

# **PROJECT REPORT**

## **SKILL / JOB RECOMMENDER APPLICATION**

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**GITHUB LINK:** <https://github.com/IBM-EPBL/IBM-Project-31242-1660198071>

**DEMO LINK:**

[https://drive.google.com/file/d/1AS8joirus6l1G4vTy5DcsosWcUbolW6e/view?usp=share\\_link](https://drive.google.com/file/d/1AS8joirus6l1G4vTy5DcsosWcUbolW6e/view?usp=share_link)

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# **1. INTRODUCTION**

## **1.1 PROJECT OVERVIEW**

In the last years, job recommender systems have become popular since they successfully reduce information overload by generating personalized job suggestions. Although in the literature exists a variety of techniques and strategies used as part of job recommender systems, most of them fail to recommending job vacancies that fit properly to the job seekers profiles. Thus, the contributions of this work are threefold, we: made publicly available a new dataset formed by a set of job seekers profiles and a set of job vacancies collected from different job search engine sites; put forward the proposal of a framework for job recommendation based on professional skills of job seekers; and carried out an evaluation to quantify empirically the recommendation abilities of two state-of-the-art methods, considering different configurations, within the proposed framework. We thus present a general panorama of job recommendation task aiming to facilitate research and real-world application design regarding this important issue. Having lots of skills but wondering which job will best suit you Don't need to worry! we have come up with a skill recommender solution through which the fresher or the skilled person can login and find the jobs by using search option or they can directly interact with the chatbot and get their dream job. To develop an end to end web application capable of displaying the current job openings based on the skillset of the users. The users and their information are stored in the Database. An alert is sent when there is an opening based on the user skillset. User will interact with the chatbot and can get the recommendations based on his skills. We can use job search API to get the current job openings in the market which will fetch the data directly from the webpage.

## **1.2 PURPOSE**

The purpose of recommenders is often summarized as help the users find relevant jobs, and the predominant operationalization of this goal has been to focus on the ability to numerically estimate the users' preferences for unseen items or to provide users with item lists ranked in accordance to the estimated. To develop an end to end web application capable of displaying the current job openings based on the skillset of the users. The users and their information are stored in the Database. An alert is sent when there is an opening based on the user skillset. User will

interact with the chatbot and can get the recommendations based on his skills. We can use job search API to get the current job openings in the market which will fetch the data directly from the webpage. In our experiment ,we show that by jointly learning the representation for the jobs and skills, our model provides better recommendation for skills and jobs. Once a user has his full skillset, we can start to recommend jobs. Or the other way round, once a HR has a skillset for one job, we can start to recommend candidates. Let's start with recommending jobs. So our goal is to recommend the most relevant jobs for a user. Mathematically, the relevance can be the similarity of two skillsets like user's skills and job's skills.

## **2. LITERATURE SURVEY**

### **2.1 EXISTING PROBLEM**

There has been a sudden boom in the technical industry and an increase in the number of good startups. Keeping track of various appropriate job openings in top industry names has become increasingly troublesome. This leads to deadlines and hence important opportunities being missed. The aim is to automate this process to eliminate this problem. To achieve this, We are Skill based job recommender app. A hybrid system of Content-Based Filtering and Collaborative Filtering is implemented to recommend these jobs. The intention is to aggregate and recommend appropriate jobs to job seekers, especially in the engineering domain. The entire process of accessing numerous company websites hoping to find a relevant job opening listed on their career portals is simplified. The proposed recommendation system is tested on an array of test cases with a fully functioning user interface in the form of a web application. It has shown satisfactory results, outperforming the existing systems. It thus testifies to the agenda of quality over quantity.

### **2.2 REFERENCES**

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## 2.3 PROBLEM STATEMENT DEFINITION

Defining the problem statement to understand the customer point of you and making easy way to apply job and helps them to find beneficial in their work place and matches their skills and requirement .

### PS1:



### PS2



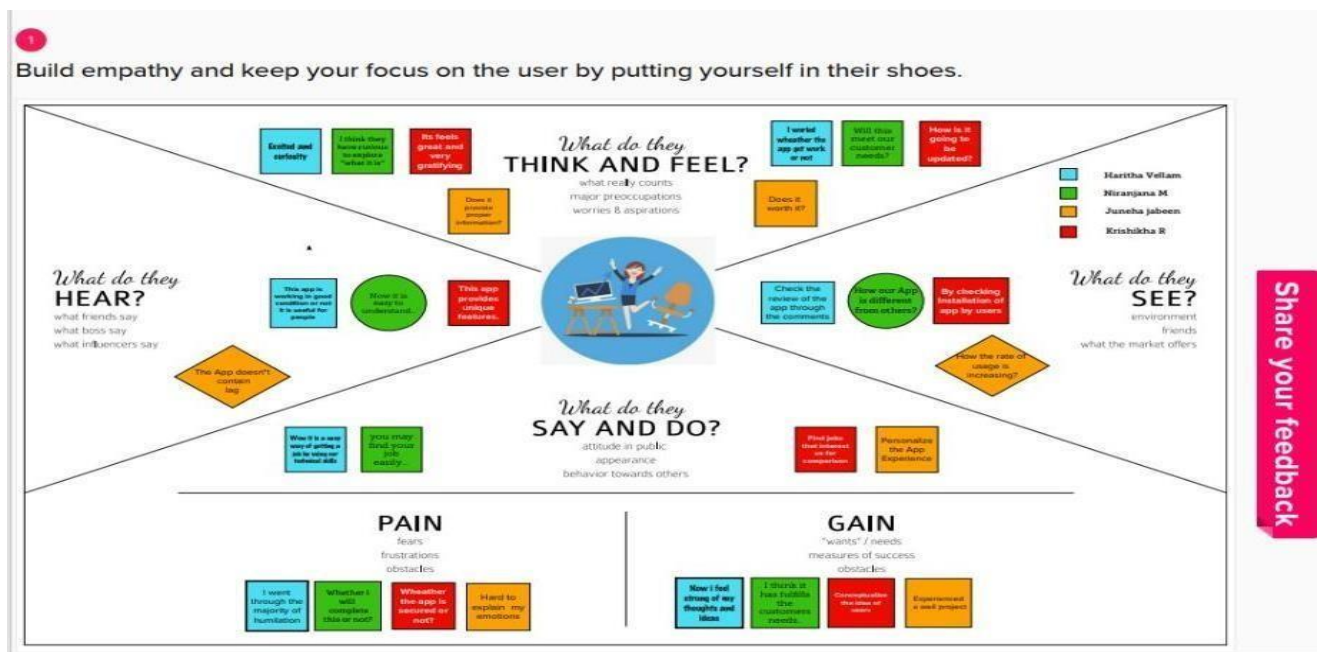
mira

| Problem Statement (PS) | I am (Customer)  | I'm trying to          | But                | Because                             | Which makes me feel |
|------------------------|------------------|------------------------|--------------------|-------------------------------------|---------------------|
| PS-1                   | Applying for job | Identifying the skills | Performance issues | Slow or lagging                     | Dissappoinment      |
| PS-2                   | A job seeker     | Provides informations  | Long load time     | It doesn't contain a mobile version | Screwed up          |

### 3. IDEATION AND PROPOSED SOLUTION

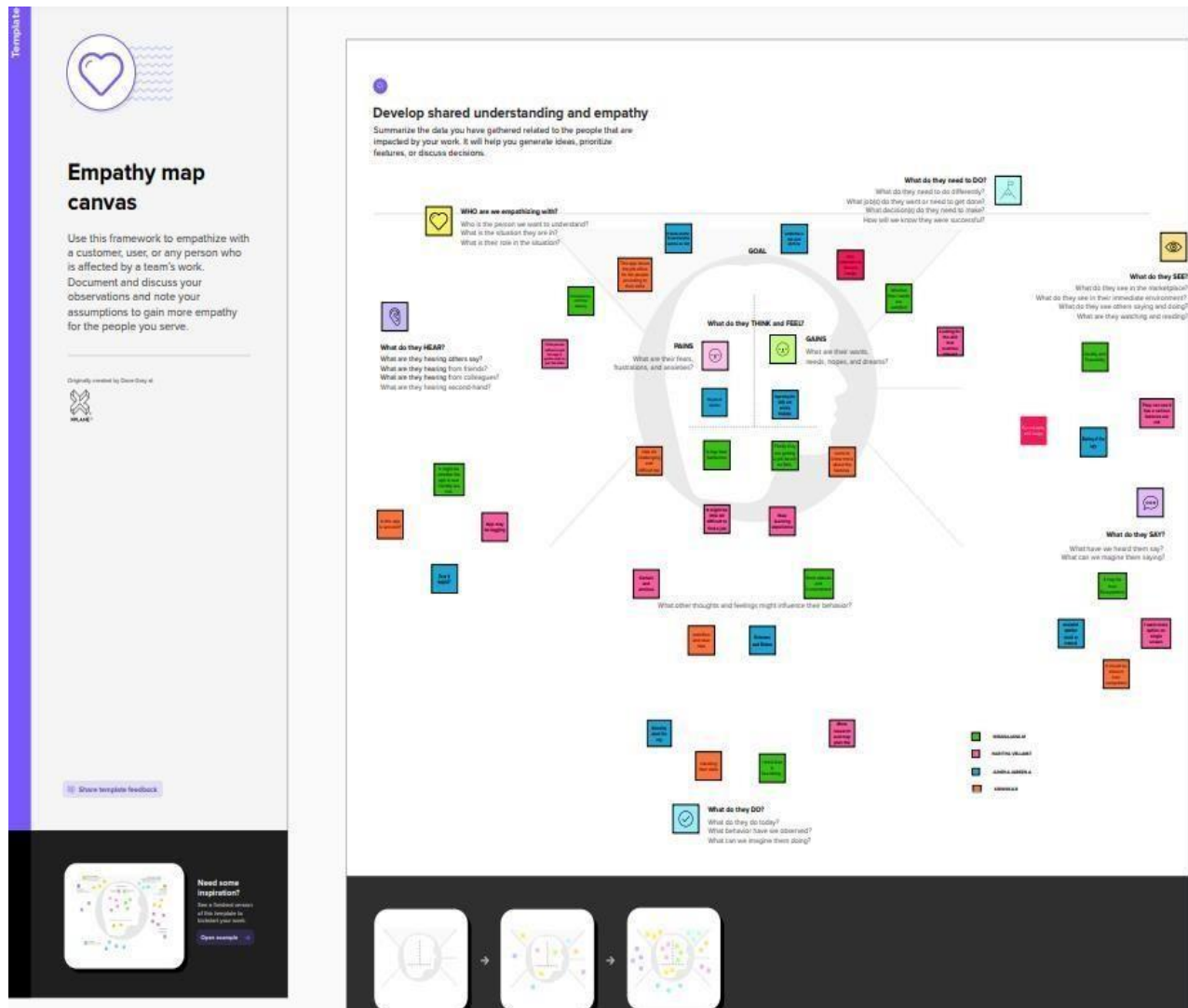
#### 3.1 EMPATHY MAP CANVAS

An empathy map is a widely-used visualization tool within the field of UX and HCI practice. In relation to empathetic design, the primary purpose of an empathy map is to bridge the understanding of the end user. Within context of its application, this tool is used to build a shared understanding of the user's needs and provide context to a user-centered solution.



#### 3.2 BRAIN STORMING

Brainstorming is a situation where a group of people meet to generate new ideas and solutions around a specific domain of interest by removing inhibitions. People are able to think more freely and they suggest as many spontaneous new ideas as possible. All the ideas are noted down without criticism and after the brainstorming session the ideas are evaluated



### 3.3 PROPOSED SOLUTION

The proposed solution should relate the current situation to a desired result and describe the benefits that will accrue when the desired result is achieved. So, begin your proposed solution by briefly describing this desired result. The main goal of presenting a business proposal is to provide solution to a problem faced by a potential buyer. This section should be as comprehensive as possible, and able to address all the needs that you have pointed in the first.



| S.No. | Parameter                                | Description  |
|-------|--|--|
| 1.    | Problem Statement (Problem to be solved) | Evaluating employees and new hires based on their skill sets instead of their work history can help level the playing field and help companies realize the talent they already have. It also makes talent pools more diverse and often makes hiring more effective.  |
| 2.    | Idea / Solution description              | Recruitment is the process of actively seeking out, finding and hiring candidates for a specific position or job. The recruitment definition includes the entire hiring process, from inception to the individual recruit's integration into the company.  |
| 3.    | Novelty / Uniqueness                     | This app is helpful for unemployed people, and easy way to use this app in phone itself and finding the job over through our skill.  |
| 4.    | Social Impact / Customer Satisfaction    | Challenging times inevitably present opportunities for innovation and, through our work, we are excited about the range of innovation we see employers undertaking to find and keep talent from disadvantaged backgrounds. More often than not, this work is being driven by passionate.   |
| 5.    | Business Model (Revenue Model)           | There are also private-public organisations like National Skill Development Corporation, besides private training institutes. With all due respect to the capabilities of the government, I believe till someone in the private sector does not figure out a profitable business model to scale this up, we will not meet the goals. |
| 6.    | Scalability of the Solution              | The recruitment organization was going to be able to successfully scale, they needed to develop the sort of hiring strategy and recruiting processes required to efficiently and effectively attract, engage, and hire top tech talent without their ecommerce competition beating them to the punch.                                |

### 3.4 PROBLEM SOLUTION FIT

This occurs when you have evidence that customers care about certain jobs, pains, and gains. At this stage you've proved the existence of a problem and have designed a value proposition that addresses your customers' jobs, pains and gains

|                         |   |   |   |                           |
|-------------------------|---|---|---|---------------------------|
| Define CS, fit into CC  | <b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span><br>Who is your customer?<br>i.e. working parents of 0-5 y.o. kids<br><br>A customer is set of people, from a recruitment perspective, is defined as a group of individuals with a specific background of qualifications and experiences capable of fulfilling a particular recruitment need.  | <b>6. CUSTOMER CONSTRAINTS</b> <span>CC</span><br>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.<br><br>Craft clear and attractive job ads, Boost your candidate sourcing, Build talent pipelines, Improve your recruitment efficiency, Evaluate candidates effectively and they should be Enhance candidate experience.  | <b>5. AVAILABLE SOLUTIONS</b> <span>AS</span><br>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<br><br>Offering Referral Bonuses, Focusing on Employer Brand, Creating and Maintaining a Talent Pool, Centering Efforts on Generation Z, Social Media Recruitment Strategy, Implementing Onboarding Into the Recruitment Solution, Looking Into Programmatic Job Advertising, Spotlighting Top Employees.  | Explore AS, differentiate |
|                         | <b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <span>J&amp;P</span><br>Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.<br><br>Unattractive Job, Internal policies within the company, Budgetary support, Government interference, Finding the right candidates in time, Under polished candidates, Candidate competition, Technology risks of traditional search tools.   | <b>9. PROBLEM ROOT CAUSE</b> <span>RC</span><br>What is the real reason that this problem exists?<br>What is the back story behind the need to do this job?<br>i.e. customers have to do it because of the change in regulations<br><br>This is often due to lack of understanding of real job needs. Rather than increasing compensation, the better solution might be to increase the scope of the job, or better still to just describe the real job in terms of projects, challenges, and opportunities. Often, this will be enough to minimize the need for a larger-than-normal comp increase. Top people always view the opportunity for growth in balance with compensation.  | <b>7. BEHAVIOUR</b> <span>BE</span><br>What does your customer do to address the problem and get the job done?<br>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)<br><br>The evidence behind the use of key selection and assessment tools, as well as the biases and judgement errors that may occur on the assessor's side when using these tools. The candidate's experience during the recruitment process. Not only does the candidate experience affect our ability to decipher who is best, it also can have knock-on effects on an employer's brand and their ability to attract talent in the future. |                           |
| Identify strong TR & EM | <b>3. TRIGGERS</b> <span>TR</span><br>What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.<br><br>When other people installing this app other people gets triggered because it has a useful feature and given a best job for your talent.  | <b>10. YOUR SOLUTION</b> <span>SL</span><br>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.<br>If you are working on a new business proposition, then keep it blank until you fill the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.<br><br>Recruitment is the process of actively seeking out, finding and hiring candidates for a specific position or job. The recruitment definition includes the entire hiring process, from inception to the individual recruit's integration into the company. If there is any issues is faced the app provide and give a complete solution and solve the problems. | <b>8. CHANNELS of BEHAVIOUR</b> <span>CH</span><br><b>K1 ONLINE</b><br>What kind of actions do customers take online? Extract online channels from #7<br><br><b>K2 OFFLINE</b><br>What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.<br><br><u>Online:</u> LinkedIn, Facebook, career portal, websites etc<br><br><u>Offline:</u> Physical events and fairs organized by universities or corporate agencies enable recruiters to meet potential candidates face-to-face.   | Identify strong TR & EM   |
|                         | <b>4. EMOTIONS: BEFORE / AFTER</b> <span>EM</span><br>How do customers feel when they face a problem or a job and afterwards?<br>i.e. lost, insecure > confident, in control - use it in your communication strategy & design.<br><br>Before use this app customer feels if this app given a correct recruitment or not once they used the app they feel good because it gives a correct Recruitment process they may be any lagging but other wise it provide a correct information. |   |   |                           |

## 4. REQUIREMENT ANALYSIS

### 4.1 FUNCTIONAL REQUIREMENTS

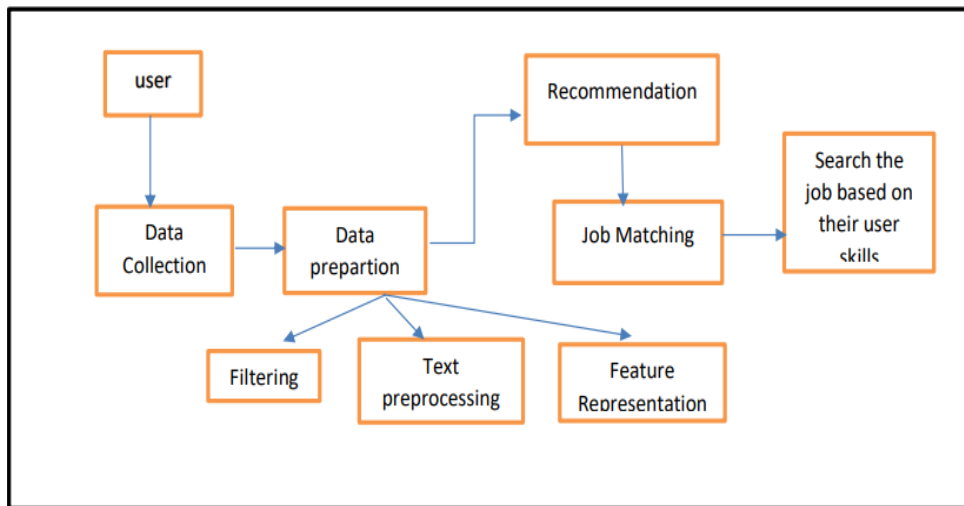
| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task)   |
|--------|-------------------------------|--|
| FR-1   | User Registration             | Registration through Form<br>Registration through Gmail<br>Registration through LinkedIn |
| FR-2   | User Confirmation             | Confirmation via Email<br>Confirmation via OTP   |
| FR-3   | System login                  | Check authorization<br>Check access  |
| FR-4   | Manage schedule               | Manage system admins<br>Manage user consent<br>Manage user                               |
| FR-5   | Check details                 | Job details  |
| FR-6   | Log out                       | Exit   |

### 4.2 NON- FUNCTIONAL REQUIREMENTS

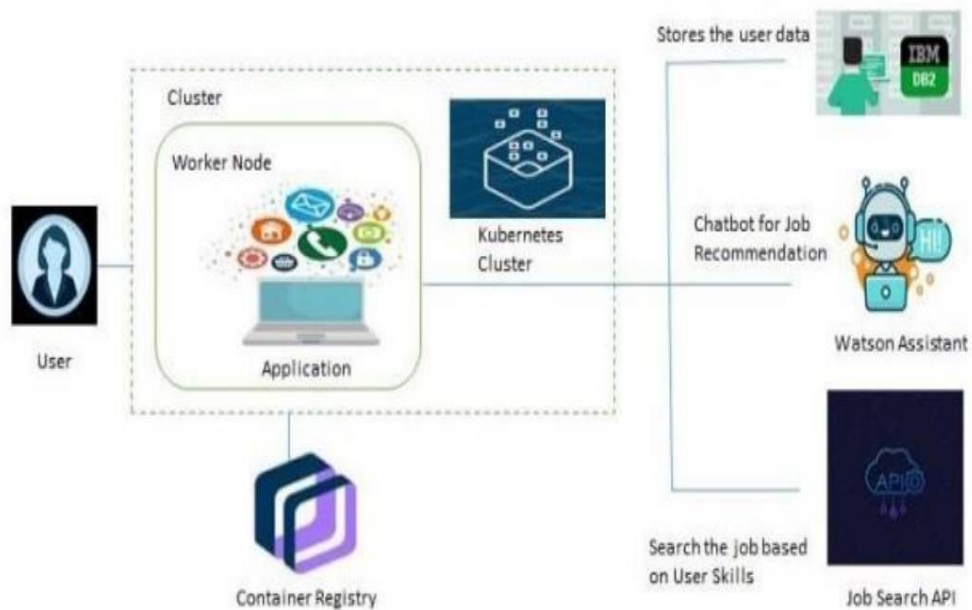
| FR No. | Non-Functional Requirement | Description   |
|--------|----------------------------|---|
| NFR-1  | <b>Usability</b>           | Need good communication and writing skills.Skills to research new technologies and current trends to anticipate consumer needs.                     |
| NFR-2  | <b>Security</b>            | Knowledge of legal guidelines for area security and public safety.  |
| NFR-3  | <b>Reliability</b>         | Performing tests and analysis.Check new systems or installation.  |
| NFR-4  | <b>Performance</b>         | Quality of work, Working relationships ability to work with h others communication.   |
| NFR-5  | <b>Availability</b>        | To verify that you can commit to the work hours required by the job role.Review your schedule.Understand the job role.Sharing the plans.            |
| NFR-6  | <b>Scalability</b>         | Scalable professions are those that require years of work with a modest baseline reward but an outside chance of a disproportionately large payoff. |

## 5. PROJECT DESIGN

### 5.1 DATA FLOW DIAGRAM



### 5.2 SOLUTION & TECHNOLOGY ARCHITECTURE





### 5.3 USER STORIES

| 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.  | I can register & access the dashboard with Gmail Login.    | Medium   | Sprint-1  |
|                         | Login                         | USN-5             | As a user, I can log into the application by entering email & password.                                       | I can access dashboard with email login                    | High     | Sprint-1  |
|                         | Dashboard                     | USN-6             | As a user I can enter into dashboard by using navigation panel.   | I can access the dashboard by using navigation panel .     | High     | Sprint-1  |
| Customer (Web user)     | Registration                  | USN-1             | As a user, I can register for the web application by entering my email, password and confirming my password . | I can access my account/dashboard .                        | Medium   | Sprint-1  |
|                         |                               | USN-2             | As a user, I will receive confirmation email once I have registered for the web application.                  | I can receive confirmation email & click confirm .         | High     | Sprint -1 |
|                         | Login                         | USN-3             | As a user I can log into the web application by entering email & password .                                   | I can access the dashboard with email login .              | High     | Sprint -1 |
|                         | Dashboard                     | USN-4             | As a user I can enter into web dashboard by using navigation panel .  | I can access into dashboard by using navigation panel .    | Medium   | Sprint -1 |
| Customer Care Executive | Login                         | USN -1            | Better organization with the company when there is trouble .  | Treating the customer with respect and kindness.           | High     | Sprint -1 |
| Administrator           |                               | USN-1             | Provides office support to either an individual or team.  | Responsible for smooth running of the app.                 | High     | Sprint -1 |

## 6. PROJECT PLANNING & SCHEDULING

### 6.1 SPRINT PLANNING & ESTIMATION

| Sprint   | Functional Requirement (Epic)    | User Story Number | User Story / Task   | Story Points | Priority | Team Members  |
|----------|----------------------------------|-------------------|---|--------------|----------|---|
| Sprint-1 | Registration                     | USN-1             | UI Creation<br>Creating Registration page, Login page                         | 10           | Medium   | 1)Sunandh Kumar,<br>2)Haneesh Chowdary,<br>3)Singam Siva Sai Ganesh,<br>4)Gnaneswara Sai. |
| Sprint-1 | Database Connectivity            | USN-2             | Viewing and applying jobs<br>Connecting UI with Database                      | 10           | High     | 1)Sunandh Kumar,<br>2)Haneesh Chowdary,<br>3)Singam Siva Sai Ganesh,<br>4)Gnaneswara Sai. |
| Sprint-2 | SendGrid Integration             | USN-3             | SendGrid Integration with Python Code   | 10           | Low      | 1)Sunandh Kumar,<br>2)Haneesh Chowdary,<br>3)Singam Siva Sai Ganesh,<br>4)Gnaneswara Sai. |
| Sprint-2 | Chatbot Development              | USN-4             | Building a chatbot  | 10           | High     | 1)Sunandh Kumar,<br>2)Haneesh Chowdary,<br>3)Singam Siva Sai Ganesh,<br>4)Gnaneswara Sai. |
| Sprint-3 | Integration and Containerisation | USN-5             | Integrating chatbot to the HTML page and containerizing the app.              | 20           | Medium   | 1)Sunandh Kumar,<br>2)Haneesh Chowdary,<br>3)Singam Siva Sai Ganesh,<br>4)Gnaneswara Sai. |
| Sprint-4 | Upload Image and deployment      | USN-6             | Upload the image to the IBM Registry and deploy it in the Kubernetes Cluster. | 10           | High     | 1)Sunandh Kumar,<br>2)Haneesh Chowdary,<br>3)Singam Siva Sai Ganesh,<br>4)Gnaneswara Sai. |

### 6.2 SPRINT DELIVERY SCHEDULE

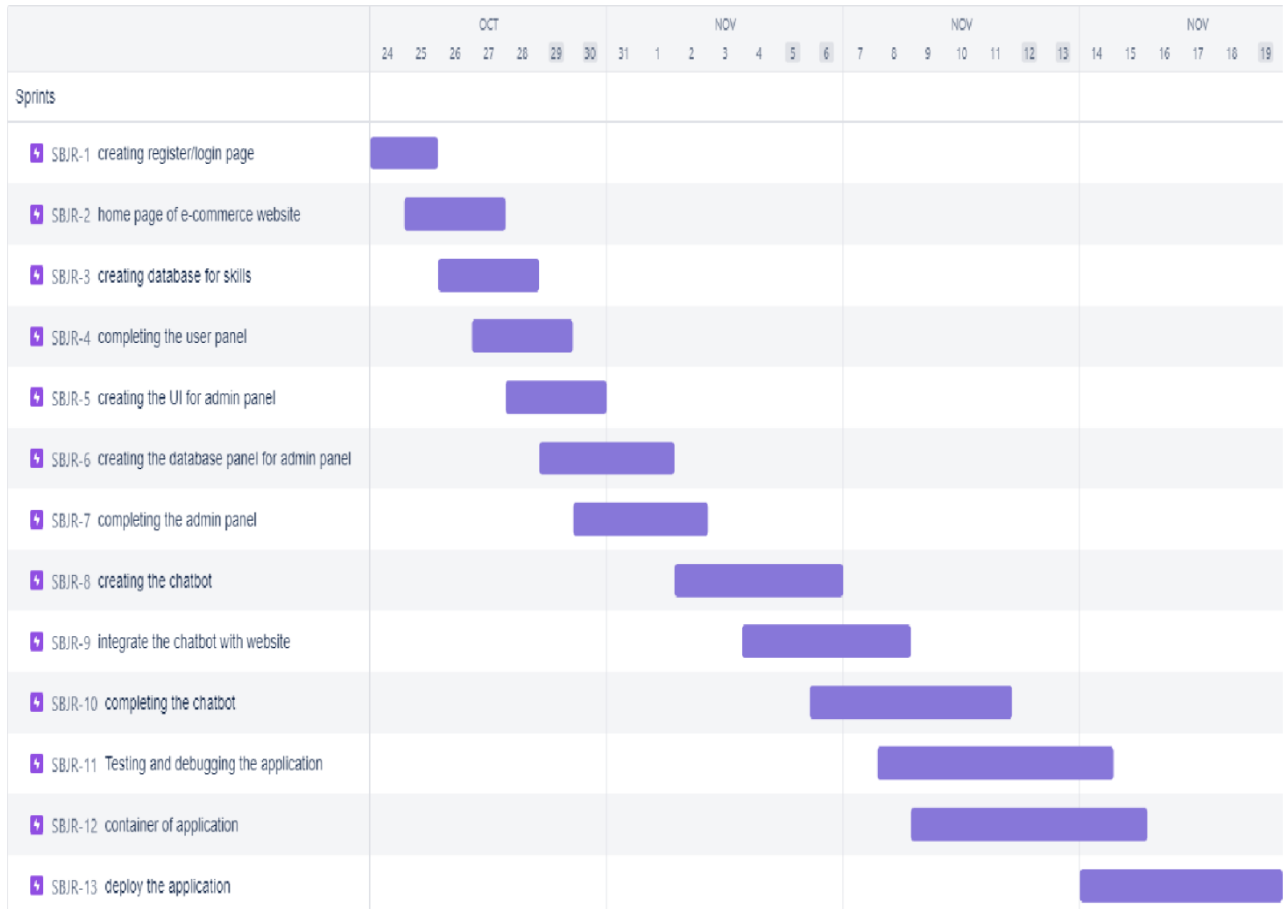
| Sprint   | Total Story Points | Duration | Sprint Start Date | Sprint End Date (Planned) | Story Points Completed (as on Planned End Date) | Sprint Release Date (Actual) |
|----------|--------------------|----------|-------------------|---------------------------|---|------------------------------|
| 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:

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)

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

## 6.3 REPORTS FROM JIRA



## 7. CODING & SOLUTIONING

### FEATURE 1

In our app we have included chat box for query purpose. Bot will help the user to solve the issue. Bot work by automatically going through a set of instructions, and they carry out the tasks and processes much faster. You can ask live chat questions or provide requests and it will reply and take action. A chatbot is a computer program that simulates human conversation through voice commands or text chats or both. Chatbot, short for chatterbot, is an that can be embedded and used through any major messaging application. A chatbot communicates similarly

to instant messaging. A chatbot is software that simulates human conversations. It enables the communication between a human and a machine, which can take the form of messages or voice commands. A chatbot is designed to work without the assistance of a human operator.

```
<script>
  window.watsonAssistantChatOptions = {
    integrationID: "0bb96b92-4e98-44c7-9dab-3a5fe2ff8562", // The ID of this
integration.
    region: "au-syd", // The region your integration is hosted in.
    serviceInstanceID: "e5babddc-2ad5-4eac-a0c5-6dad126622cb", // 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>
```

## FEATURE 2

In our app login page is initiated to gain access to an application by entering their username and password or by authenticating using a social media login. If the authentication is successful and the user is directed to the application page. A user has forgotten their username or password. A link is available to begin the process to reset their information. Social login will allow user to sign in with their social networks or idPs accounts. Insecure Login page may lead to application security vulnerabilities in the web applications. So, you should properly secure your login page with the SSL and other security measures.

```
{% extends 'layouts/base-fullscreen.html' %}

{% block title %} Sign IN {% endblock title %}

<!-- Specific CSS goes HERE -->
{% block stylesheets %}{% endblock stylesheets %}

{% block body_class %} sign-in-illustration {% endblock body_class %}

{% block content %}
```



```

{% include "includes/navigation.html" %}

<section>
  <div class="page-header section-height-100">
    <div class="container">
      <div class="row">
        <div class="col-xl-4 col-lg-5 col-md-7 d-flex flex-column mx-lg-0 mx-
auto">
          <div class="card card-plain">
            <div class="card-header pb-0 text-left">
              <h4 class="font-weight-bolder">Sign In</h4>
              <p class="mb-0">Enter your username and password to sign in</p>
            </div>
            <div class="card-body">
              <form role="form">
                <div class="mb-3">
                  <input class="form-control form-control-lg"
placeholder="Username" aria-label="Username" aria-describedby="username-addon">
                </div>
                <div class="mb-3">
                  <input type="password" class="form-control form-control-lg"
placeholder="Password" aria-label="Password" aria-describedby="password-addon">
                </div>
                <div class="form-check form-switch">
                  <input class="form-check-input" type="checkbox"
id="rememberMe">
                  <label class="form-check-label" for="rememberMe">Remember
me</label>
                </div>
                <div class="text-center">
                  <button type="button" class="btn btn-lg bg-gradient-primary
btn-lg w-100 mt-4 mb-0">Sign in</button>
                </div>
              </form>
            </div>
            <div class="card-footer text-center pt-0 px-lg-2 px-1">
              <p class="mb-4 text-sm mx-auto">
                Don't have an account?
                <a href="/page-sign-up.html" class="text-primary text-gradient
font-weight-bold">Sign up</a>
              </p>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>

```

```
<div class="col-6 d-lg-flex d-none h-100 my-auto pe-0 position-absolute
top-0 end-0 text-center justify-content-center flex-column">
  <div class="position-relative bg-gradient-primary h-100 m-3 px-7
border-radius-lg d-flex flex-column justify-content-center">
    
    <div class="position-relative">
      
    </div>
    <h4 class="mt-5 text-white font-weight-bolder">
      Soft UI Design System
    </h4>
    <p class="text-white">
      &copy; <a target="_blank" class="text-white"
href="https://bit.ly/3fKQZaL" target="_blank">Creative Tim</a>
      - Coded by <a class="text-white" target="_blank"
href="https://appseed.us" target="_blank">AppSeed</a>.
    </p>
  </div>
</div>
</div>
</div>
</div>
</section>

{% endblock content %}

<!-- Specific JS goes HERE -->
{% block javascripts %}

  <script src="/static/assets/js/soft-design-system.min.js?v=1.0.1"
type="text/javascript"></script>

{% endblock javascripts %}
```

## 8. TESTING

### TEST CASES

| Test case  | Feature Type | Component | Test Scenario  | Steps To Execute  | Expected Result   | Actual Result       | Status | Comments   | TC for Automation(Y/N) | BUG ID | Executed By                        |
|------------|--------------|-----------|--|---|---|---------------------|--------|------------|------------------------|--------|------------------------------------|
| Login page | Functional   | Home Page | Verify user is able to see the Login/Signup                        | 1. Enter URL and click go<br>2.Scroll down<br>3.Verify login/Signup page  | Login/Signup popup should display   | Working as expected | PASS   | Successful | Y                      |        | SUNANDH KUMAR,<br>HANEESH CHOWDARY |
| Login Page | UI           | Home Page | Verify the UI elements in Login/Signup page                        | 1. Enter URL and click go<br>2. Click on Signup page for User<br>3. Verify login/Signup up popup with below UI elements:<br>a. Id text box<br>b. Password text box<br>c. Login button | Application should show below UI elements:<br>a. Email text box<br>b. password text box | Working as expected | PASS   | Successful | Y                      |        | SUNANDH KUMAR,<br>HANEESH CHOWDARY |
| Login Page | Functional   | Home page | Verify user is able to log into application with Valid credentials | 1. Enter URL and click go<br>2. Click on login page drop down<br>3. Enter Valid ID in text box<br>4. Enter valid password in password text box<br>5. Click on login button            | User should navigate to user information homepage                                       | Working as expected | PASS   | Successful | Y                      |        | HANEESH CHOWDARY,<br>GANESH REDDY  |

|            |            |            |   |   |   |                     |      |            |   |  |                                    |
|------------|------------|------------|---|---|---|---------------------|------|------------|---|--|------------------------------------|
| Login Page | Functional | Login page | Verify user is able to log into application with Invalid credentials  | 1. Enter and click go<br>2. Click on login dropdown button<br>3. Enter Invalid ID in ID text box<br>4. Enter valid password in password text box<br>5. Click on login button            | Application should show 'Incorrect email or password' validation message. | Working as expected | PASS | Successful | Y |  | SUNANDH KUMAR,<br>GANESH REDDY     |
| Login Page | Functional | Login page | Verify user is able to log into application with In Valid credentials | 1. Enter URL() and click go<br>2. Click on My Account dropdown button<br>3. Enter Valid ID in ID text box<br>4. Enter Invalid password in password text box<br>5. Click on login button | Application should show 'Incorrect email or password' validation message. | Working as expected | PASS | Successful | Y |  | GANESH REDDY<br>GNANESWARA SAI     |
| Login Page | Functional | Login page | Verify User is able to log into application with Valid Credentials    | 1. Enter URL and click go<br>2. Click on Sign in page<br>3. Enter In Valid ID in ID text box<br>4. Enter Invalid password in password text box<br>5. Click on login button              | Application should show 'correct email or password' validation message.   | Working as expected | PASS | Successful | Y |  | SUNANDH KUMAR,<br>HANEESH CHOWDARY |

|            |            |                      |  |  |  |                     |      |            |   |  |                                    |
|------------|------------|----------------------|--|--|--|---------------------|------|------------|---|--|------------------------------------|
| Login Page | Functional | Login page for ADMIN | Verify User is able to log into application with Valid Credentials                       | 1.Enter URL and click go 2.Click on Sign in page<br>3. Enter In Valid ID in IDText box.<br>4. Enter Invalid password in password text box<br>5.Click on login button | Application should show 'correct email or password ' validation message. | Working as expected | PASS | Successful | Y |  | GNANESWARA SAI<br>SUNANDH KUMAR,   |
| Login Page | UI         | Home page for USER   | Verify user is able to see the User home page when user finish on submitting Credentials | 1. Enter URI and click go2.Click on sign in button<br>3. Enter Valid ID in ID text box.<br>4. Enter valid password in password text box<br>5.Click on login button   | USER Home Page Should display the sign in page                           | Working as expected | PASS | Successful | Y |  | GANESH REDDY<br>GNANESWARA SAI     |
| Login Page | UI         | ADMIN PAGE           | On delete Button the user Credentials will be deleted                                    | 1. Enter URI and click go 2.Click on sign in button 3. Enter In Valid ID in IDText box<br>4. Enter Invalid password in password text box<br>5.Click on login button  | ADMIN Home page should the sign in page                                  | Working as expected | PASS | Successful | Y |  | SUNANDH KUMAR,<br>HANEESH CHOWDARY |

|           |            |           |   |   |                                |                     |      |            |   |  |                                    |
|-----------|------------|-----------|---|---|--------------------------------|---------------------|------|------------|---|--|------------------------------------|
| User Page | Functional | USER PAGE | Verify user is able to search the job based on their skills         | 1.Enter URL and click go2.Scroll down sign in button<br>3.Verify login/Sign up displayed or not | Show search box                | Working as expected | PASS | Successful | Y |  | GANESH REDDY<br>SUNANDH KUMAR,     |
| User Page | UI         | USER PAGE | Verify the User whether their identify the job based on their skill | Click on the URL and goto user page by giving Correct Credentials                               | Display the job recommendation | Working as expected | PASS | Successful | Y |  | GANESH REDDY<br>GNANESWARA SAI     |
| User Page | UI         | USER PAGE | Verify User   | Click on the URL and goto user page by giving Correct Credentials                               | Display the job recommendation | Working as expected | PASS | Successful | Y |  | HANEESH CHOWDARY<br>GNANESWARA SAI |

|            |            |            |   |  |  |                     |      |            |   |  |  |
|------------|------------|------------|---|--|--|---------------------|------|------------|---|--|--|
| Admin Page | Functional | Admin Page | Admin can see the user database                             | 1.Enter URL : and click go 2. Enter the Credentials for the admin page and submit  | user database should display on admin page | Working as expected | PASS | Successful | Y |  | GNANESWARA SAI<br>SUNANDH KUMAR,<br>HANEESH CHOWDARY |
| Admin Page | Functional | Admin Page | Admin can detect the user Database                          | 1. Enter URL and click go 2. Click on submit by giving correct credentials to the admin Page   | Detect the user Database                   | Working as expected | PASS | Successful | Y |  | GANESH REDDY<br>GNANESWARA SAI<br>HANEESH CHOWDARY   |
| Admin Page | Functional | Admin Page | Verify the overall search and will get a job recommendation | 1. Enter URL and click go 2. Click on submit by giving correct credentials to the admin Page<br>3. After type the skills will get recommendation | Detect the job recommendation.             | Working as expected | PASS | Successful | Y |  | SUNANDH KUMAR,<br>HANEESH CHOWDARY<br>GNANESWARA SAI |

| Test case ID | Feature Type | Component | Test Scenario   | Steps To Execute   | Expected Result   | Actual Result       | Status | Comments   | TC for Automation(Y/N) | BUG ID | Executed By                        |
|--------------|--------------|-----------|---|--|---|---------------------|--------|------------|------------------------|--------|------------------------------------|
| Home Page    | Functional   | Home Page | Verify user is able to see the Login/Signup page when user clicked the left corner button | 1. Enter URL and click go<br>2. Scroll down 3. Verify login/Signup page displayed or not   | Login/Signup page should display  | Working as expected | PASS   | Successful | Y                      |        | GANESH REDDY<br>GNANESWARA SAI     |
| Home Page    | UI           | Home Page | Verify the UI elements in Login/Signup page   | 1. Enter URL and click go<br>2. Click on Sign in button for User<br>3. Verify login/Signup up popup with below UI elements:<br>a. id text box<br>b. Password text box            | Application should show below UI elements:<br>a. email text box b. password text box c. login page will display | Working as expected | PASS   | Successful | Y                      |        | HANEESH CHOWDARY<br>GNANESWARA SAI |
| Home Page    | Functional   | Home page | Verify user is able to log into application with Valid credentials                        | 1. Enter URL and click go 2. Click on My Account dropdown button<br>3. Enter Valid ID in ID text box<br>4. Enter valid password in password text box<br>5. Click on login button | User should navigate to user homepage   | Working as expected | PASS   | Successful | Y                      |        | SUNANDH KUMAR,<br>GNANESWARA SAI   |

|          |            |          |   |  |                                   |                     |      |            |   |  |                                    |
|----------|------------|----------|---|--|-----------------------------------|---------------------|------|------------|---|--|------------------------------------|
| Chat box | Functional | Chat box | Verify user is unable to login in the login page.       | 1. Enter URL and click go<br>2. Scroll down 3. when you are login/Signup up in the page if their facing any issue you can use the chat                                       | Chat box should display           | Working as expected | PASS | Successful | Y |  | GNANESWARA SAI<br>HANEESH CHOWDARY |
| Chat box | UI         | Chat box | Verify the user is ask their query to chat box or not   | 1. Enter URL and click go<br>2. Click on Signup button for User.<br>3. Create an account for the user<br>4. User will use the chat box                                       | Chat box should display           | Working as expected | PASS | Successful | Y |  | SUNANDH KUMAR,<br>GANESH REDDY     |
| Chat box | Functional | Chat box | Verify the user is able to chat with chat box assistant | 1. Enter URL and click go<br>2. Click on Signup button for User.<br>3. Create an account for the user<br>4. User will use the chat box and get the reply from chat assistant | Application should Chat with user | Working as expected | PASS | Successful | Y |  | SUNANDH KUMAR,<br>HANEESH CHOWDARY |

## 8.2 USER ACCEPTENCE TESTING

The purpose of this document is to briefly explain the test coverage and open issues of the [Skill Based Job Recommender Application] project at the time of the release to User Acceptance Testing (UAT).

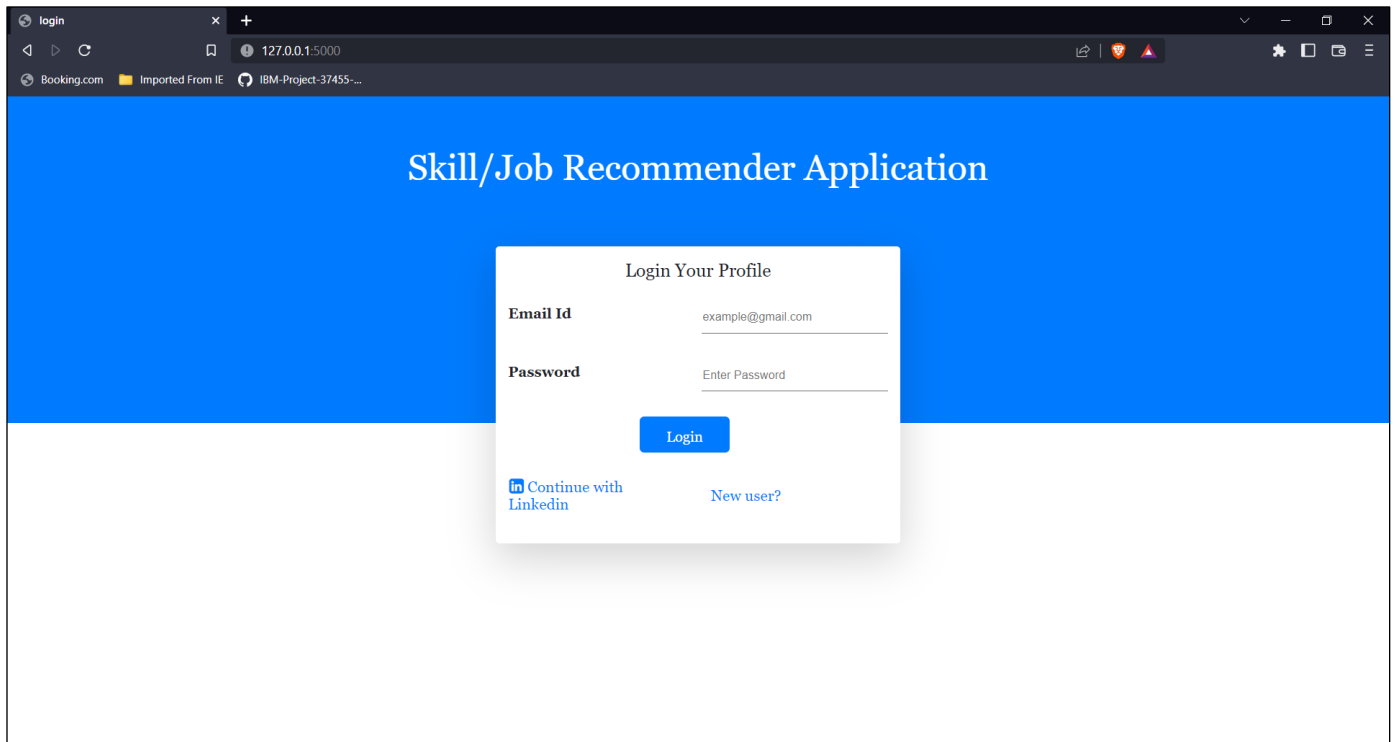
### DEFECT ANALYSIS:

| Resolution     | Severity 1 | Severity 2 | Severity 3 | Severity 4 | Subtotal |
|----------------|------------|------------|------------|------------|----------|
| By Design      | 20         | 15         | 13         | 7          | 50       |
| Duplicate      | 1          | 0          | 2          | 0          | 3        |
| External       | 6          | 5          | 3          | 1          | 14       |
| Fixed          | 20         | 15         | 13         | 7          | 50       |
| Not Reproduced | 0          | 0          | 0          | 0          | 0        |
| Skipped        | 0          | 1          | 0          | 1          | 2        |
| Won't Fix      | 0          | 7          | 2          | 1          | 10       |
| Totals         | 46         | 44         | 33         | 17         | 126      |

### TEST CASE ANALYSIS:

| Section            | Total Cases | Not Tested | Fail | Pass |
|--------------------|-------------|------------|------|------|
| Print Engine       | 15          | 0          | 0    | 15   |
| Client Application | 50          | 0          | 0    | 50   |
| Security           | 10          | 0          | 0    | 10   |

## 9. RESULTS



A screenshot of a web browser displaying the login page of the 'Skill/Job Recommender Application'. The browser's address bar shows the URL '127.0.0.1:5000'. The page has a blue header with the title 'Skill/Job Recommender Application' in white. A white login form is centered on the page. The form is titled 'Login Your Profile' and contains two input fields: 'Email Id' with the value 'example@gmail.com' and 'Password' with the placeholder 'Enter Password'. Below these fields is a blue 'Login' button. At the bottom of the form, there is a link 'Continue with LinkedIn' and a link 'New user?'.

login

127.0.0.1:5000

Booking.com Imported From IE IBM-Project-37455-...

### Skill/Job Recommender Application

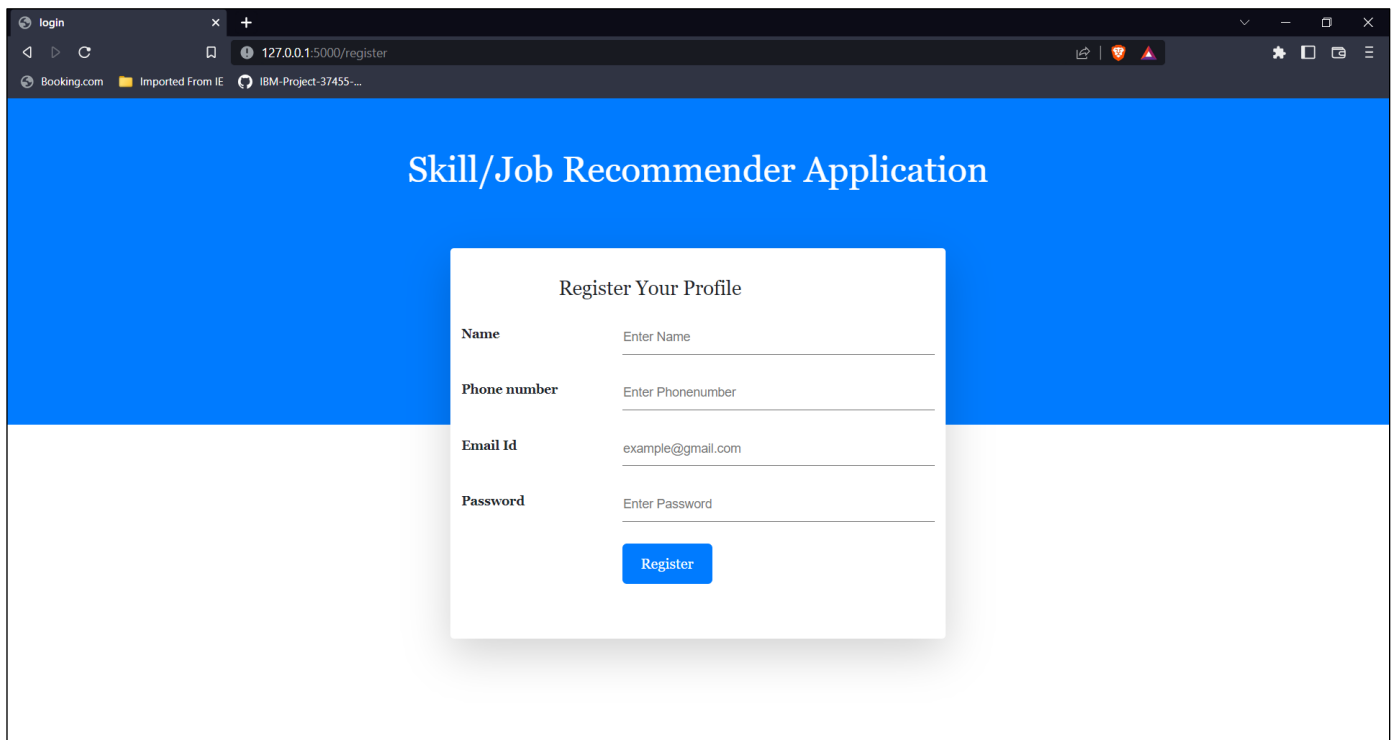
Login Your Profile

Email Id example@gmail.com

Password Enter Password

Login

Continue with LinkedIn New user?



A screenshot of a web browser displaying the register page of the 'Skill/Job Recommender Application'. The browser's address bar shows the URL '127.0.0.1:5000/register'. The page has a blue header with the title 'Skill/Job Recommender Application' in white. A white register form is centered on the page. The form is titled 'Register Your Profile' and contains four input fields: 'Name' with the placeholder 'Enter Name', 'Phone number' with the placeholder 'Enter Phonenumber', 'Email Id' with the value 'example@gmail.com', and 'Password' with the placeholder 'Enter Password'. Below these fields is a blue 'Register' button.

login

127.0.0.1:5000/register

Booking.com Imported From IE IBM-Project-37455-...

### Skill/Job Recommender Application

Register Your Profile

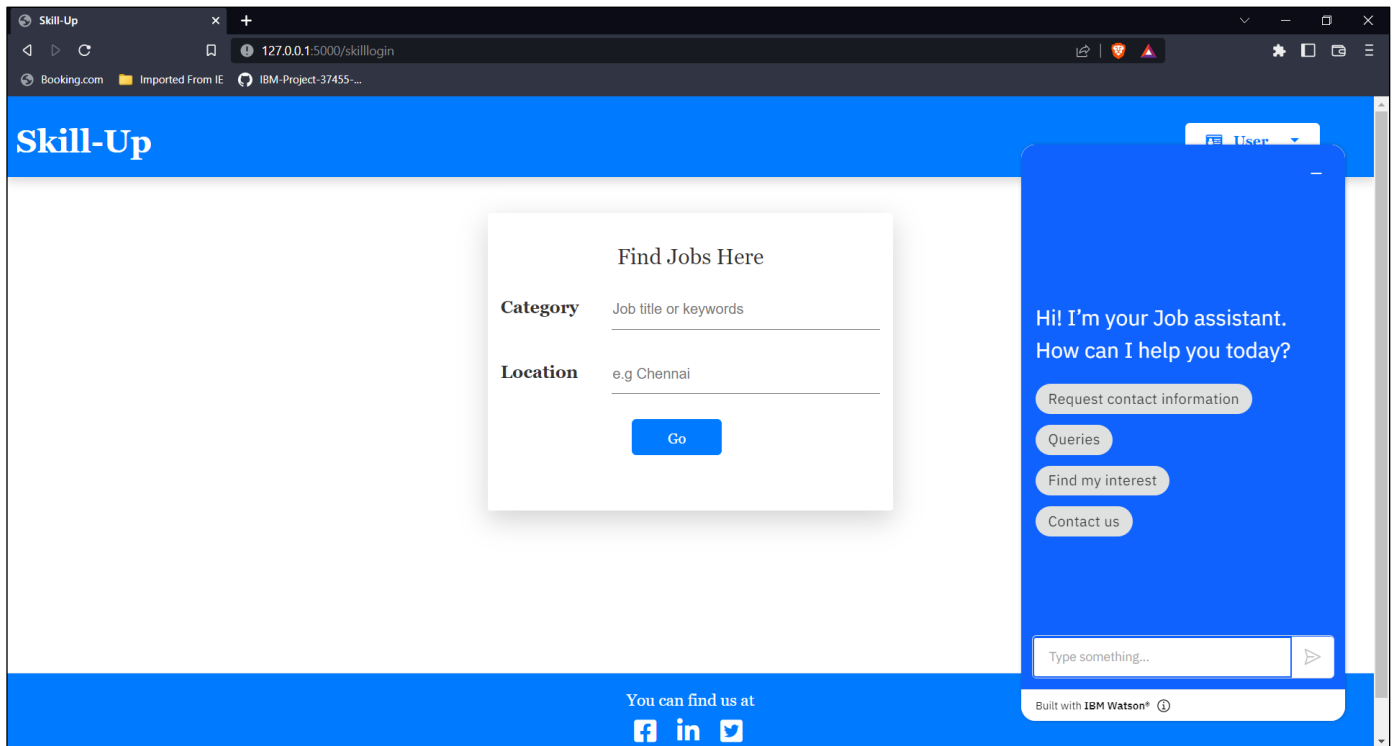
Name Enter Name

Phone number Enter Phonenumber

Email Id example@gmail.com

Password Enter Password

Register



| Skill-Up    |  |  |                                    |   |   | User |
|-------------|--|--|------------------------------------|---|---|------|
| DATE        | JOB TITLE                                    | COMPANY NAME                                       | SALARY                             | APPLY   | DESCRIPTION   |      |
| Just posted | Senior Marketing Specialist                  | Cargill  | Estimated \$75.5K - \$95.6K a year | <a href="https://www.indeed.com/rc/clk?jk=e913deb6f9673c91&amp;fcid=d7d9a8241ba2f3ec&amp;vjs=3">https://www.indeed.com/rc/clk?jk=e913deb6f9673c91&amp;fcid=d7d9a8241ba2f3ec&amp;vjs=3</a> | Identify and implement marketing strategies and programs in collaboration with internal businesses, sales, and technical teams.                                   |      |
| Just posted | Senior Customer Marketing Specialist         | BOEING   | Estimated \$115K - \$146K a year   | <a href="https://www.indeed.com/rc/clk?jk=f197ea8a20034489&amp;fcid=edae4285faf6c2f0&amp;vjs=3">https://www.indeed.com/rc/clk?jk=f197ea8a20034489&amp;fcid=edae4285faf6c2f0&amp;vjs=3</a> | Develops and completes marketing campaigns for fleet growth and replacement decisions with airlines. Elements of the Total Rewards package include competitive... |      |
| Just posted | VP Strategic Marketing                       | ALTENLOH BRINCK & CO US INC (SPAX, TRUFEST, & TRUF |                                    | <a href="https://www.indeed.com/rc/clk?jk=cc2b6618a1c473fa&amp;fcid=dd616958bd9ddc12&amp;vjs=3">https://www.indeed.com/rc/clk?jk=cc2b6618a1c473fa&amp;fcid=dd616958bd9ddc12&amp;vjs=3</a> | (Digital) Build a robust digital marketing strategy that supports the strategy of all three brands (all media) . Company match 401k @ 30 days.                    |      |
| Just posted | Product Marketing Manager (remote available) | Vasion   | Estimated \$103K - \$131K a year   | <a href="https://www.indeed.com/rc/clk?jk=7954d1c6f22103f2&amp;fcid=53c5c300e2c5704&amp;vjs=3">https://www.indeed.com/rc/clk?jk=7954d1c6f22103f2&amp;fcid=53c5c300e2c5704&amp;vjs=3</a>   | With Vasion's SaaS platform, businesses can capture analog and digital content, automate workflows, and securely manage content wherever it is stored.            |      |
| Just posted | Social Media Specialist                      | Goodwill Industries of Central NC                  | \$40,000 - \$45,000 a year         | <a href="https://www.indeed.com/rc/clk?jk=8e8ae7feb6a56e0a&amp;fcid=1b4f226cdc060a18&amp;vjs=3">https://www.indeed.com/rc/clk?jk=8e8ae7feb6a56e0a&amp;fcid=1b4f226cdc060a18&amp;vjs=3</a> | Minimum 2-years' professional work experience in content marketing, digital marketing, communications, or other related activities required...                    |      |



## 10 . ADVANTAGES & DISADVANTAGE

### ADVANTAGES:

- ❖ **Personalized experience** - Analyzing user behaviors, geography, language, and interest apps can tailor a delightful experience for the customers.
- ❖ **Enhanced user interaction** - Customers are fond of immersive experience today. Hence apps are the best solution to give such a vivifying job search experience right from their comfort.
- ❖ **Flexible access** - Employees can work from anywhere with internet access.
- ❖ **Client secure login** - Impress clients with a modern web portal and improve customer service with automated processes.
- ❖ **Browse support** - Our app support in all the web browser.
- ❖ **Faster operation** – Application are way faster than other website this feature constitute apps to gain an advantage over website.

### DISADVANTAGES:

- ❖ **Never ending scrolling** - User should be able to get the most of the needed information within the limits of the screen.
- ❖ **No auto filled user data** - Apps which don't have auto fill data nowadays are regarded as poor in terms of usability.
- ❖ **Reduced speed** - A slight lag can cause massive loss and that leads to customer discontent.
- ❖ **Only online capacity** - The app works only when the internet connection is on.
- ❖ **Limited recommendation** - Our app consist of limited source.

## **11. CONCLUSION**

In the final analysis of our app, we have considered that skill based job recommender application is for finding the job according to their skill. The benefit of the app is it improves model performance, improves distribution of candidates over a set of homogeneous vacancies. Currently most attention goes out to represent how the substantial amount of textual data from both candidate profiles and vacancies to create job recommendations, for especially those who are seeking for job. Understanding of job recommendation process as well as it allows the use of variety of recommendation method according to the preferences of the job recommender system. Moreover, we also contribute making publicly available a new app containing for job seeker profiles and job vacancies. This survey shows the several approaches for job recommendation have been proposed and many techniques combined in order to produce the best fit between jobs and candidates. As part of our ongoing research, we aim to build a new recommendation approach and test with real data for employee and staffing data from large companies. In addition to we plan to enhance the similarity measures suitable for this problem.

## **12. FUTURE SCOPE**

The significance of information system support in the recruitment process can be observed when considering the phase of the recruitment such as handling of candidates applications and the pre-selection of candidates. However, a best fit between job and candidates depends on underlying aspects that are hard to measure. These underlying aspects are a significant reason why information systems have not been extensively used in the area of personnel selection so far. Mostly, IS technology is used to pre-select applicants based on Boolean search method. This method used queries contain a combination of key words that define skill requirements in order to determine those candidates that match with search criteria. Such type of skill matching is applied in numerous e-recruiting applications. However, as mentioned above, the simple filter techniques. The objective of recommender systems is to provide recommendations based on recorded information on the users' preferences. These systems use information filtering techniques to process information and provide the user with potentially more relevant items.