SKILL /JOB RECOMMENDER

A PROJECT REPORT

Submitted by

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1. INTRODUCTION

last recentyears, job recommender systems have become popular since they successfully reduce information overload by generating personalized job suggestions. Although in the literature exists a variety of techniques and strategies used as part of job recommender systems, most of them fail to recommending the job vacancies that fit properly to the job seekers profiles. Thus, the contributions of this work are three fold, we:

i) 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.

ii) Put forward the proposal of a framework for job recommendation based on professional skills of job seekers.

iii) Carried out an evaluation to quantify empirically the recommendation abilities of two state-of-the-art methods, considering different configurations, within the proposed framework. We thus present a general panorama of job recommendation task aiming to facilitate research and real-world application design regarding this important issue.

1.1 Project Overview

A number of postings for different job roles and job positions are posted at numerous sources in the recruitment industry. Therefore, this is a challenging and time -consuming task to collate the information and find out most relevant user-job connection mapping according to the skills and job preferences of a user. This research work has been done to cover up this same problem and efforts have been made to provide a feasible and efficient solution for the same. We suggest a content-based recommendation system, which automatically provides best suggestions to users by matching their interests and skills with the features of a job posting. In order to produce an intended recommendation, the

proposed to applying that various text filters and feature similarity measurements. Similarity techniques use the bag of n-grams and topic models as the elements of feature vectors. The validations and testing of the model on real data obtained from a top job portal website show the applicability and efficiency of using topic models as features. The approach is generic and can be replicated to different techniques.

1.2 Purpose

Skill sets complement AQF qualifications. Skill sets benefit the students by giving them:

i. Training pathways to AQF qualification.

ii. Specific skills and general capabilities.

iii. More career opportunities within their workplace and between employers.

In the immediate term, skill sets are a means of re-skilling that can help Victorians respond to a rapidly changing post-COVID-19 economy and job market.

Specific purpose job description includes detailed information about job responsibilities of an employee. It also covers sub tasks, essential functions and detailed job duties. It involves huge amounts of details such as what an employee needs to do, how it is to be done and what are the performance standards,

A career purpose creates a sense of meaning, like you're on a mission to do something worthy. It integrates who you are with what you do, and connects it to the impact you want to make on this world. Knowing your

WHY provides a filter through which you can make decisions, every day, to act with purpose.

2. LITERATURE SURVEY

The Internet-based recruiting platforms become a primary recruitment channel in most companies. While such platforms decrease the recruitment time and advertisement cost, they suffer from an inappropriateness of traditional information retrieval techniques like the Boolean search methods. Consequently, a vast amounting of candidates missed the opportunity of recruiting. The recommender system technology aims to help users in finding items that match their personnel interests; it has a successful usage in e-commerce applications to deal with problems related to information overload efficiently. In order to improve the e-recruiting functionality, many recommending system approaches have been proposed. This article will present a survey of e-recruiting process and existing recommendation approaches for building personalized recommender systems for candidates/job matching.

The significance of Information System (IS) support in the recruitment process can be observed when considering the phases of the recruitment such as the handling of candidates‟ applications and the pre-selection of candidates. However, a best fit between job and candidates depends on underlying aspects that are hard to measure. These underlying aspects are a significant reason why information systems have not been extensively used in the area of personnel selection so far. Mostly, IS technology is used to pre-select applicants based on Boolean search method. This method used queries contain a combination of key words that define skill requirements in order to determine those candidates that match with search criteria. Such type). The recommender systems techniques can be used to address the problem of information overload by

prioritize the delivery of information for individual users based on their learned preferences (Lee and Brusilovsky, 2007). Additionally, the success of personalization technologies depends critically on the existence of comprehensive user profiles that precisely capture users‟ interests (Rafter and Smyth, 2001) and the perfect matching method. Moreover, the recommender systems could use historical rating information to determine which type of job required which type of candidate characteristics in the past in order to be rated positively by the recruiter. This information could then be used to predict the match between job and previously not rated candidates. The need of applying the recommender system techniques for selection process can be motivated from different perspectives. While we interested in how people find an appropriate job, other researchers are interested in how change the ways people effectively collaborate once the candidate is recruited. of skill matching is applied in numerous e-recruiting applications. However, as mentioned above, the simple filter techniques such as Boolean search method cannot be sufficient to realize the complexity of a person-job fit as selection decisions often depend on underlying attributes such as personal characteristics or social skills that cannot be put into an operational way easily (Malinowski et al., 2006). Additionally, the need to understand the job requirements, in terms of the skills that are mandatory and those that are optional but preferable, the experience criteria if any, preference for the location of the candidate etc. Consequently, the major challenge faced e-recruiting applications as identified by the literature analysis is the large number of low qualification of applicants that match the search criteria (Singh et al., 2010This increases the requirements to select candidates that not only fit with the requirements of the job but also with the team members in terms of interpersonal compatibility (Malinowski et al., 2006).

2.1 Existing Problem:

1. A significant problem for labour market policies relies on the individual of the most advisable skills to have and to

enhance throough focused trainning offers.

2. Vocational trainning system and institution are called too answer the question posed by every person looking for a new job.

3. Recommendation system is based on the job ads published by Italian companies on various websites for both 2019 and 2020 after the skills required for each job offer have been mapped to one of the skills presented in the classification of European Skills/ competence, qualifications ad Occupations (ESCO).

2.2 References :

* Breaugh JA,Starke M (2000). Research on Employee Recruitment: So Many Studies, So Many Remaining Questions. J. Manag. 26(3):405434.

* Breese JS, Heckerman D, Kadie C (1998). Empirical analysis of predictive algorithms for collaborative filtering. In Proceedings of the Fourteenth Conference on Uncertainty in Artificial Intelligence, Madison, WI, ACM, pp. 43-52.

* Brusilovsky P (2001). Adaptive hypermedia. User Model. User Adapt. Interact. 11(1-2):87-110.

* Burke R (1999). Integrating Knowledge-Based and CollaborativeFiltering Recommender Systems. In Proceedings of the AAAI Workshop on AI in Electronic Commerce, Orlando, Florida, USA pp. 69-72.

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* Carroll M, Marchington M, Earnshaw J, Taylor S (1999). Recruitment in Small Firms: Processes, Methods and Problems. Employee Relations 21(3):236-250.

* Chen PC (2009). A Fuzzy Multiple Criteria Decision Making Model in Employee Recruitment. IJCSNSInt. J. Comput. Sci. Netw. Secur. 9(7):113-117.

* Laumer S, Eckhardt A (2009). Help to Find the Needle in a Haystack: Integrating Recommender Systems in an IT Supported Staff Recruitment System. In proceedings of the special interest group on management information system's 47th annual conference on Computer personnelResearch, Limerick, Ireland, ACM pp. 7-12.

* Malinowski J, KeimT, Wietzel T (2005). Analyzing the Impact of IS Support on Recruitment Processes: An E-recruitment Phase Model. In Proceedings of the ninth Pacific Asia conference on information systems ((PACIS-2005)), Bangkok, Thailand pp. 977-988.

* Malinowski J, KeimT, Wendt O, Weitzel T (2006). Matching People and Jobs: A Bilateral Recommendation Approach. In Proceedings of the 39th Annual Hawaii International Conference on System Sciences, Hawaii, USA, IEEE pp. 137-145.

2.3 ProblemStatement definition :

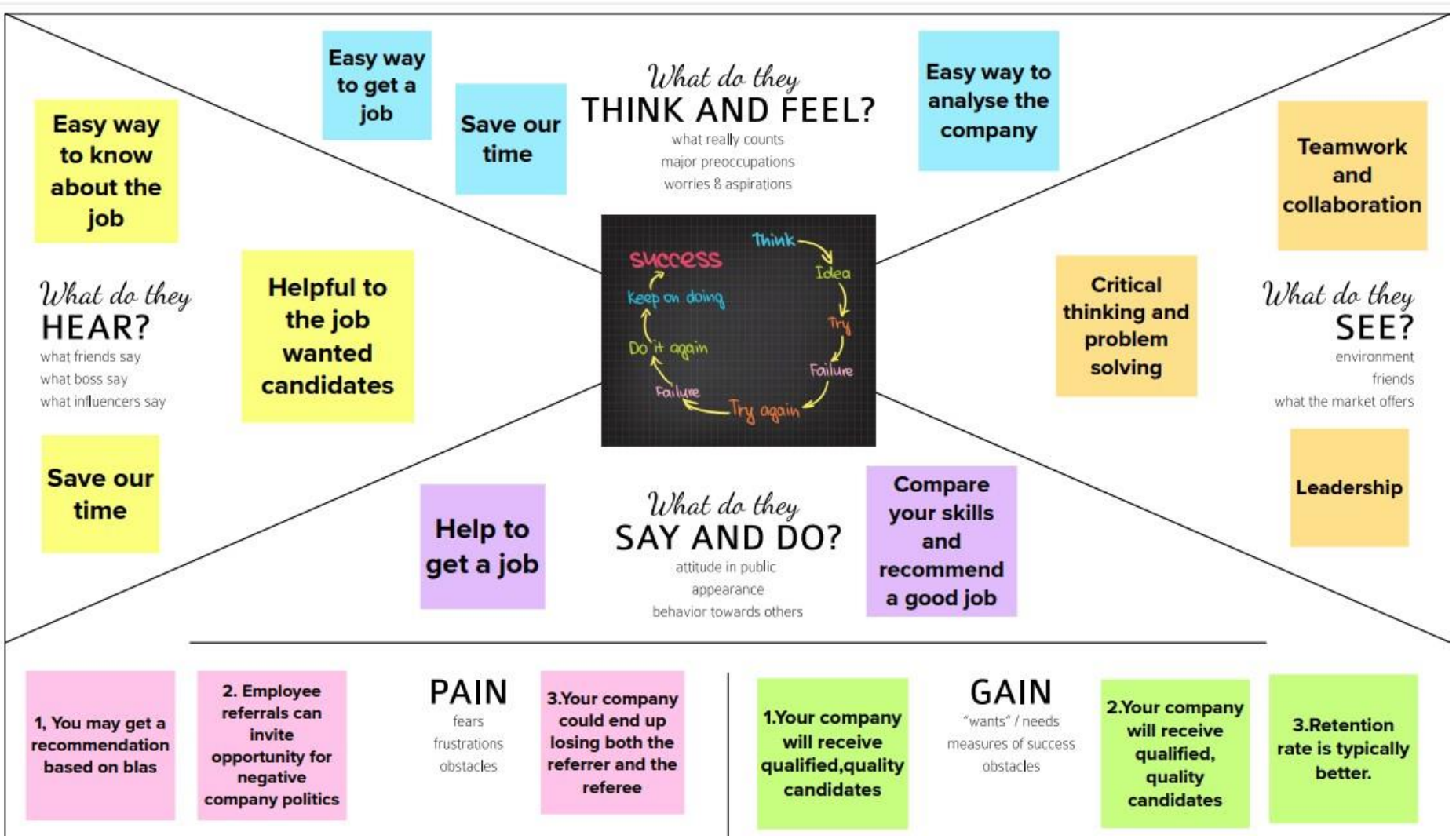
The dataset used for this research are sourced from Stack overflow survey data which is modelled as the user data for this research. Another dataset was created by web scrapping the Job board Using R programming language to fulfill the road map of this dissertation. The research question proposed by this research is "Can an efficient recommender system be modeled for the Job seekers which recommend Jobs with the user's skill set and job domain and also addresses the issue of cold start?". To answer the research question, below are the objectives that need to be satisfied with going forward.

3. IDEATION & PROPOSED SOLUTION

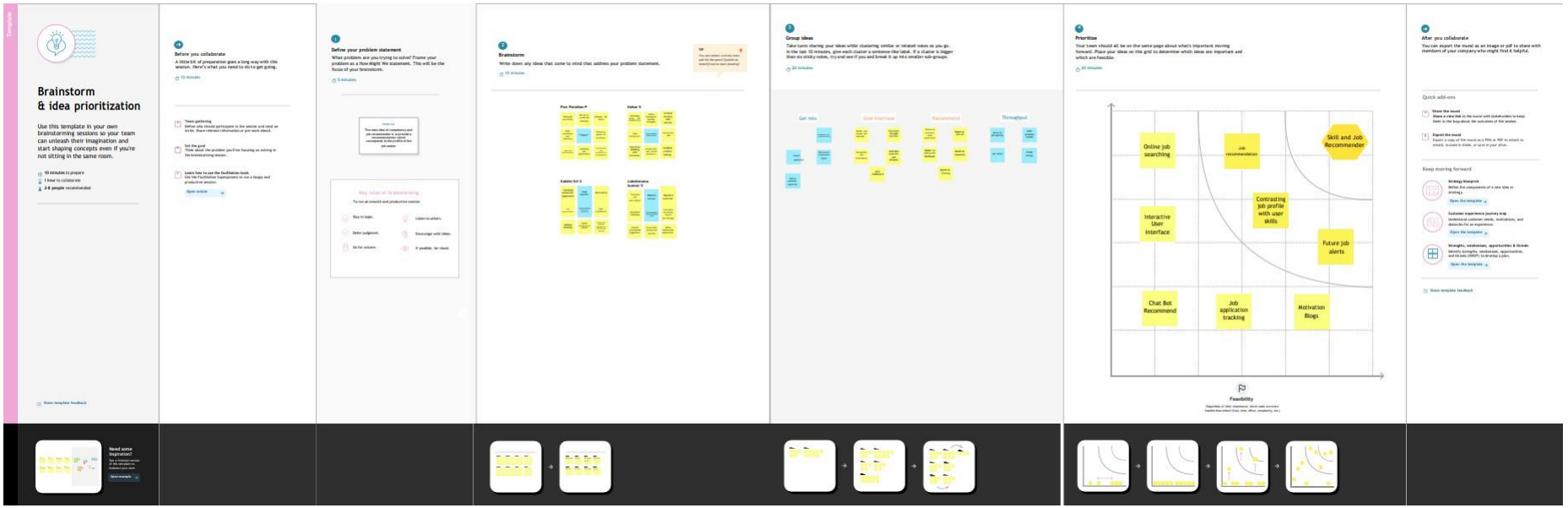
In the Ideation stage, design thinkers spark off ideas in the form of questions and solutions through creative Ideation is at the heart of the Design Thinking process. There are literally hundreds of ideation techniques, for example brainstorming, sketching, empathy map, SCAMPER and prototyping. Some techniques are merely renamed or slightly adapted versions of more foundational techniques, and curious activities such as Brainstorms and Worst Possible Idea. In this article, we'll introduce you to some of the best Ideation methods and guidelines that help facilitate successful Ideation sessions and encourage active participation from members.

When facilitated in a successful way, Ideation is an exciting process. The goal is to generate a large number of ideas ideas that potentially inspire newer, better ideas that the team can then cut down into the best, most practical and innovative ones.

3.1 Empathy Map Canvas:



3.2 Ideation & Brainstorming:



3.3 Proposed Solution:

Proposed Solution Parameter and its Descriptions:

Problem Statement (Problem to be Solved):

1. Recruiters also get the recommendations about the seekers based on the skills requirements.

2. Premium policy is an issues to the users.
3. Estimating salaries based on technical skills.

Idea / Solution Description:

1. Free access to every user’s.
2. Recruiters can post for the job openings in our applications.
3. Provide job description to the job seekers.

Novelty / Uniqueness:

1. Job seekers will be able to communicate through chat box and our application is user friendly and the structure is simple.
2. Earnings estimator based on knowledge of users.

Social Impact / Customer Satisfaction:

1. Open doors for every users as there is free access.
2. Users stay up to date of the offers.

Business Model (Revenue Model):

1. Regularly updating the new technologies and jobs offers.
2. Advertisements, Database Selling, Premium Content, Affiliate Marketing and Email Sales.

Scalability of the Solution:

1. Easy navigation and user-friendly interfaces.
2. Creating a positive culture is the main cause in maximizing the productivity.

3.4 Problem Solution Fit:

1.Customer segment:

1. Job seekers who are looking for job opportunity as a fresher and looking for better job than his current job.
2. Recruiters who are looking to hire a valuable candidate for their company.

2.Job to be done/problems:

1. Premium policy in the existing solution makes the users to feel that being out of the game.

2. Lot of mixed set of information's makes the users to feel their search as a hindrance.
3. Spam is one of the flows in the existing solutions that has become more and more common in recent years.

3. Triggers:

1. An event that causes a buyer to have a clear need.
2. This might have caused you to browse the web reading various reviews.
3. Time savings and Job alerts.

4. Emotion:

1. Before:
    1. Stressed
    2. Unsatisfication

2. After:

    1. Quick result
    2. Up to Date information

5. Available solution:

3. Daily Job Alerts
4. Hiring Workflow
5. Finding Best Match Candidate
6. Fegregation of job field

6. Customer constraints:

1. Network Connectivity
2. Groups of information
3. Possibility of scams
4. Operating Systems

5. Subscription reduces opportunity

7.Behaviour:

"Job" is shorthand for what an individual really seeks to accomplish in a given circumstance. The circumstances are more important than customer characteristics, product attributes new technologies, or trends.

8.Channels of behaviour:

1. ONLINE:

    1. It is all about taking care of your customers.

    2. Maintaining a great customer experience does more than benefits your customers.

2. OUTLINE:

    1.The offline media channels for advertising includes television ads billboards radio, telemarketing, pamphlets and any other kind of print media.

    2. Final round of interview process Certificate verification.

9. Problem root cause:

3. Fake profile which seeks money and people.

4. Personal information collected by recommends raises the risk unwanted exposure of information
5. Spam messages, which range from unsuitable proposals due to a lack of research or automatically generated messages.

10. Your solution:

To develop an application that helps users to overcome their difficulty to search for jobs. Overcoming the hurdles faced by the users in the existing solutions.

4.REQUIREMENT ANALYSIS:

4.1 Functional Requirements:

1. **User Registration -** Registration through Web Application, Mobile Number, Gmail ID.
2. **User Accessibility -** The users need to enable location, storage, media allowance.
3. **User Profile -** The users have to create a profile which has some basic information relevant to the application.
4. **User Uploads -** The users have to upload the softcopy of their mark sheet, identity card and resume of

their original database.

5. **User Verification -** The user has to verify whether the given information is correct or not.
6. **End User Benefits -** This makes the recruit process in an easy manner. It helps us to know the educational information in an effective way.

4.2 Non-Functional Requirements:

1. **USABITILIY -** It is effective way to achieve the skill and job recommendation. It is easily access by everyone.
2. **Security -** The privacy of the users should be guaranteed in the system.
3. **Reliability** -Integrity and consistency of the recommender engine and all its transactions should be ensured.
4. **Performance -** The recommender engine should generate recommendation within a time frame of 500 milliseconds.
5. **Availability -** It is always available in all platforms through websites.
6. **Scalability -** It may convenient for the user to use the application and also this app have been considered as user friendly.
7. **Learnability -** A new user should be able to use the recommender engine without putting too much efforts on learning how to use it, and in case of doubt, there must be some help to solve their doubts.

5.PROJECT DESIGN:

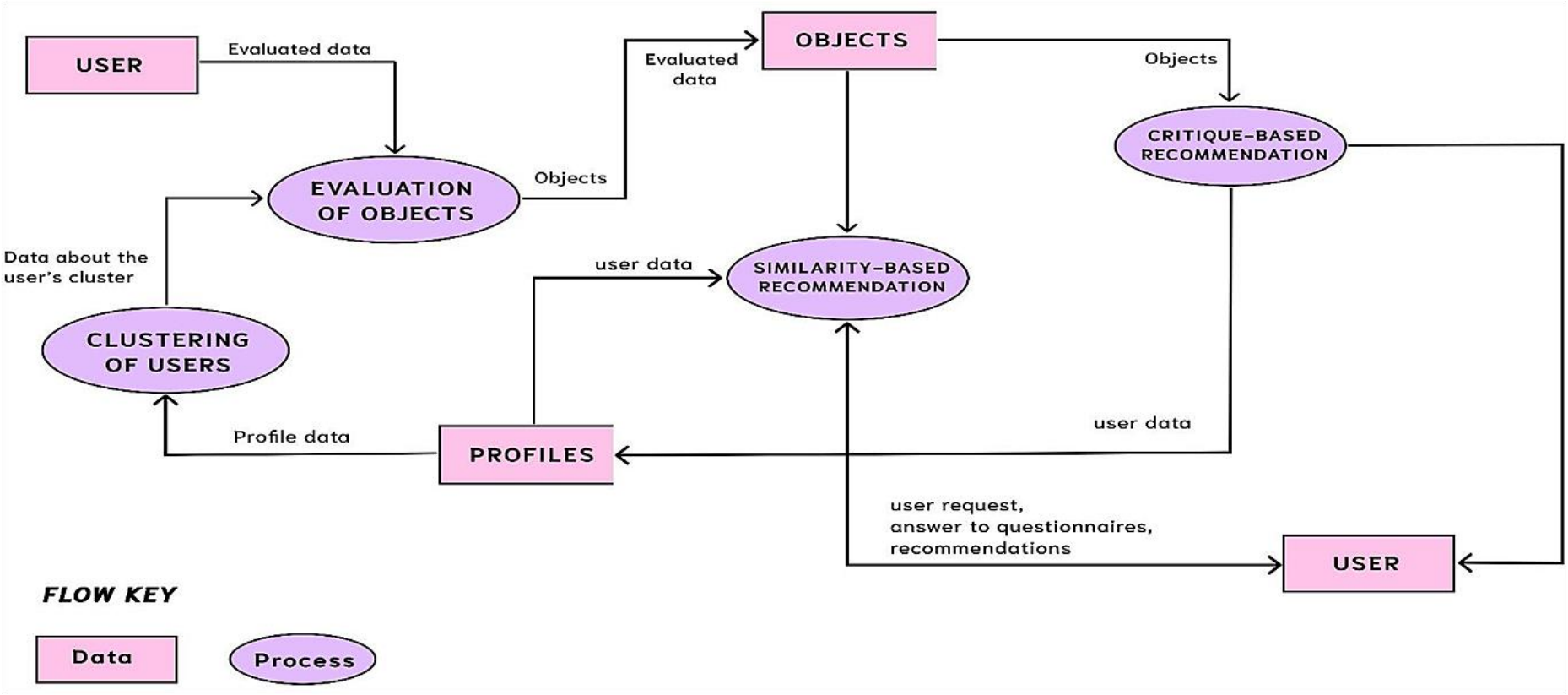
A project design of skill job recommender application. recommender is an extensive class of web application that involves predicting the user response to the option.

Often termed as recommender system they are simple algorithms which aim to provide the most relevant and accurate items to the user by filtering useful information base.

In real time examples are like amazon, they have been using a recommendation engine for suggesting the goods or product that customer might also like.

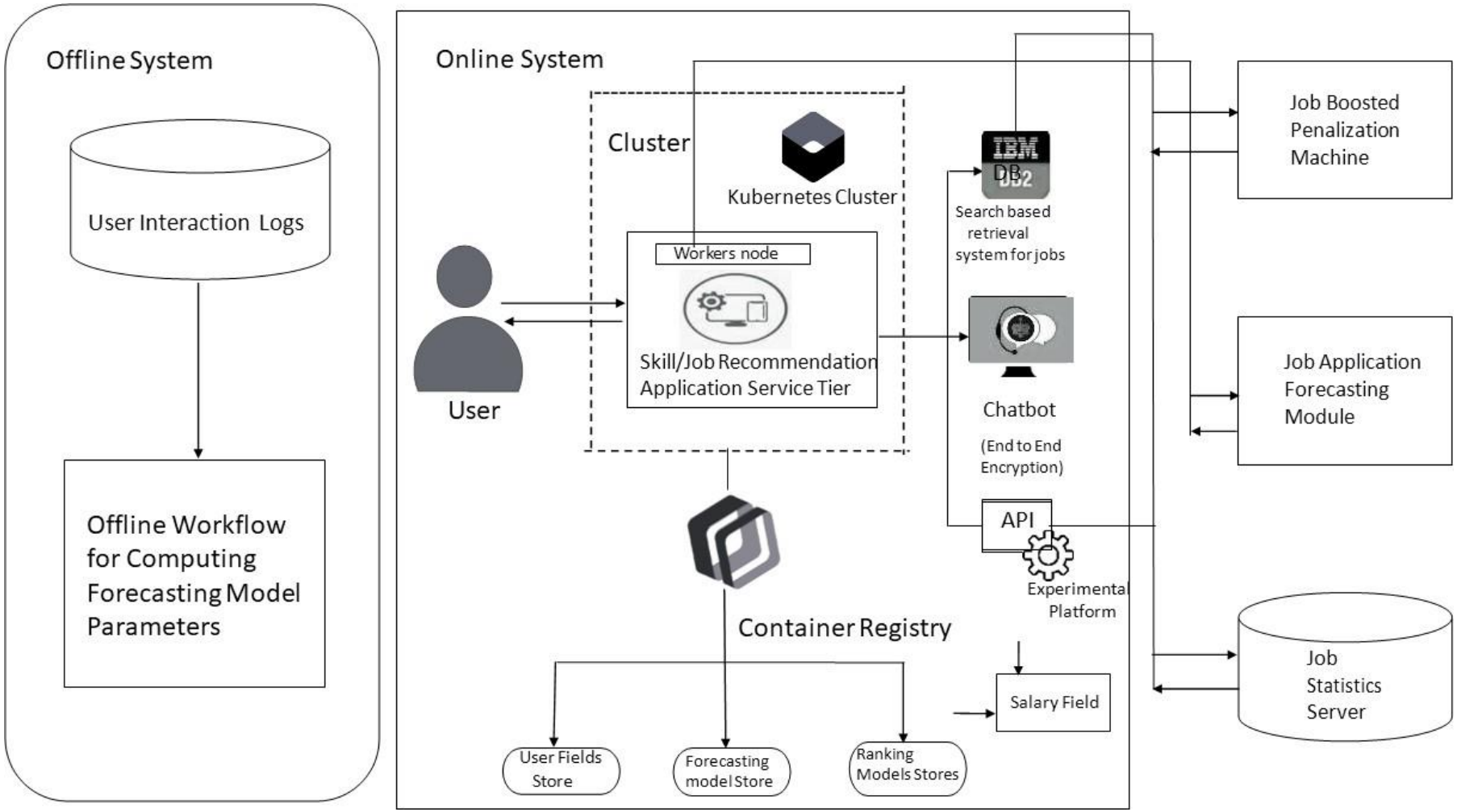
Although machine learning commonly used in building recommendation system, it doesn’t mean it’s the only solution. There are many ways to build recommendation system.

5.1 Data Flow Diagrams:

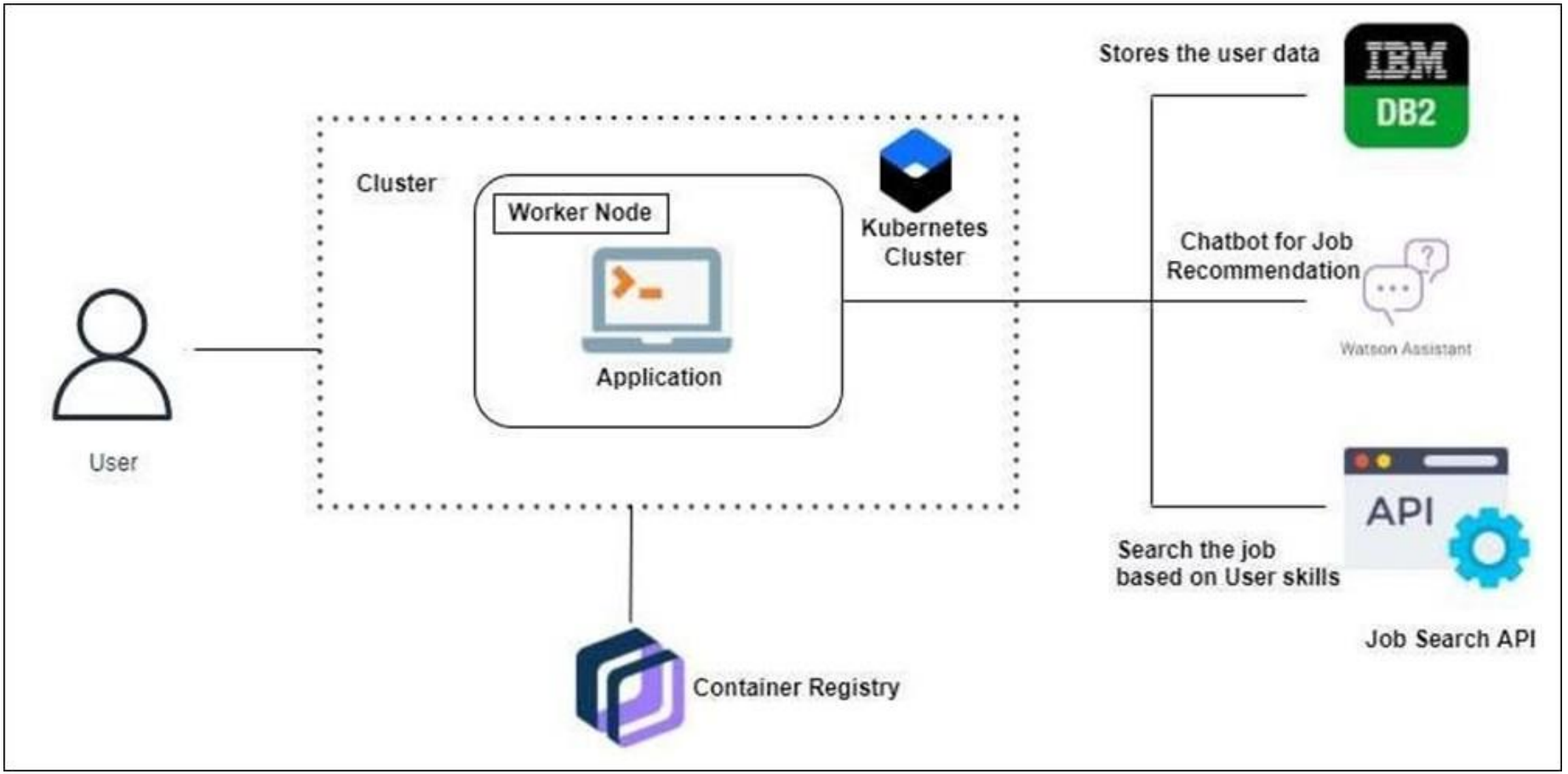


5.2 Solution & Technical Architecture:

Solution Architecture:



Technical Architecture:



5.3 User Stories:

1. UI Creation, Creating Registration page, Login page.

2. Viewing and applying jobs Connecting UI with Database.

3. Send Grid Integration with python code.
4. Building a chatbot.
5. Integrating chatbot to the HTML page and containerizing the app.
6. Upload the image to the IBM Registry and deploy it in the Kubernetes Cluster.

6.PROJECT PLANNING & SCHEDULING:

6.1 sprint planning & estimation:

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	UI Creation, Creating Registration page, Login page.	10	Medium	Sheshathri v m Senthilnathan s Shaik muhammad asif Srikanta yeswanth adithya
Sprint-1	Database Connectivity	USN-2	Viewing and applying jobs Connecting UI with Database.	10	High	Sheshathri v m Senthilnathan s Shaik muhammad asif Srikanta yeswanth adithya

Sprint-2	Send Grid Integration	USN-3	Send Grid Integration with python code.	10	Low	Sheshathri v m Senthilnathan s Shaik muhammad asif Srikanta yeswanth adithya
Sprint-2	Chatbot Development	USN-4	Building a chatbot.	10	High	Sheshathri v m Senthilnathan s Shaik muhammad asif Srikanta yeswanth adithya
Sprint-3	Integration and Containerization	USN-5	Integrating chatbot to the HTML page and containerizing the app.	20	Medium	Sheshathri v m Senthilnathan s Shaik muhammad asif Srikanta yeswanth adithya
Sprint-4	Upload Image and deployment	USN-6	Upload the image to the IBM Registry and deploy it in the Kubernetes Cluster.	20	High	Sheshathri v m Senthilnathan s Shaik muhammad asif Srikanta yeswanth adithya

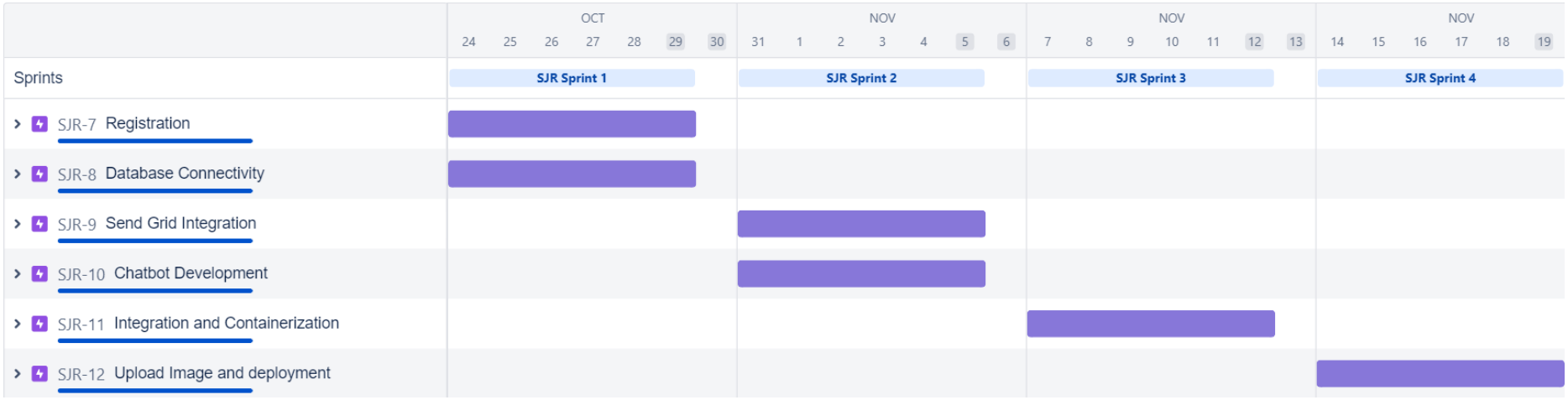
6.2 sprint delivery schedule:

Total Story Points	**Duration**	**Sprint Start Date**	**Sprint End Date (Planned)**	**Story Points Completed (as on Planned End Date)**	**Sprint Release Date (Actual)**
20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022

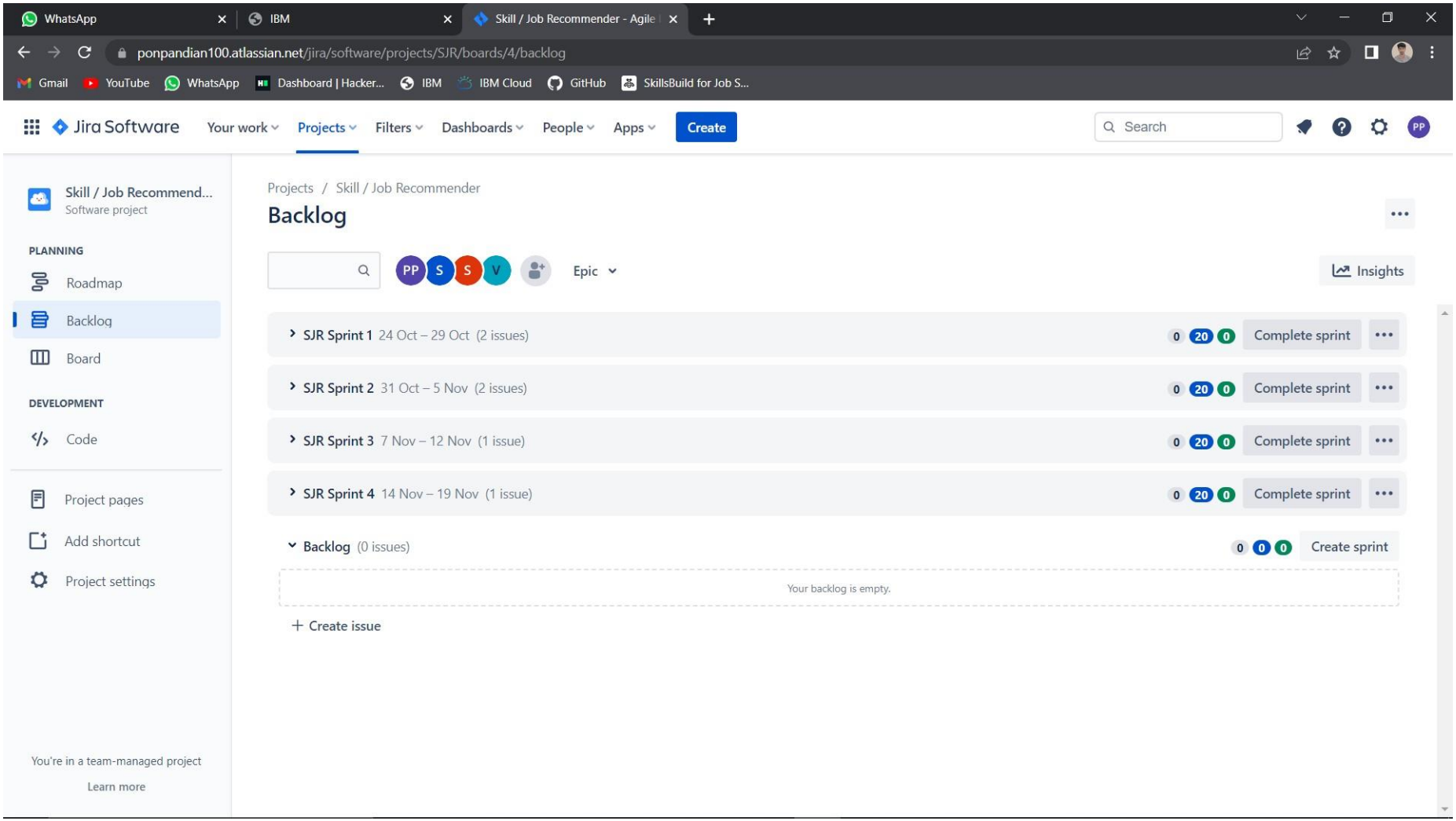
20	6 Days	30 Oct 2022	05 Nov 2022	20	05 Nov 2022
20	6 Days	06 Nov 2022	12 Nov 2022	20	12 Nov 2022
20	6 Days	13 Nov 2022	19 Nov 2022	20	19 Nov 2022

6.3 Reports from JIRA:

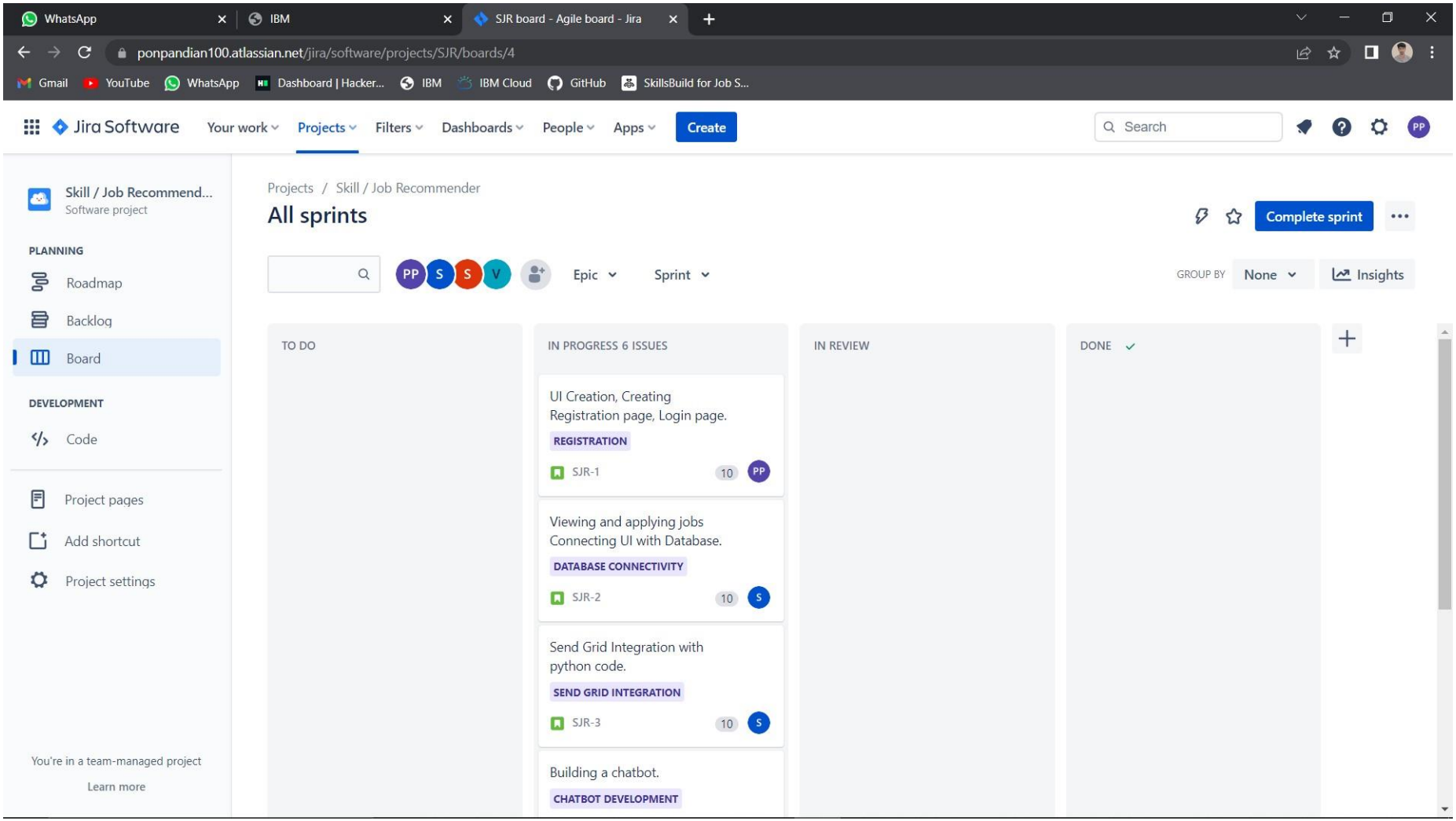
ROADMAP:



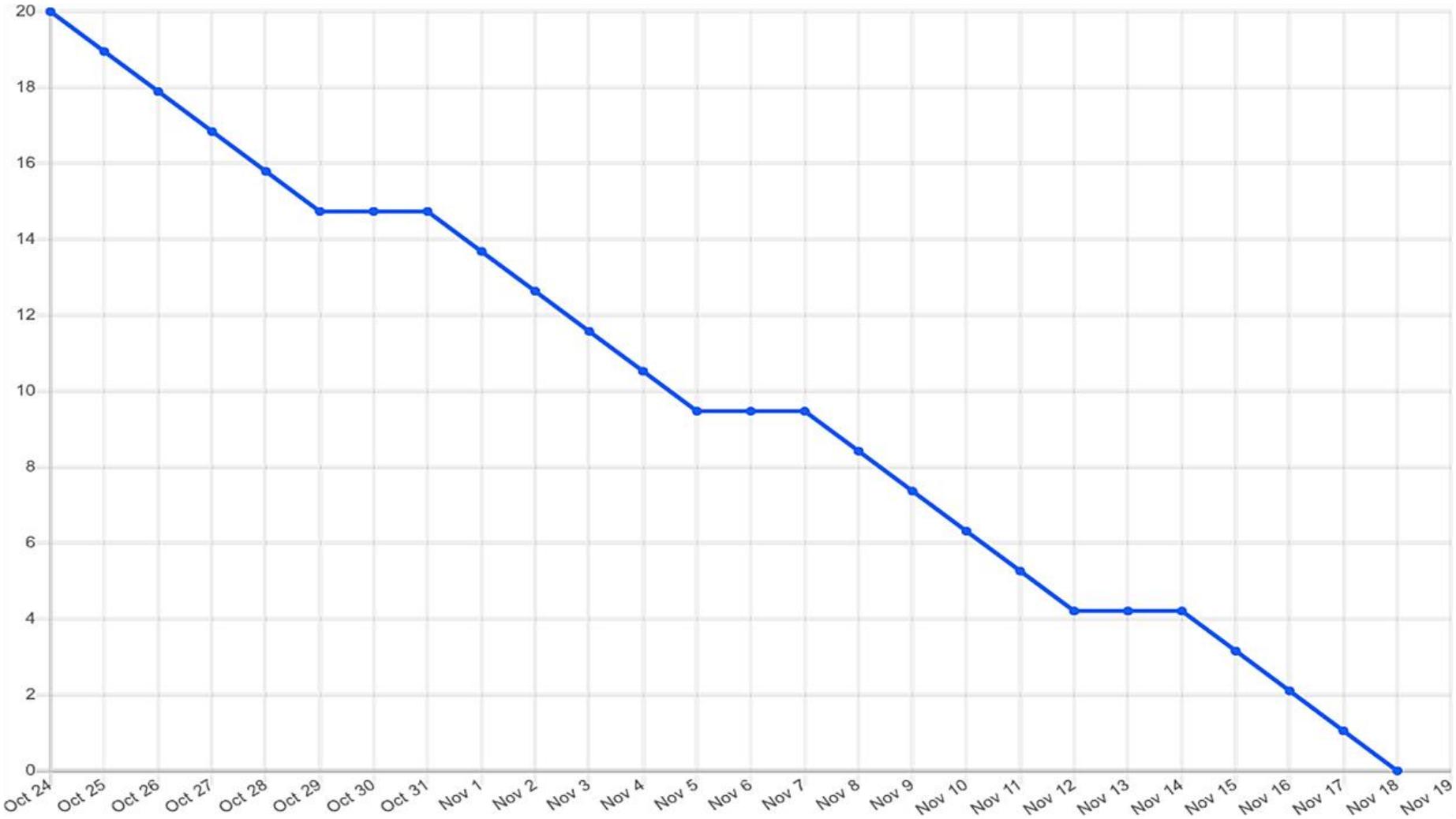
BACKLOG:


WhatsApp
IBM
Skill / Job Recommender - Agile
ponpandian100.atlassian.net/jira/software/projects/SJR/boards/4/backlog
Gmail
YouTube
WhatsApp
Dashboard | Hacker...
IBM
IBM Cloud
GitHub
SkillsBuild for Job S...
Jira Software
Your work
Projects
Filters
Dashboards
People
Apps
Create
Search
Skill / Job Recommend...
Software project
PLANNING
Roadmap
Backlog
Board
DEVELOPMENT
Code
Project pages
Add shortcut
Project settings
You're in a team-managed project
Learn more
Projects / Skill / Job Recommender
Backlog
Epic
Insights
SJR Sprint 1 24 Oct – 29 Oct (2 issues)
SJR Sprint 2 31 Oct – 5 Nov (2 issues)
SJR Sprint 3 7 Nov – 12 Nov (1 issue)
SJR Sprint 4 14 Nov – 19 Nov (1 issue)
Complete sprint
Backlog (0 issues)
Create sprint
Your backlog is empty.
Create issue

BOARD:


WhatsApp
IBM
SJR board - Agile board - Jira
ponpandian100.atlassian.net/jira/software/projects/SJR/boards/4
Gmail
YouTube
WhatsApp
Dashboard | Hacker...
IBM
IBM Cloud
GitHub
SkillsBuild for Job S...
Jira Software
Your work
Projects
Filters
Dashboards
People
Apps
Create
Search
Skill / Job Recommend...
Software project
PLANNING
Roadmap
Backlog
Board
DEVELOPMENT
Code
Project pages
Add shortcut
Project settings
You're in a team-managed project
Learn more
Projects / Skill / Job Recommender
All sprints
Complete sprint
Epic
Sprint
GROUP BY
None
Insights
TO DO
IN PROGRESS 6 ISSUES
IN REVIEW
DONE
UI Creation, Creating Registration page, Login page.
REGISTRATION
SJR-1
10
Viewing and applying jobs Connecting UI with Database.
DATABASE CONNECTIVITY
SJR-2
10
Send Grid Integration with python code.
SEND GRID INTEGRATION
SJR-3
10
Building a chatbot.
CHATBOT DEVELOPMENT

BURNDOWN CHART:



7.CODING & SOLUTION

(Explain the features added in the project along with code):

7.1 Feature 1 code:

```
{% load static %}
<!DOCTYPE html>
<html>

<head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <title>{% block title %} {% endblock %} - PSSL Jobs</title>
    <meta name="description" content="">
```

```
<meta name="viewport" content="width=device-width, initial-scale=1">
<meta name="robots" content="all,follow">
<!-- Bootstrap CSS-->
<link rel="stylesheet"
    href="{% static 'vendor/bootstrap/css/bootstrap.min.css' %}">
<!-- Font Awesome CSS-->
<link rel="stylesheet"
    href="{% static 'vendor/font-awesome/css/font-awesome.min.css' %}">
<!-- Google fonts - Roboto for copy, Montserrat for headings-->
<link rel="stylesheet" href="http://fonts.googleapis.com/css?family=Roboto:300,400,700">
<link rel="stylesheet" href="http://fonts.googleapis.com/css?family=Montserrat:400,700">
<!-- owl carousel-->
<link rel="stylesheet"
    href="{% static 'vendor/owl.carousel/assets/owl.carousel.css' %}">
<link rel="stylesheet"
```

```
        href="{% static 'vendor/owl.carousel/assets/owl.theme.default.css' %}">
    <!-- theme stylesheet-->
    <link rel="stylesheet" href="{% static 'css/style.default.css' %}"
        id="theme-stylesheet">
    <!-- Custom stylesheet - for your changes-->
    <link rel="stylesheet" href="{% static 'css/custom.css' %}">
    {% block styles %}{% endblock %}
    <!-- Favicon-->
    <link rel="shortcut icon" href="favicon.png">
    <!-- Tweaks for older IEs--><!--[if lt IE 9]>
    <script src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
    <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script><![endif]-->
</head>
<body>
    <script>
```

```
      window.watsonAssistantChatOptions = {
        integrationID: "78169ac8-b6d4-4662-9ca5-731a5ab3a9ba", // The ID of this integration.
        region: "au-syd", // The region your integration is hosted in.
        serviceInstanceID: "e04f8ce2-317d-45fe-ae1c-e0a831150e9b", // 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>
<!-- navbar-->
<header class="header">
```

```
<nav class="navbar navbar-expand-lg bg-dark">
    <div class="container">
        <a href="/" class="navbar-brand">
            <img src="{% static 'img/itsourcecodes.jpg' %}" alt="logo" class="d-none d-lg-block">
            <span class="sr-only">Home</span>
        </a>
        <button type="button" data-toggle="collapse" data-target="#navbarSupportedContent"
            aria-controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle navigation"
            class="navbar-toggler navbar-toggler-right">Menu<i class="fa fa-bars"></i>
        </button>
        <div id="navbarSupportedContent" class="collapse navbar-collapse">
            <ul class="navbar-nav ml-auto">
                <li class="nav-item active">
                    <a href="/" class="nav-link">Home <span class="sr-only">(current)</span></a>
```

```
</li>
<li class="nav-item">
    <a href="#" class="nav-link">About Us</a>
</li>
<li class="nav-item">
    <a href="#" class="nav-link">Contact</a>
</li>
{% if request.user.is_authenticated and request.user.role == 'employer' %}
    <li class="nav-item dropdown">
        <a id="clientZone" href="#" data-toggle="dropdown"
           aria-haspopup="true" aria-expanded="false"
           class="nav-link dropdown-toggle has-img mb-3 mb-lg-0 mt-3 mt-lg-0">
            <div class="client-menu-image">
                <div class="inner">
                    <img src="{% static 'img/itsourcecodes.jpg' %}"
```

```
                    alt="company image"
                    class="img-fluid">
                </div>
            </div>
            {% if request.user.role == 'employee' %}
                {{ request.user.first_name }} {{ request.user.last_name }}
            {% else %}
                {{ request.user.first_name }}
            {% endif %}
        </a>
        <div aria-labelledby="clientZone" class="dropdown-menu">
            <a href="{% url 'jobs:employer-dashboard' %}" class="dropdown-item">Dashboard</a>
            <a href="{% url 'jobs:employer-all-applicants' %}" class="dropdown-item">Applicants </a>
            <a href="{% url 'jobs:employer-jobs-create' %}" class="dropdown-item">Post a
```

```
new
                        job </a>
                    <a href="{% url 'accounts:logout' %}" class="dropdown-item">Logout</a>
                </div>
            </li>
        {% elif request.user.is_authenticated and request.user.role == 'employee' %}
            <li class="nav-item dropdown">
                <a id="clientZone" href="#" data-toggle="dropdown"
                    aria-haspopup="true" aria-expanded="false"
                    class="nav-link dropdown-toggle has-img mb-3 mb-lg-0 mt-3 mt-lg-0">
                    <div class="client-menu-image">
                        <div class="inner">
                            <img src="{% static 'img/itsourcecodes.jpg' %}"
                                alt="company image"
                                class="img-fluid">
```

```
                    </div>
                </div>
                {% if request.user.role == 'employee' %}
                    {{ request.user.first_name }} {{ request.user.last_name }}
                {% else %}
                    {{ request.user.first_name }}
                {% endif %}
            </a>
            <div aria-labelledby="clientZone" class="dropdown-menu">
                <a href="{% url 'accounts:employer-profile-update' %}" class="dropdown-item">Edit Profile</a>
                <a href="{% url 'accounts:logout' %}" class="dropdown-item">Logout</a>
            </div>
        </li>
    {% else %}
```

```
                <li class="nav-item dropdown">
                    <a id="pages" href="#" data-toggle="dropdown" aria-haspopup="true" aria-
expanded="false"
                       class="nav-link dropdown-toggle"><i class="fa fa-signing"></i>Register
                    </a>
                    <div aria-labelledby="pages" class="dropdown-menu">
                        <a href="{% url 'accounts:employee-register' %}" class="dropdown-
item">Employee</a>
                        <a href="{% url 'accounts:employer-register' %}" class="dropdown-
item">Employers</a>
                    </div>
                </li>
                <li class="nav-item" style="color: #fff">
                    <a href="{% url 'accounts:login' %}" class="btn navbar-btn btn-outline-light mb-5
mb-lg-0">
                        <i class="fa fa-sign-in"></i>Login
```

```
                    </a>
                </li>
            {% endif %}
        </ul>
    </div>
</div>
</nav>
</header>
<div>
{% if messages %}

    {% for message in messages %}
        <div class="alert alert-{{ message.tags }} alert-dismissible fade show" role="alert">
            {{ message }}
            <button type="button" class="close" data-dismiss="alert" aria-label="Close">
```

```
                <span aria-hidden="true">&times;</span>
            </button>
        </div>
{#          <li{% if message.tags %} class="alert alert-{{ message.tags }}"{% endif %}>{{ message }}</li>#}
    {% endfor %}


  {% endif %}
  {% block content %} {% endblock %}
</div>
<footer class="footer">
  <div class="footer__block">
    <div class="container">
      <div class="row">
        <div class="col-lg-4 col-md-12 mb-5">
```

```
            <h4 class="h5">About Jobs</h4>

            <p> A job, employment, work or occupation, is a person's role in society. More specifically, a job is an activity, often regular and often performed in exchange for payment. Many people have multiple jobs. A person can begin a job by becoming an employee, volunteering, starting a business, or becoming a parent. </p>

          </div>

        </div>

      </div>

    </div>

    <div class="footer__copyright">

      <div class="container">

        <div class="row">

          <div class="col-md-6 text-md-left text-center">

            <p>Online Job Portal 2022 made by Pon Pandian</p>

            <p>Helping partners Sakthisri,sekar,Lakshmanakumar</p>

            <p>Team ID : PNT20222TMID32271</p>
```

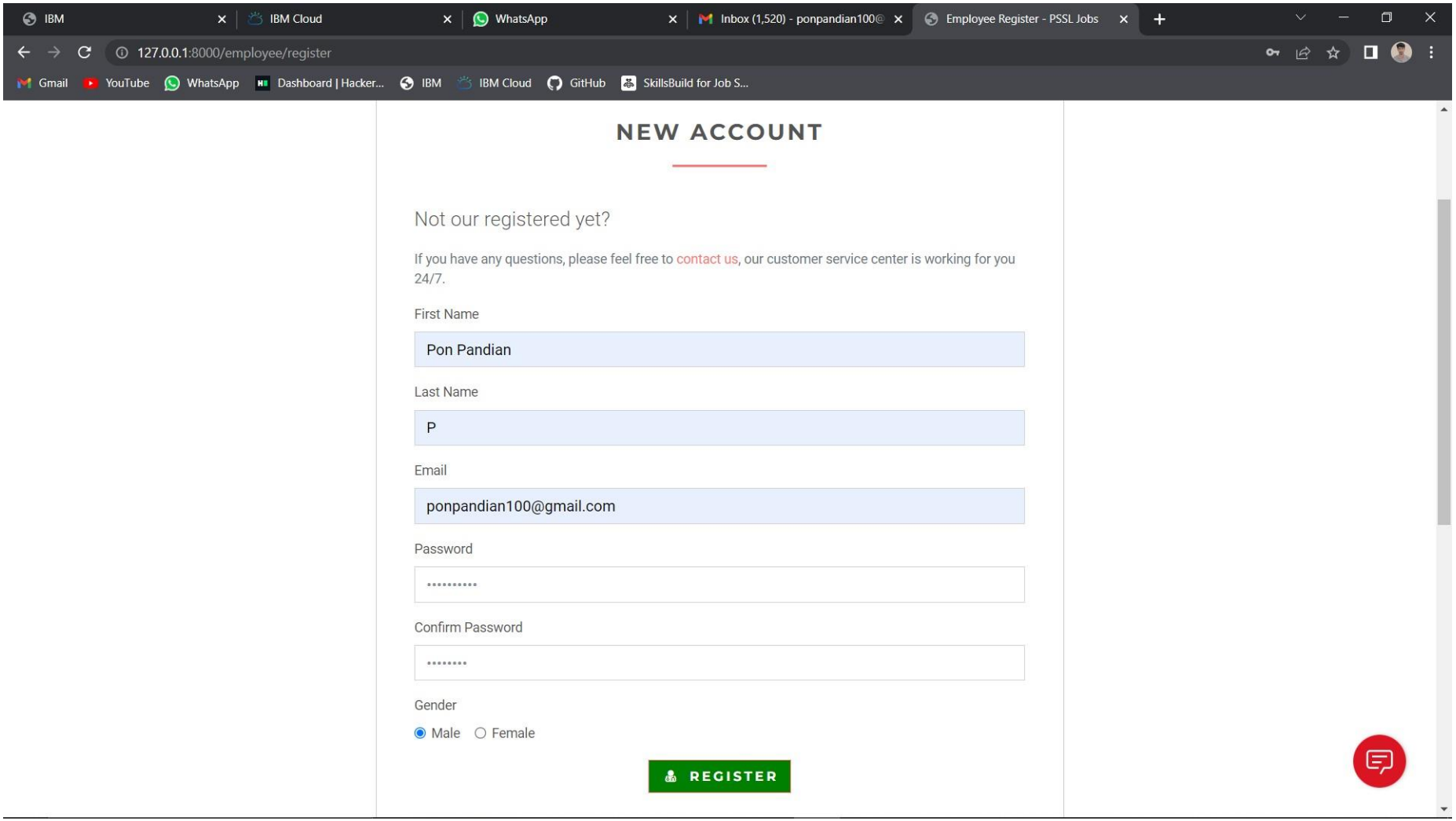
```
                <p>Skill /Job Recommender Application</p>
            </div>
        </div>
    </div>
</div>
</footer>

<script src="{% static 'vendor/jquery/jquery.min.js' %}"></script>
<script src="{% static 'vendor/popper.js/umd/popper.min.js' %}"></script>
<script src="{% static 'vendor/bootstrap/js/bootstrap.min.js' %}"></script>
<script src="{% static 'vendor/jquery.cookie/jquery.cookie.js' %}"></script>
<script src="{% static 'vendor/owl.carousel/owl.carousel.min.js' %}"></script>
<script src="{% static 'vendor/bootstrap-select/js/bootstrap-select.min.js' %}"></script>
<script src="{% static 'js/front.js' %}"></script>
```

{% block javascripts %}{% endblock %}

</body>

</html>

7.2 Feature 2 OUTPUT: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Employee Register - PSSL Jobs
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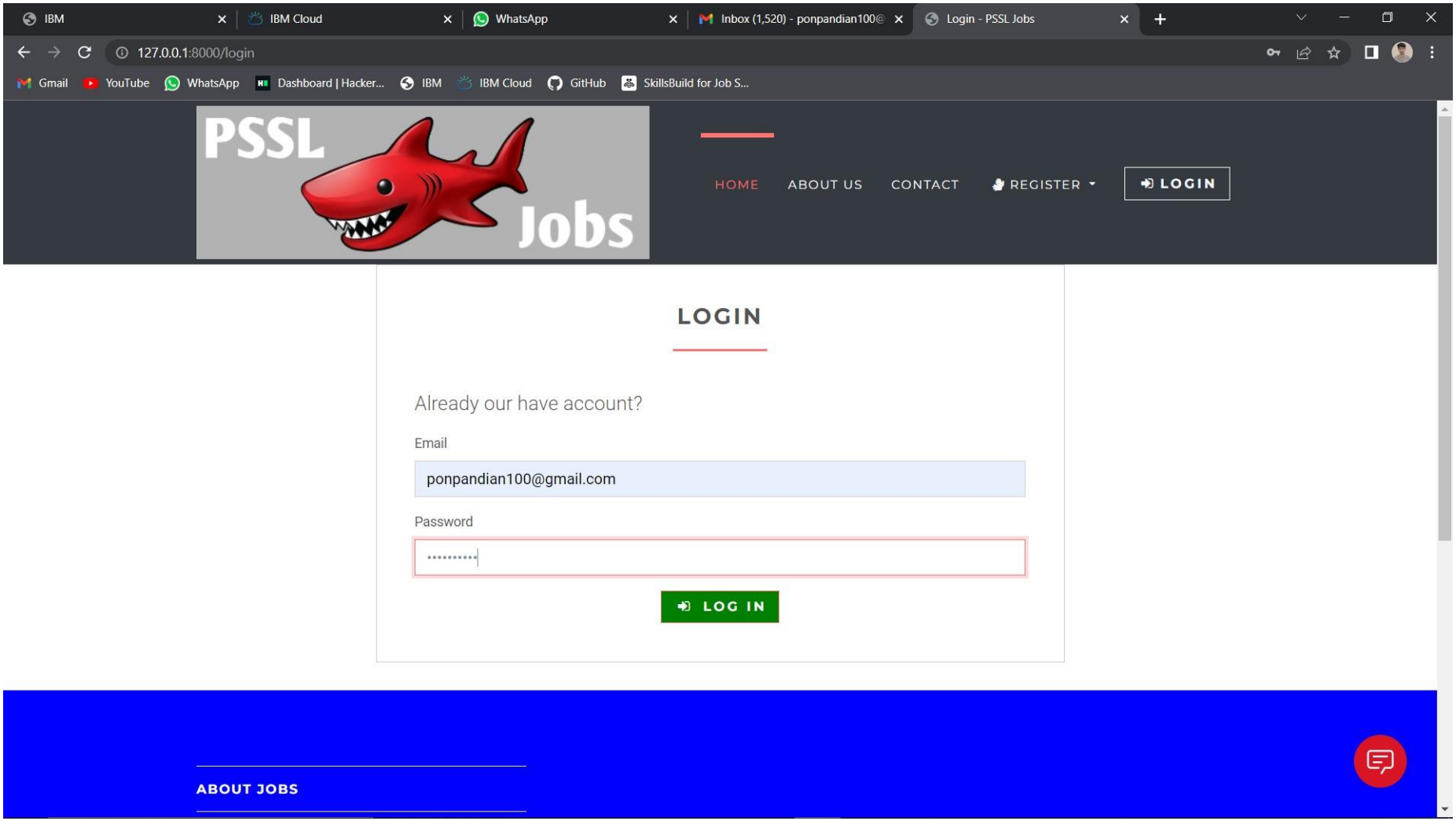
SkillsBuild for Job S...
NEW ACCOUNT
Not our registered yet?
If you have any questions, please feel free to contact us, our customer service center is working for you 24/7.
First Name
Pon Pandian
Last Name
P
Email
ponpandian100@gmail.com
Password
Confirm Password
Gender
Male
Female
REGISTER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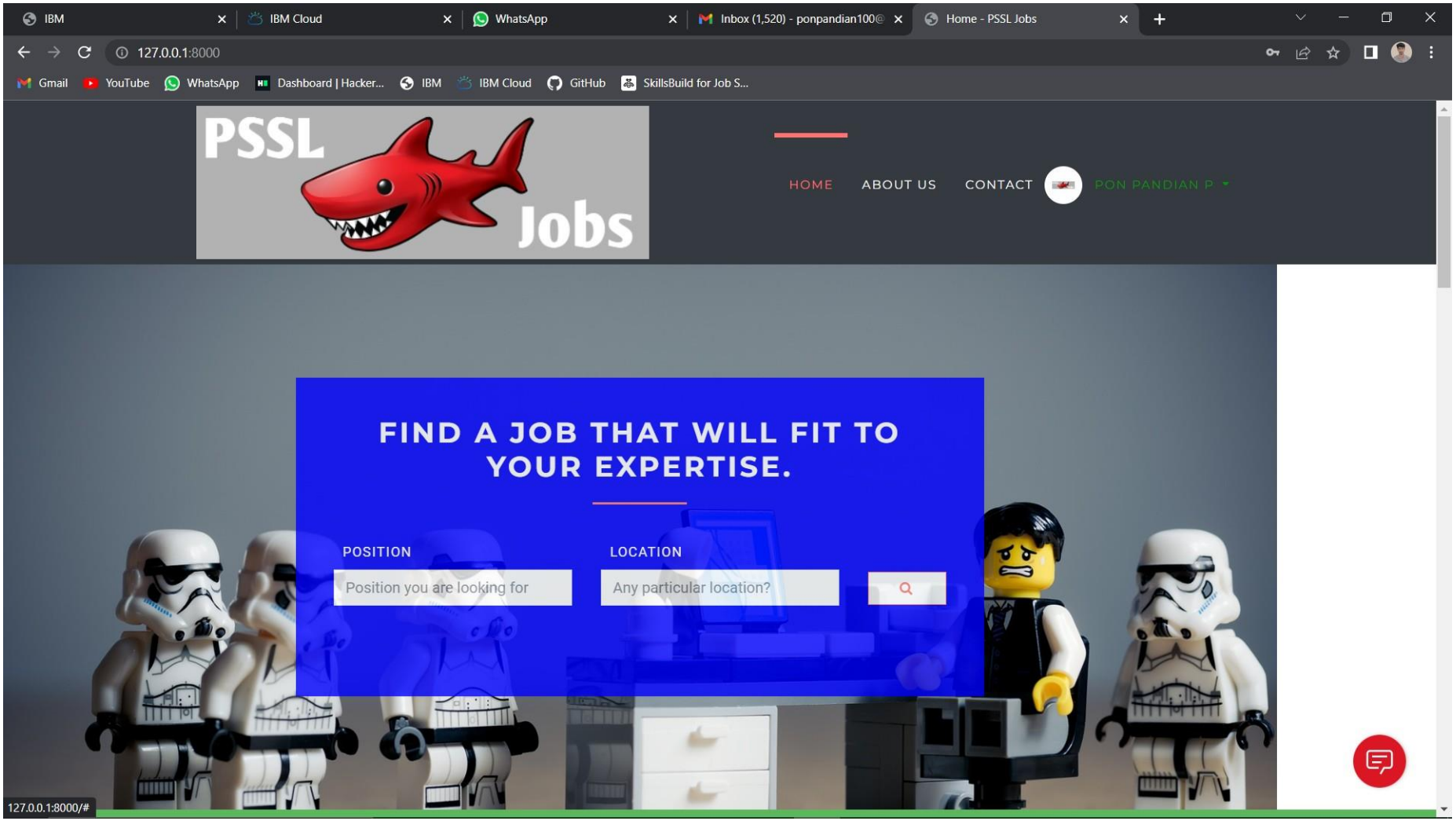
Dashboard | Hacker...
IBM
IBM Cloud
GitHub
SkillsBuild for Job S...
PSSL
Jobs
HOME
ABOUT US
CONTACT
REGISTER
LOGIN
LOGIN
Already our have account?
Email
ponpandian100@gmail.com
Password
LOG IN
ABOUT JOBS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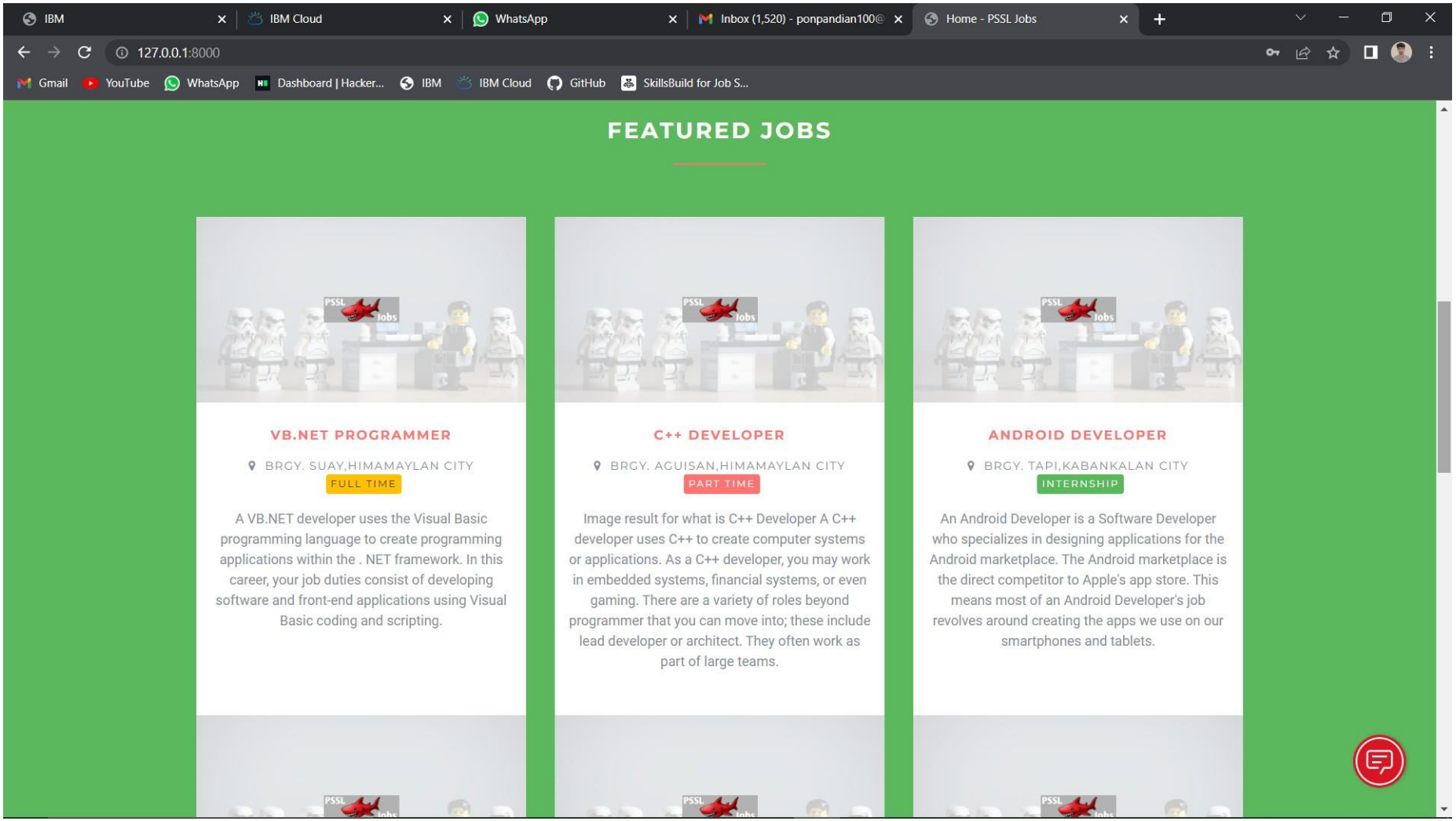
SkillsBuild for Job S...
PSSL
Jobs
HOME
ABOUT US
CONTACT
PON PANDIAN P
FIND A JOB THAT WILL FIT TO YOUR EXPERTISE.
POSITION
Position you are looking for
LOCATION
Any particular location?
127.0.0.1:8000/#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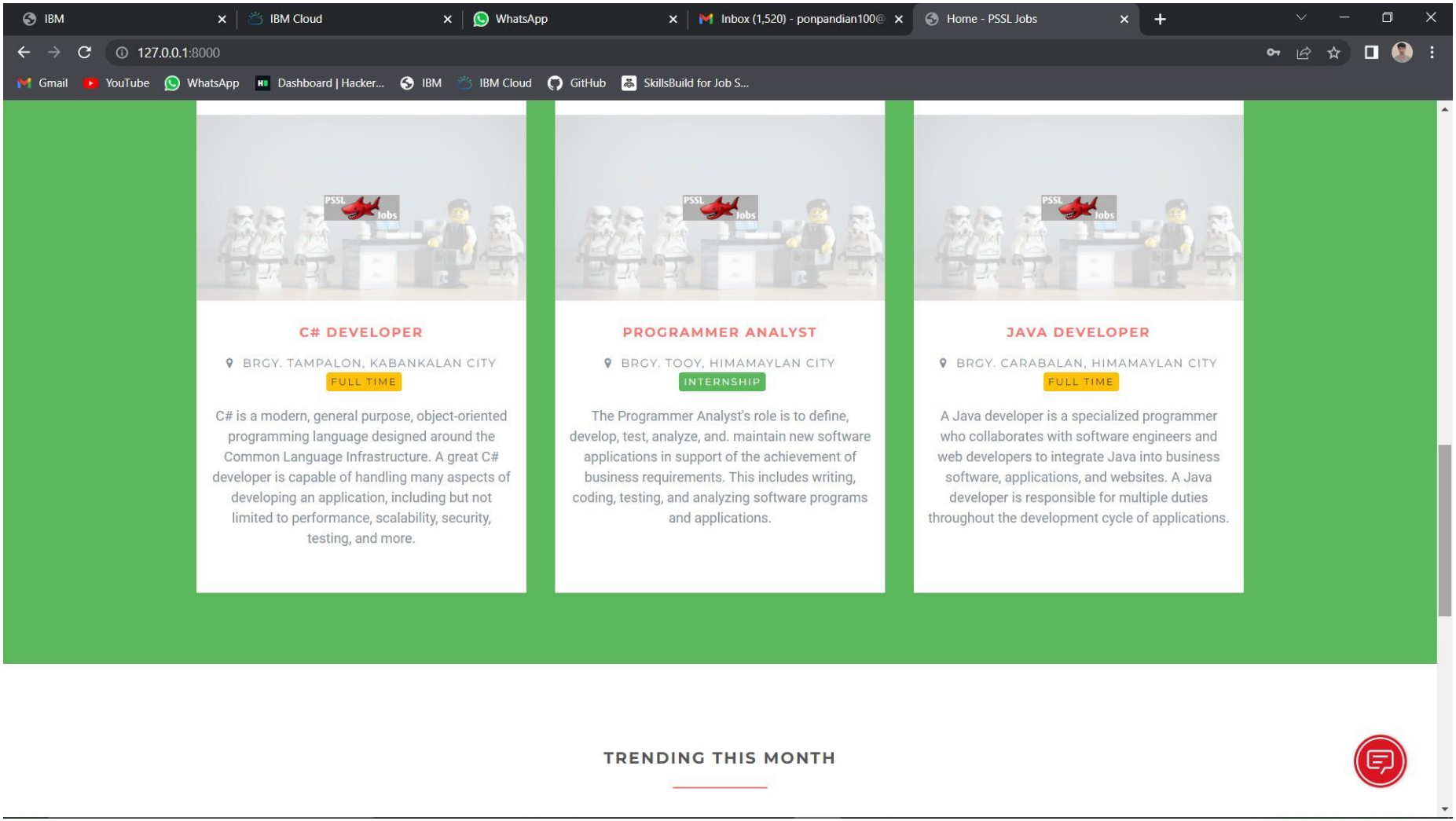
GitHub
SkillsBuild for Job S...
FEATURED JOBS
VB.NET PROGRAMMER
BRGY. SUAY,HIMAMAYLAN CITY
FULL TIME
A VB.NET developer uses the Visual Basic programming language to create programming applications within the . NET framework. In this career, your job duties consist of developing software and front-end applications using Visual Basic coding and scripting.
C++ DEVELOPER
BRGY. AGUISAN,HIMAMAYLAN CITY
PART TIME
Image result for what is C++ Developer A C++ developer uses C++ to create computer systems or applications. As a C++ developer, you may work in embedded systems, financial systems, or even gaming. There are a variety of roles beyond programmer that you can move into; these include lead developer or architect. They often work as part of large teams.
ANDROID DEVELOPER
BRGY. TAPI,KABANKALAN CITY
INTERNSHIP
An Android Developer is a Software Developer who specializes in designing applications for the Android marketplace. The Android marketplace is the direct competitor to Apple's app store. This means most of an Android Developer's job revolves around creating the apps we use on our smartphones and tablets.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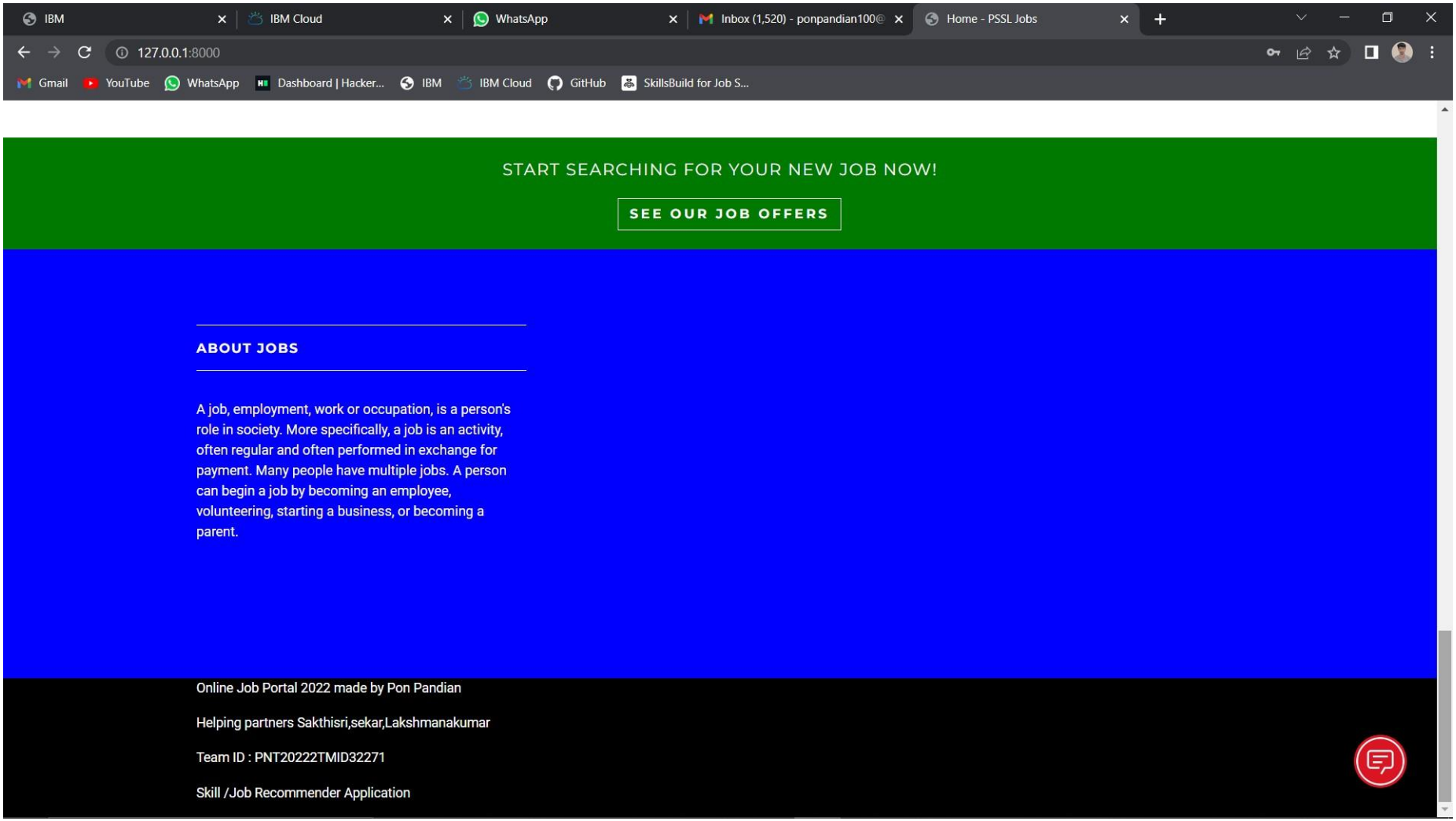
Dashboard | Hacker...
IBM
IBM Cloud
GitHub
SkillsBuild for Job S...
C# DEVELOPER
BRGY. TAMPALON, KABANKALAN CITY
FULL TIME
C# is a modern, general purpose, object-oriented programming language designed around the Common Language Infrastructure. A great C# developer is capable of handling many aspects of developing an application, including but not limited to performance, scalability, security, testing, and more.
PROGRAMMER ANALYST
BRGY. TOOY, HIMAMAYLAN CITY
INTERNSHIP
The Programmer Analyst's role is to define, develop, test, analyze, and. maintain new software applications in support of the achievement of business requirements. This includes writing, coding, testing, and analyzing software programs and applications.
JAVA DEVELOPER
BRGY. CARABALAN, HIMAMAYLAN CITY
FULL TIME
A Java developer is a specialized programmer who collaborates with software engineers and web developers to integrate Java into business software, applications, and websites. A Java developer is responsible for multiple duties throughout the development cycle of applications.
TRENDING THIS MONTH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IBM
IBM Cloud
GitHub
SkillsBuild for Job S...
START SEARCHING FOR YOUR NEW JOB NOW!
SEE OUR JOB OFFERS
ABOUT JOBS
A job, employment, work or occupation, is a person's role in society. More specifically, a job is an activity, often regular and often performed in exchange for payment. Many people have multiple jobs. A person can begin a job by becoming an employee, volunteering, starting a business, or becoming a parent.
Online Job Portal 2022 made by Pon Pandian
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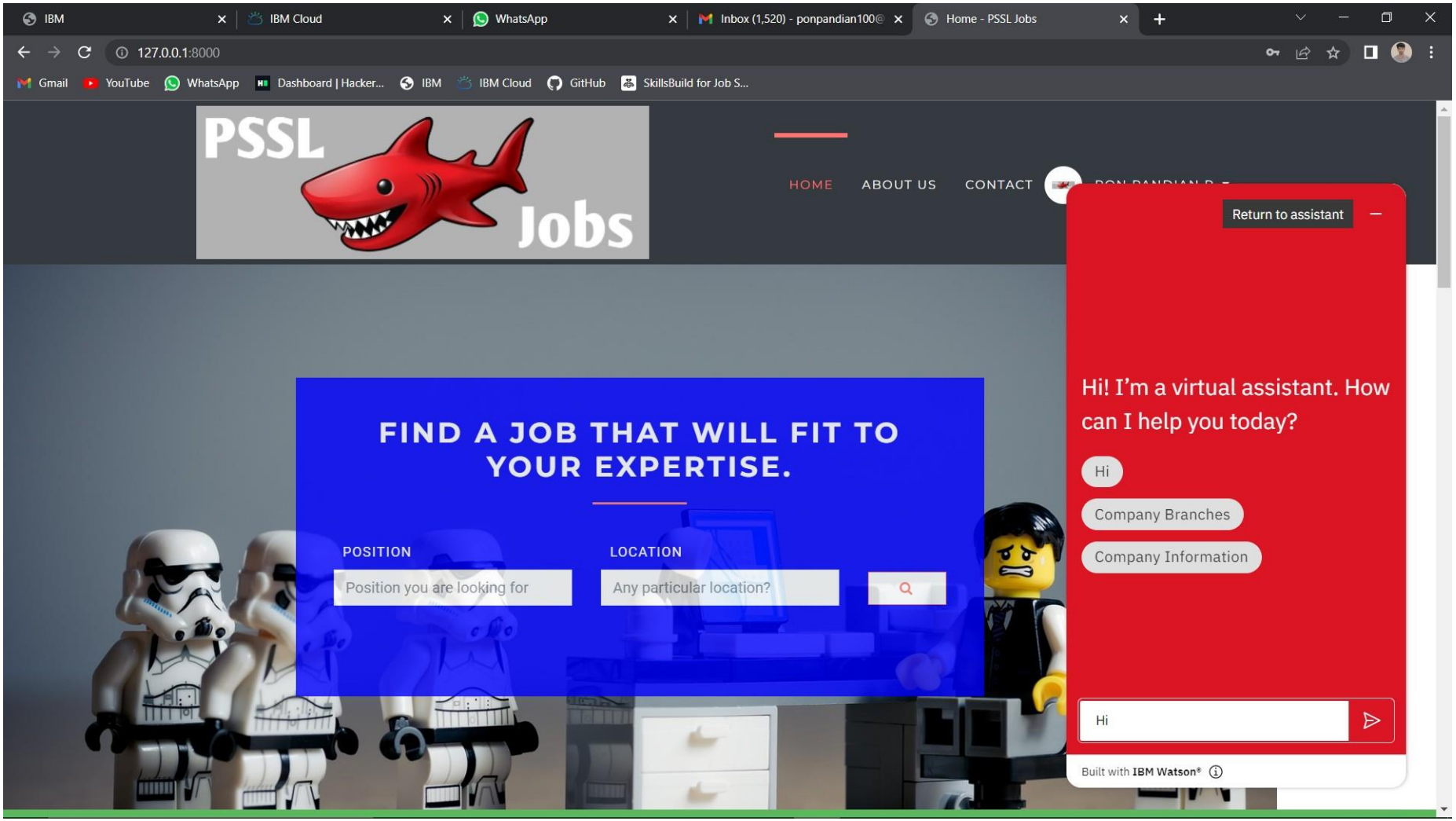
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SkillsBuild for Job S...
PSSL
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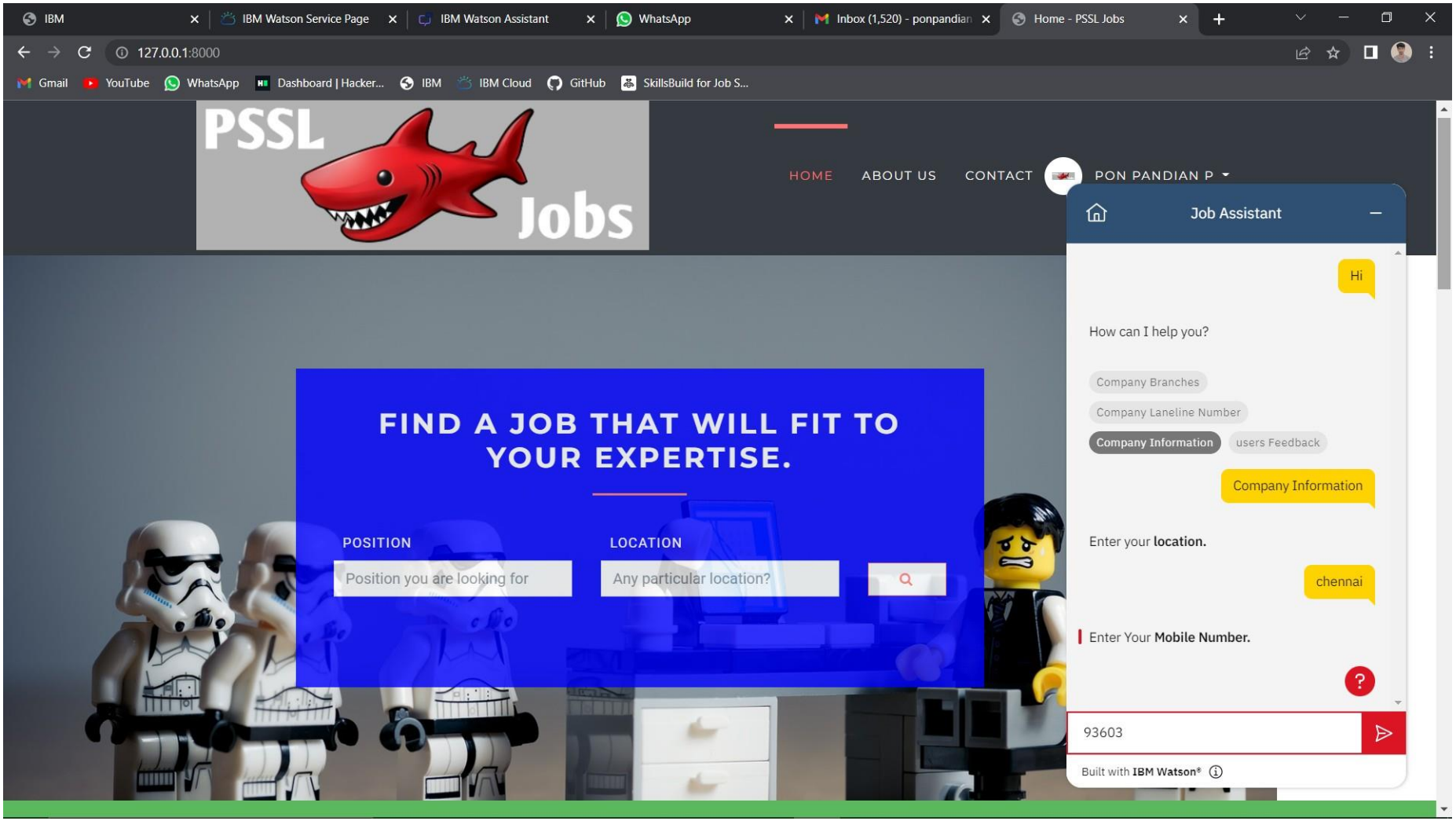
CONTACT
FIND A JOB THAT WILL FIT TO YOUR EXPERTISE.
POSITION
Position you are looking for
LOCATION
Any particular location?
Return to assistant
Hi! I'm a virtual assistant. How can I help you today?
Hi
Company Branches
Company Information
Hi
Built with IBM Watson®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PSSL
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PON PANDIAN P
FIND A JOB THAT WILL FIT TO YOUR EXPERTISE.
POSITION
Position you are looking for
LOCATION
Any particular location?
Job Assistant
Hi
How can I help you?
Company Branches
Company Laneline Number
Company Information
users Feedback
Company Information
Enter your location.
chennai
Enter Your Mobile Number.
93603
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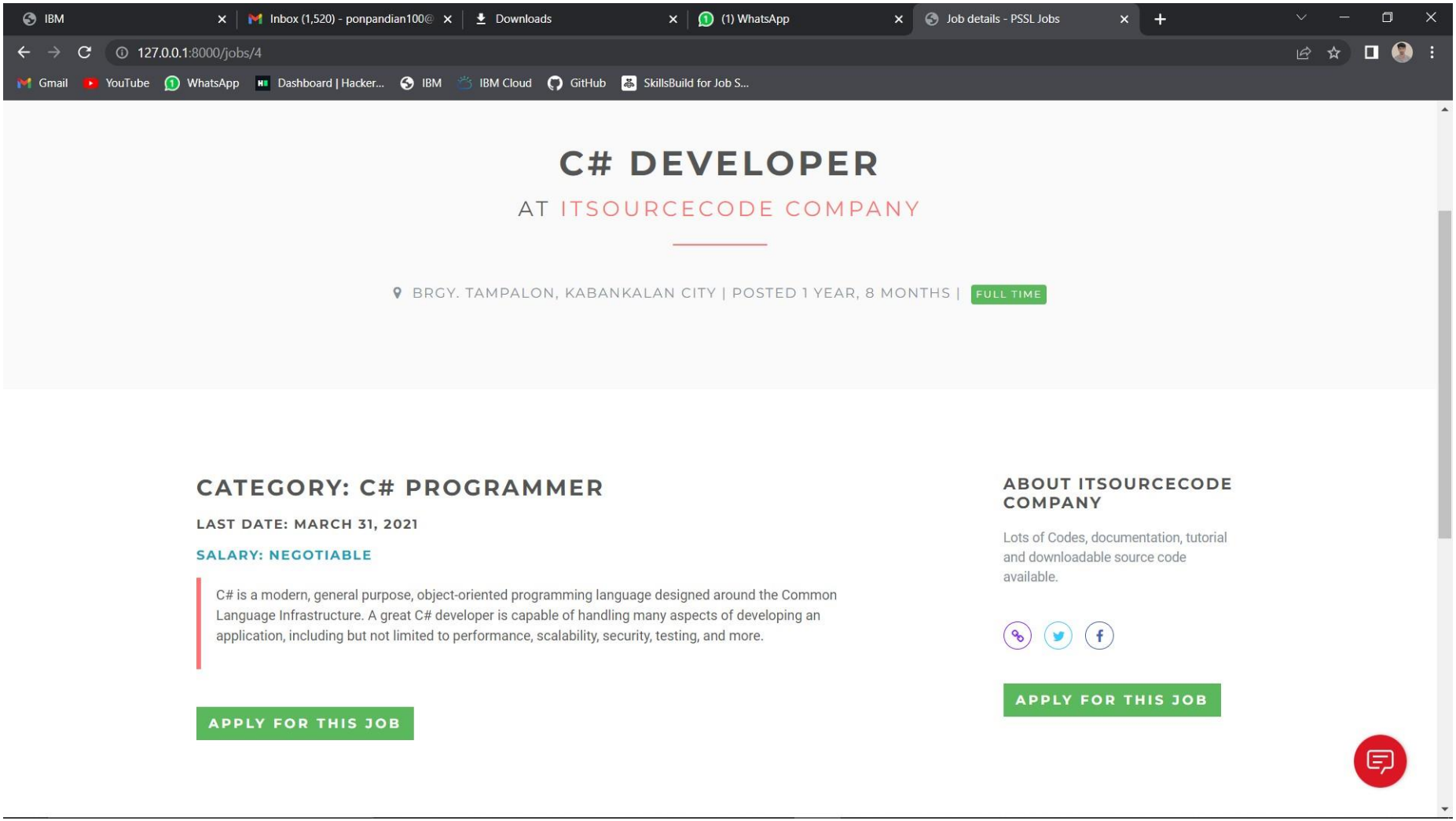
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IBM
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GitHub
SkillsBuild for Job S...
C# DEVELOPER
AT ITSOURCECODE COMPANY
BRGY. TAMPALON, KABANKALAN CITY | POSTED 1 YEAR, 8 MONTHS | FULL TIME
CATEGORY: C# PROGRAMMER
LAST DATE: MARCH 31, 2021
SALARY: NEGOTIABLE
C# is a modern, general purpose, object-oriented programming language designed around the Common Language Infrastructure. A great C# developer is capable of handling many aspects of developing an application, including but not limited to performance, scalability, security, testing, and more.
APPLY FOR THIS JOB
ABOUT ITSOURCECODE COMPANY
Lots of Codes, documentation, tutorial and downloadable source code available.
APPLY FOR THIS JOB

8.TESTING:

8.1Test case:

SECTION	TOTAL CASES	NOT TESTED	FAIL	PASS
PRINT ENGINE	8	0	0	8
CLIENT APPLICATION	65	0	0	65
SECURITY	3	0	0	3
OUTSOURCE SHIPPING	5	0	0	5
EXCEPTION REPORTING	4	0	0	4

FINALREPORT OUTPUT	3	0	0	3
VERSION CONTROL	4	0	0	4

8.2 User acceptance testing:

Test Cases ID	Feature Type	Components	Test Scenario
TC01	functional	home page	verify user is able to see the login/signin popup when user clicked on my account button
TC02	UI	home page	verify the UI elements in login/signin popup
TC03	functional	home page	verify user is able to log into application with valid credentials
TC04	functional	application	verify user is able to job application form
TC05	functional	contact	verify user is able to customer comment system
TC06	functional	chatbot	verify user is able to customer help system

Test Case ID	Pre-Requisite	Steps To Execute	Test Date
TC01	flask , vscode	1. enter URL and click go 2. click on my account dropdown 3. verify login/signin popup displayed or not	home.html
TC02	flask , vscode	1.enter URL 2.click on register 3.verify login/signin popup with 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	login.html

TC03	flask , vscode	1.enter URL 2.click on register 3.enter valid username/email in email text box 4.enter valid password in password text box	username: userid@gmail.com password:@userpassword
TC04	flask , vscode	1.press the register button 2.start to fill the form 3.enter your name and details placed in at the place in text box 4..enter valid username/email in email text box 5.enter valid password in password text box	username: userid@gmail.com password:@userpassword
TC05	flask , vscode	1.press the contact button 2.start to fill the form 3.enter your name and details placed in at the place in text box 4.enter valid username/email in email text box 5.enter your comments about in the application	username: userid@gmail.com password:@userpassword
TC06	flask , vscode	1.you first finish the login/sigin popup 2.you have to see in right side bottom corner in enable to chat bot 3.you did to ask in application related questions in chat bot	you start with Hi

Test Case ID	Actual Result	Result	BUG ID
TC01	working as expected	pass	no
TC02	working as expected	pass	no
TC03	working as expected	pass	no
TC04	working as expected	pass	no
TC05	working as expected	pass	no
TC06	working as expected	pass	no

9.RESULT:

9.1 Performance metrics:

At its most basic, a performance evaluation is simply providing constructive feedback on whether an employee is underperforming, meeting, or exceeding the goals and objectives of their job. Employees need this feedback so they can feel confident knowing what is expected of them as well as how and where they can improve.

1. CPU usage.CPU usage affects the responsiveness of an application.
2. Memory usage.
3. Requests per minute and bytes per request.
4. Latency and uptime.
5. Average response time
6. Error rates.

10. ADVANTAGES & DISADVANTAGES:

ADVANTAGES:

1. The model doesn't need any data about other users, since the recommendations are specific to this user. This makes it easier to scale to a large number of users.
2. The model can capture the specific interests of a user, and can recommend niche items that very few other users are interested in.

DISADVANTAGES:

1. Since the feature representation of the items are hand-engineered to some extent, this technique requires a lot of domain knowledge. Therefore, the model can only be as good as the hand-engineered features.
2. The model can only make recommendations based on existing interests of the user. In other words, the model has limited ability to expand on the users' existing interests.

11. CONCLUSION:

In this conclusion, we used a literature analysis of many journals and proceedings related to the requiring process and

the job recommendation researches. We have seen from our literature review and from the challenges that faced the holistic e-requiring platforms, an increased need for enhancing the quality of candidates/job matching. The recommender system technologies accomplished significant success in a broad range of applications and potentially a powerful searching and recommending techniques Consequently is a great opportunity for applying these technologies in environment to improve the matching quality. This survey shows that several approaches for job recommendation have been proposed, an many techniques combined in order to produce the best fit between jobs and candidates. We presented state of the job recommendation as well as a comparative study for its approaches that proposed by literatures. Additionally, we reviewed typical recommender system techniques and the recruiting process related issues. We conclude that the field of job recommendations is still unripe and require further improvements. As part of our ongoing research, we aim to build a new recommendation approach and test with real data for employee and staffing data from large companies.

12. FUTURE SCOPE:

Futureproof your CV by learning about the skills employers of tomorrow will most likely be looking for, and the online courses you can take to train up.

Important skills for future scope:

1. Active learning
2. Analytical thinking

3. Complex problem-solving
4. Communication
5. Cognitive flexibility
6. Emotional intelligence
7. Leadership
8. Technical design aptitude

future important skill:

1. becoming more adaptable
2. adjusting to career changes and new environments
3. succeeding in a variety of settings
4. improving teamwork skills
5. offering greater benefits to companies that hire you

A few high potential career options in India are:

1. Full stack software developer
2. Company secretary
3. Software engineer

13. APPENDIX:

PROJECT VIDEO DEMO LINK:
https://pp1.s3.jp-tok.cloud-object-storage.appdomain.cloud/Project%20Video.m4v
GITHUB LINK:
https://github.com/IBM-EPBL/IBM-Project-14085-1659540164