

PROJECT REPORT

Skill and Job Recommender

Team ID : PNT2022TMID23185

1.INTRODUCTION:

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 log in and find the jobs by using the 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 user skillset. The user and their information are stored in the Database. An alert is sent when there is an opening based on the user skillset. Users will interact with the chatbot and can get the recommendations based on their skills. We can use a job search API to get the current job openings in the market which will fetch the data directly from the webpage.

1.1.IMPORTANCE OF SKILL JOB RECOMMENDER SYSTEM:

Recommender system has the ability to predict whether a particular user would prefer an item or not based on the user's profile. Recommender systems are beneficial to both service providers and users [3]. They **reduce transaction costs of finding and selecting items in an online shopping environment** .

2.LITERATURE SURVEY:

YE AR	TITLE	AUTHOR	PROBLEM STATEME NT	TECHNIQUE	PROS	CONS
2018	Job Recommendati onbased on Job Seeker Skills	I. Jorge Valverde - Rebaza a. Ricardo Puma b. Paul Bustios c. Nat hal ia C. Sil va	Although in the literature exists a variety of techniquesand strategies used as part of job recommender systems, most of them fail to recommend job vacancies that fit properly to the job seekers profiles.	Text processing and recommendat ion methods	making publicly available a newdataset containing job seekers profilesand job vacancies	focus on performing a more exhaustive evaluation considering a greater amount ofmethods and data as well as comprehensi ve evaluation of theimpact of each professional skillof a job seeker on the received job recommendati on

2018	A Combined Representati onLearning Approach for Better Job and Skill Recommendation	<p>a. Vachik S. Dave</p> <p>b. B a i c h u a n Z h a n g</p> <p>c. Mo ha mm ad Al Has an</p> <p>d. K h a l i f e h A l J</p>	An excellent job recommender system not only enables to recommend a higherpaying job which is maximally aligned with the skill-set of the current job, but also suggests to acquire few additional skills which are required to assume the new position	<p>a. Job-transit ion netwo rk</p> <p>b. J o b - s k ill n e t w o r k</p> <p>c. J o b - o c c u r r e n c e n e t w o r k</p>	<p>a. P a i r w i s e R a n k i n g O b j e c t i v e</p> <p>b. Providi ng high quality job recom mendat ion</p>	Skill-gap accurate identification skillmatch
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		<p>a d d a</p> <p>e. Mo ha m m ed Kor ay em</p>				
2018	Talent Search and Recommendation at LinkedIn	<p>a. Sachin Cem</p> <p>b. Geyik Ket an Tha kk ar</p>	The talent search system could be quite complex combining several structured fields	Talent Search Recommendation Candidate Retrieval and Ranking	Recruiters can search the candidates for the job openings	The recruiter or HR may not be able to express their hiring needs in the form of a search query (job posting)

2019	Tripartite Vector Representations for Better Job Recommendation	<ul style="list-style-type: none"> a. Mengshu Liu b. Jingya Wang c. Kareem Abdulatah d. Mohammed Korayem 	To match the right person with the right job, a good representation of job postings is required. Such representations should ideally recommend jobs with fitting titles, aligned skill set, and reasonable commute.	Graph by the combination of title, skill and location	This allows us to gain a representation of job postings/ resumes using both elements, which subsequently can be combined with location.	Develop an inductive learning framework to accommodate newly emerged job titles and skills and representation vectors only exist if it is in the input graph
2019	The AI Behind LinkedIn Recruiter search and Recommendation Systems	<ul style="list-style-type: none"> a. QiGuo b. Sachin Cem Geyik 	It uses existing information in your profile	<ul style="list-style-type: none"> a. Non-linear modeling with Gradient Boosted Decision Trees b. Deep 	Easily attach your LinkedIn resume to any job application	<ul style="list-style-type: none"> a. Getting spam messages b. Taking too much time while using

				p l e a r n i n g		ng c. There is no opportunity for reference
20 19	A-Map Based Job recommender Model	a. Manal Aliyhieth b. Amal A. Shargabi	People often search their job openings on a particular website. Many of the system does not offer mapping support	Content-Based recommendation Location Based Search	This system provides the mapping support in order to increase the job search	Sometimes complicated to understand the map that was provided

20 20	Efficient and Scalable job Recommender System	a. Ravita Mishra b. Sheetal Rathi	Incomplete Description, Information overload	a. Collaborative content b. Graph-based filtering	In this technique, the user can access the information he/she may have been interested in the past. Accuracy, measure application domain efficiency.	Lack of good evaluation measure, scalability, privacy and security
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20 20	Job Recommendation Profile Clustering and Job Seeker Behavior	a. Mhamdi .D b. Azzouazi .M	In Big Data, both employees and job seekers are confronted with increasing data overload and time consuming	K-clustering Profile Clustering	Job offers can be collected from the websites. Job offers can be divided into Job clusters based on the features	a. Increasing data overloaded b. Time consuming processes
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20 21	Implementati onK-Means Clustering Methodin Job Recommendati on System	I. Betty Dewi Puspasari a. Bet ty Dewi Pusp asari b. A n d y P r a m o n o c. Aang Kisnu Darm	Finding job vacancies is a problem for students who have just completed their studies in higher education because they still do not havework experience so they are required to look for jobs that really match their criteria	K- Means Clusteri ng method	This application can provide solutions to companies and applicants in finding workers or jobs using a recommendati onsystem	With the different representations of the data, the results achieved are alsodifferent.
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20 22	Job Recommendati onSystem Using Hybrid Filtering	<p>a. Aneesh Mulay,</p> <p>b. Shriyash Sutar</p> <p>c. Jiten Patel</p> <p>d. A di ti C h h a b ri a,</p> <p>e. Sn eh al Mu mb aik ar</p>	Many fresher candidates face issues while job recruitment process to undergo which field of interest.	Hybrid Filtering	<p>The application will be user friendly and the user just has to fill in basic details such as his past yearsof experiences, project, internship,etc.</p> <p>The rest of recommending the job to the users will be done safely by the recommendati onmodel of this project.</p>	content-based and collaborative approach have their own disadvantages
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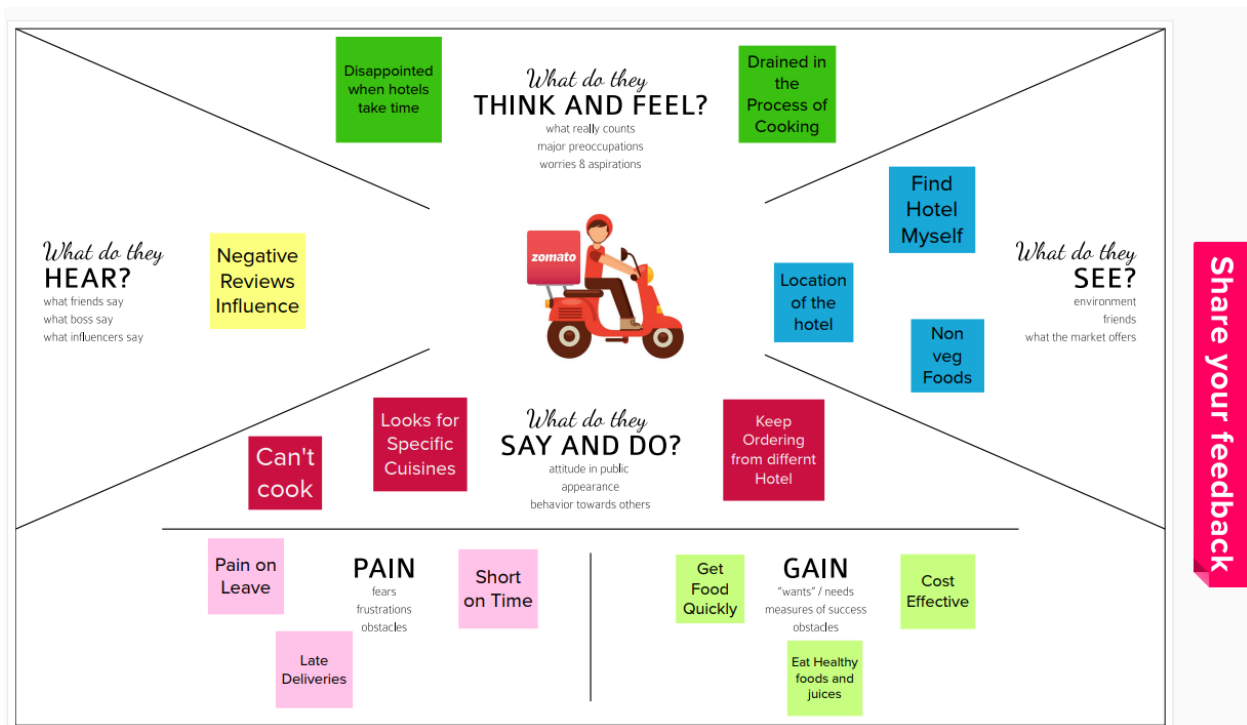
2.2 CustomerProblem Statement:

Create a problem statement to understand your customer's point of view.The Customer Problem Statement template helps you focus on what matters to create experiences people will love

A well-articulated customer problem statement allows you and your team to find ideal solution for the challenges your customers face. Through out the process also be able to empathize with your customers, which helps you better understand how they perceive your product or service

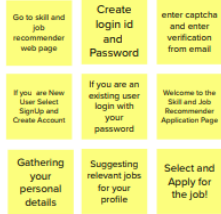
3. IDEATION & PROPOSED SOLUTION:

3.1. EMPATHY MAP CANVAS:

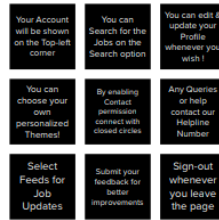


3.2.IDEATION & BRAINSTORMING:

Sign in & SignUp-Webpage



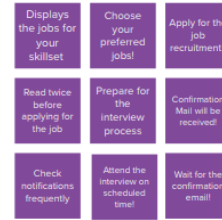
User Interface



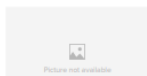
Customize Details



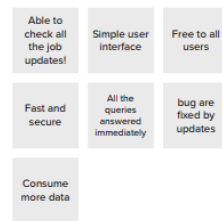
Job Recruitments



Admin Interfaces



Pain & Gain



3.3 PROPOSED SOLUTION

1. PROBLEM STATEMENT

finding a job is a major challenge. It's not clear for the candidates to choose the right path hence needs to choose a correct job for their future.

Problems faced by recruiters are

- i) Many of the users post their false qualifications on the portals.
- ii) Overflow of applicants
- iii) Too many tests, too many cheaters

Problems faced by job seekers are

- i) Many of the jobs are not real
- ii) The companies listed do not give their actual structure and environment where the industry is located
- iii) Also some of the job portals ask for the money before the commencement of the job.
- iv) No response from the companies
- v) Outdated job posting
- vi) Unfit job alerts

2. IDEA/SOLUTION DESCRIPTION

1. Application completion rate
2. Candidate call back
3. Candidate per Hire
4. Track the percentage of openings filled
5. Chat support
6. User-friendly
7. Providing the actual infrastructure of the Industry
8. By checking and verifying the documents and openings
9. No alerts based on past history

3. NOVELTY/UNIQUENESS

1. Using of Content-based filtering, collaborative filtering and Hybrid filtering.
2. Most candidates don't actually read the JD, so getting candidates that are genuinely interested in the position beyond the paycheck/title saves recruiters a lot of time.
3. The skills in the job will be mentioned as beginner, intermediate and expert level.
4. Chatbot

4. SOCIAL IMPACT/CUSTOMER SATISFACTION

1. The app logs out everytime.
2. Reinstalled the app but the Issue is not resolved.
3. Due to getting logged out frequently, it doesn't receive the job notifications also.
4. Additionally most of the it says No network available.

5. BUSINESS MODEL

This project will give the best results in finding the job for the job seekers. It'll suggest the exact job that fits for the user. Also we are including the levels of skills in the job description so that the user won't get confused while apply for the job. Hope this project will be the upgrade version of other job search apps.

6. SCALABILITY OF SOLUTION

1. Enabling a rapid response.
2. Improving work conditions, modernising employment services and making them more flexible
3. Exercising social dialogue as an effective way to design balanced and acceptable policy responses.
4. Strengthening employment and social protection systems.
5. Promoting transitions from the informal to the formal economy.

3.4. PROBLEM SOLUTION FIT:

Problem-Solution Fit canvas			Purpose / Vision	Version:
Define CS, fit into C.	1. CUSTOMER SEGMENT(S) CS The user wants a job that fits to their skills	6. CUSTOMER LIMITATIONS CL <small>EG. BUDGET, DEVICES</small> Can view the details of what the recruiter added in the job description Needs understanding to use the application	5. AVAILABLE SOLUTIONS AS <small>PLUSES & MINUSES</small> Text processing and recommendation method Content-based filtering Collaborative filtering Graph-based filtering	Explore AS, differentiate
	2. PROBLEMS / PAINS + ITS FREQUENCY PR Confusion in choosing a right job Similar job alerts for frequent times Many of the jobs are not real The companies listed do not give their actual structure	9. PROBLEM ROOT / CAUSE RC Giving Incorrect details in profile page No responses for the application Network problem The company and the job openings should be verified	7. BEHAVIOR + ITS INTENSITY BE User-friendly Saves lots of time Chat Support Providing the actual infrastructure of the Industry	
Identify through TR & BE	3. TRIGGERS TO ACT TR The user gets the job alerts Job description reveals the necessary criteria	10. YOUR SOLUTION SL 1. Application completion rate 2. Track the percentage of openings filled 3. Providing the actual Infrastructure of the Industry 4. By checking and verifying the documents and opening 5. Hybrid filtering technique	8. CHANNELS of BEHAVIOR CH ONLINE Users have to upload their resumes and fill up the essential details such as name, education, skills, location, and experience. OFFLINE Users can view the job description from their alerts.	Extract online & offline CH of BE
	4. EMOTIONS <small>BEFORE / AFTER</small> EM Before : Had lots of confusion to choose a job After : Can attend the job interview without worries			

4.REQUIREMENT ANALYSIS:

FUNCTIONAL REQUIREMENTS:

Following are the functional requirements of the proposed solution.

<u>FR No.</u>	<u>Functional Requirement (Epic)</u>	<u>Sub Requirement (Story / Sub-Task)</u>
<u>FR-1</u>	<u>User Registration</u>	<u>Registration through Form.</u> <u>Registration through Gmail.</u> <u>Registration through Application.</u>
<u>FR-2</u>	<u>User Confirmation</u>	<u>Confirmation via Email.</u> <u>Confirmation via OTP.</u>
<u>FR-3</u>	<u>User Login</u>	<u>Login using credentials.</u>
<u>FR-4</u>	<u>User Application</u>	<u>Search for desired company.</u>
<u>FR-5</u>	<u>User Profile</u>	<u>Complete user profile by providing personal details.</u>
<u>FR-6</u>	<u>User Application</u>	<u>User applies for the desired company.</u>

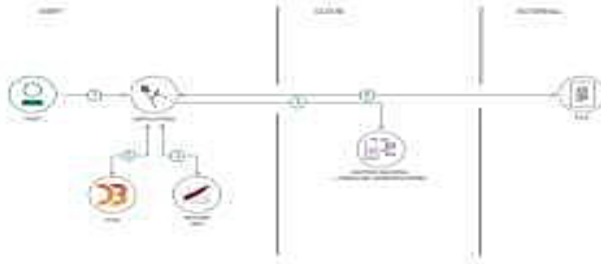
Non-functional Requirements: Following are the non-functional requirements of the proposed solution

<u>FR No.</u>	<u>Non-Functional Requirement</u>	<u>Description</u>
<u>NFR-1</u>	<u>Usability</u>	1. <u>User-Friendly Application.</u>
<u>NFR-2</u>	<u>Security</u>	1. <u>End-to-End Encryption.</u>
<u>NFR-3</u>	<u>Reliability</u>	1. <u>Based on personalised skillsets.</u>
<u>NFR-4</u>	<u>Performance</u>	1. <u>Analysing the skill sets of the user to ensure our recommendations reach them better.</u>
<u>NFR-5</u>	<u>Availability</u>	1. <u>24/7 chatbot support ✓ 24/7 chatbot support.</u>
<u>NFR-6</u>	<u>Scalability</u>	1. <u>Reaching the on-scale the user.</u>

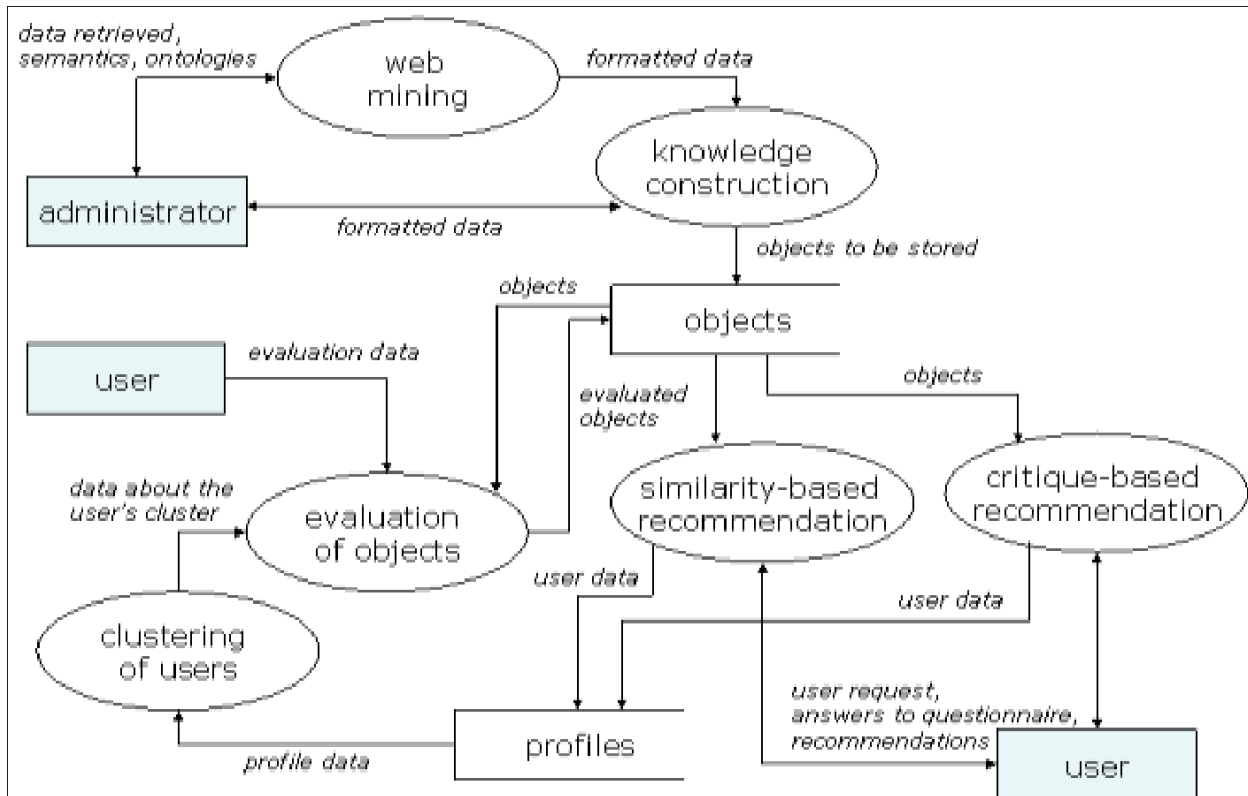
5.PROJECT DESIGN:

DATA FLOW DIAGRAM:

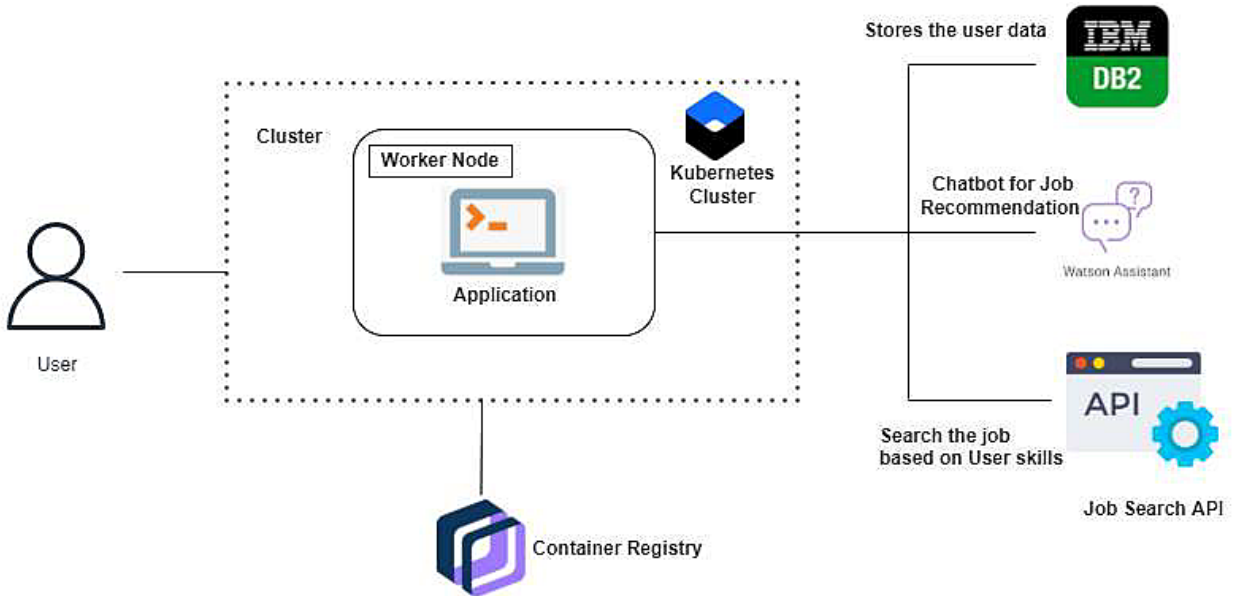
Flow



1. User configures credentials for the Watson Natural Language Understanding service and starts the app.
2. User selects data file to process and load.
3. Apache Tika extracts text from the data file.
4. Extracted text is passed to Watson NLU for enrichment.
5. Enriched data is visualized in the UI using the D3.js library.



5.2.SOLUTION ARCHITECTURE:

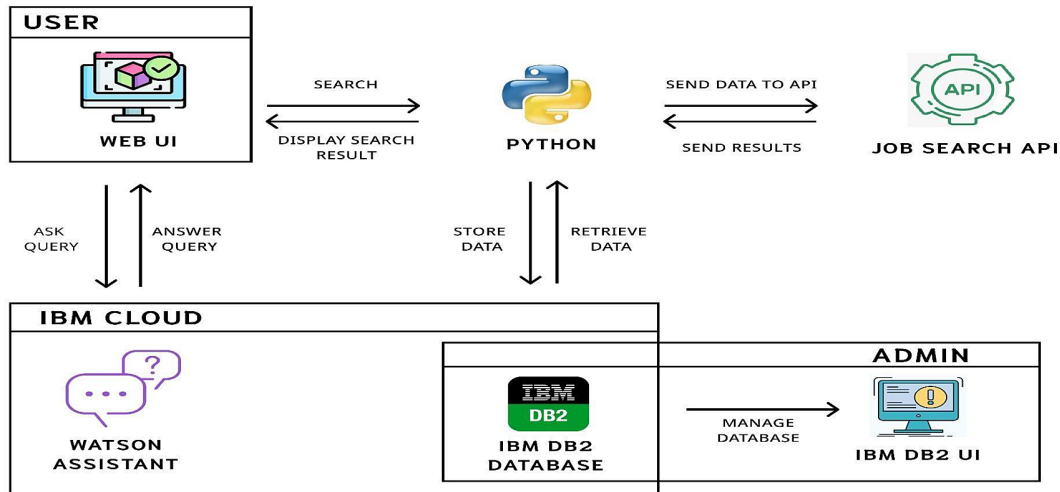


SERVICES USED:

Watson Assistant:



TECHNICAL 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		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, can I register for job	I can register with my skills specification	High	Sprint -1
Customer (Web user)	support	USN-7	As a user, can I get support when I need some assistance	I can get help in support section	Medium	Sprint-2
	profile	USN-8	As a user, can I get the steps to fulfil my profile	I can get steps of fulfilling my profile section	High	Sprint-1
	apply	USN-9	As a user, can I get reference to apply for job	I can get reference to apply for job	High	Sprint-1

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

CODING AND SOLUTIONS:

LOGIN PAGE

```
!DOCTYPE html>

<html lang="en" dir="ltr">

  <head>

    <meta charset="utf-8">

    <title>Skill and Job Recommender</title>

    <link rel="stylesheet" href="style.css">

  </head>

  <body>

    <div class="center">

      <h1>Login</h1>

      <form action="/login" method="post">

        <div class="txt field">

          <input type="text" required>

          <span></span>

          <label>Username</label>

        </div>

        <div class="txt field">

          <input type="password" required>

          <span></span>

          <label>Password</label>

        </div>

        <div class="pass">Forgot Password?</div>

        <input type="submit" value="Login" href="dashboard.html">

      </form>

    </div>

  </body>

</html>
```

```

<div class="signup link">
    Not a member? <a href="register.html">Signup</a>
</div>
</form>
</div>
</body>
</html>

```

login style:

```

@import
url('https://fonts.googleapis.com/css2?family=Noto+Sans:wght@700&family=Poppins:wght@400;500;600&display=swap');
*{
    margin: 0;
    padding: 0;
    box-sizing: border-box;
    font-family: "Poppins", sans-serif;
}
body{
    margin: 0;
    padding: 0;
    background: linear-gradient(120deg,#2980b9, #8e44ad);
    height: 100vh;
    overflow: hidden;
}
.center{
    position: absolute;
    top: 50%;
    left: 50%;

```

```

transform: translate(-50%, -50%);
width: 400px;
background: white;
border-radius: 10px;
box-shadow: 10px 10px 15px rgba(0,0,0,0.05);
}
.center h1{
  text-align: center;
  padding: 20px 0;
  border-bottom: 1px solid silver;
}
.center form{
  padding: 0 40px;
  box-sizing: border-box;
}
form .txt_field{
  position: relative;
  border-bottom: 2px solid #adadad;

```

REGISTER PAGE:

```

<!DOCTYPE html>
<!-- Coding by CodingLab | www.codinglabweb.com-->
<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>signup for skill/job recommender</title>

```

```
<!--<title>Email and Password Validation</title>-->
```

```
<!-- CSS -->
```

```
<link rel="stylesheet" href="style-register.css" />
```

```
<!-- Boxicons CSS -->
```

```
<link
```

```
  href="https://unpkg.com/boxicons@2.1.2/css/boxicons.min.css"
```

```
  rel="stylesheet"
```

```
/>
```

```
</head>
```

```
<body>
```

```
  <div class="container">
```

```
    <header>Signup</header>
```

```
    <form action="/register" method="post">
```

```
      <div class="field email-field">
```

```
        <div class="input-field">
```

```
          <input type="text" placeholder="Enter your Name" class="email" />
```

```
        </div>
```

```
      </div>
```

```
      <div class="field create-password">
```

```
        <div class="input-field">
```

```
          <input
```

```
            type="email"
```

```
            placeholder="Enter your email"
```

```
            class="password"
```

```
          />
```

```
        <span class="error email-error">
```

```
          <i class="bx bx-error-circle error-icon"></i>
```

```
          <p class="error-text">Please enter a valid email</p>
```

```
        </span>
```

```

</div>
<span class="error password-error">
  <i class="bx bx-error-circle error-icon"></i>
  <p class="error-text">
    Please enter atleast 8 charatcer with number, symbol, small and
    capital letter.
  </p>
</span>
</div>
<div class="field confirm-password">
  <div class="input-field">
    <input
      type="password"
      placeholder="Enter Your password"
      class="cPassword"
    />
  </div>
  <span class="error cPassword-error">
    <i class="bx bx-error-circle error-icon"></i>
    <p class="error-text">Password don't match</p>
  </span>
</div>
<div class="input-field button">
  <input type="submit" value="Submit"/>
</div>
</form>
</div>

<!-- JavaScript -->
<!--<script src="js/script.js"></script>-->
</body>

```

</html>

STYLE REGISTER:

@import

url("https://fonts.googleapis.com/css2?family=Poppins:wght@300;400;500;600&display=swap");

*** {
margin: 0;
padding: 0;
box-sizing: border-box;
font-family: "Poppins", sans-serif;
}**

**body {
min-height: 100vh;
display: flex;
align-items: center;
justify-content: center;
background: #4070f4;
}**

**.container {
position: relative;
max-width: 370px;
width: 100%;
padding: 25px;
border-radius: 8px;
background-color: #fff;
}**

```
.container header {  
  font-size: 22px;  
  font-weight: 600;  
  color: #333;  
}  
.container form {  
  margin-top: 30px;  
}  
form .field {  
  margin-bottom: 20px;  
}  
form .input-field {  
  position: relative;  
  height: 55px;  
  width: 100%;  
}  
.input-field input {  
  height: 100%;  
  width: 100%;  
  outline: none;  
  border: none;  
  border-radius: 8px;  
  padding: 0 15px;  
  border: 1px solid #d1d1d1;  
}  
.invalid input {  
  border-color: #d93025;  
}  
.input-field .show-hide {  
  position: absolute;  
  right: 13px;
```

```
top: 50%;
transform: translateY(-50%);
font-size: 18px;
color: #919191;
cursor: pointer;
padding: 3px;
}
.field .error {
display: flex;
align-items: center;
margin-top: 6px;
color: #d93025;
font-size: 13px;
display: none;
}
.invalid .error {
display: flex;
}
.error .error-icon {
margin-right: 6px;
font-size: 15px;
}
.create-password .error {
align-items: flex-start;
}
.create-password .error-icon {
margin-top: 4px;
}
.button {
margin: 25px 0 6px;
}
```



```
.button input {  
  color: #fff;  
  font-size: 16px;  
  font-weight: 400;  
  background-color: #4070f4;  
  cursor: pointer;  
  transition: all 0.3s ease;  
}  
.button input:hover {  
  background-color: #0e4bf1;  
}
```

LOGOUT:

```
<!DOCTYPE html>  
<head>  
  <style>  
    body{  
      background-color: rgb(207, 36, 64);  
    }  
    h1{  
      color: whitesmoke;  
      font-family: 'Times New Roman', Times, serif;  
      text-align: center;  
    }  
  </style>  
</head>  
<body>  
  <h1>You are Successfully Logged out!</h1>
```

```
</body>
</html>
```

HOME 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>JOBPORTAL | HOME</title>
  <meta charset="UTF-8">
  <!-- favicon -->
  <!-- <link rel="shortcut icon" href="/assets/img/favicon.ico"
type="image/x-icon"> -->
  <!-- <link rel="icon" href="/assets/img/favicon.ico" type="image/x-
icon"> -->
  <link rel="icon" type="image/png" sizes="16x16"
href="/assets/img/favicon-32x32.png">
  <!-- bootstrap css cdn -->
  <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.
min.css" integrity="sha384-
JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGM
N5t9UJ0Z" crossorigin="anonymous">
  <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.css">
  <!-- css stylesheet -->
```

```
<link rel="stylesheet" href="css/style.css">
<!-- font styles cdn -->
<link rel="preconnect" href="https://fonts.gstatic.com">
<link
href="https://fonts.googleapis.com/css2?family=Alegreya&display=swap"
rel="stylesheet">
<link
href="https://fonts.googleapis.com/css2?family=Alegreya:wght@600&dis
play=swap" rel="stylesheet">
</head>
<body>
  <!-- bootstrap navbar -->
  <nav class="navbar sticky-top navbar-expand-lg navbar-dark">
    <div class="container-fluid">
      <a class="main-logo-img mt-3" href="#">
      <!-- <a class="navbar-brand" href="index.html">JobPortal</a> -->
    </a>
    <div class="row donate-sponsor">
      <a type="button" class="btn btn-success mr-1" id="donate"
href="login">LOGIN</a>
      <a type="button" class="btn btn-warning mr-1" id="sponsor"
href="register">REGISTER</a>
      <a type="button" class="btn btn-primary mr-1" id="sponsor"
href="contact.html">CONTACT US</a>
    </div>
  </div>
</nav>
<!-- navbar ends -->

<!-- what we focus on -->
```

```

<section class="our-focus">
  <div class="container">
    <h2 class="text-center mt-3">Aboutus</h2>
    <div class="row ml-3 mt-3">
      <div class="col-lg-3 mr-5" id="focus-first">
        <div class="card" style="width: 19rem;">
          <!--  -->
          <div class="card-body">
            <h5 class="card-title">Mission</h5>
            <p class="card-text">SMARTBRIDGE is an edTech
organization with a vision to bridge the gap between academia & industry.
Our outcome-based experiential learning programs on emerging
technologies (Internet of Things, Machine Learning, Data Science,
Artificial Intelligence, Robotics) are building skilled entry - level engineers,
for the corporate world. .
            </p>
          </div>
        </div>
      </div>
    </div>
    <div class="col-lg-3 mr-5" id="focus-second">
      <div class="card" style="width: 20rem;">
        <!--  -->
        <div class="card-body">
          <h5 class="card-title">Vission</h5>
          <p class="card-text">Our main objective is to bridge the
existing gaps between prevailing industry standards and what the
academics offer to the graduates while passing out of university.
SmartBridge offers suitable skill deployment and training to the young
talent before on boarding their first job.

```

Our skill development programs are designed considering the present expectations in the industry. </p>

</div>

</div>

</div>

<div class="col-lg-3 ml-5" id="focus-third">

<div class="card" style="width: 20rem;">

<!-- -->

<div class="card-body">

<h5 class="card-title">Objective</h5>

<p class="card-text">Well directed career guidance programs for educational institutions

Appropriate certification courses that suit the industry need

Train the trainers; expanded awareness about the current industry standards

Liaise with corporates to offer niche internships

Establish technology development centers in colleges

Specialised incubation centers in collaboration with corporates</p>

</div>

</div>

</div>

</div>

</div>

</section>

<!-- focus section ends -->

<!-- footer starts -->

<!-- Site footer -->

<footer class="site-footer">

```
<div class="container mt-5">
  <div class="row">
    <div class="col-sm-12 col-md-6">
      <h3>JobPortal</h3>
      <p class="text-justify">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
log in and find the jobs by using the search option or they can directly
interact with the chatbot and get their dream job.</p>
    </div>

    <div class="col-xs-6 col-md-3">
      <h4>Get in Touch</h4>
      <ul class="footer-links">
        <li><a
href="contact.html">vikramgnanasekaran2@gmail.com</a></li>
        <li><a href="">+91 9360324195</a></li>
      </ul>
    </div>

  </div>
  <hr>
</div>
</div>
</footer>

</body>
</html>
```

APPLY 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>JOBPORTAL | APPLY</title>
  <!-- favicon -->
  <!-- <link rel="shortcut icon" href="/assets/img/favicon.ico"
type="image/x-icon"> -->
  <!-- <link rel="icon" href="/assets/img/favicon.ico" type="image/x-
icon"> -->
  <link rel="icon" type="image/png" sizes="16x16"
href="/assets/img/favicon-32x32.png">
  <!-- bootstrap css cdn -->
  <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.
min.css" integrity="sha384-
JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGM
N5t9UJ0Z" crossorigin="anonymous">
  <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.css">
  <!-- css stylesheet -->
  <link rel="stylesheet" href="css/apply-style.css">
  <!-- font styles cdn -->
  <link rel="preconnect" href="https://fonts.gstatic.com">
  <link
```

```
href="https://fonts.googleapis.com/css2?family=Alegreya&display=swap"
rel="stylesheet">
```

```
<link
```

```
href="https://fonts.googleapis.com/css2?family=Alegreya:wght@600&dis
play=swap" rel="stylesheet">
```

```
<style>
```

```
body{
```

```
background-color:skyblue;
```

```
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<!-- bootstrap navbar -->
```

```
<div class="logo mt-3 text-center">
```

```
<a class="main-logo-img mt-5" href="#">
```

```
<!-- <a class="navbar-brand" href="index.html">JobPortal</a> -->
```

```
</a>
```

```
</div>
```

```
<!-- navbar ends -->
```

```
<!-- Login form -->
```

```
<div class="login text-center mt-5">
```

```
<h2>Apply Now</h2>
```

```
<div class="msg">{{ msg }}</div>
```

```
<form action="/apply" method="post" class="mt-3">
```

```
<!-- <input type="text" placeholder="fullname" id="fullname">
```

```
</br></br> -->
```

```
<input type="text" name="username" placeholder="Enter Your
Username" id="username" required></br></br>
```

```
<input type="email" name="email" placeholder="Enter Your email"
id="email" required></br></br>
```



```
<input type="text" name="qualification" placeholder="Enter Your
Qualification" id="qualification" required></br></br>
```

```
<input type="text" name="skills"
placeholder="Enter Your skills" id="skills" required></br></br>
```

```
<select name ="s">
<option value ="PYTHON"> Python</option>
<option value ="ML"> ML</option>
<option value ="AI"> AI</option>
</select>
```

```
</br></br>
<button type="submit" id="button" class="btn btn-primary">
Submit</button>
</form>
</div>
```

```
<div class="note mt-3 text-center">
<p> click here to go to dashboard <a href="dashboard.html">Dashboard!
</a> </p>
</div>
</body>
</html>
```

DISPLAY 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>JOBPORTAL | HOME</title>
  <div class="msg">{{ msg }}</div>
<meta charset="UTF-8">
  <!-- favicon -->
  <!-- <link rel="shortcut icon" href="/assets/img/favicon.ico"
type="image/x-icon"> -->
  <!-- <link rel="icon" href="/assets/img/favicon.ico" type="image/x-
icon"> -->
  <link rel="icon" type="image/png" sizes="16x16"
href="/assets/img/favicon-32x32.png">
  <!-- bootstrap css cdn -->
  <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.
min.css" integrity="sha384-
JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGM
N5t9UJ0Z" crossorigin="anonymous">
  <link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.css">
  <!-- css stylesheet -->
  <link rel="stylesheet" href="css/style.css">
  <!-- font styles cdn -->
  <link rel="preconnect" href="https://fonts.gstatic.com">
  <link
href="https://fonts.googleapis.com/css2?family=Alegreya&display=swap"
rel="stylesheet">
  <link
href="https://fonts.googleapis.com/css2?family=Alegreya:wght@600&dis
play=swap" rel="stylesheet">
</head>
<body>
```

```

<!-- bootstrap navbar -->
<nav class="navbar sticky-top navbar-expand-lg navbar-light">
  <div class="container-fluid">
    <a class="main-logo-img mt-3" href="#">
    <!-- <a class="navbar-brand" href="index.html">JobPortal</a> -->
    </a>
    <button class="navbar-toggler" type="button" data-bs-
toggle="collapse" data-bs-target="#navbarSupportedContent" aria-
controls="navbarSupportedContent" aria-expanded="false" aria-
label="Toggle navigation">
      <span class="navbar-toggler-icon"></span>
    </button>
    <div class="row donate-sponsor">
      <a type="button" class="btn btn-success mr-1" id="donate"
href="/logout">LOGOUT</a>
      <a type="button" class="btn btn-warning mr-1" id="sponsor"
href="register.html">REGISTER</a>
      <a type="button" class="btn btn-primary mr-1" id="sponsor"
href="display.html">MY JOBS</a>
    </div>
  </div>
</nav>
<!-- navbar ends -->

```

```

<!-- what we focus on -->
<section class="our-focus">
  <div class="container">
    <h2 class="text-center mt-3">Your details</h2>
    <div class="border">

```

class="worddark"></br></br></br></br>

<table

<tr>

<td>userid:</td>

<td>{{ account[0] }}</td>

</tr>

<tr>

<td>username:</td>

<td>{{ account[1] }}</td>

</tr>

<tr>

<td>Email ID:</td>

<td>{{ account[2] }}</td>

</tr>

<tr>

<td>qualification:</td>

<td>{{ account[3] }}</td>

</tr>

<tr>

<td>skills:</td>

<td>{{ account[4] }}</td>

```

</tr>
<tr>

<td>JOB Applied:</td>

<td>{{ account[5] }}</td>

</tr>

</table>

</section>
</body>
</html>

```

DASHBOARD WEBPAGE:

```

<!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>JOBPORTAL | HOME</title>
  <meta charset="UTF-8">
  <!-- favicon -->
  <!-- <link rel="shortcut icon" href="/assets/img/favicon.ico"
type="image/x-icon"> -->
  <!-- <link rel="icon" href="/assets/img/favicon.ico" type="image/x-
icon"> -->
  <link rel="icon" type="image/png" sizes="16x16" href="logo.jpg">

```

```
<!-- bootstrap css cdn -->
<link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.
min.css" integrity="sha384-
JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGM
N5t9UJ0Z" crossorigin="anonymous">
<link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.css">
<!-- css stylesheet -->
<link rel="stylesheet" href="css/style.css">
<!-- font styles cdn -->
<link rel="preconnect" href="https://fonts.gstatic.com">
<link
href="https://fonts.googleapis.com/css2?family=Alegreya&display=swap"
rel="stylesheet">
<link
href="https://fonts.googleapis.com/css2?family=Alegreya:wght@600&dis
play=swap" rel="stylesheet">
</head>
<body>
<!-- bootstrap navbar -->
<nav class="navbar sticky-top navbar-expand-lg navbar-light">
<div class="container-fluid">
<a class="main-logo-img mt-3" href="#">
<!-- <a class="navbar-brand" href="index.html">JobPortal</a> -->
</a>
<button class="navbar-toggler" type="button" data-bs-
toggle="collapse" data-bs-target="#navbarSupportedContent" aria-
controls="navbarSupportedContent" aria-expanded="false" aria-
```

```

label="Toggle navigation">
    <span class="navbar-toggler-icon"></span>
</button>
<div class="row donate-sponsor">
    <a type="button" class="btn btn-success mr-1" id="donate"
href="/logout.html">LOGOUT</a>
    <a type="button" class="btn btn-warning mr-1" id="sponsor"
href="/register.html">REGISTER</a>
    <a type="button" class="btn btn-primary mr-1" id="sponsor"
href="/display.html">MY JOBS</a>
</div>
</div>
</nav>
<!-- navbar ends -->

<!-- what we focus on -->
<section class="our-focus">
    <div class="container">
        <h2 class="text-center mt-3">Available Jobs</h2>
        <div class="row ml-3 mt-3">
            <div class="col-lg-3 mr-5" id="focus-first">
                <div class="card" style="width: 19rem;">
                    <!--  -->
                    <div class="card-body">
                        <h5 class="card-title">Python</h5>
                        <p class="card-text">Skills for python
                        </p>
                        <a href="apply.html" class="btn btn-primary">Apply Now</a>
                    </div>
                </div>
            </div>

```

```

</div>
<div class="col-lg-3 mr-5" id="focus-second">
  <div class="card" style="width: 20rem;">
    <!--  -->
    <div class="card-body">
      <h5 class="card-title">Data Scientist</h5>
      <p class="card-text">Skills for datascientist</p>
      <a href="apply" class="btn btn-primary">Apply Now</a>
    </div>
  </div>
</div>
<div class="col-lg-3 ml-5" id="focus-third">
  <div class="card" style="width: 20rem;">
    <!--  -->
    <div class="card-body">
      <h5 class="card-title">HR Manager</h5>
      <p class="card-text">skills for hr manager</p>
      <a href="apply" class="btn btn-primary">Apply Now</a>
    </div>
  </div>
</div>
</div>
</div>
</section>
<!-- focus section ends -->

<!-- footer starts -->
<!-- Site footer -->
</body>

```


BACK END CODING:

```
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=fbd88901-ebdb-
4a4f-a32e-
9822b9fb237b.c1ogj3sd0tgtu0lqde00.databases.appdomain.cloud;PORT
=32731;SECURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;U
ID=ycg24187;PWD=R7TmBtZyHy6XwE0U",,")
```

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

```

```
def home():
    return render_template('home.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('dashboard.html', msg = msg)
else:
    msg = 'Incorrect username / password !'
return render_template('login.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('register.html', msg = msg)

```

```

@app.route('/dashboard')
def dash():
    return render_template('dashboard.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('username', None)
    return render_template('home.html')

if __name__ == '__main__':
    app.run(debug=True)
```

ADVANTAGES & DISADVANTAGES

ADVANTAGES:

1. Person who looks for a job can easily find a suitable job
based on their skill set.
2. Person can check their eligibility by attending
3. Most of the Recruiters find the suitable person based on the scores they have gotten in the ability

DISADVANTAGES

4. Person Job May get technical difficulty while taking the eligibility
5. Job seeker may have trouble to contact recruiters directly.

CONCLUSION:

The application has been developed to make job search easier.

The application that we have developed is user friendly .

User can find a job based on their skill set in the short period of time. The job seeker certainly gets benefit by using this application.

In the addition, Chatbot Has been implemented with the help of IBM Watson . The chatbot helps job seeker and organization when they experience the difficulties.

GITHUB AND DEMO LINK:

GITHUB LINK:

<https://github.com/IBM-EPBL/SI-GuidedProject-41232-1665840794>

DEMO LINK:

<https://youtu.be/NfTx3s0gYks>

