Project Report

Project Name: Skill and Job Recommender

Team ID: PNT2022TMID07064

TEAM MEMBERS :

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1. INTRODUCTION

1.1 Project Overview

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.

1.2 Purpose

The purpose of this project is to display job openings for the user based on their skills.

2. LITERATURE SURVEY

2.1 Existing problem

The context formed in the peak season and the off season has an influence on the job desire of a job applicant.

The request to the user to weigh the skills is a barrier to usability and efficiency from the user point of view.

The five factor model is superficial and only descriptive in a world where self-improvement is a seemingly universal goal.

Recommender systems can play an important role in the area of job seeking and recruiting.

Perhaps the most common and significant difficulty is a lack of high-quality data to complete deep learning.

Generating serendipitous recommendations and solving the cold-start problem for new jobs and new candidates.

2.2 References

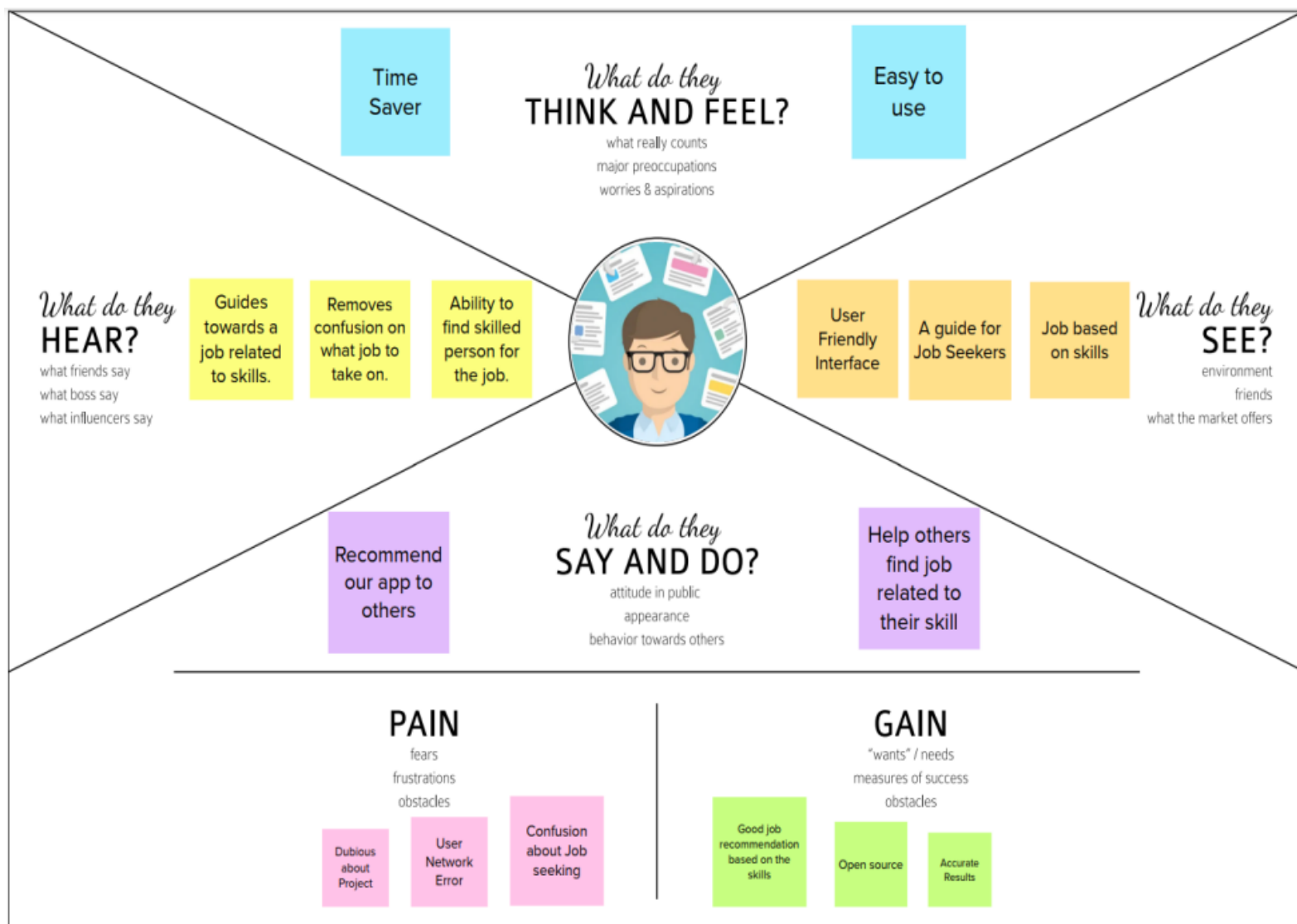| S.NO	TITLE	AUTHOR	ABSTRACT
1	Dynamic user profile – based job recommender system	Wenxing Hong, Siting Zheng and Huan Wang	Update and extend the user profile dynamically based on the historical applied jobs and behaviors of job applicants.
2	Levelized Taxonomy Approach for the Job seeking / Recruitment Problem	Michael Guedj	The use of taxonomy hierarchizing the skill following a relation of inheritance.
3	Generating personalized job role recommendations for the IT sector through predictive analytics and personality traits	I.A. Mirza, S. Mulla, R. Parekh, S. Sawant and K. M. Singh	To suggest potentially beneficial and currently relevant skills that the individual could acquire to excel in the suggested job roles.
4	Job Recommendation through Progression of Job Selection.	A. Nigam, A. Roy, H. Singh and H. Waila	Generating serendipitous recommendations and solving the cold-start problem for new jobs and new candidates.
5	A content based approach for recommending personnel for job positions.	N. D. Almalis, G. A. Tsihrintzis and N. Karagiannis	Recommender systems can play an important role in the area of job seeking and recruiting.

2.3 Problem Statement Definition

In the last few 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 recommend job vacancies that fit properly to the jobseekers profiles. Thus, the contributions of this work are threefold, 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
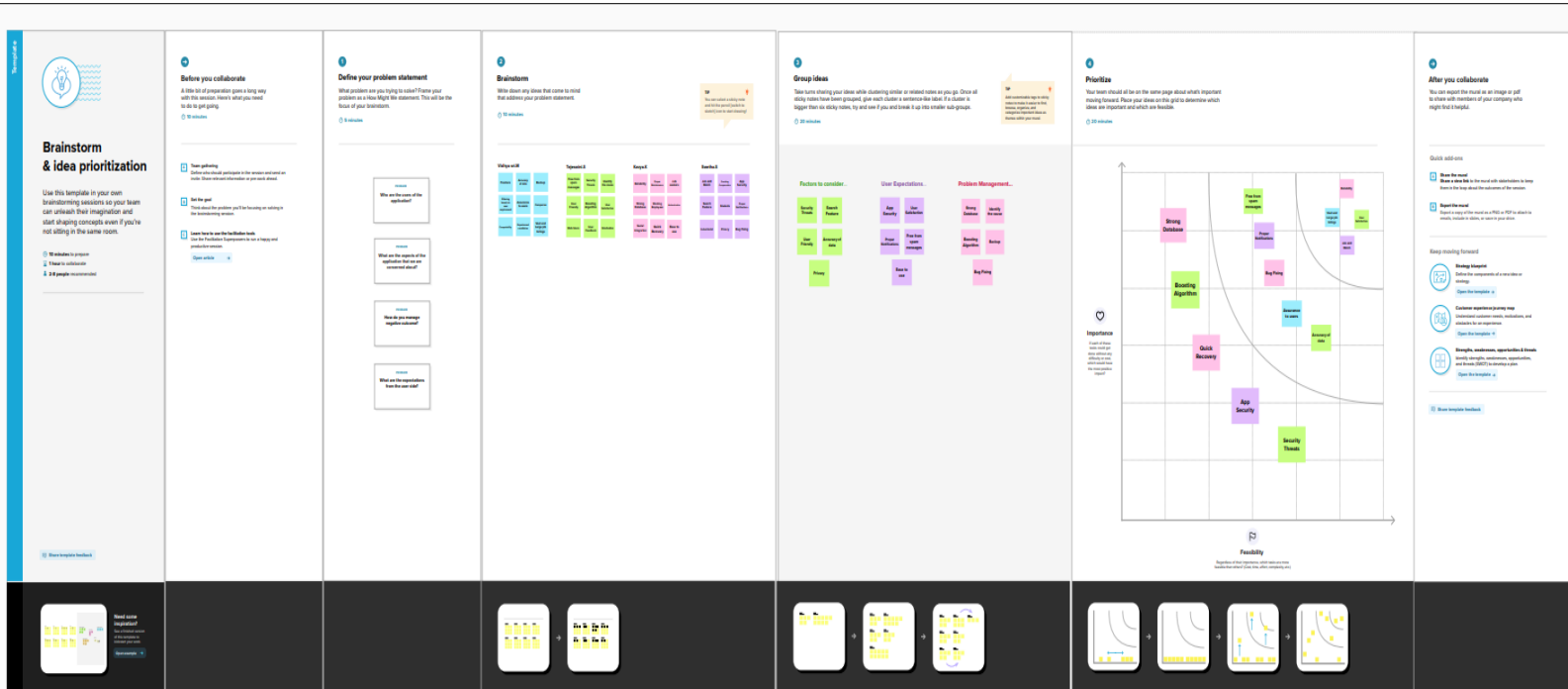
abilities of two state-of-the-art methods, considering different configurations, within the proposed framework. Thus present a general panorama of job recommendation tasks aiming to facilitate research and real-world application design regarding this important issue. Job matching, job seeking, job search, job recommender systems. Proposed a framework for job recommendation tasks. This framework facilitates the understanding of the job recommendation process as well as it allows the use of a variety of text processing and recommendation methods according to the preferences of the job recommender system designer. Moreover, we also contribute to making publicly available a new dataset containing job seekers profiles and job vacancies. Future directions of our work will focus on performing a more exhaustive evaluation considering a greater amount of methods and data as well as a comprehensive evaluation of the impact of each professional skill of a job seeker on the received job recommendation.IDEATION & PROPOSED SOLUTION

3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

3.2 Ideation & Brainstorming

3.2 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	- In order to Enhance the Opportunities and challenges to provide a job. - To Protect great volume of digital data - To Satisfy on the basis of the need and requirement of satisfaction.
2.	Idea / Solution description	- To Reduce the Risk Assessment & Threat Analysis in the platform. - Creating Prototype Solution so that users can access Easily.
3.	Novelty / Uniqueness	- On-demand self service which helps the user to gain knowledge regarding specific jobs. - Mobile endpoint security that allows Organization to protect all the devices on their network and prevent unauthorized access.

4.	Social Impact / Customer Satisfaction	- Frequently updating about requirements and Fulfilling the needs. - Users will get a Responsive speed Regarding the job they have searched. - User friendly Layout and approach design.
5.	Business Model (Revenue Model)	- Commercializing about platforms in Social media, entertainment applications so that users will have knowledge about our platforms how effective it is. - Generating Revenue through the advertisement that display on the platform.
6.	Scalability of the Solution	- Hyperscaling capabilities that includes the ability to provide and add more resources to the platforms. - To improve job opportunities to fresher and unemployed persons and also career development to industrialization and organization.

3.3 Problem Solution fit

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4. REQUIREMENT ANALYSIS

4.1 Functional requirement

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Utilizing a Form for Registration signing up with Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Application installation	A chatbot will be available on the website to address user concerns and issues about job applications, job searches, and much more.
FR-4	User Login	Log in using the Register credentials
FR-5	User Search	Job exploration using suggested skills and job filters.
FR-6	User Profile	The login credentials are used to update the user profile.
FR-7	User Acceptance	Confirmation of the Job.

4.2 Non-Functional requirement

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Job searchers can log in and search for jobs based on their skill sets using this programme.
NFR-2	**Security**	This application has separate logins for job recruiters and job seekers, making it secure.
NFR-3	**Reliability**	You can use this application for free and without having to pay anything because it is open source. All job seekers will have unlimited access to the massive employment postings..
NFR-4	**Performance**	This application responds more quickly and completes tasks in a shorter amount of time
NFR-5	**Availability**	This programme advises skills for specific job vacancies and offers jobs.
NFR-6	**Scalability**	The Response time of the application is quite faster compared to any other application

5. PROJECT DESIGN

5.1 Data Flow Diagrams
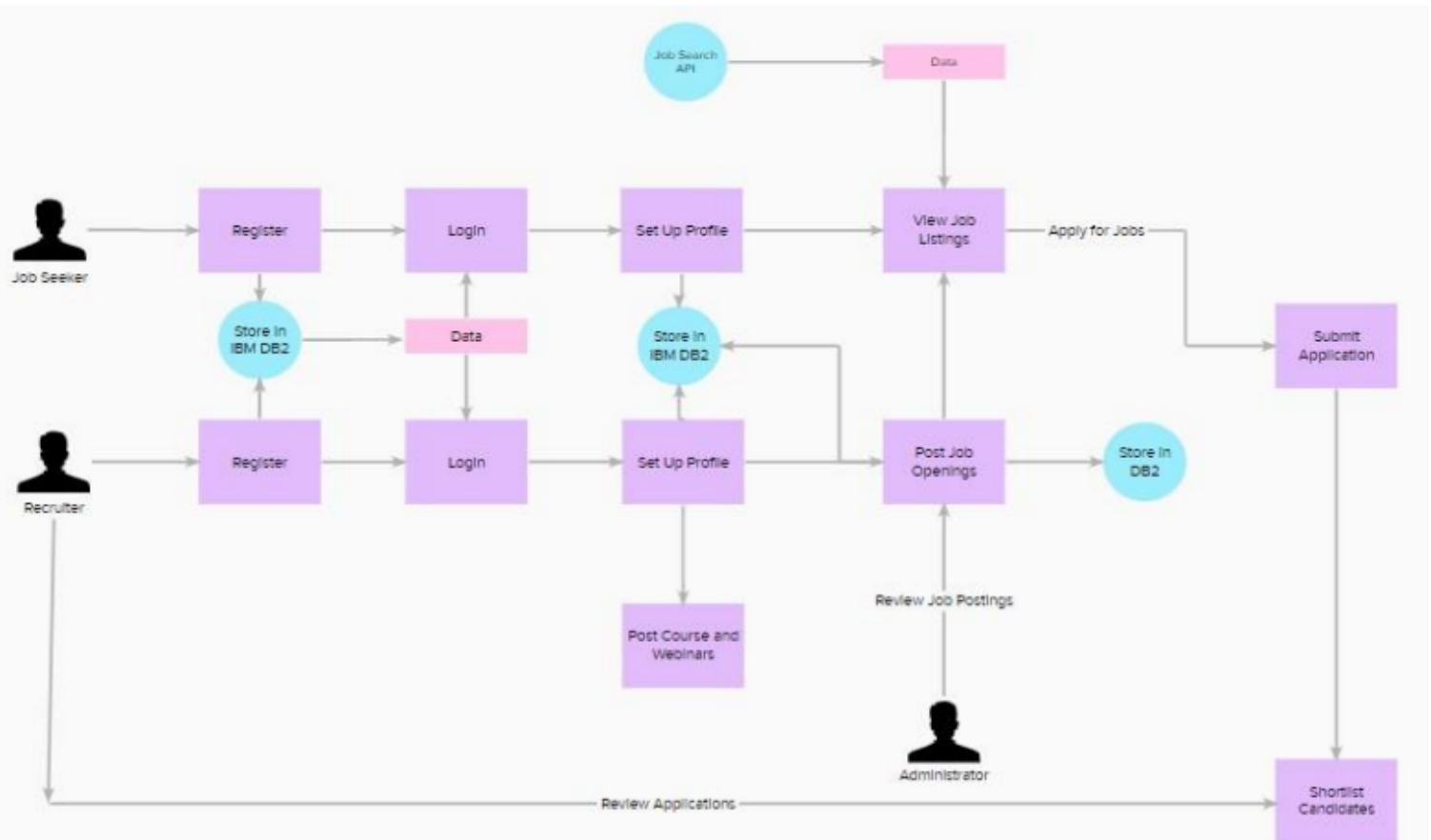
5.2 Solution Architecture
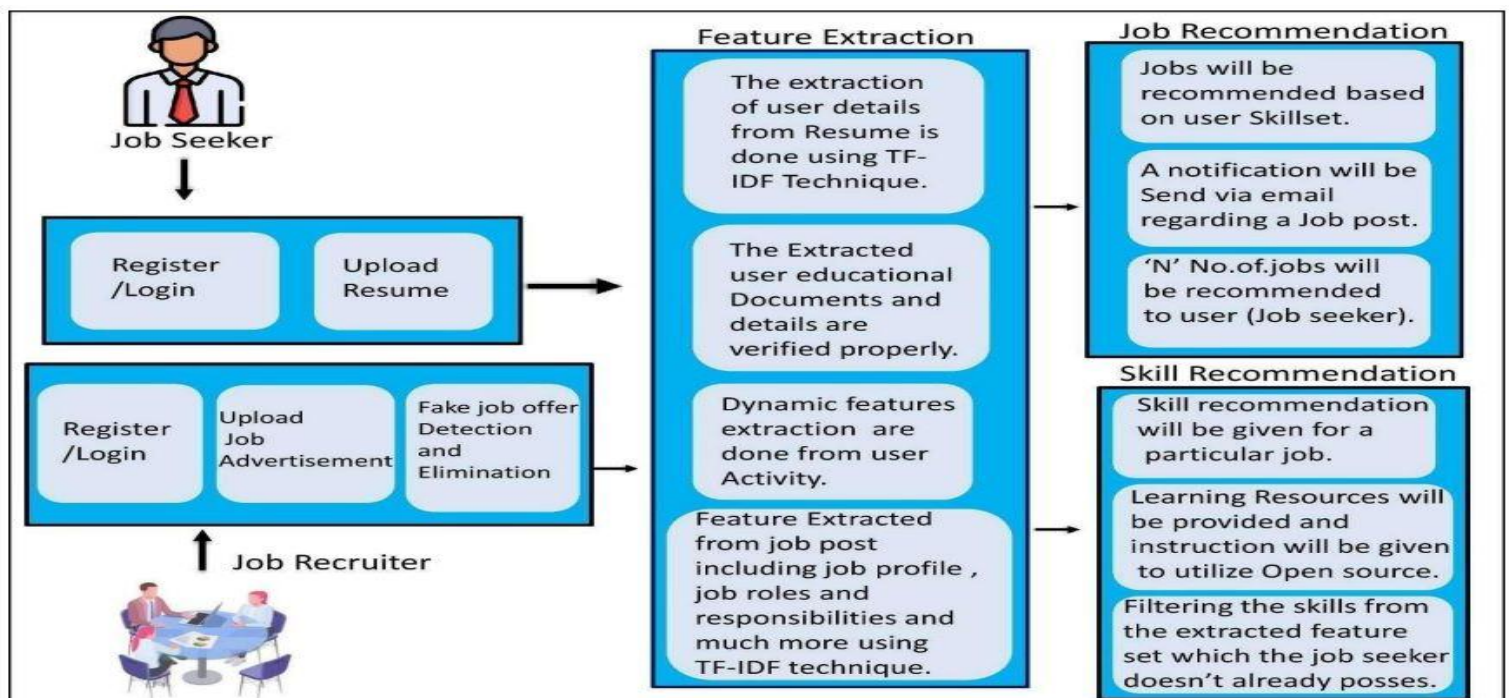
5.3 User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web User)	Registration	USN-1	As a user, I can register for the application by entering my username, email, password, confirming my password and specifying myself as Job seeker or Recruiter. .	I can register & access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive verification email once I have registered for the application	I can receive verification email & click verify	High	Sprint-1
		USN-3	As a user, I can register for the application through Google Signup	I can register & access my account / dashboard with Google Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Sign In with LinkedIn	I can register & access my account / dashboard with Google Login	Low	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering registered email & correct password	I can access my account / dashboard	High	Sprint-1
		USN-6	As a user, I can log into the application using google sign in option	I can access my account / dashboard	Low	Sprint-2
		USN-7	As a user, I can log into the application using LinkedIn Login	I can access my account / dashboard	Low	Sprint-1
	Profile Setup	USN-8	As a fresh user I need to setup my profile by filling required details to easily apply to any jobs	I will be ready to apply for jobs	High	Sprint-2
		USN-9	As a fresh recruiter I need to set up profile for my company by filling required details so as to post jobs on the website	I will be ready to post job openings	High	Sprint-2
	Applying	USN-10	As a Job Seeker I can explore on various jobs listed from Google Job Search API as well as	I can apply for any jobs listed in the Home Page	High	Sprint-3

6. PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Recruiter-Registration	USN-1	As a recruiter he can register for the application by entering my email, password, and confirming my password.	5	High	Heinrich,Gautham
Sprint-1		USN-2	As a recruiter he can receive confirmation email once I have registered for the application	5	High	Harishkumar
Sprint-1	Login	USN-3	As a Recruiter he can login to my account to create job openings and applications that the user have submitted	5	High	Heinrich,Gautham
Sprint-1	Dashboard	USN-4	As a recruiter he can view the application of applicant ,create an job opening ,view the news feed and also an profile section information about the recruiter	5	High	Deepak,Harishkumar
Sprint-2	Applicant-Registration	USN-1	as an applicant he can create an account in the platform	5	High	Heinrich,Gautham
Sprint-2	Applicant-Login	USN-2	as an applicant he can login to the application	5	HIgh	Harishkumar,Deepak
Sprint-2	Dashboard	USN-3	as an user he can view the job openings , newsfeed and job search	10	High	Harishkumar,Deepak
Sprint-3	Database	USN-1	connecting application to cloud with ibmdb2 and ibm cloud storage	10	High	Deepak
Sprint-3	Sendgrid	USN-2	Sending job alerts via mail and sends mail to the job alerts based on the skillset	10	High	Harishkumar

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-4	Deployment	USN-1	Dockerizing the app	10	High	Deepak,Harishkumar
		USN-2	Creating Kuberbnetes cluster and deploying it	10	High	Deepak,Harishkumar

6.2 Estimation

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

7. CODING & SOLUTIONING

7.1 Feature 1

IBM Cloud

IBM Watson Platform

IBM DB2

Container Registry

Kubernetes Cluster

Docker

Docker Hub

7.2 Feature 2

Login

Update Resume

Job Recommendations

8. TESTING AND RESULTS

8.1 Test Cases

Test case 1

Test case ID	Feature Type	Compon ent	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments
LoginPage_TC_OO1	Functional	Home Page	Verify user is able to see the Login/Signup popup when user clicked on My account button		1. Enter URL and click go 2. Click on My Account dropdown button 3. Verify login/Sign Up popup displayed or not	https://login.com/	Login/Signup popup should display	Working as expected	Pass	

Test Case ID	Type	Page	Description		Steps	Test Data	Expected Result		Status	Comments
LoginPage_TC_OO2	UI	Home Page	Verify the UI elements in Login/Signup popup		1. Enter URL and click go 2. Click on My Account dropdown button 3. Verify login/Singup popup with below UI elements: a.email text box b.password text box c.Login button d.New customer? Create account link e.Last password? Recovery password link	https://homepage.com/	Application should show below UI elements: a.email text box b.password text box c.Login button with orange color d.New customer? Create account link e.Last password? Recovery password link	Working as expected	Pass	Steps are not clear to follow
LoginPage_TC_OO3	Functional	Home page	Verify user is able to log into application with Valid credentials		1. Enter URL(https://homepage.com/) and click go 2. Click on My Account dropdown button 3. Enter Valid username/email in Email text box 4. Enter valid password in password text box 5. Click on login button	Username: heinrichmandai@gmail.com password: heinrich@424	User should navigate to user account homepage	Working as expected		
LoginPage_TC_OO4	Functional	Login page	Verify user is able to log into application with InValid credentials		1. Enter URL(https://login.com/) and click go 2. Click on My Account dropdown button 3. Enter InValid username/email in Email text box 4. Enter valid password in password text box 5. Click on login button	Username: heinrichmandai@gmail.com password: abc	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass	
LoginPage_TC_OO4	Functional	Login page	Verify user is able to log into application with InValid credentials		1. Enter URL(https://login.com/) and click go 2. Click on My Account dropdown button 3. Enter Valid username/email in Email text box 4. Enter Invalid password in password text box	Username: HEINRICH@gmail.com password: ys329	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass	

Test Case ID	Type	Module	Description		Test Steps	Test Data	Expected Result	Actual Result	Status	
					5. Click on login button					
LoginPage_TC_OO5	Functional	Login page	Verify user is able to log into application with InValid credentials		1. Enter URL(https://login.com/) and click go 2. Click on My Account dropdown button 3. Enter InValid username/email in Email text box 4. Enter Invalid password in password text box 5. Click on login button	Username: heinrich@ password:ys329	Application should show 'Incorrect email or password ' validation message.	Working as expected	Pass	
LoginPage_TC_OO5	Functional	JOB vacancy	verify user is able to view the vacancies posted		1.Enter URL and click go 2.Click on dropdown button 3. Enter qualification and experiences search box 4. click on search button	Qualification: B.Tech Experience:Fresher	Application should show list of vacancies based on their qualification and experience	Working as expected	Pass	

8.2. User Acceptance Testing

1. Purpose of Document

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

2. Defect Analysis

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

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	10	4	2	3	20
Duplicate	1	1	3	1	6
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	5	2	1	8
Totals	24	14	13	26	80

3. Test Case Analysis

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

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	7	0	1	7
Client Application	51	0	1	51
Security	2	0	2	2
Outsource Shipping	3	0	1	3
Exception Reporting	9	0	1	9
Final Report Output	4	0	1	4
Version Control	2	0	0	2

9. ADVANTAGES

- This job recommender system provides the recommendation jobs that satisfy the changeable preferences of the job applicant.
- Cold-start problem is overcome by applying the user-based collaborative filtering to generate the initial recommendation jobs.
- The utilization of semantic technology has shown good results to an effective matching.

10. DISADVANTAGES

- Scalability

- In this project, it will recommend only interesting jobs.

- It will not be recommended based on eligibility.

11. CONCLUSION

We proposed a framework for job recommendation tasks. This framework facilitates the understand-ing of the job recommendation process as well as it allows the use of a variety of text processing and recommendation methods according to the preferences of the job recommender system designer. Moreover, we also contribute mak-ing publicly available a new dataset containing job seekers profiles and job vacancies.Future directions of our work will focus on performing a more exhaustive evaluation considering a greater amount of methods and data as well as a comprehensive evaluation of the impact of each professional skill of a job seeker on

the received job recommendation.

12. FUTURE SCOPE

We have proposed an interpretable monotonic nonlinear state-space model for career path modeling and analyzed two large-scale online user professional profile datasets. Experimental results show that our model achieves excellent predictive performance on the tasks of the company, job title,and skill prediction. Moreover, we used a series of case studies to show that our model is interpretable and can be used to provide actionable feedback to users on the skills they need to acquire and recommendations on feasible career paths they can take to achieve their desired career goal. There are numerous avenues for future work to address the limitations of our work. First, since real-life constraints including geographical, transportation, and family constraints are significant factors in a user's career decision, they should be taken into account by the career path planning algorithm.Second, since a detailed career path also contains not only jobs but also the duration of these jobs, there is a need to use path search algorithms that take duration into account, given a user's desire to reach a career goal within a certain amount of time. Third, since different users have different ideologies, we need to explore other formulations of the career path planning problem, e.g., maximizing total career earnings. Fourth, since the numbers of companies, job titles, and skills are large, there is a need to use taxonomies such as ONET or language models to standardize the data, resulting in more compact entity representations. Fifth, since the sample of online user professional profiles is inevitably biased toward high-skill users who have enough digital skills to craft these profiles, there is a need to include more diverse data sources to promote fairness and benefit every user equally.

13. APPENDIX

13.1 Source Code

app.py

```python
from collections import UserDict
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=19af6446-6171-4641-8aba-9dcff8e1b6ff.c1ogj3sd0tg
tu0lqde00.databases.appdomain.cloud;PORT=30699;SECURITY=SSL;SSLServerCertificate=certificate.
crt;UID=sfn99311;PWD=caZLaLE3llMcd7x6",'','')
@app.route('/')
def home():
    return render_template('home.html')
```

```python
@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']=account['USERNAME']
            session['id']=account['USERNAME']
            userid=account['USERNAME']
            session['username']=account['USERNAME']
            msg= 'logged in succesfully !!!'

            return render_template('dashboard.html',msg=msg)

        else:
            msg='incorrect'

    return render_template('login.html',msg=msg)
@app.route('/register',methods=['GET','POST'])
def register():
    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 exist'
        elif not re.match(r'[^@]+@[^@]+\.[^@]+',email):
```

```python
            msg='invalid email address !'
        elif not re.match(r'[A-Za-z0-9]+',username):
            msg='Name must contain char and number'
        else:
            insert_sql="INSERT INTO users VALUES (?,?,?)"
            prep_stmt=ibm_db.prepare(conn,insert_sql)
            ibm_db.bind_param(prep_stmt,1,username)
            ibm_db.bind_param(prep_stmt,2,email)
            ibm_db.bind_param(prep_stmt,3,password)
            ibm_db.execute(prep_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 =?'
        insert_sql="INSERT INTO job VALUES (?,?,?,?,?)"
        prep_stmt=ibm_db.prepare(conn,insert_sql)
        ibm_db.bind_param(prep_stmt,1,username)
        ibm_db.bind_param(prep_stmt,2,email)
        ibm_db.bind_param(prep_stmt,3,qualification)
        ibm_db.bind_param(prep_stmt,4,skills)
        ibm_db.bind_param(prep_stmt,5,jobs)
        ibm_db.execute(prep_stmt)
        msg='you have successfully applied for job '
        session['loggedin']=True
    elif request.method =='POST':
        msg="Please fill out the form"
    return render_template('apply.html',msg=msg)


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

```python
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(host='0.0.0.0')
```

apply.html

```html
<!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"
```

```html
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"
integrity="sha384-JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGMN5t9UJ0Z"
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&display=swap"
rel="stylesheet">

</head>

<body>

    <!-- bootstrap navbar -->

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

        <a class="main-logo-img mt-5" href=".png"><img src="" alt="" height="50px"
width="180px">

            <!-- <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>
```

```html
                <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">Dashboard! </a> </p>

    </div>



</body>

</html>
```

dashboard.html

```html
<!DOCTYPE html>

<html lang="en">

<head>
```

```html
    <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+VmmDGMN5t9UJ0Z"
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&display=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="#"><img src="static/img/smartinternz.png"
```

```html
alt="sheep-logo" height="50px" width="180px">

                <!-- <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">REGISTER</a>

                <a type="button" class="btn btn-primary mr-1" id="sponsor" href="display">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;">

                  <!-- <img src="assets/img/home kids.jpg" class="card-img-top" alt="...">
-->
```

```html
                    <div class="card-body">

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

                        <img
src="https://s3.jp-tok.cloud-object-storage.appdomain.cloud/bu-123/chris-ried-ieic5Tq8YMk-uns
plash.jpg", width="200px", height="120px" />

                            <p class="card-text">Skills for python

                            </p>

                            <a href="apply" class="btn btn-primary">Apply Now</a>

                        </div>

                    </div>

                </div>

                <div class="col-lg-3 mr-5" id="focus-second">

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

                        <!-- <img src="assets/img/friendship day.JPG" class="card-img-top"
alt="..."> -->

                        <div class="card-body">

                            <h5 class="card-title">Data Scientist</h5>

                            <img
src="https://s3.jp-tok.cloud-object-storage.appdomain.cloud/bu-123/stephen-dawson-qwtCeJ5cLYs
-unsplash.jpg", width="200px", height="120px"/>

                            <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;">

                        <!-- <img src="assets/img/health camp.jpg" class="card-img-top"
alt="..."> -->

                        <div class="card-body">
```

```html
                    <h5 class="card-title">HR Manager</h5>

                    <img
src="https://s3.jp-tok.cloud-object-storage.appdomain.cloud/bu-123/campaign-creators-gMsnXqIL
jp4-unsplash.jpg", width="200px", height="120px"/>

                    <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>

</html>
```

display.html

```html
<!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>
```

```html
    <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+VmmDGMN5t9UJ0Z"
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&display=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="#"><img src="static/img/smartinternz.png"
alt="sheep-logo" height="50px" width="180px">

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

                </a>
```

```html
            <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">REGISTER</a>

              <a type="button" class="btn btn-primary mr-1" id="sponsor" href="display">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">

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

            <tr>

              <td>userid:</td>

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

            </tr>

            <tr>

              <td>username:</td>
```

```html
        <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>
```

home.html

```html
<!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+VmmDGMN5t9UJ0Z"
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&display=swap"
rel="stylesheet">


</head>
```

```html
<body class="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="#"><img src="/static/img/smartinternz.png"
alt="sheep-logo" height="50px" width="180px">

                    <!-- <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">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;">

                            <!-- <img src="assets/img/home kids.jpg" class="card-img-top" alt="...">
```

```html
-->
                    <div class="card-body">

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

                        <img
src="https://s3.jp-tok.cloud-object-storage.appdomain.cloud/bu-123/eric-prouzet-B3UFXwcVbc4-u
nsplash.jpg", width="200px", height="100px"/>

                        <p class="card-text">JOBPORTAL 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 class="col-lg-3 mr-5" id="focus-second">

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

                    <!-- <img src="assets/img/friendship day.JPG" class="card-img-top"
alt="..."> -->

                    <div class="card-body">

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

                        <img
src="https://s3.jp-tok.cloud-object-storage.appdomain.cloud/bu-123/markus-winkler-7iSEHWsxPLw
-unsplash.jpg", width="200px", height="100px"/>

                        <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. Jobportal 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>
```

```html
                    </div>

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

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

                        <!-- <img src="assets/img/health camp.jpg" class="card-img-top"
alt="..."> -->

                        <div class="card-body">

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

                          <img
src="https://s3.jp-tok.cloud-object-storage.appdomain.cloud/bu-123/jason-goodman-Oalh2MojUuk-
unsplash.jpg", width="200px", height="100px"/>

                          <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">
```

```html
              <div class="col-sm-12 col-md-6">

                <h3>JobPortal</h3>

                <p class="text-justify">Lorem ipsum dolor sit amet consectetur adipisicing
elit.

                  Voluptatum quis, reiciendis id magni magnam, accusamus nobis in,

                   temporibus molestias ab placeat rerum aperiam illum perspiciatis

                   ducimus non! Fugiat, odit ducimus.</p>

              </div>


              <div class="col-xs-6 col-md-3">

                <h4>Get in Touch</h4>

                <ul class="footer-links">

                  <li><a href="mailto:test@gmail.com">jobportal@gmail.com</a></li>

                  <li><a href="">+91 900000000</a></li>

                </ul>

              </div>



            </div>

          <hr>



          </div>

        </div>

    </footer>

    <script>

      window.watsonAssistantChatOptions = {

        integrationID: "e27edce7-4767-45cb-bd34-ea8232056316", // The ID of this
integration.
```

```
        region: "au-syd", // The region your integration is hosted in.

        serviceInstanceID: "8904e4a2-ac0f-4845-8017-fddeaa71d261", // 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>


    </body>

</html>
```

login.html

```
<!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 | LOGIN</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 -->
```

```html
        <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"
integrity="sha384-JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGMN5t9UJ0Z"
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&display=swap"
rel="stylesheet">

</head>

<body>

    <!-- bootstrap navbar -->

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

        <a class="main-logo-img mt-5" href="#"><img src="static/img/smartinternz.png"
alt="sheep-logo" height="50px" width="180px">

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

        </a>

    </div>

      <!-- navbar ends -->

    <!-- Login form -->

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

        <h2> Login Form </h2>

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

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

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

```html
            <input type="password" name="password" placeholder="Enter Your Password"
id="password" required></br></br>

            </br>

            </br>

        <button type="submit" id="button" class="btn btn-primary" > Login </button>

        </form>

    </div>



    <div class="note mt-3 text-center"> <!--Register form -->

    <p> Don't have an account yet? Click here to <a href="register">register! </a> </p>

    </div>



</body>

</html>
```

register.html

```html
<!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 | LOGIN</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"
```

```html
      href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"
      integrity="sha384-JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGMN5t9UJ0Z"
      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&display=swap"
        rel="stylesheet">

</head>

<body>

    <!-- bootstrap navbar -->

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

        <a class="main-logo-img mt-5" href="#"><img src="static/img/smartinternz.png"
        alt="sheep-logo" height="50px" width="180px">

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

          </a>

    </div>

      <!-- navbar ends -->

    <!-- Login form -->

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

        <h2> Register Form </h2>

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

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

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

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

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

            <input type="password" name="password" placeholder="Enter Your Password"
id="password" required></br></br>



        </br>

        </br>

    <button type="submit" id="button" class="btn btn-primary" > Register </button>

    </form>

  </div>



  <div class="note mt-3 text-center"> <!--Register form -->

  <p> already have an account ? please login  <a href="/login">login! </a> </p>



  </div>



</body>

</html>
```

style.css

```css
* {

    font-family: 'Alegreya', serif !important;

}

/* // Small devices (landscape phones, 576px and up) */

@media (min-width: 576px) {



 }

/* // Medium devices (tablets, 768px and up) */
```

```css
@media (min-width: 768px) {

 }

/* // Large devices (desktops, 992px and up) */

@media (min-width: 992px) {

    .navbar {

        padding-top:15px;

        padding-bottom:15px;

        background-color: white;

    }

    .navbar-brand{

        padding-left: 5px;

    }

    .navbar-nav {

        margin-left: 30px;

    }

    .nav-item {

        padding-left:5px;

    }

    .donate-sponsor{

        margin-right:10px;

    }

    #donate,#sponsor{

        margin:5px;

        padding: 5px 15px 5px 15px;

    }

    .homepage-header{

        background: url('../img/group.JPG');

        background-size: cover;
```

```css
        background-position: center top;

        padding: 0;

        position: relative;

        width: 100%;

        overflow: hidden;

        display: -webkit-flex;

        display: -ms-flexbox;

        display: flex;

        height: 85vh;

    }

    .home-for-children {

        background-color: #ffeeba;

        margin-top:0px;

        padding-top:10px;

        padding-bottom:30px;

    }

    .home-for-children h2 {

        line-height: 2.5rem !important;

        letter-spacing: 3px;

        font-weight: 600;

    }

    .home-for-children h5 {

        line-height: 1.8rem;

    }

    .home-for-children .btn-success {

        padding: 8px 25px;

        font-size: large;

    }
```

```css
/* our focus */

.our-focus .container {

    margin-top:3rem !important;

}

.our-focus .row{

    margin-top:1.5rem !important;

}

.our-focus .card {

    border: none !important;

}

.our-focus #focus-first {

    margin-right:80px;

}

.our-focus #focus-second {

    margin-right:90px;

}

/* media */

.media .container{

    margin-top: 3rem !important;

}

.media .row{

    margin-top: 1.5rem !important;

}

/* footer */

.row-initiative {

    margin-top:10px

}

.site-footer {
```

```css
        margin-top:30px;

        line-height:24px;

}

.footer-links {

        padding-left:0;

        list-style: none;

}

.footer-links li {

        display: block;

}

.footer-links.inline li {

        display: inline-block;

}

.footer-links li a{

        color: black;

}

.footer-logo img{

        width: 100px;

}

.social-icons {

        text-align: right;

        margin-left:50px;

}

.social-icons li{

        list-style: none;

        display: inline-block;

}

.social-icons li a {
```

```css
        border-radius: 50%;

        margin-left:10px;

    }

    input {

        padding:10px 20px;

     }

     #button {

        border:none;

        padding:10px 20px;

        border-radius:10px;

        animation:pulse 3s infinite ease-out;

     }

 }
/* // X-Large devices (large desktops, 1200px and up) */

@media (min-width: 1200px) {

    .navbar-brand{

        padding-left: 10px;

    }

 }
/* // XX-Large devices (larger desktops, 1400px and up) */

@media (min-width: 1400px) {

    .navbar-brand{

        padding-left: 15px;

    }

 }
```

chatbot

```
<script>

  window.watsonAssistantChatOptions = {

    integrationID: "f0775cf3-3958-40eb-b2f5-485eb35448c6", // The ID of this integration.

    region: "au-syd", // The region your integration is hosted in.

    serviceInstanceID: "1201a732-1f70-402a-bf84-61dd81786920", // 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>
```

13.2 GitHub link:

https://github.com/IBM-EPBL/IBM-Project-19096-1659693197