

SMART FASHION RECOMMENDER APPLICATION

1.1 PROJECT OVERVIEW

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

In this project you will be working on two modules :

1. Admin and
2. User

Admin:

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

User :

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

Features of Chat bot :

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

1.2 PURPOSE

Fashion is such an industry where luxury goods can only be bought in a few physical boutiques and one to one customer service is crucial. The Internet changed this dramatically, by giving the customers a smooth but a very detached experience of shopping. This particular problem can be solved by Chat bots. Customers can be provided with personalized services through Fashion Chat bot, which can exchange messages, give required suggestions and information

2. LITERATURE SURVEY

2.1 EXISTING PROBLEMS

Unfortunately, with all the ease and convenience of online shopping, a shopping cart cannot say “this dress looks like it was made especially for you, ma’am” or “may I suggest a scarf which would look just right with this blouse?”

Lack of an efficient Chat bot connected with an agent seems makes it hard for the users to search the right product. Users also lack the experience of the review system, that might help them to check if the product is to purchased is good enough as mentioned in the application.

Fashion brands are turning to technology, artificial intelligence, in particular, to recreate that personalized atmosphere of a beauty boutique only right within their online applications.

2.2 REFERENCES

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2.3 PROBLEM STATEMENT DEFINITION

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. People feel difficult when search many websites to find fashion clothes and accessories.

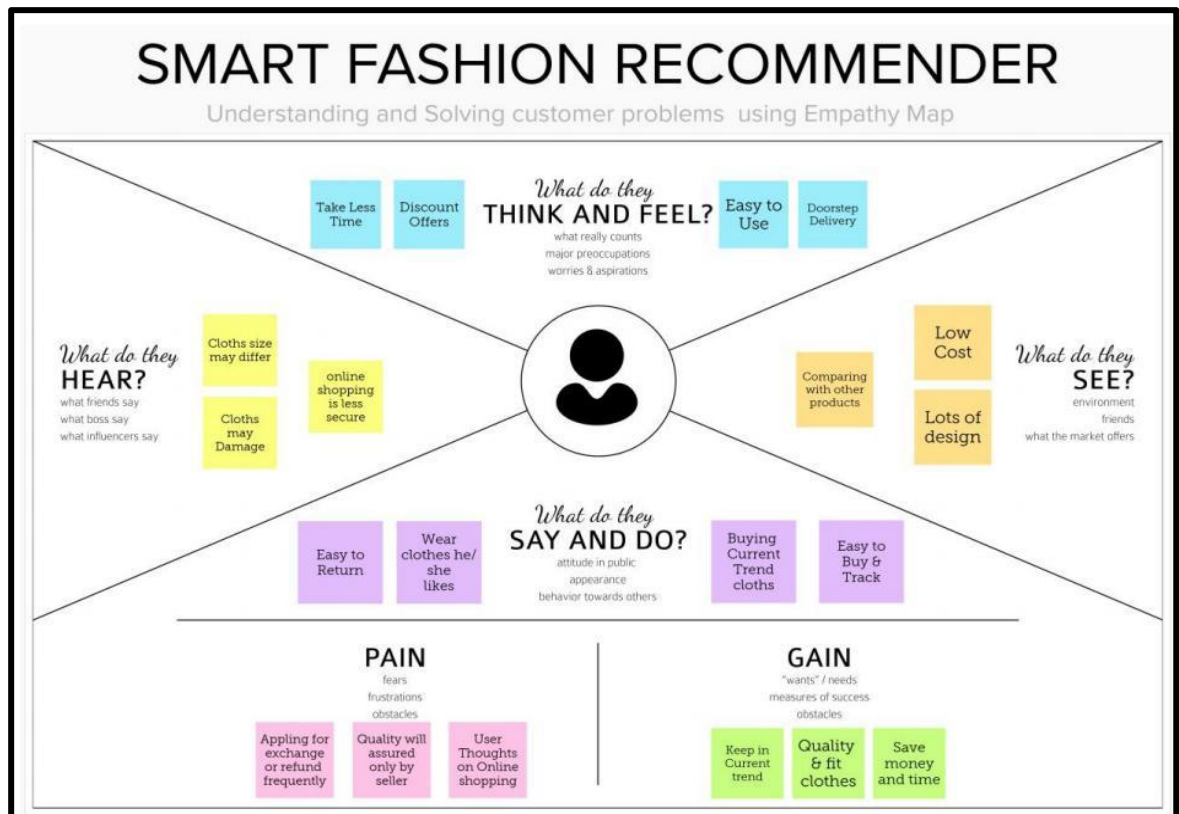
3. IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviour 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.



3.2 IDEATION AND BRAINSTORMING

3.2.1. Brainstorm & Idea Prioritization Template:

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

3.2.2 Brainstorm, Idea Listing and Grouping:

1

Smart Fashion Recommender Application
Solving the user problems on purchasing items online

5 minutes

QUESTION

How might we (your problem statement)?

Key rules of brainstorming

To run an smooth and productive session

1. Stay in topic.

2. Defer judgment.

3. Go for volume.

4. Encourage wild ideas.

5. Listen to others.

6. If possible, be visual.

2

Brainstorm
Write down any ideas that come to mind that address your problem statement.

10 minutes

Prabu K

Cash on Delivery

Shop with Account

Discounts and offers

Transfering Personal Links

Ragupathi M

Lowest Price

Quality product

Personalized

Fast Delivery

Madesh Kumar A

Easy Return

Lowest Price

Personalized

Discounts

Muthu Logesh M

Fast Delivery

Low Price

Easy Return

Personalized

TIP

You can select a sticky note and in this panel (click to start drawing)

3

Prioritize
Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

Importance

If most of these items could get done, what's the biggest impact?

Easy to Solve grid

Costs on Delivery

Reviews of Products

Shopping via the internet

No need to Travel

Online with Low delivery

These Quality

TIP

Participants can use their colours to point at where they want to start on the grid. The facilitator can confirm the grid by using the first quarter holding the #1 key on the keyboard.

3.3 PROPOSED SOLUTION

Project team shall fill the following information in proposed solution template.

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Customer feel difficult when search many websites to find fashion clothes and accessories.
2.	Idea / Solution description	Customer directly make online shopping based on customer choice without any search.
3.	Novelty / Uniqueness	The customer will talk to chat bot regarding the products.
4.	Social Impact / Customer Satisfaction	The user friendly, interface from chat bot finding dress makes customer satisfied.
5.	Business Model (Revenue Model)	The chat bot sells our products to customer.
6.	Scalability of the Solution	We can easily scale our application by increasing the items and products

3.4 PROBLEM SOLUTION FIT

Define CS, fit into CC	1. CUSTOMER SEGMENT(S) CS Who is your customer? i.e. working parents of 0-5 y.o. kids <div>The Customers are Adults and children</div>	6. CUSTOMER CONSTRAINTS CC What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices <div>Money and Network Connection</div>	5. AVAILABLE SOLUTIONS AS Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking <div>Online shopping gives New Collections pros: Easy to use cons: customer confused when have lost of collections</div>	Explore AS, differentiate
	2. JOBS-TO-BE-DONE / PROBLEMS J&P Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides. <div>Users hard to find Trending Fashion Clothes.</div>	9. PROBLEM ROOT CAUSE RC What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations. <div>Customers need to be with new fashions for current trends</div>	7. BEHAVIOUR BE What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace) <div>Customers spend the time to find the new fashion clothes</div>	
Identify strong TR & EM	3. TRIGGERS TR What triggers customers to act? i.e. seeing the ir neighbour installing solar panels, reading about a more efficient solution in the news. <div>Seeing neighbor Dressing Styles</div>	10. YOUR SOLUTION SL If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour. <div>Make a ChatBot Assistant for shopping with customers and send notifications when new collections arrived</div>	8. CHANNELS of BEHAVIOUR CH 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7 8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development. <div>ONLINE: Customers buy the new clothes OFFLINE: Customers will use the clothes</div>	Identify strong TR & EM
	4. EMOTIONS: BEFORE / AFTER EM How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure > confident, in control • use it in your communication strategy & design. <div>Felling Sad and Frustration > Selfconfident</div>			

4.REQUIREMENT ANALAYSIS

4.1 FUNCTIONAL REQUIREMENTS

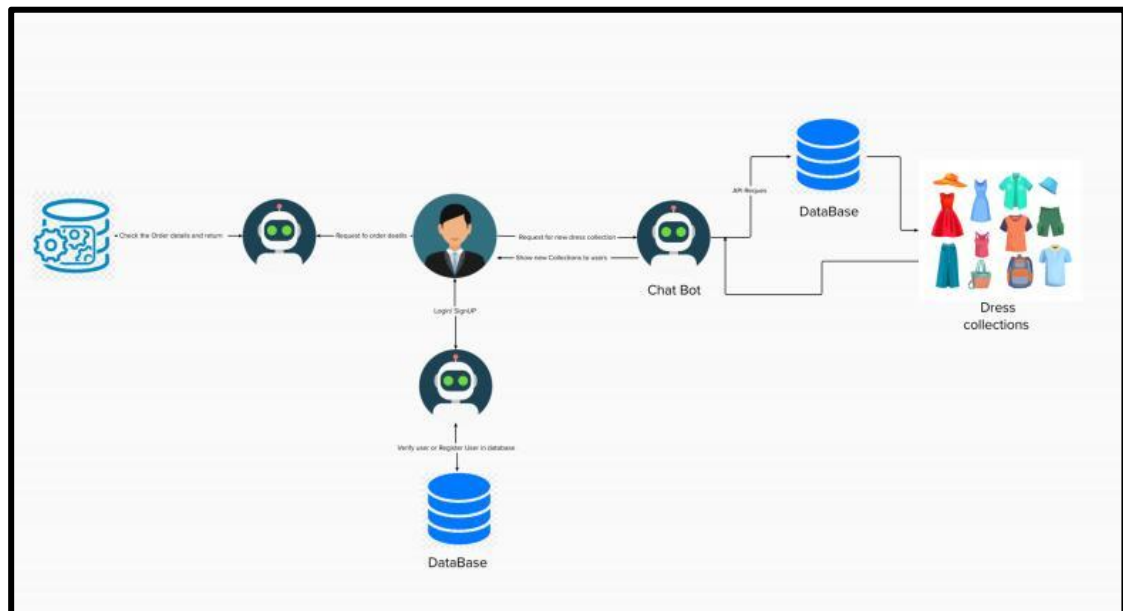
Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form
FR-2	User Interaction	Communication via Chat bot
FR-3	Buying Products	Through the chat Bot Recommendation
FR-4	Track Products	Ask the Chat 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

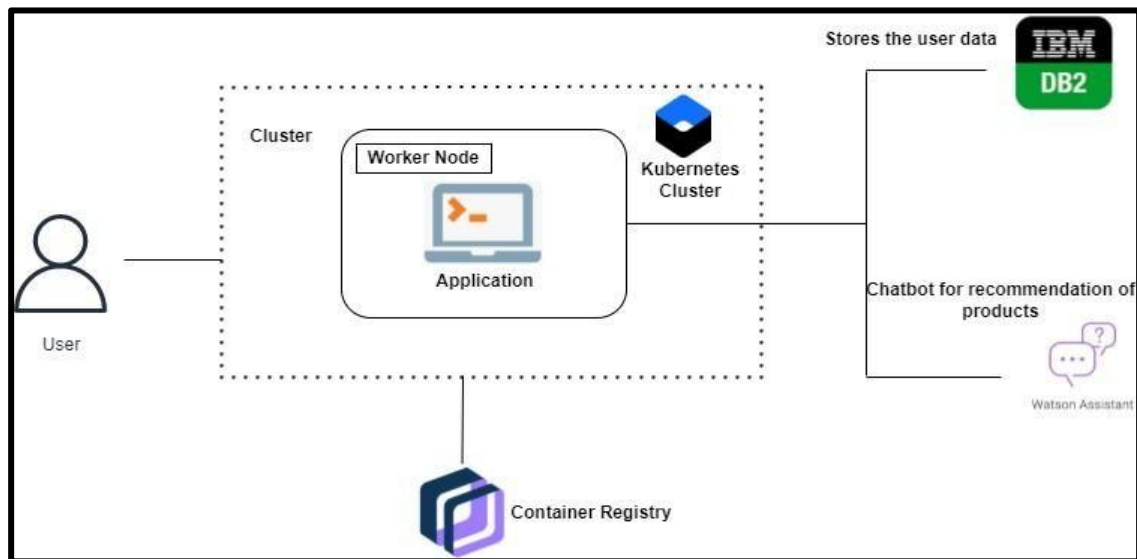
Following are the non-functional requirements of the proposed solution.

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	Its easy to scale the size of users and products.

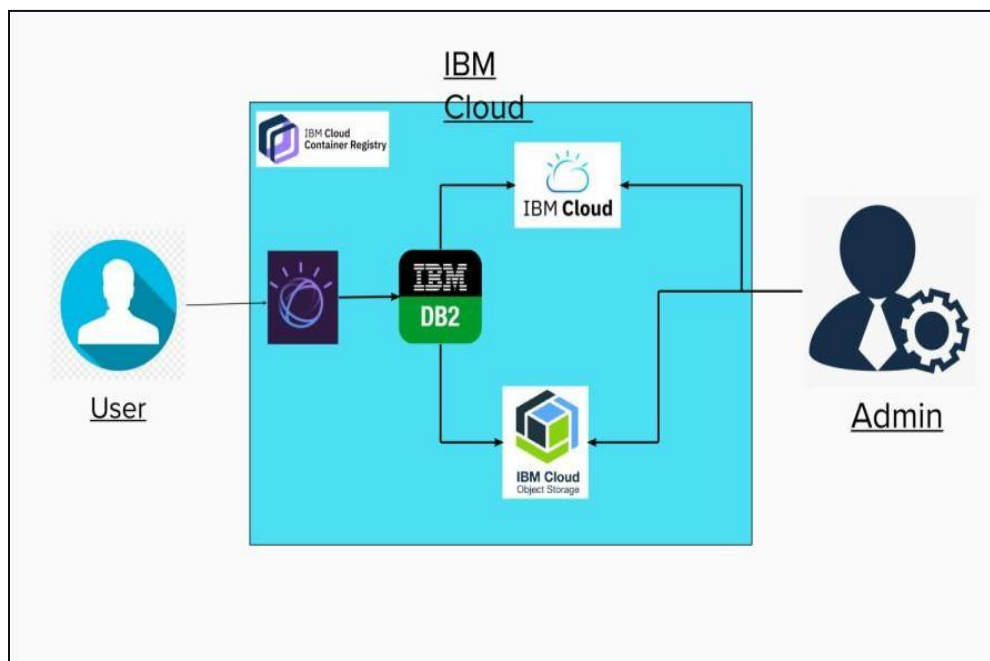


5.2 SOLUTION AND TECHNICAL ARCHITECTURE

5.2.1 SOLUTIONAL ARCHITECTURE



5.2.2 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		High	Sprint-1
	Dashboard	USN-6	As a user, I can view the dashboard and byproducts		High	Sprint-2
Customer (Webuser)	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	High	Sprint-1
Customer Care Executive	Contact of Customers	USN-8	As a Customer 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 company	High	Sprint-2

6.PROJECT PLANING AND SCHEDULING

6.1 SPRINT PLANING AND ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Team Members
Sprint-1	User Panel	USN-1	The user will login into the website and go through the products available on the website	20	Prabu K Madesh Kumar A Ragupathi M Muthu Logesh M
Sprint-2	Admin panel	USN-2	The role of the admin is to check out the database about the stock and have a track of all the things that the users are purchasing.	20	Prabu K Madesh Kumar A Ragupathi M Muthu Logesh M
Sprint-3	Chat Bot	USN-3	The user can directly talk to Chat bot regarding the products. Get the recommendations based on information provided by the user.	20	Prabu K Madesh Kumar A Ragupathi M Muthu Logesh M
Sprint-4	Final delivery	USN-4	Container of applications using docker kubernetes and deployment the application. Create the documentation and final submit the application	20	Prabu K Madesh Kumar A Ragupathi M Muthu Logesh M

6.2 SPRINT DELIVERY SCHEDULING

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		29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022		05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022		12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022		19 Nov 2022

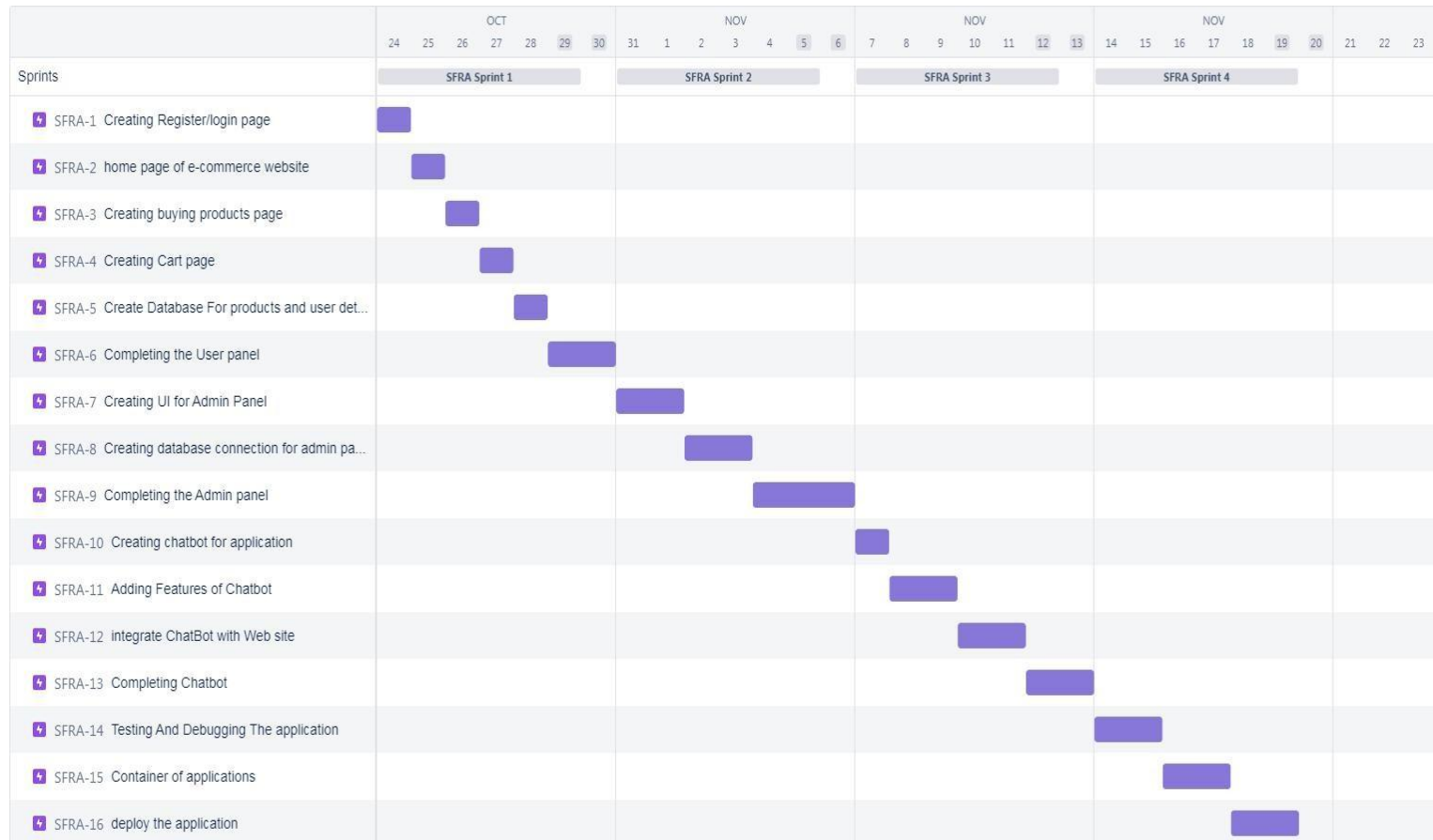
Velocity:

Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day).

$$AV = \frac{\textit{sprint duration}}{\textit{velocity}} = \frac{20}{10} = 2$$

6.3REPORTS FROM JIRA

The following image represents the reports from JIRA.



7. CODING & SOLUTIONING

Feature 1

Web application for fashion recommender

```
from flask import Flask, render_template, request, redirect, url_for, session
import ibm_db
import re

app = Flask(__name__)

app.secret_key = 'a'

conn=ibm_db.connect("DATABASE=bludb;HOSTNAME=9938aec0-8105-433e-
8bf90fbb7e483086.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud;PORT=32459;Security
=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;UID=dpk79343;PWD=29Jm7EbzOu
btoerk",",")

@app.route('/')

def homer():
    return render_template('index.html')

@app.route('/Login',methods=['GET', 'POST'])
def login():
    global userid
    msg = ""

    if request.method == 'POST' :
        username = request.form['username']
        password = request.form['password']
        sql = "SELECT * FROM users WHERE username=? AND password=?"
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt,1,username)
        ibm_db.bind_param(stmt,2,password)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        print (account)
        if account:
            session['loggedin'] = True
            session['id'] = account['USERNAME']
            userid= account['USERNAME']
            session['username'] = account['USERNAME']
            msg = 'Logged in successfully !'

            msg = 'Logged in successfully !'
            return render_template('homepage.html', msg = msg)
        else:
            msg = 'Incorrect username / password !'
            return render_template('index.html', msg = msg)
```

```

@app.route('/Register', methods=['GET', 'POST'])
def registet():
    msg = "
    if request.method == 'POST' :
        username = request.form['username']
        email = request.form['email']
        password = request.form['password']
        sql = "SELECT * FROM users WHERE username =?"
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt,1,username)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        print(account)
        if account:
            msg = 'Account already exists !'
        elif not re.match(r'[^@]+@[^@]+\.[^@]+', email):
            msg = 'Invalid email address !'
        elif not re.match(r'[A-Za-z0-9]+', username):
            msg = 'name must contain only characters and numbers !'
        else:
            insert_sql = "INSERT INTO users VALUES (?, ?, ?)"
            prep_stmt = ibm_db.prepare(conn, insert_sql)
            ibm_db.bind_param(prepare_stmt, 1, username)
            ibm_db.bind_param(prepare_stmt, 2, email)
            ibm_db.bind_param(prepare_stmt, 3, password)
            ibm_db.execute(prepare_stmt)
            msg = 'You have successfully registered !'
    elif request.method == 'POST':
        msg = 'Please fill out the form !'
    return render_template('reg.html', msg = msg)

```

```

@app.route('/Homepage')
def dash():

    return render_template('homepage.html')

```

```

@app.route('/apply', methods=['GET', 'POST'])
def apply():
    msg = "
    if request.method == 'POST' :
        username = request.form['username']
        email = request.form['email']

        qualification= request.form['qualification']
        skills = request.form['skills']
        jobs = request.form['s']
        sql = "SELECT * FROM users WHERE username =?"
        stmt = ibm_db.prepare(conn, sql)
        ibm_db.bind_param(stmt,1,username)
        ibm_db.execute(stmt)
        account = ibm_db.fetch_assoc(stmt)
        print(account)
        if account:

```

```
msg = 'there is only 1 job position! for you'
return render_template('apply.html', msg = msg)
```

```
insert_sql = "INSERT INTO job VALUES (?, ?, ?, ?, ?)"
prep_stmt = ibm_db.prepare(conn, insert_sql)
ibm_db.bind_param(prepare_stmt, 1, username)
ibm_db.bind_param(prepare_stmt, 2, email)
ibm_db.bind_param(prepare_stmt, 3, qualification)
ibm_db.bind_param(prepare_stmt, 4, skills)
ibm_db.bind_param(prepare_stmt, 5, jobs)
ibm_db.execute(prepare_stmt)
msg = 'You have successfully applied for job !'
session['loggedin'] = True
TEXT = "Hello,a new application for job position" +jobs+"is requested"
```

```
elif request.method == 'POST':
    msg = 'Please fill out the form !'
    return render_template('apply.html', msg = msg)
```

```
@app.route('/display')
def display():
    print(session["username"],session['id'])

    cursor = mysql.connection.cursor()
    cursor.execute('SELECT * FROM job WHERE userid = % s', (session['id'],))
    account = cursor.fetchone()
    print("accountdisplay",account)
```

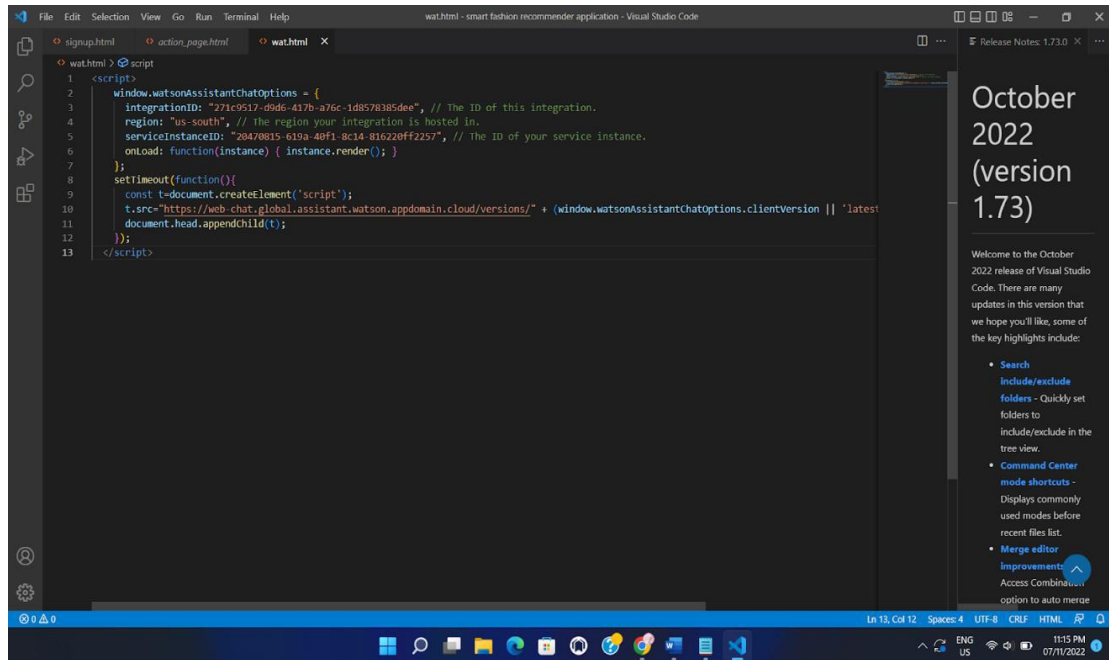
```
return render_template('display.html',account = account)
```

```
@app.route('/logout')
```

```
def logout():
    session.pop('loggedin', None)
    session.pop('id', None)
    session.pop('
if __name__ == '__main__':
    app.run(host='0.0.0.0')
username', None)
    return render_template('home.html')
```

Feature 2

Chatbot




8. TESTING

IBM x IBM-EPBL (IBM-E x IBM-Project-491 x IBM Watson Assi x Trendy fashion x Resource list - IB x Trendy Botique x images from clo x +

File | C:/Projects/Assignments/Assignment%203/bucket.html

IBM YouTube Maps Gmail GitHub

TRENDY FASHION WELCOMES YOU



Watson Assistant

I didn't catch that. Select a valid option:

Hi

Hello, how can I help you?

Men's Fashion Women's fashion
Kid's fashion

Women's fashion

Select category:

Casual wear Formal wear
Traditional wear Wedding wear

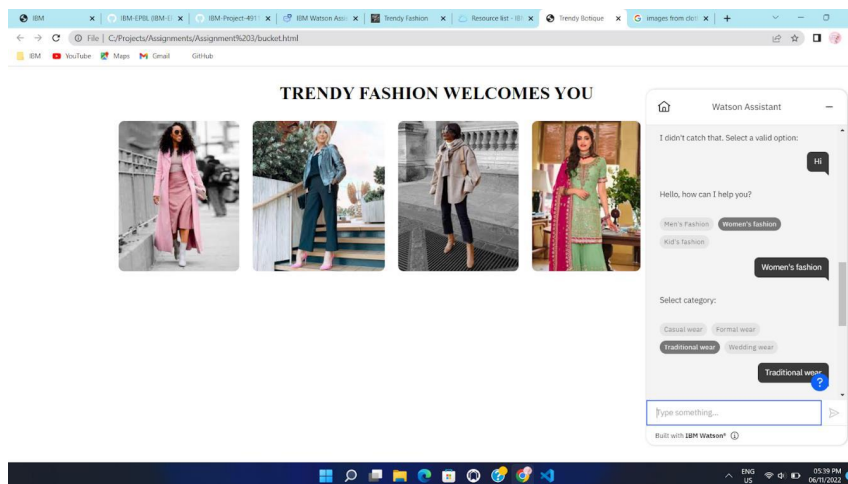
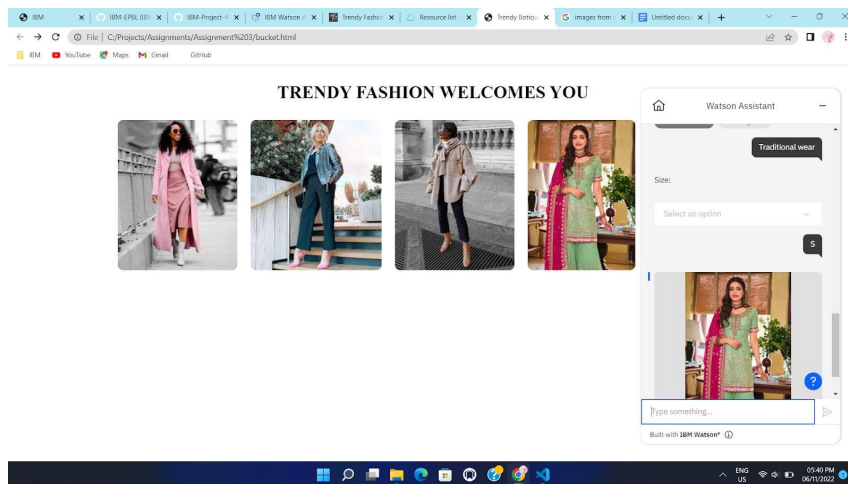
Traditional wear

Type something...

Built with IBM Watson®

Windows taskbar: ENG US 05:39 PM 06/11/2022

9. RESULTS



Thus, a web application for smart fashion recommender is created and a chatbot (Watson Assistant) is deployed on it and it helps customer feel easier when search many websites to find fashion clothes and accessories.

10. ADVANTAGES & DISADVANTAGES

Advantages of recommender system:

With continuing advances in artificial intelligence (AI), recommendations are no longer aimed at general audiences, or even those of a certain segment. Using deep learning-based recommendation engines, marketers today can target consumers with hyper-personalized recommendations at the individual level, based on metrics like persona, location, interests, real-time online behaviour and so on. This will not only allow marketers to drive online traffic through retargeting ads or email marketing, but also reduce customer irritation and churn rates.

Personalized product recommendations also help engage customers by serving them with products or services that are highly relevant to them. This will encourage higher average order values and increase conversions. In the long term, using personalized recommendations will show your customers that you understand and value them, increasing customer satisfaction and loyalty.

Disadvantages of recommender system:

1. Significant investments required

Recommendation engines are a big investment, not only financially, but in terms of time, too.

2. The complex onboarding process

Bringing a recommendation engine into your business can be a complex affair.

3. Lack of data analytics capability

Like all AI-based technologies, recommendation engines rely on data – if you do not have high-quality data, or cannot crunch and analyze it properly, you will not be able to make the most of the recommendation engine.

4. Inability to capture changes in user behavior

Consumers do not stand still – they are constantly behaving and evolving both as people and customers.

5. Privacy concerns

11.CONCLUSIONS

This paper presented an interdisciplinary, comprehensive review of what has been done in the field of conversational agents for fashion and retail e-commerce. Thus, this study adds to specialized literature in the field of chat bot design for fashion e-commerce by providing a comprehensive map of chat bot approaches that can be deployed by retailers. This study also revealed that despite the increasing investment in chat bots for e-commerce in general, research and use in fashion e-commerce are still relatively modest. Thus, further research and development on this topic are still needed.

12.FUTURE SCOPES

How might such recommender systems be utilized to make predictions regarding the fashion trends of the future? This aspect can be linked to popularity forecasting in the fashion domain since trendy items will likely be popular.

13.APPENDIX

Unlike other areas, fashion recommendations shouldn't be based solely on personal taste and past activity of the customer. There are many external factors (many of which are emotional) that make creating a fashion recommendation system all the more complex. Public perceptions must be taken into account, as well as fashion rules, dress rules and current trends.

13.1 SOURCE CODE

Link - <https://github.com/IBM-EPBL/IBM-Project-33396-1660219605/tree/main/Final%20Deliverables/Source%20Code>

13.2 GITHUB AND PROJECT DEMO LINK

Link - <https://github.com/IBM-EPBL/IBM-Project-33396-1660219605>