                    <br><br><br><br><br>
                    <img src="Image/img17.jpg"/>
                    <b><p style= "color: black; text-indent: 100px;">Cost: 1000</p></b>
                    <b><p style="color: black; text-indent: 100px;">Product Rating: 5<progress id="p1"
value="5" max="5"> 5 </progress></p></b>
          </div>
</div>
</body>
</html>
```

ABOUT

```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body {
  margin: 0;
  font-family: Arial, Helvetica, sans-serif;
}
.topnav {
  overflow: hidden;
  background-color: #333;
}
.topnav a {
  float: left;
  color: #f2f2f2;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
  font-size: 17px;
}
.topnav a:hover {
  background-color: #ddd;
  color: black;
}
.topnav a.active {
```

```
  background-color: #04AA6D;
  color: white;
}
p {
        color: white;
}
body {
  background-image: url('Image/about.jpg');
  background-repeat: no-repeat;
  background-attachment: fixed;
  background-size: cover;
}
</style>
</head>
<body>
<div class="topnav">
  <a href="index.html">Home</a>
  <a href="products.html">Products</a>
  <a class="active" href="#about">About</a>
  <a href="contact.html">Contact</a>
  <h3><p
align="justify">             &
nbsp;              &nb
sp;               
               &n
bsp;             &nbs
p;  Smart Fashion Recommender</p></h3>
</div>
<br><br><br>
<center>
        <h1><b>About Us</b></h1>
        <br><br>
        <h4><p align="justify" style="color:
black">              &
nbsp;             &nb
sp;              
          Hi!, we the members of Smart Fashion
Recommender website have created a one stop solution to all your fashion needs,</p></h4>
```

```
<h4><p align="justify" style="color:
black">              &
nbsp;              &nb
sp;               
          which is what you're looking at right
now, "THE SMART FASHION RECOMMENDER". Our aim is to quench your thirst for fashion.</p></h4>
        <h4><p align="justify" style="color:
black">              &
nbsp;              &nb
sp;               
          We always look forward to providing you with
the bestest of our collections at an affordable price. Customer satisfaction </p></h4>
        <h4><p align="justify" style="color:
black">              &
nbsp;              &nb
sp;               
          is our prime goal. Hope you enjoy shopping
with us.</p></h4><br>
        <h4><p align="justify"
style="color:black">            &nb
sp;               
               &n
bsp;         Regards,</p></h4>
        <h4><p align="justify"
style="color:black">            &nb
sp;               
               &n
bsp;         Smart Fashion Recomender
Team</p></h4>
</center>
</body>
</html>
```

CONTACT

```
<!DOCTYPE html>
<html>
        <head>
                <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.min.css">
```

```
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
        body {
                margin: 0;
                font-family: Arial, Helvetica, sans-serif;
        }
        .topnav {
                overflow: hidden;
                background-color: #333;
        }
        .topnav a {
                float: left;
                color: #f2f2f2;
                text-align: center;
                padding: 14px 16px;
                text-decoration: none;
                font-size: 17px;
        }
       .topnav a:hover {
                background-color: #ddd;
                color: black;
        }
        .topnav a.active {
                background-color: #04AA6D;
                color: white;
        }
        p {
                color: white;
        }
        body {
                background-image: url('Image/contact.jpg');
                background-repeat: no-repeat;
                background-attachment: fixed;
                background-size: cover;
        }
        .fa-facebook {
                background: #3B5998;
                color: white;
                height: 60px;
```

```
                    width: 80px;
                    font-size: 50px;
                }
                .fa-instagram {
                    background: #125688;
                    color: white;
                    height: 60px;
                    width: 80px;
                    font-size: 50px;
                }
                .fa-youtube {
                    background: #bb0000;
                    color: white;
                    height: 60px;
                    width: 80px;
                    font-size: 50px;
                }
        </style>
</head>
<div class="topnav">
  <a href="index.html">Home</a>
  <a href="products.html">Products</a>
  <a href="about.html">About</a>
  <a class="active" href="#contact">Contact</a>
  <h3><p
align="justify">             &
nbsp;         
               &n
bsp;              &nbs
p;               
        Smart Fashion Recommender</p></h3>
</div>
<br><br>
<center><h2>For more queries connect with us through the below social media accounts,</h2>
<br>
<ul>
        <li>
                <a href="https://www.facebook.com" class="fa fa-facebook"> </a>
        </li>
```

```
        <br><br><br>
        <li>
                <a href="https://www.instagram.com" class="fa fa-instagram"> </a>
        </li>
        <br><br><br>
        <l1>
                <a href="https://www.youtube.com" class="fa fa-youtube"> </a>
        </li>
</ul>
</html>
```

MAIL INTEGRATION

```
# using SendGrid's Python Library
# https://github.com/sendgrid/sendgrid-python
import os
from sendgrid import SendGridAPIClient
from sendgrid.helpers.mail import Mail
message = Mail(
   from_email='gokulapriya.23ec@licet.ac.in',
   to_emails='teresa.23ec@licet.ac.in',
   subject='Sending with Twilio SendGrid is Fun',
   html_content='<strong>Your order has been confirmed</strong>')
try:
   sg = SendGridAPIClient('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')
   response = sg.send(message)
   print(response.status_code)
   print(response.body)
   print(response.headers)
except Exception as e:
   print(e.message)
```

CREATE A FLASK APP

```
from flask import Flask, render_template
app = Flask(__name__)
 @app.route("/signin")
def sign_in():
      return render_template("signin.html")
@app.route('/signup')
```

```
def sign_up():
    return render_template("signup.html")
@app.route('/')
def home():
    return render_template("home.html")
@app.route('/about')
def about():
    return render_template("about.html")
    if__name__=='__main__':
    app.run(debug=True)
```

HOMEPAGE:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Home</title>
    <!-- Connect Bootstrap -->
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet"
/>
</head>
<body background="C:\Users\Teresa\Desktop\Ass\img\img1.jpg" style="background-size: cover;">
    <!-- NAVBAR -->
    <nav class="navbar navbar-expand bg-light">
        <div class="container-fluid">
            <a class="navbar-
brand" href="./"> <strong>Smart Fashion Recommender Application</strong
> </a>
            <ul class="navbar-nav ms-auto mb-2 mb-lg-0">
                <li class="nav-item">
                    <a class="nav-link active" href="/">Home</a> </li>
                <li class="nav-item">
                    <a class="nav-link active" href='C:\Users\Teresa\Desktop\Ass\about.html'>About
 Us</a> </li>
                <li class="nav-item">
                <a class="nav-link active" href="C:\Users\Teresa\Desktop\Ass\signin.html">Signin</
a> </li>
                <li class="nav-item">
                    <a class="nav-link active" href="C:\Users\Teresa\Desktop\Ass\signup.html">Sig
nup</a> </li>
            </ul>
        </div>
```

```
    </nav>
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js"></script>
<br/>
<h1 style="text-
align: center;color: rgb(87, 0, 250);">Smart Fashion Recommender Application</h1>
<p align="center" style="padding: 5rem;color: rgb(0, 255, 255); font-weight: 900; font-
size:60px; font">Welcome to Smart Fashion Recommender Application.</p>
</body>
</html>
```

ABOUT PAGE:

```
<!DOCTYPE html>
<html lang="en">
<head>
        <meta charset="UTF-8">
        <meta http-equiv="X-UA-Compatible" content="IE=edge">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <title>Document</title>
    </head>
    <body background="C:\Users\Teresa\Desktop\Ass\img\img2.jpg"style="background-size:
    cover;">
        <h1 style="text-align:center;">About us</h1>
        <p style="font-family: Verdana, Geneva, Tahoma, sans-serif;font- size: large;">Hi!, we
    the members of Smart Fashion Recommender website have created a one stop solution to
    all your fashion needs,which is what you're looking at right now, "THE SMART FASHION
    RECOMMENDER". Our aim is to quench your thirst for fashion.We always look forward to
    providing you with the bestest of our collections at an affordable price. Customer
    satisfaction is our prime goal. Hope you enjoy shopping with us
        Regards
        Smart Fashion Recomender Team
            </p>
    </body>
    </html
```

SIGN IN PAGE and DATABASE CONNECTIVITY

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <!-- CSS only-->
```

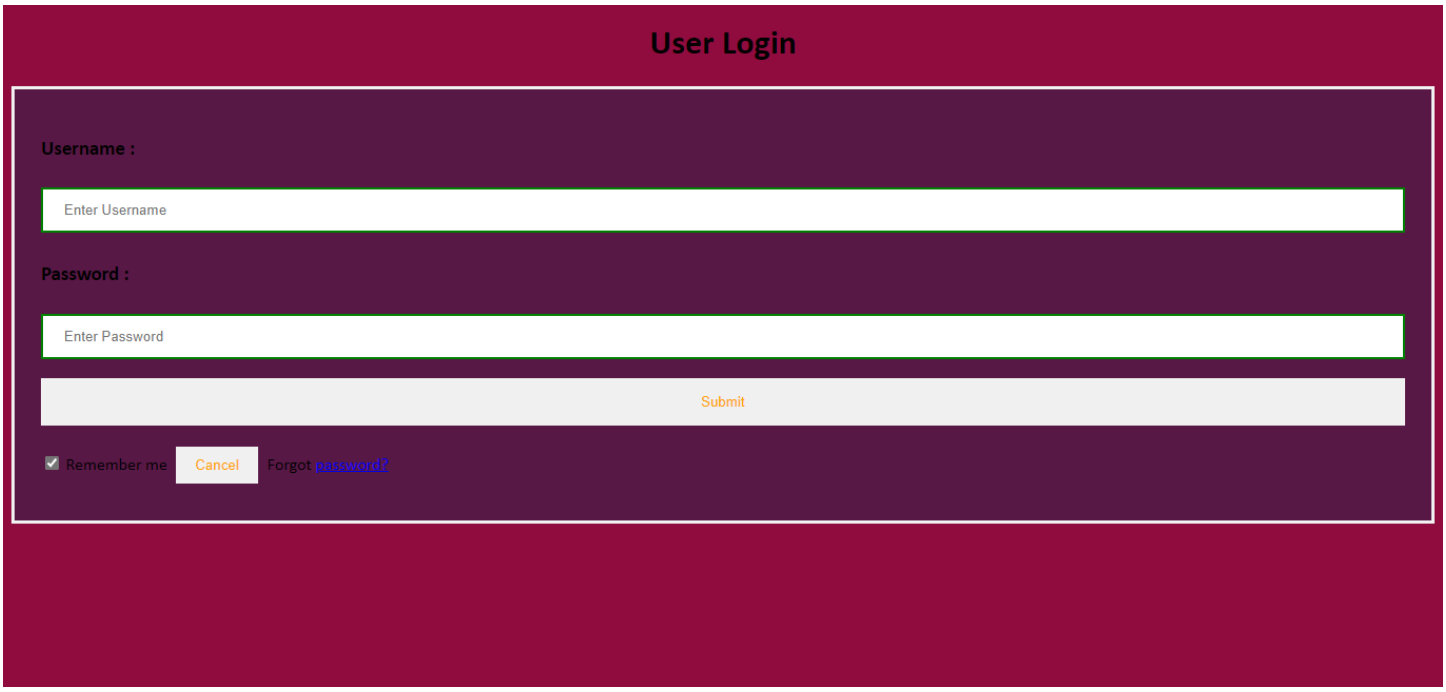
```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css" rel="stylesheet"
integrity="sha384- Zenh87qX5JnK2Jl0vWa8Ck2rdkQ2Bzep5IDxbcnCeuOxjzrPF/et3URy9Bv1WTRi" cross
origin="anonymous">
</head>
<body>
      <form>
            <!-- Email input-->
            <div class="mb-2">
               <input type="email" id="form2Example1" class="form-control" />
               <label class="form-
label" for="form2Example1">Email address</label>
            </div>
                  <!-- Password input -->
                  <div class=" mb-4">
                     <input type="password" id="form2Example2" class="form-control" />
                     <label class="form-
            label" for="form2Example2">Password</label>
                  </div>
                  <!-- 2 column grid layout for inline styling-->
                  <div class="row mb-4">
                     <div class="col d-flex justify-content-center">
                     <div class="col">
                  <!-- Submit button-->
                  <button type="button" class="btn btn-primary btn-block mb-4">Sign
            in</button>
                  <!-- Register buttons -->
                  <div class="text-center">
                     <p>Not a member? <a href="signup.html">Signup</a>
                     <button type="button" class="btn btn-link btn-floating mx-1">
                        <i class="fab fa-facebook-f"></i>
                     </button>
                     <button type="button" class="btn btn-link btn-floating mx-1">
                        <i class="fab fa-google"></i>
                     </button>
                     <button type="button" class="btn btn-link btn-floating mx-1">
                        <i class="fab fa-twitter"></i>
                     </button>
                     <button type="button" class="btn btn-link btn-floating mx-1">
                        <i class="fab fa-github"></i>
                     </button>
                  </div>
               </form>
               <!-- JavaScript Bundle with Popper -->
            <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/js/bootstrap.bundle.min.js"
            integrity="sha384-
```

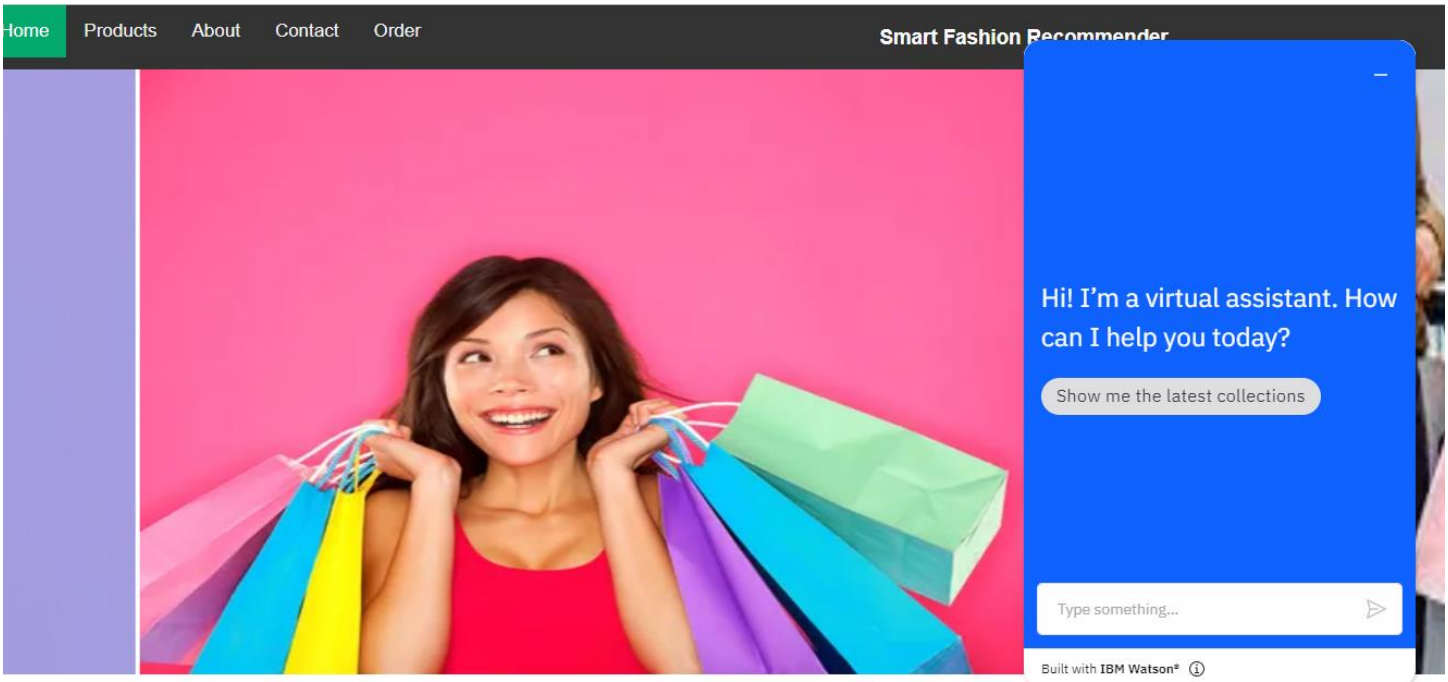
```
OERcA2EqjJCMA+/3y+gxIOqMEjwtxJY7qPCqsdltbNJuaOe923+mo//f6V8Qbsw3" cross
origin="anonymous"></script>
</body>
</html>
```

WATSON ASSISTANT

```
<script>
 window.watsonAssistantChatOptions = {
  integrationID: "fcaaa4c6-08ab-4e0e-a3ce-b6435fd1e12e", // The ID of this integration.
  region: "au-syd", // The region your integration is hosted in.
  serviceInstanceID: "90b722a3-3b41-43c1-beea-2104ada854b8", // 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>
```

8. TESTING


User Login
Username :
Enter Username
Password :
Enter Password
Submit
Remember me
Cancel
Forgot password?


Home
Products
About
Contact
Order
Smart Fashion Recommender
Hi! I'm a virtual assistant. How can I help you today?
Show me the latest collections
Type something...
Built with IBM Watson®

Home Products About Contact Order

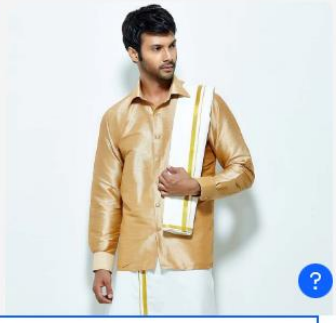
Smart Fashion Recommender

Smart Fashion Recommender

Which one do you choose?

Traditional Western Formal

Traditional



Type something...

Built with IBM Watson®

Home Products About Contact Order

Smart Fashion Recommender

Cost: 2500

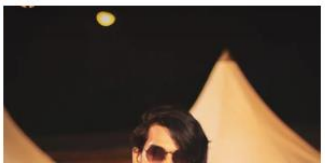
Product Rating: 4

Cost: 2500

Product Rating: 4

Cost: 3500

Product Rating: 3.5



Cost: 2500

Product Rating: 4

Cost: 1500

Product Rating: 4

Cost: 1000

Product Rating: 4

Cost: 1500

Product Rating: 4

Cost: 2500

Product Rating: 5

Cost: 1500

Product Rating: 3

Cost: 5500

Product Rating: 5

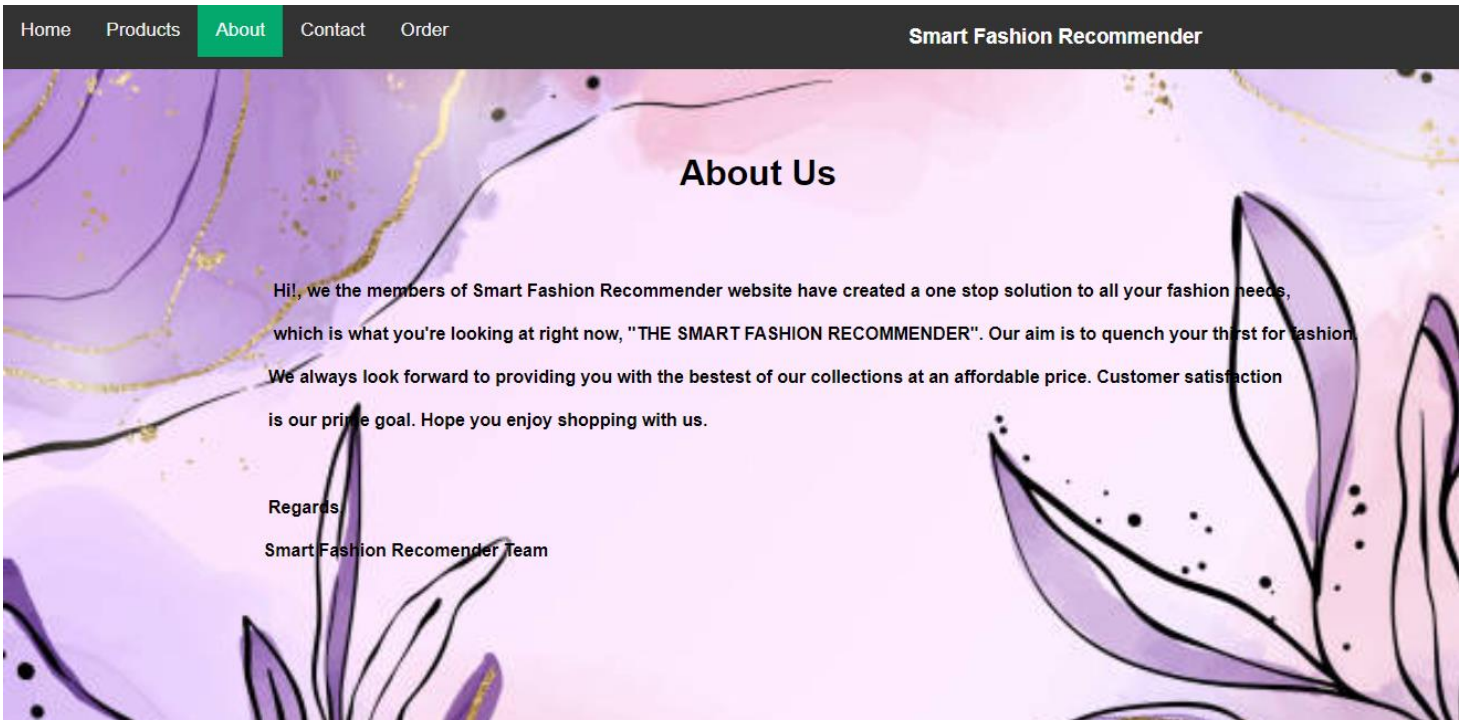
Cost: 4000

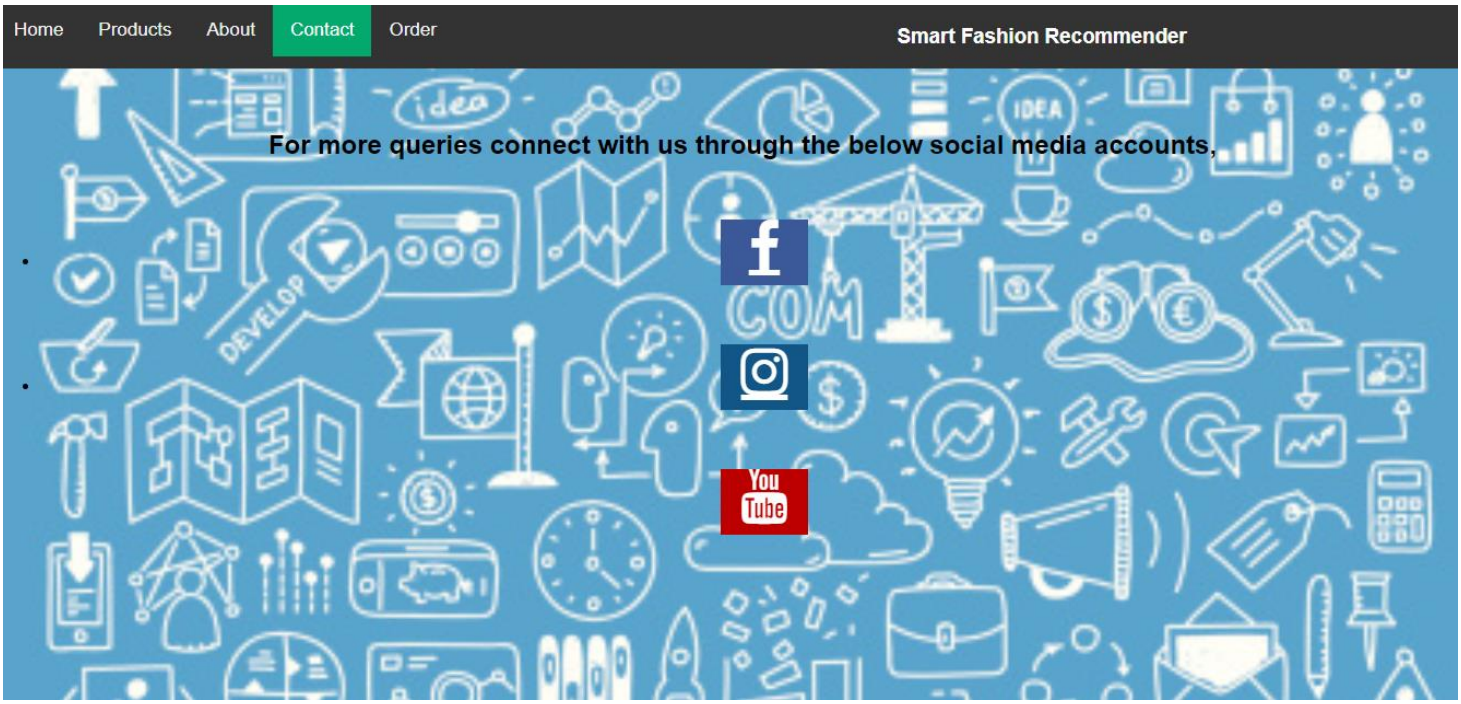
Product Rating: 3.5

Cost: 3500

Product Rating: 4

Cost: 1000


Home
Products
About
Contact
Order
Smart Fashion Recommender
About Us
Hi!, we the members of Smart Fashion Recommender website have created a one stop solution to all your fashion needs,
which is what you're looking at right now, "THE SMART FASHION RECOMMENDER". Our aim is to quench your thirst for fashion.
We always look forward to providing you with the bestest of our collections at an affordable price. Customer satisfaction
is our prime goal. Hope you enjoy shopping with us.
Regards,
Smart Fashion Recomender Team

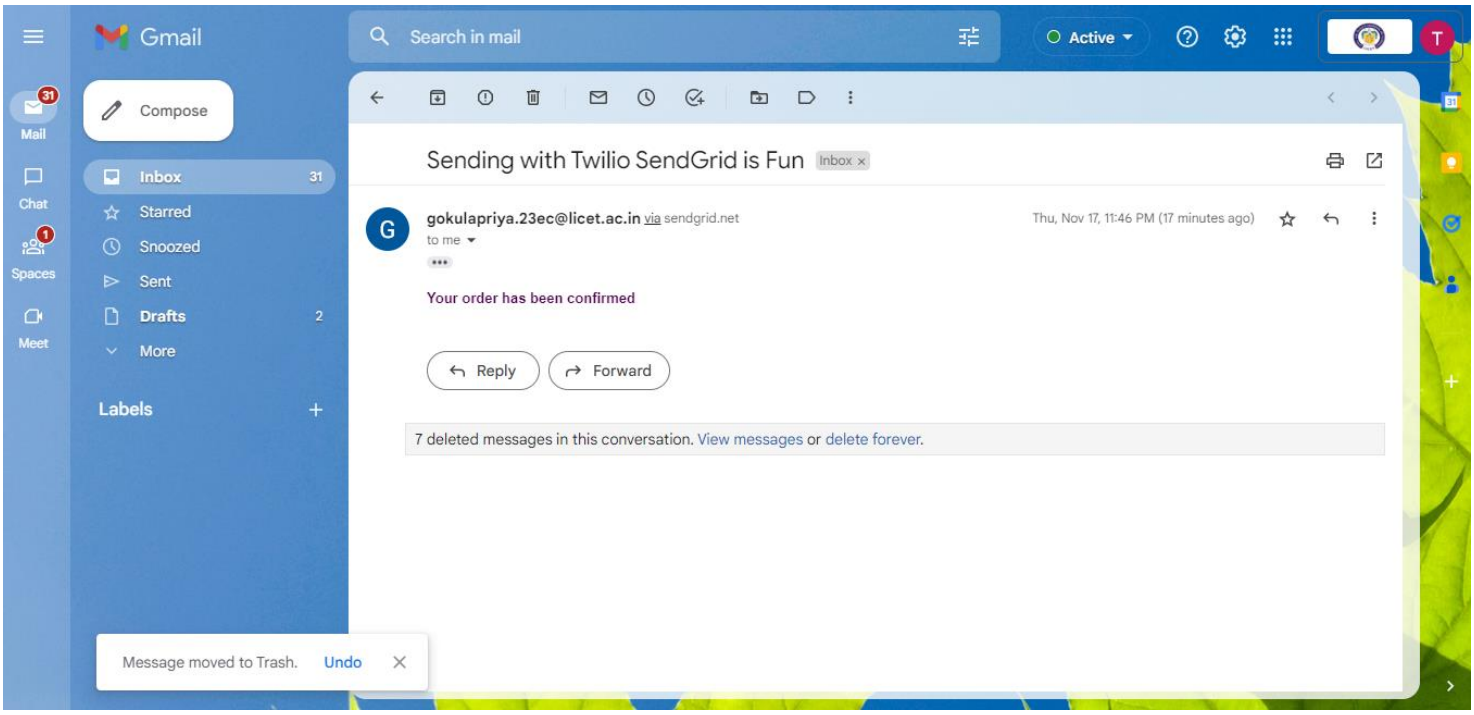

Home
Products
About
Contact
Order
Smart Fashion Recommender
For more queries connect with us through the below social media accounts,
You
Tube

Home Products About Contact Order Smart Fashion Recommender

Your Cart

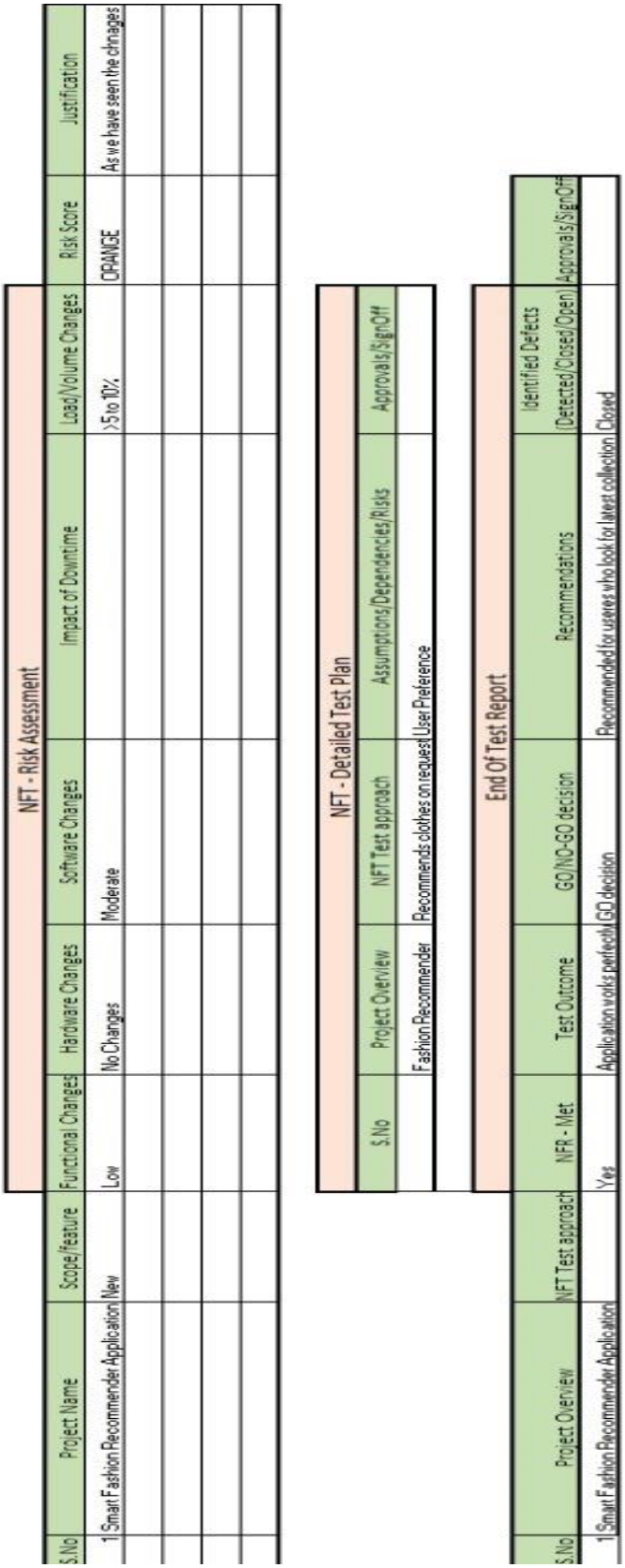
Home Products About Contact Smart Fashion Recommender

Your order has been placed.


Gmail
Search in mail
Active
Compose
Inbox 31
Starred
Snoozed
Sent
Drafts 2
More
Labels
Sending with Twilio SendGrid is Fun
Inbox ×
gokulapriya.23ec@licet.ac.in via sendgrid.net
to me
Thu, Nov 17, 11:46 PM (17 minutes ago)
Your order has been confirmed
Reply
Forward
7 deleted messages in this conversation. View messages or delete forever.
Message moved to Trash.
Undo

9. RESULTS

9.1 PERFORMANCE TESTING:



NFT - Risk Assessment

S.No	Project Name	Scope/Feature	Functional Changes	Hardware Changes	Software Changes	Impact of Downtime	Load/Volume Changes	Risk Score	Justification
1	Smart Fashion Recommender Application	New	Low	No Changes	Moderate		>5 to 10%	CRANGE	As we have seen the chnages

NFT - Detailed Test Plan

S.No	Project Overview	NFT Test approach	Assumptions/Dependencies/Risks	Approvals/SignOff
	Fashion Recommender	Recommends clothes on request/ User Preference		

End Of Test Report

S.No	Project Overview	NFT Test approach	NFR - Met	Test Outcome	GO/NO-GO decision	Recommendations	Identified Defects (Detected/Closed/Open)	Approvals/SignOff
1	Smart Fashion Recommender Application		Yes	Application works perfectly	GO decision	Recommended for users who look for latest collection	Closed	

9.2 UAT:

Acceptance Testing
UAT Execution & Report Submission

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the Smart Fashion Recommender project at the time of the release to User Acceptance Testing (UAT).

2. Defect Analysis

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

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

3. Test Case Analysis

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

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	9	0	4	5
Client Application	51	0	5	46
Security	2	0	0	2
Outsource Shipping	3	0	0	3
Exception Reporting	9	0	1	8
Final Report Output	4	0	0	4
Version Control	2	0	0	2

10. ADVANTAGES & DISADVANTAGES

ADVANTAGES:

- ◊ Drive Traffic
- ◊ Deliver Relevant Content
- ◊ Engage Shoppers
- ◊ Convert Shoppers to Customers
- ◊ Increase Average Order Value
- ◊ Control Merchandising and Inventory Rules
- ◊ Reduce Workload and Overhead

DISADVANTAGES:

- ◊ Significant investments required
- ◊ Too many choices
- ◊ The complex onboarding process
- ◊ Lack of data analytics capability
- ◊ The ‘cold start’ problem
- ◊ Inability to capture changes in user behavior
- ◊ Privacy concerns

11. CONCLUSION

- ✓ We clarified what makes developing fashion recommender systems a necessity for the fashion domain, in this contemporary society, as a competitive advantage leveraging the power of data within employing machine learning methods and AI solutions for different purposes, including marketing, decision making, cross-selling, etc.
- ✓ Representing what makes the fashion domain distinguished from other recommender system domains, we conceptualized the sources of complexity in the fashion domain by illustrating how interconnected these concepts are, as a framework that any fashion recommender system can be defined and understood through it.
- ✓ Focusing on image-based fashion recommender systems, we identified four main tasks in fashion recommender systems, bringing their characteristics to the fore, including cloth-item retrievals, Complementary item recommendation, Outfit recommendation, and Capsule wardrobes.
- ✓ The studies which have been conducted in each category also have been introduced. In addition, we provide the evolvement trajectory of image-based fashion recommender systems, which consists of three main eras, in addition to considerations of the most recent advancements in computer vision and deep learning-based methods.
- ✓ We compared the traditional computer vision techniques versus deep learning.
- ✓ Finally, we categorized the DL-based fashion recommender systems based on employing one single neural network or deep hybrid neural networks with highlighting the methods they used and the input.

12. FUTURE SCOPE

- ✓ Considering the rapid growth of multimedia data, where visual information will be the critical component.
- ✓ More indepth research in applications of multi-model fusion and multi-task learning in fashion recommender systems are required to model recommender system to be capable of profiling users comprehensively.
- ✓ While the majority of researches in fashion recommender systems is mainly based on similaritybased retrieval techniques, there is a need for more studies in the development of new functions such as designing clothes, which are highly demanded in future fashion recommender systems.
- ✓ Most of the current fashion datasets do not contain outfit compatibility annotations, or they are limited in terms of size and the type of annotations they provide.
- ✓ Consequently, most researchers built their dataset, which is a labor-costing process, and most of them are not accessible publicly for further research.
- ✓ So, the other future direction for subsequent studies may be focusing on developing automatic annotation methods, constructing large-scale rich annotated data sets for particular task definitions in fashion recommender systems.
- ✓ From an ethical perspective in fashion recommender systems also there is a need for performing the comprehensive study

13. APPENDIX

SOURCE CODE:

GITHUB: **https://github.com/IBM-EPBL/IBM-Project-37099-1660300461/blob/main/SOURCE%20CODE**

DEMO LINK:

GITHUB: **https://github.com/IBM-EPBL/IBM-Project-37099-1660300461/blob/main/FINAL%20DELIVERABLES**

PROJECT: **https://youtu.be/Xhiek6DcvC0**