Date	18 November 2022		
Team ID	PNT2022TMID33711		
Project Name	Project- skill and job Recommender		
Team Leader	S.Nivetha		
Team Members	P.Sangavi		
	C.Priya		
	R.Roshini		

In partial fulfilment for the award of the degree

Of

BACHELOR OF ENGINEERING

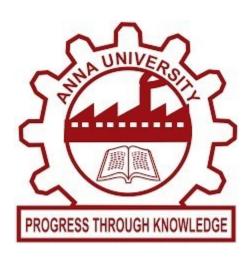
In

DEPARTMENT OF INFORMATION TECHNOLOGY



V.S.B. ENGINEERING COLLEGE, KARUR

V.S.B ENGINEERING COLLEGE, KARUR (Approved by AICTE & Affiliated by Anna University, Chennai)



BONAFIDE CERTIFICATE

Certified that this mini project report titled "Fertilizer Recommendation System for Disease Prediction" is the bonafide record work by NIVETHA S (922519205073), PRIYA C (922519205082), ROSHINI R(922519205090) and SANGAVI P (922519205092) for IBM-NALAIYATHIRAN in VII semester of B.E., degree course in Computer Science and Engineering branch during the academic year of 2022-2023

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We are grateful to our head of the department **Mr. MANIVANNAN K** and our Nalaiyathiran project coordinator **Mrs. Nandhini I** Department of Information Technology for their valuable support.

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Our sincere thanks to all the teaching staff of V.S.B Engineering College and our friends for their help in the successful completion of this IBM Nalaiyathiran project work. Finally, we bow before God, the Almighty who always had a better plan for us. We give our praise and glory to Almighty God for successful completion of this IBM Nalaiyathiran.

Project Report

1. INTRODUCTION

1.1 Project Overview

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 main aim of the project is to building a model 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.

2. LITERATURE SURVEY

1.3 Existing problem

Skill -based recommendation services platforms wants to turn into a leading source of the job recommender platform. The job and skill recommender system is expected to reduce unemployment and improve the skills of job seekers to boost the country's economy. Job recommender is giving guidance for job seekers to get quick contact for those jobs. Immediate announcement of the latest job openings, and walk-in

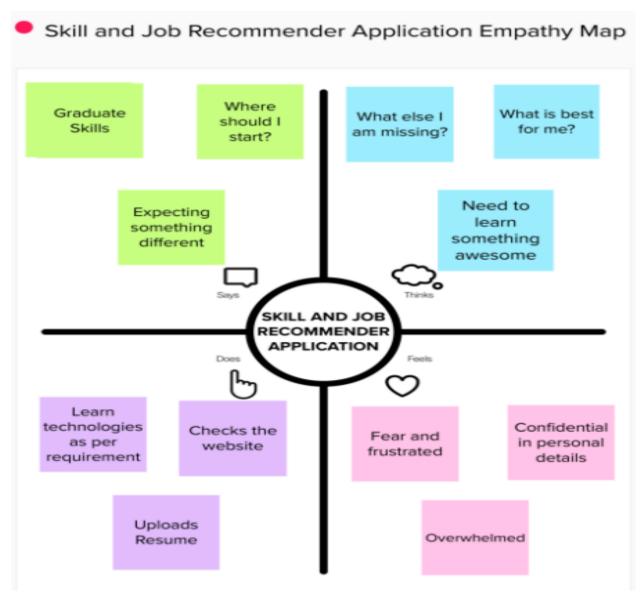
interviews with different locations and offers you full details of recruitment such as the number of job vacancies, eligibility criteria, interview date, required qualifications etc.

1.4 Problem Statement Definition

The main aim of the project is to develop an end-to-end web application capable of displaying the current job openings based on the user skill set. Users will interact with the chat-bot and can get recommendations based on their skills. This Application uniquely identifies the user's skills recommend the job according to the user's interest.

2. IDEATION & PROPOSED SOLUTION

2.1 Empathy Map Canvas



2.2 Ideation & Brainstorming



2.3 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be	Managing thehuge measure of enrolling
	solved)	dataon the Web, a task searcher generally
		goes through hours to see as helpful ones.
		Commonly, individuals who need industry
		information are hazy about what precisely
		theyneed to learn to get a appropriate
		occupation for them. We address the issue of
		prescribing reasonable responsibilities to
		individuals who are looking for a new work.
		We plan this suggestion issuses administered
		Al issue.

2.	Idea / Solution description	Work proposal is a significant undertaking for the cutting edge enrollment industry. A magnificent occupation recommender framework not just empowers to suggest a morelucrative work whichis maximally linedup with the range of abilities of the present place of employment, yet in addition proposes to procure not many extra abilities which are expected to accept the new position. In this work, we made three sorts of data net-works from the authentic work information: (I) work change organization, (ii) work ability organization, and (iii) expertise co-event organization.
3.	Novelty / Uniqueness	From the mostrecent twenty yearsweb based selecting stages have turned into an essential direct in many organizations for enlisting gifts. Such entries decline the ad cost, yet they experience the ill effects of data over-burden issue. Work entryways utilizing customary data recovery procedures, for example, Boolean huntstrategies are commonly utilizing basic word matching calculations. The main pressing concern of these entryways is their powerlessness to figure out the intricacy of matching between applicants' longings and associations' prerequisites.

4.	Social Impact / Customer Satisfaction	Social capability is especially striking for
		understudies who are arranged into one of the
		great frequency handicap gatherings like
		explicitlearning inabilities, mental impediment,
		close tohome unsettling influence, or
		consideration shortfall/hyperactivity jumble.
		Among the most famous of the educational
		methodologies for these understudies has
		been interactive abilitiespreparing (SST).
		Different meta-examinations of the writing
		recommend that SST has not delivered
		enormous, socially significant, long haul, or
		summed up changes in friendly capability of
		understudies with high-rate handicaps.
		Likelyclarifications for the powerlessimpacts in
		some meta-examinations are talked about and
		explicit proposals are presented for planning
		and creating more successful SST mediations.
5.	Business Model (Revenue Model)	Various postings for various work jobs and
		occupation positions are posted at various
		sources in the enrollment business. Thusly,
		this is a difficult and tedious errand to gather
		the data and figure out most important client
		work association planning as indicated by the
		abilitiesand inclinations of a client. This
		examination work has been finished to
		conceal this equivalent issue and endeavors
		have been made to give a doable and
		productive answer for something very similar.
		We propose a substance based suggestion
		motor, which consequently gives best ideas to
		clients by coordinating their inclinations and
		abilities withthe elements of a task posting. To
		create an expected suggestion, the proposed motor applies different text channels and
		element similitude estimations
		element similitude estimations

6.	Scalabilityof the Solution	The present Recommender framework is a somewhat new area of examination in AI. The
		recommender framework's fundamental
		thought is to fabricate connection between
		theitems, clients and go with the choice to
		choosethe most properitem to a particular
		client.
		There are four principal ways that
		recommender frameworks produce a rundown
		of proposals for a client - content-based,
		Cooperative, Segmentand half breedsifting. In
		satisfied based sifting the model purposes
		details of a thing to suggest extra things with
		comparative properties.

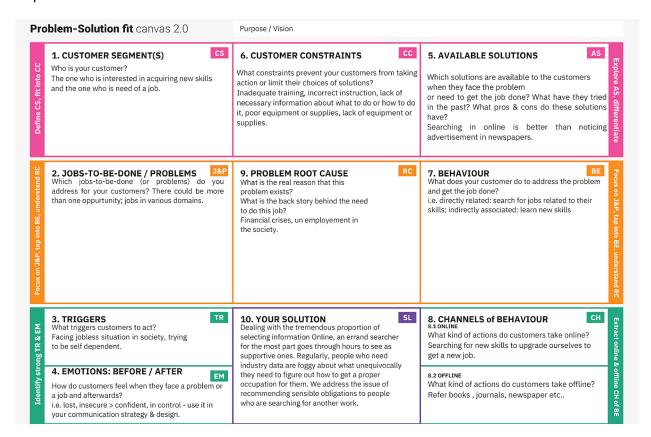
2.4 Problem Solution fit

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns

Purpose:

- Solve complex problems in a way that fits the state of your customers.
- Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.

- Sharpen your communication and marketing strategy with the right triggers and messaging.
- Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems.



3. REQUIREMENT ANALYSIS

3.1 Functional Requirement

S. FUNCTIONAL REQUIREMENT

No (Epic)

SUB REQUIREMENT (Story)

- 1. Sign In / Login Register with username, password
- 2. Profile Registration Register with username, password, email, qualification, skills. This data will be stored in a database.
- 3. Job profile display Display job profiles based on availability, location ,skills
- 4. ChatbotA chat on the webpage to solve user queries and issues
- 5. Job registration A copy of the company the user applied for with its registration/description details will be sent to the registered email id.
- 6. Logout Logging out of the webpage.

3.2 Non-Functional requirements

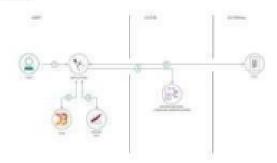
S. No	NON-FUNTIONAL REQUIREMENT	DESCRIPTION					
1)	Usability	The webpage will be designed in such a way that any non-technical user can easily navigate through it and complete the job registration work.					
2)	Security	Using of SSL certificate (Python Flask to Cloud connect) will provide security to the project. Database will be safely stored in DB2.					
3)	Reliability	To make sure the webpage doesn't go down due to network traffic.					

4)	Performance	Focus on loading the webpage as
		quickly as possible irrespective of the
		number of user/integrator traffic.
5)	Availability	This webpage will be available to all
		users at any given point of time.
6)	Scalability	Increasing the storage space of database can
		increase
		the number of users.

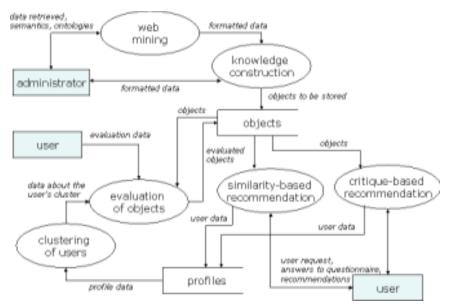
4. PROJECT DESIGN

4.1 Data Flow Diagram

Flow



- 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 is library.



4.2 Solution & Technical Architecture

S.No.	Parameter	Description
1.	Is the System Robust?	Yes, it is partially buildable platform as the budget required will be more as cloud is a pay per use model and time taken will be quite.
2.	Is it highly modifiable?	Indeed, the framework is modifiable and it can own up to the progressions by recognizing blunders that requirements to be fixed and new functionalities. It is exceptionally receptive to the progressions.

المطلا طلائين المملم منمم للأرمم والطموسوين برال
ally versatile as it can deal with the
g responsibility where great
is likewise expected to effectively
anization of the stage has been
tilizing different OS virtualization
will deal with the responsibility
3 1

4.3 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-5	As a user, I can access my dashboard after signing in.	I can access my account / dashboard	High	Sprint-1
Customer (Web user)	Access	USN-6	As a user, I can setup a profile, and basic details by signing in.			
·		USN-7	As a user, I will upload my resume, certificates, and other requirements.	I can perform several task in the application	Medium	Sprint-1
Customer Care Executive	Chatbot	USN-8	As a user, I can seek guidance from the customer care executive.		High	Sprint-1
Administrator	DBMS	USN-9	As a administrator, I can keep the applications of your organization relies on running.	I can perform various modifications in the applications.	High	Sprint-1

5. PROJECT PLANNING & SCHEDULING

5.1 Sprint Planning & Estimation

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Priority	Acceptance criteria		Team Members	
Sprint-1	UI Design	USN-1	As a job seeker experience an awesome user interface in the website	Medium	Better Impression about a website		Dinesh Raj	
Sprint-1	Registration	USN-2	As a job seeker register for the application by entering my email, password, and confirming my password.	High	I can access my account I dashboard		Dasvanth	
Sprint-1		USN-3	As a job seeker receive confirmation email once I have registered for theapplication	High	I can receive confirmation email & click confirm		Hari Haran	
Sprint-1		USN-4	As a job seeker register for the application through Facebook	Low	I can register & access the dashboard with Facebook Login		Dharshan	
Sprint-1		USN-5	As a job seeker register for the application through Gmail	Medium	I can receive confirmation email & click confirm		Dinesh Raj	
Sprint-1	Login	USN-6	As a job seeker log into the application by entering email & password	High	I can acce dashboard	ss my account /	Dasvanth, Dharshan	
	Sprint Function	nal	User User Story / Task	100	Priority	Acceptance criteria	Team Membe	

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Priority	Acceptance criteria	Team Members
Sprint-1	Dashboard	USN-8	As a user, If I Logged in correctly, I can view my dashboard and I can navigate to any pages which are already listed there.	High	I can access all the pages/ dashboard	Hari Haran
Sprint-2	User Profile	USN-9	As a user, I can view and update my details	Medium	I can modify my details/data	Dinesh Raj
Sprint-2	Database	USN-10	As a user, I can store my details and data in the website w	Medium	I can store my data	Dasvanth
Sprint-2	Cloud Storage	USN-11	As a user, I can upload my photo, resume and much more in the website.	Medium	I can Upload my documents and details	Dharshan
Sprint-2	Chatbot	USN-12	As a user, I can ask the Chatbot about latest job openings, which will help me and show the recent job openings based on my profile	High	I can know the recent job openings	Hari Haran
Sprint-2	Identity-Aware	USN-13	As a User, I can access my account by entering by correct login credentials. My user credentials is only displayed to me.	High	I can have my account safely	Dinesh Raj

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Priority	Acceptance criteria	Team Members
Sprint-3	Sendgrid service	USN-14	As a user, I can get a notification or mail about a job opening with the help of sendgrid service.	Medium	I can get a notification in a second.	Dasvanth
Sprint-3	Learning Resource	USN-15	As a user, I can learn the course and I will attain the skills which will be useful for developing my technical skills.	High	I can gain the knowledge and skills	Dharshan
Sprint-3	Docker	USN-16	As a user, I can access the website in any device	High	I can access my account in any device	Dinesh Raj
Sprint-3	Kubernetes	USN-17	As a user, I can access the website in any device	High	I can access my account in any device	Dasvanth
Sprint-3	Deployment in cloud	USN-18	As a user, I can access the website in any device	High	I can access my account in any device	Hari Haran
Sprint-3	Technical support	USN-19	As a user, I can get a customer care support from the website which will solve my queries.	Medium	I can tackle my problem & queries.	Dharshan
Sprint-4	Unit Testing	USN-15	As a user, I can access the website without any interruption	High	I can access the website without any interruption	Dharshan
Sprint-4	Integration testing	USN-16	As a user, I can access the website without any interruption	High	I can access the website without any interruption	Hari Haran

5.2 Sprint Delivery Schedule

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

7. CODING & SOLUTIONING (Explain the features added in the project along with code)

7.1 Feature 1

```
import ibm_db
from flask import Flask, flash, redirect, render_template, request, url_for
from flask import Sexison
import sqlite3
import os

conn=ibm_db.connect("DATABASE=bludb;HOSTNAME=blbc1829-6f45-4c44-bef4-10cf081900bf.clogj3sd0tgtu0lqde00.databases.appdomain.cloud;PORT=32304;

con-sqlite3.connect("myimage.db")
con.execute("create table if not exists image(pid integer primary key,img TEXT)")

app = Flask(_name__)
app.secret_key = '//sd_S#y2L"F4Q8z\n\xec|/'
app.config["UPLOAD_FOLDER"]="statical_mages"

EMAIL=''

@app.route('/')
def index():
return render_template('signup.html')

@app.route('/home')
def home():
return render_template('index.html', login=login)

preturn render_template('index.html', login=login)

@app.route('jingup', methods=['POST','GET'])
```

```
EMAIL-email

sql^-SELECT * FROM authentication WHERE email-? AND password=?"

stm:im_db.prepare(conn,sql)

ibm_db.bind_param(stnt,1,email)

ibm_db.bind_param(stnt,2,password)

ibm_db.execute(stnt)

account-ibm_db.fetch_assoc(stnt)

faccount:

*session['loggedin'] = True

*session['email'] = email

#return render_template('home.html')

return redirect(unl_for('home'))

else:

error - "Invalid email/password"

return render_template('login'))

elif request.method--'EET':

return render_template('login.html')

*app.rout('/forgot', methods-['POST', 'GET'])

def forgot():

if request.method--'POST':

email-request.form['email']

remail-email

secret-request.form['secret']

sql--'SELECT * FROM authentication WHERE email-? AND secret-?"

stm:im_db.bind_param(stnt,2,secret)

ibm_db.execute(stnt)

ibm_db.bind_param(stnt,2,secret)

ibm_db.bind_param(stnt,2,secret)

ibm_db.bind_param(stnt,2,secret)

ibm_db.execute(stnt)

return redirect(unl_for('reset'))

else:

return redirect(unl_for('reset'))

else:

return redirect(unl_for('reset'))
```

```
pay_DMM MODECNapinit x

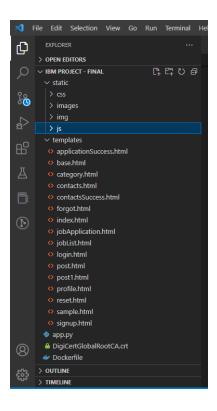
wsp pass():
    con = sqlite3.connect("myimage.db")
    con.com_sqlite3.connect("myimage.db")
    con.com_sor()
    con.cursor()
    con.cursor()
    con.cursor()
    con.cursor()
    if request.method="POST":
    upload_image.filename|="":
        filepath-os.path.join(app.config['UPLOAD_FOLDER'],upload_image.filename)
        upload_image.sawe(filepath)
        con-sqlite3.connect("myimage.db")
        cur-execute("insert into image(img) values(?)",(upload_image.filename,))
        con.commit()
        flash("File Upload Successfully","success")

        con = sqlite3.connect("myimage.db")
        con.row_factory-sqlite3.Row
        cur-execute("select * from image")
        data-cur.fetchall()
        con.close()
        return render_template("post.html",data-data)
        return render_template("post.html",data-data)
```

7.2 Feature 2

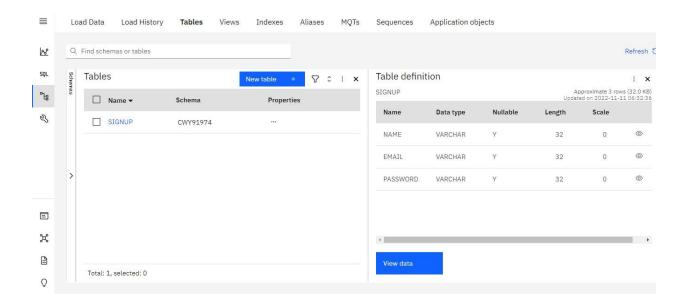
8. TESTING

8.1 Test Cases



8.2 User

Acceptance



9. RESULTS

9.1 Performance Metrices

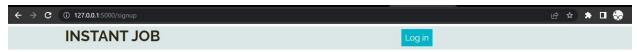
```
PROBLEMS OUTPUT TERMINAL JUPYTER ···
                                                                              -bef4-10cf081900bf.clogj3sd0tgtu0lqde00.databases.appdomain.cloud;p
ORT=32304;Security=SSL;SSLServerCertificate=DigiCertGlobalRootCA.cr
t;UID=cwy91974;MD=aj53b8isyFaXUr2y;","","")
Exception: [IBM][CLI Driver] SQL1336N The remote host "blbc1829-6f
45-4cd4-bef4-10cf081900bf.clogj3sd0tgtu0lqde00.databases.ap" was no
t found. SQL5TATE=08001 SQLCODE=-1336
PS C: USers\dasva\OneDrive\Desktop\ibm project - final> python -u "
c:\USers\dasva\OneDrive\Desktop\ibm project - final\app.py"
* Serving Flask app 'app'
 c:\Users\dasva\OneDrive\Des
* Serving Flask app 'app'
* Debug mode: on
  * Running on http://127.0.0.1:5000
Press CTRL+C to quit

* Restarting with stat

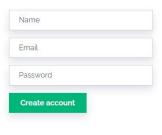
* Debugger is active!

* Debugger PIN: 143-483-106
127.0.0.1 - - [16/Nov/2022 11:50:42] "GET /home HTTP/1.1" 200 -
127.0.0.1 - - [16/Nov/2022 11:50:43] "GET /static/js/bootstrap.min.
js HTD/1.1" 404 -
127.0.0.1 - [16/Nov/2023 11:50:44] "GET /static/js/bootstrap.min.
 J377.8.0.1 - [16/Nov/2022 11:50:44] "GET /static/css/style.css HTT P/1.1" 304 -
  127.0.0.1 - - [16/Nov/2022 11:50:44] "GET /static/css/index.css HTT
 137.8.0.1 - - [16/Nov/2022 11:50:44] "GET /static/js/script.min.js
HTTP/1.1" 404 -
  127.0.0.1 - - [16/Nov/2022 11:50:44] "GET /static/js/index.js HTTP/
  127.0.0.1 - - [16/Nov/2022 11:50:44] "GET /static/js/chat.js HTTP/1
  127.0.0.1 - - [16/Nov/2022 11:50:44] "GET /static/img/man3.jpg HTTP
 /1.1" 384 -
127.0.0.1 - - [16/Nov/2022 11:50:44] "GET /static/img/man2.jpg HTTP
   /1.1" 304 -
  127.0.0.1 - - [16/Nov/2022 11:50:44] "GET /static/css/bg2.jpg HTTP/
         304 -
```

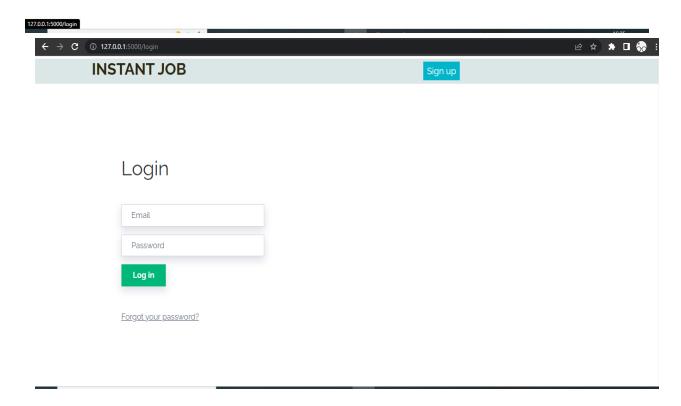
9.2 Output

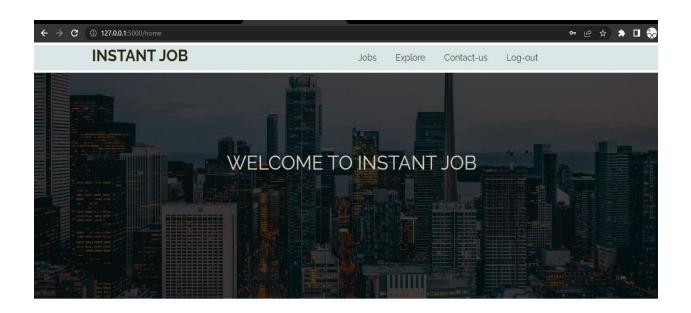


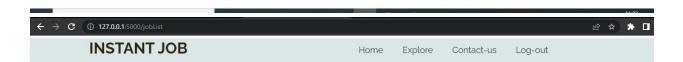
Sign Up



Already have an account? $\underline{\text{Log in}} \rightarrow$







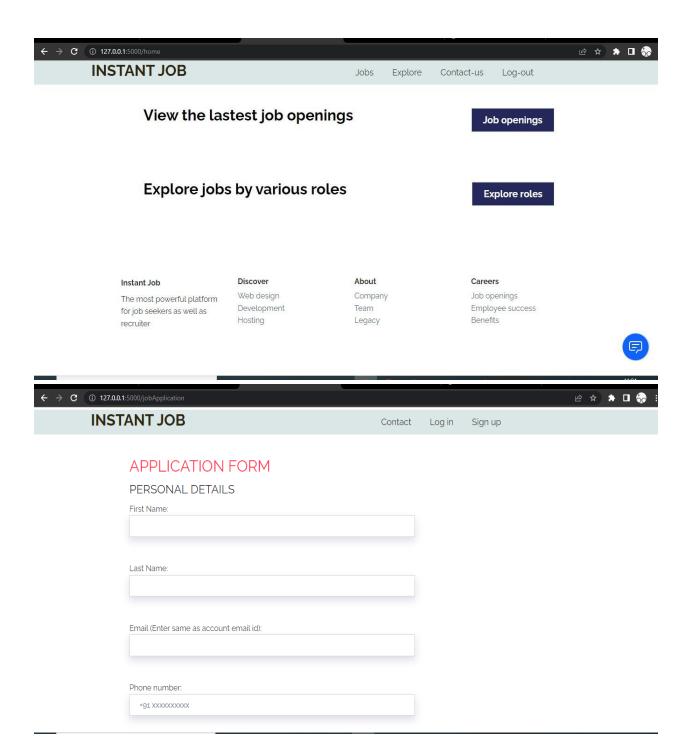
Job openings

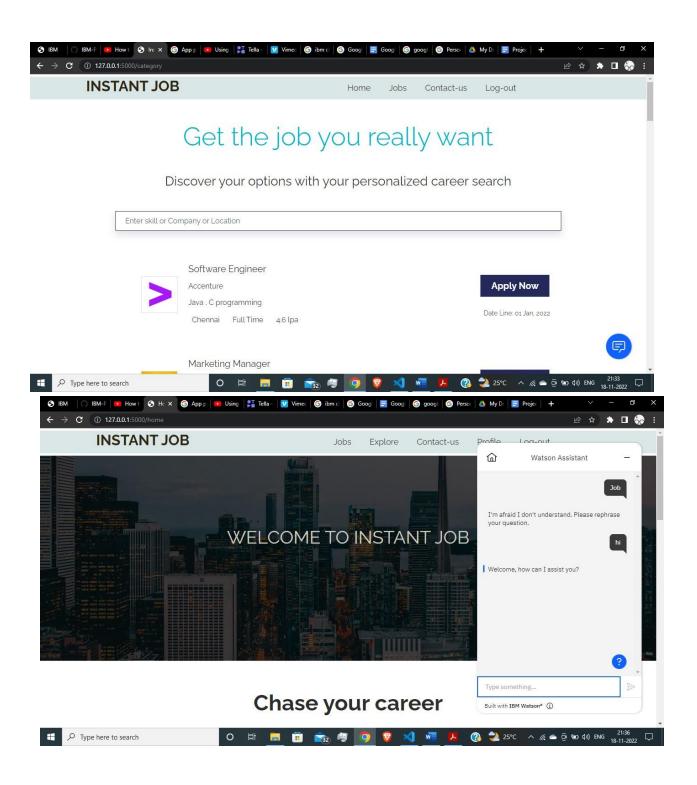
Featured Full Time Part Time

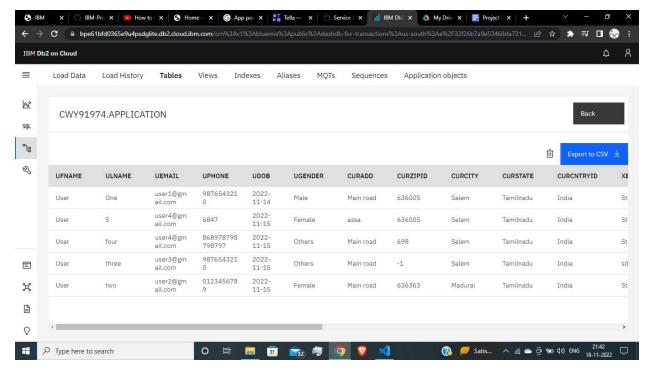


Date Line: 01 Jun, 2023

Banglore Full Time 13 lpa







10. ADVANTAGES & DISADVANTAGES

ADVANTAGES

- When recruiting externally, hiring teams find candidates, evaluate them and, if all goes well, persuade them to join their company. All of which takes time.
- Everyone needs some time to adjust to a new role, but internal hires are quicker to onboard than external hires.
- May be familiar with people in their new team, especially in smaller businesses.
- Know how your company operates and most of your policies and practices.

DISADVANTAGES

• Employees who were considered for a role could feel resentful if a colleague or external

candidate is eventually hired.

• While your company may have a lot of qualified candidates for specific

positions, this isn't necessarily true for every open role.

11. CONCLUSION

By the end of this project we will

• know fundamental concepts and techniques of recommender system.

• gain a broad understanding of databases and cloud.

• know how to build a web application using the Flask framework.

know how to build chatbot.

• know how to containerize the application.

12. FUTURE SCOPE

• Al is revolutionizing the recommender systems.

• The popularity of LinkedIn and Google for jobs has proved that there is a future for

job boards if effectively managed to provide solutions

• Right pricing strategies for online recruitment advertising are essential to get an

effective response.

Recruiters and job seekers are experiencing an entirely automated process of

searching and connecting. All job boards should be perfectly indexed, highly

responsive, and exhaustive in job descriptions to establish their credibility and

reliability.

13. APPENDIX

Ref: https://github.com/IBM-EPBL/IBM-Project-40069-1660622812