M.A.M. College of Engineering

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Department of Computer Science and Engineering

REPORT ON

HX 8001 PROFESSIONAL READINESS FOR INNOVATION, EMPLOYABILITY AND ENTERPRENEURSHIP

(Nalaiya Thiran Program)

PROJECT TITLE

SKILL / JOB RECOMMENDER APPLICATION

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ABSTRACT

Developing a Skill /Job recommender application, for recruiting employees and candidates for hiring Candidates by identifying the employees with accurate skills and efficiency for the job role. It is also helpful for the candidates to choose their right platform for their career path. It shows relevant ideas for the employees and their employers for hiring and to be hired for the desirable job role. Thus, the Skills/Job Recommender Application is mutually helpful for both organizations and the Candidates.

Key words: Recommender systems, collaborative filtering, content-based filtering, hybrid approach, machine learning, e-recruiting, similarity measure.

SKILL / JOB RECOMMENDER APPLICATION

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CHAPTER 1

INTRODUCTION

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 number 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.

To improve the e-recruiting functionality, many recommendations system approaches have been proposed. This note will present a survey of e-recruiting process and existing recommendation approaches for building personalized recommender systems for candidates or job matching.

A recommendation system is a system that gives us recommendations based on the data that it has collected from us, and other users like us, over a course of time. We are paying them, not in the form of money, but in the form of data. And this data is used by the websites, to provide better recommendations or is sold to other websites, who want to provide better recommendations, using their massive repositories of data on individuals. Often, when we search for something on the web, we find the most relevant information or links at the top. These results are unique for A particular individual and would be different for different users. Although we do not think about this for A second time, it is all because of recommendation systems that feed on our data and decide which results fit us best.

1.1. Project Overview

To develop an end-to-end web application capable of displaying the current job openings based on the skillset of the users. The users and their information are stored in the Database. An alert is sent when there is an opening based on the user skillset. User will interact with the chatbot and can get the recommendations based on his skills. We can use job search API to get the current job openings in the market which will fetch the data directly from the webpage.

1.2. Purpose

To serve the constant cycle of the hiring process in the job applicant's perspective, many job companies have come up with solutions for providing the job board. Here a seeker look's up for the job he would find relevant to him and apply for it. As there are many job boards, applicants tend to use the tool that provides better services to them, services such as writing a CV, creating a job profile, and recommending new jobs to a job seeker.

Job applicants have become more persistent and proactive in searching for new opportunities that fit their skills. However, companies that are targeting these job seekers are finding it challenging to identify the job seeker's skill and provide personalized job recommendation.

CHAPTER 1

LITERATURE SURVEY

2.1. Existing Problem

1. Cannot Upload and Download the latest updates.
2. No use of Web Services and Remoting.
3. Risk of mismanagement and of data when the project is under development.
4. Less Security.
5. No proper coordination between different Applications and Users.
6. Fewer Users – Friendly.

2.2. References

Many papers have studied to know the details about skill-based job recommender system and other techniques can be involved. Here, explain the development techniques of each paper.

PAPER 1

Name of the Paper: Job Recommendation System Using Profile Matching And Web-Crawling

Published Year: 2016

Author: Deepali V Musale, Mamta K Nagpure , Kaumudini S Patil , Rukhsar F Sayyed

Topic: Job and Sill Recommender

Inference:

The developed system is job recommendation system for campus recruitment which helps college placement office to match company's profiles and student's profiles with higher precision and lower cost. For profile matching, two matching methods are used: semantic matching, tree-based knowledge matching and query matching. These methods are integrated according to representations of attributes of students and companies, and then the profile similarity degree is acquired. Based on profile similarity degree, preference lists of companies and students are generated. Also, students can perform keyword-based search for job profiles from various job recruitment sites (e.g. Naukari.com, indeed.com). For obtaining

data from online recruitment sites system uses web crawling. With loop matching, matching results would be further optimized and provide more effective guidance for recommendation.

PAPER 2

Name of the Paper: A survey of job recommender systems

Published Year: 2012

Author: Shaha T. Al-Otaibi and Mourad Ykhle

Topic: Job and Skill recommender

Inference:

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 number 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 recommenders 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.

PAPER 3

Name of the Paper: Job Recommendation based on Job Seeker Skills: An Empirical Study

Published Year:2018

Author: Jorge Valverde-Rebaza Ricardo Puma Paul Bustios Nathalia C. Silva

Topic: Job and Skill recommender

Inference:

In the last years, job recommender systems have become popular since they successfully reduce information overload by generating personalized job suggestions. Although in the

literature exists a variety of techniques and strategies used as part of job recommender systems, most of them fail to recommending job vacancies that fit properly to the job seekers profiles. Thus, the contributions of this work are threefold, we: 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; and iii) carried out an evaluation to quantify empirically the recommendation abilities of two state-of-theart 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.

PAPER 4

Name of the Paper: A cloud-based recommendation system to enhance the employability of fresh it graduates.

Published Year:2017

Author: SAJU MOHANAN, SUNITHA CHERIYAN

Topic: Job and Skill recommender

Inference:

Employability determination is necessary for a fresh graduate since it is significant to meet several variables to accomplish the needs of various needs of the skilled candidates in labour market and for the competency of the students who are graduated from any Higher Educational Institution (HEI). Those variables build relation map between various attributes by the representation of a conceptual model. We emphasize here three key components which are Industries, Academies and Students. Those elements are unified for business needs, and it will play a vital role in the development of skilful IT professionals. This paper shows ontologically represented recommender system to enhance the present system and balances the demands of the various stakeholders. This is done through a skill analyser program; that analyses and updates the scores of students in their profile. It can also recommend an appropriate candidate to the employer based on the industrial needs. The system also helps the students to examine their own skills, potentials to do a self-analysis and the recommendation engine also

recommends the methods for improvement based on the job opportunities. It improves the quality of the query results based on the job notifications currently available. This review of domain provides prompt insight about the system and its stakeholders to identify a subset of suitable resources from a set of options. Our proposed system acts as a tool to implement an academic skill analyser mechanism in a cloud computing platform. The use of cloud infrastructure helps all stakeholders to keep track of the assessments and its progress if there is a need arising from time to time.

PAPER 5

Name of the Paper: A review on job scheduling technique in cloud computing and priority rule based intelligent framework

Published Year:2022

Author: Saydul Akbar Murad a , Abu Jafar Md Muzahid a , Zafril Rizal M Azmi a , Md Imdadul Hoque b , Md Kowsher c

Topic: Job and Skill recommender

Inference:

In recent years, the concept of cloud computing has been gaining traction to provide dynamically increasing access to shared computing resources (software and hardware) via the internet. It's not secreted that cloud computing's ability to supply mission-critical services has made job scheduling a hot subject in the industry right now. Cloud resources may be wasted, or in-service performance may suffer because of under-utilization or over-utilization, respectively, due to poor scheduling. Various strategies from the literature are examined in this research in order to give procedures for the planning and performance of Job Scheduling techniques (JST) in cloud computing. To begin, we look at and tabulate the existing JST that is linked to cloud and grid computing. The present successes are then thoroughly reviewed, difficulties and flows are recognized, and intelligent solutions are devised to take advantage of the proposed taxonomy. To bridge the gaps between present investigations, this paper also seeks to provide readers with a conceptual framework, where we proposed an effective job scheduling technique in cloud computing. These findings are intended to provide academics and policymakers with information about the advantages of a more efficient cloud computing

setup. In cloud computing, fair job scheduling is most important. We proposed a priority-based scheduling technique to ensure fair job scheduling. Finally, the open research questions raised in this article will create a path for the implementation of an effective job scheduling strategy.

PAPER 6

Name of the Paper: Scheduling Techniques in Cloud Computing: A Systematic Review

Published Year:2014

Author: Harshit Gupta , Danveer Singh , Basant Kumar Gupta

Topic: Job and Skill recommender

Inference:

Cloud computing is the developing showground to manage to pay for the IT facilities. Cloud computing is bodily used by many IT help providers. In cloud computing mood resources are located at swing locations. This geographic distribution, operating behaviour and heterogeneity of resources perform dogfight of the system and makes resource supervision and scheduling a secret argument Scheduling in cloud computing is finished for improved client satisfaction. Efficient job scheduling in cloud computing shortens make span and join the put on of the system. The QoS requirement of the client is the main incline to schedule the tasks. The High QoS requirement task is schedule in the back of the low QoS requirement task. Users have enough money the facilities based not quite usage era; therefore the mean of job scheduling is to minimize the cost by reducing make span era. The paper focuses on various existing scheduling algorithms and their problems.

PAPER 7

Name of the Paper: A CLOUD-BASED RECOMMENDATION SYSTEM

Published Year:2016

Author : Ricardo Batista Rodrigues , Carlo M. R. da Silva, Wilton O. Ferreira , Glaucia M. M. Campus ,

Vinicius C. Garcia , Frederico A. Durão andRodrigo E. Assad

Topic: Job and Skill recommender

Inference:

The massive growth in the data volume provided by the development of the computational capacity has exceeded the users' cognitive ability to analyse large data masses. This paper presents the research and development of a file's recommendation engine in a cloud storage environment, using the content-based technique filtering added to cloud factors. Thus, it proposes a cloud-based recommendation model. The main contribution from this work is the use of cloud factors, which when applied in generating of recommendation can infer considerable gains in terms of recommended files availability and the saving time by the user in the search for new contents, besides to filter relevant contents in an immensity of data stored into the cloud.

PAPER 8

Name of the Paper: A Study on Cloud computing & its impact on Job Creation
Published Year:2013

Author Gaurav Jindal , Ankit Mishra

Topic: Job and Skill recommender

Abstract:

With the significant advancement in information technology over the last half century cloud computing emerging as a power that creates job opportunities and storage of data securely. As a result of the shift to cloud, there is growing demand for professionals and managers that are more focused on business development than they are in application development. There will be greater opportunities for enterprise architects, and some offshoots will include cloud architects, cloud capacity planners, cloud service managers and business solutions consultants. Jobs being created may not always bear the term " cloud " in their titles, but cloud will form the core of their job descriptions. It is found that IT cloud services helped organizations of all

sizes and all vertical sectors around the world generate more than $400 billion in revenue and 1.5 million new jobs. In the next four years, the number of new jobs will generate in million. Cloud computing is attractive to business owners as it eliminates the requirement for users to plan ahead for provisioning and allows enterprises to start from the small and increase resources only when there is a rise in service demand.

PAPER 9

Name of the Paper: A review on job scheduling technique in cloud computing and priority rule based intelligent framework

Published Year: 2022

Topic: Job and Skill recommender

Abstract:

In recent years, the concept of cloud computing has been gaining traction to provide dynamically increasing access to shared computing resources (software and hardware) via the internet. It's not secreted that cloud computing's ability to supply mission-critical services has made job scheduling a hot subject in the industry right now. Cloud resources may be wasted, or in-service performance may suffer because of under-utilization or over-utilization, respectively, due to poor scheduling. Various strategies from the literature are examined in this research to give procedures for the planning and performance of Job Scheduling techniques (JST) in cloud computing. To begin, we look at and tabulate the existing JST that is linked to cloud and grid computing. The present successes are then thoroughly reviewed, difficulties and flows are recognized, and intelligent solutions are devised to take advantage of the proposed taxonomy. To bridge the gaps between present investigations, this paper also seeks to provide readers with a conceptual framework, where we proposed an effective job scheduling technique in cloud computing. These findings are intended to provide academics and policymakers with information about the advantages of a more efficient cloud computing setup. In cloud computing, fair job scheduling is most important. We proposed a priority-based

scheduling technique to ensure fair job scheduling. Finally, the open research questions raised in this article will create a path for the implementation of an effective job scheduling strategy.

PAPER 10

Name of the Paper: Research on Job Scheduling Algorithms Based on Cloud Computing

Published Year:2020

Author:Gang qiu, yang gao, yajun zhang

Topic: Job and Skill recommender

Abstract:

With the rapid development of digital technology, from the application of traditional databases and scientific computing to the emerging cloud computing services, the analysis and processing of massive data has become the focus of society. Providing low-cost, scalable, and configurable shared cloud services to users on cloud service platforms is a new hotspot for the development of major cloud service providers. Job scheduling plays an important role in improving the overall system performance of cloud service capabilities. Simple job scheduling strategies (such as Fair and FIFO scheduling) do not consider job size and may degrade performance when jobs of different sizes arrive. This paper proposes the MQWAG (Multi-queue Load-Sensitive Greedy Scheduling Algorithm) job scheduling algorithm to reorder multi-queue jobs so that short jobs are executed preferentially in multiple queues. In our experiments, our algorithm shortened the average job completion time by about 26% compared with other algorithms.

2.3 Problem Statement Definition

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.

We have come up with an innovation solution through which you can directly choose your job related to your skills without needing help from someone. User can login into application and search for a job otherwise interact with chatbot via entering skills to the Bot, it suggest some job based on entered skills and also it update latest jobs every day, lists of jobs are uploaded into database and the chatbot also connected with database once user enter skills into chatbot it will search related job in database then it display various jobs related to skill.

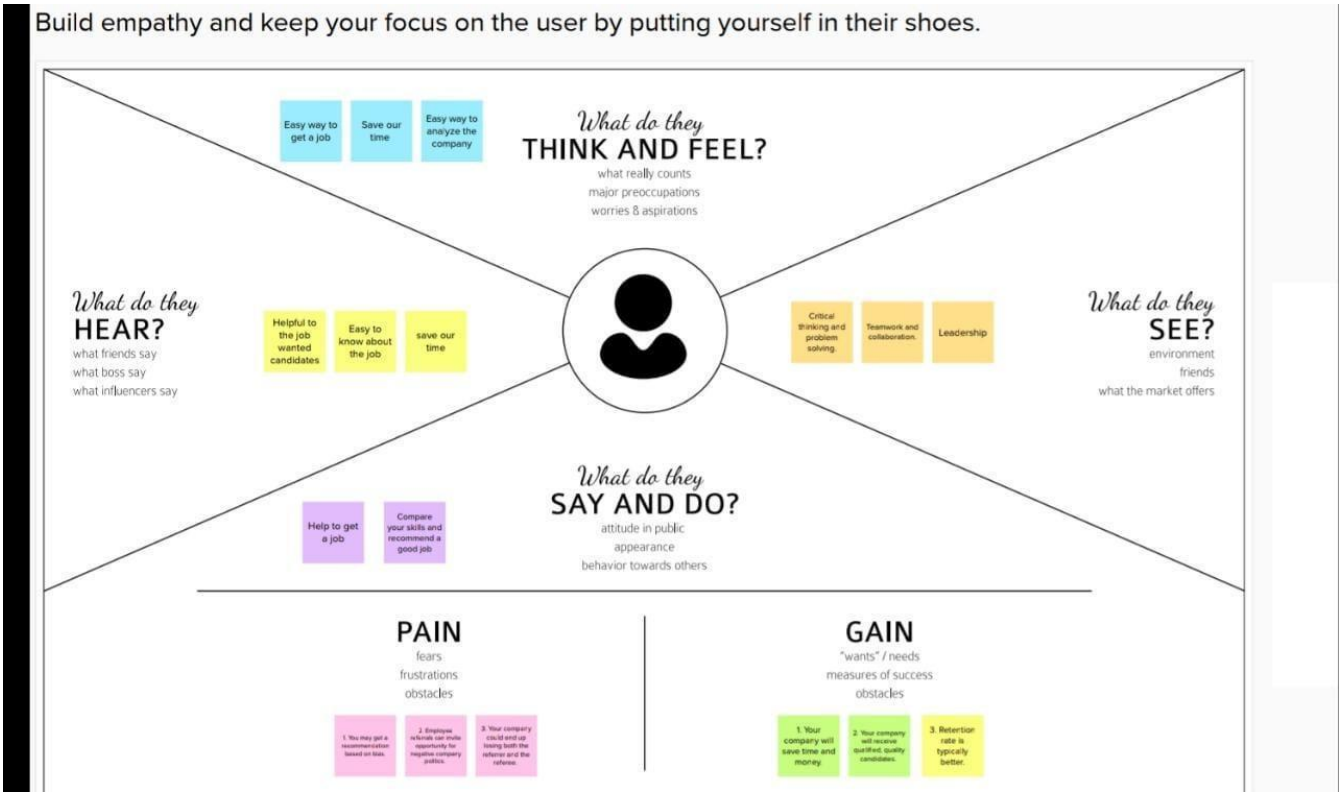
CHAPTER 3

IDEATION & PROPOSED SOLUTION

In this Phase the Planning and Project designing of the application were performed. The Ideation and Proposed solution perform, How the Customer got problems and how they overcome the problems were analysed.

3.1. Empathy Map Canvas

An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers. Much like a user persona, an empathy map can represent a group of users, such as a customer segment. The empathy map was originally created by Dave Gray and has gained much popularity within the agile community.



3.2 Ideation & Brainstorming

We have come up with a skilled 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 skill set. 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.

Reference Link:
https://www.researchgate.net/publication/272802616_A_survey_of_job_recommender_systems

3.3 Proposed Solution

Our proposed solution should relate the current situation to a desired result and describe the benefits that will accrue when the desired result is achieved. So, begin your proposed solution by briefly describing this desired result.

S. No	Parameter	Description
1.	Problem Statement (problem to be solved)	We have come up with a skilled 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.
2.	Idea / Solution Description	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 number 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 recommenders system approaches have been proposed. This article will present a survey of e-recruiting process and existing

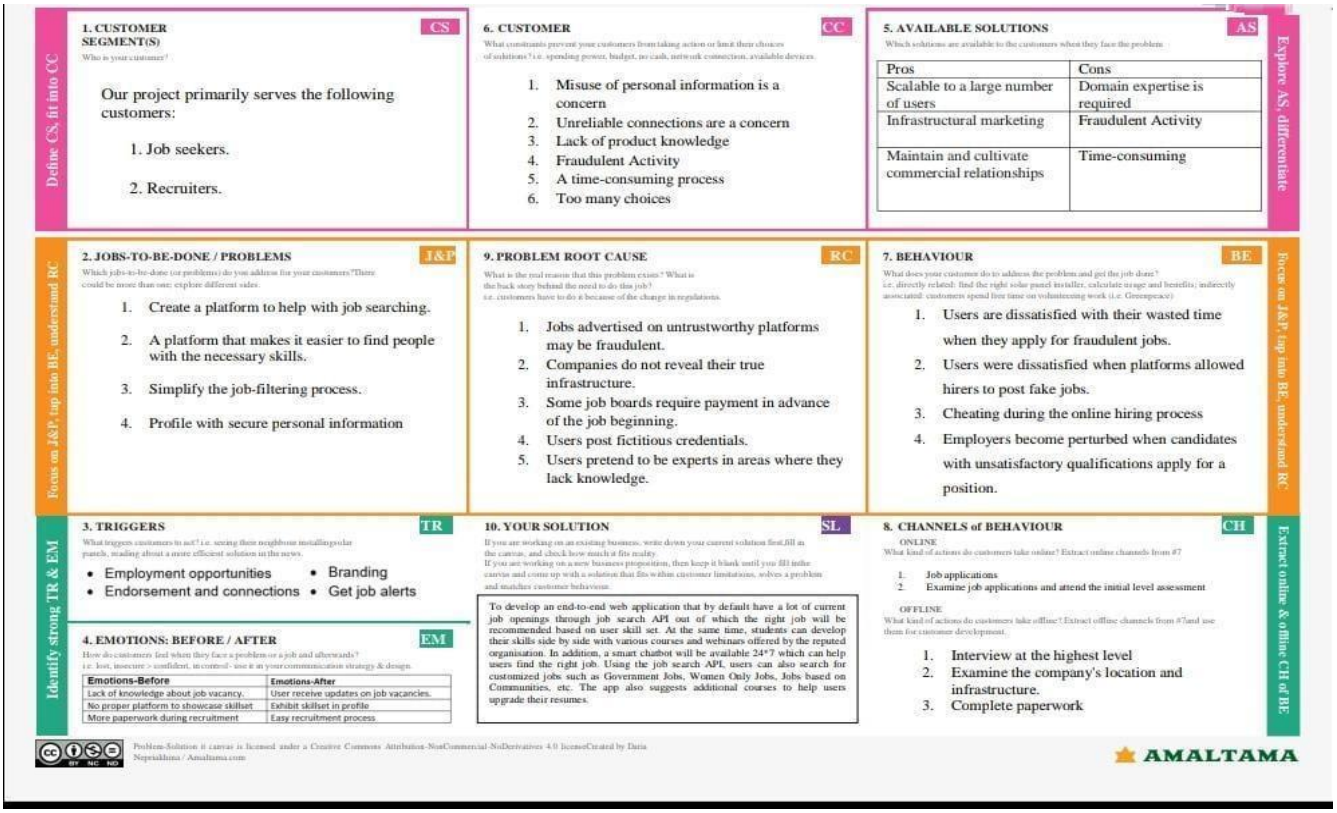
3.	Novelty / Uniqueness	The Uniqueness of the Project is to add/implement the admin module in the authentication page (the role of the admin module to update the skills, providing job and recruitment process and avoiding fake job details)
4.	Social Impact / Customer Satisfaction	Dealing with the enormous amount of recruiting information on the Internet, a job seeker always spends hours to find useful ones. To reduce this laborious work, we design and implement a recommendation system for online job-hunting. In this paper, we contrast user-based and item-based collaborative filtering algorithms to choose a better performed one. We also take background information including students' resumes and details of recruiting information into consideration, bring weights of co-apply users (the users who had applied for the candidate jobs) and weights of student used-liked jobs into the recommendation algorithm.

5.	Business Model (Revenue Model)	There are major requirements presented in literatures that should be derived when recommending candidates for a specific job 1. The matching of individuals to job depends on skills and abilities that individuals should have. 2. Recommending people is a bidirectional process that needs to take into account the preferences not only of the recruiter but also of the candidate. 3. Recommendations should be based on the candidate attributes, as well as the relational aspects that determine the fit between the person and the team members with whom the person will be collaborated. 4. Individual is unique; we cannot choose a single person several times such as a movie or book.
6.	Scalability of the Solution	Recommendation system is a technique, which provides users with information, which he/she may be interested in or accessed in past. Traditional recommender techniques such as content and collaborative filtering used in various applications such as education, social media, marketing, entertainment, e-governance and many more. Content-based and collaborative filtering has many advantages and disadvantage, and they are useful in specific application. Sparsity and cold start problem are major challenges in content and collaborative filtering. Challenges of content and collaborative filtering can be solved by using hybrid filtering. Hybrid filtering combines the features of two recommender system like content and collaborative; content-based filtering improves the classification accuracy and collaborative model easily gives the best-predicted result of a latent factor model. In this paper, we have presented a brief survey of the recommendation system approaches, techniques and application, one important application of recommendation system in Job Recruitment; in which candidates are elected by

		using online job recruitment portal based on their profile and job history and behaviour components; wherein it serves millions of candidates with suitable and personifies jobs. As per the recent survey this domain is less explored till now and existing job recommender system has many shortcomings, they use resumes/profile and job descriptions for analysis and new job post and candidate profiles are not matched properly because of cold start problem, sometime potential candidate loses their job due to the incomplete job description and education detail in the ontology. LinkedIn's Job Ecosystem handles few problems, few are still unsolved that we discussed in result part. In this paper, we have presented a comparative analysis of different job recommender system and their techniques.

Table 3.3.1 Proposed Solution

3.4. Problem Solution Fit



CHAPTER - 4

REQUIREMENT ANALYSIS

A solution requirement is aimed at the concerns of the people who will build and deliver the solution. It tells those people what the functional and non-functional requirements for the solution will be and how the solution will deliver on the business and stakeholder requirements.

4.1. Functional Requirements

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Sign in / Login	Register with username, password
FR-2	Profile Registration	Register with username, password, email, qualification, skills. This data will be stored in a database.
FR-3	Job profile display	Display job profiles based on availability, location, skills.
FR-4	Chatbot	A chat on the webpage to solve user queries and issues.
FR-5	Job Registration	The company's registration/Description details will be sent to the registered email id of the user.
FR-6	Logout	Use logout option after completing job registration process.

Table 4.1.1 Functional Requirements

4.2. Non-Functional Requirements

FR No.	Non-Functional Requirement	Description
NFR-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. (Easy and simple design)
NFR-2	Security	Using of python flask to cloud connect will provide security to the project. Database will be safely stored in DB2.
NFR-3	Reliability	Using of python flask to cloud connect will provide security to the project. Database will be safely stored in DB2.
NFR-4	Performance	Focus on loading the webpage as quickly as possible irrespective of the number of user/integrator traffic.
NFR-5	Availability	The webpage will be available to all users (network connectivity is necessary) at any given point of time.
NFR-6	Scalability	Increasing the storage space of database can increase the number of users. Add some features in future to make the webpage unique and attractive.

Table 4.2.1 Non – Functional Requirements

CHAPTER - 5

PROJECT DESIGN

5.1. DATA FLOW DIAGRAMS

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

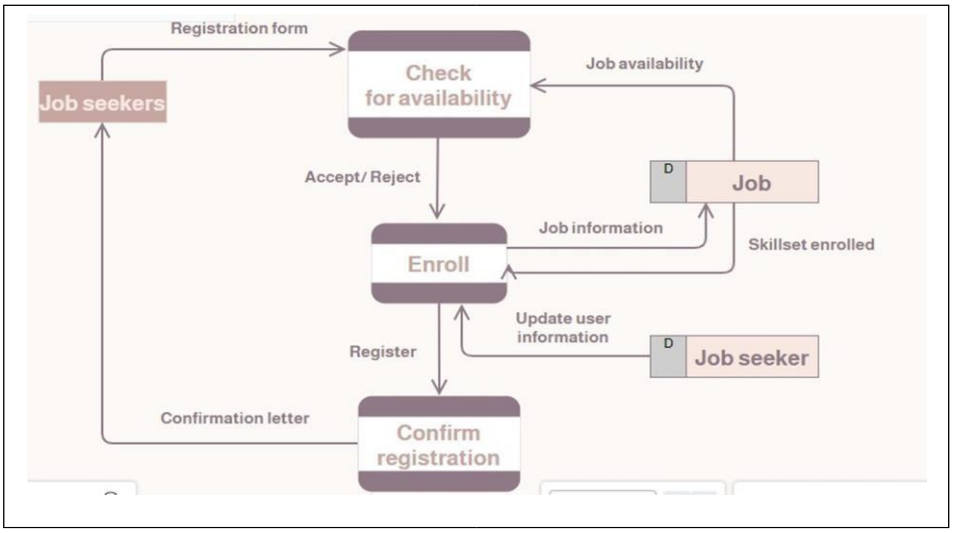


Figure 5.1.1 Data Flow Diagram

A data flow diagram is graphical tool used to describe and analyse movement of data through a system. These are the central tool and the basis from which the other components are developed. The transformation of data from input to output, through processed, may be described logically and independently of physical components associated with the system. These are known as the logical data flow diagrams.

The physical data flow diagrams show the actual implements and movement of data between people, departments, and workstations. A full description of a system consists of

a set of data flow diagrams. Using two familiar notations Yourdon, Gane and Sarson notation develops the data flow diagrams. Each component in a DFD is labelled with a descriptive name. Process is further identified with a number that will be used for identification purpose.

The development of DFD'S is done in several levels. Each process in lower-level diagrams can be broken down into a more detailed DFD in the next level. The lop-level diagram is often called context diagram. It consists of a single process bit, which plays vital role in studying the current system. The process in the context level diagram is exploded into other process at the first level DFD.

The idea behind the explosion of a process into more process is that understanding at one level of detail is exploded into greater detail at the next level. This is done until further explosion is necessary, and an adequate amount of detail is described for analyst to understand the process.

Larry Constantine first developed the DFD as a way of expressing system requirements in a graphical from, this lead to the modular design.

A DFD is also known as a "bubble Chart" has the purpose of clarifying system requirements and identifying major transformations that will become programs in system design. So, it is the starting point of the design to the lowest level of detail. A DFD consists of a series of bubbles joined by data flows in the system.

DFD SYMBOLS:

In the DFD, there are four symbols,

1. A square defines a source(originator) or destination of system data
2. An arrow identifies data flow. It is the pipeline through which the information flows
3. A circle or a bubble represents a process that transforms incoming data flow into outgoing data flows.
4. An open rectangle is a data store, data at rest or a temporary repository of data.

CONSTRUCTING A DFD:

Several rules of thumb are used in drawing DFD'S:

1. Process should be named and numbered for an easy reference. Each name should be representative of the process.
2. The direction of flow is from top to bottom and from left to right. Data traditionally flow from source to the destination although they may flow back to the source. One way to indicate this is to draw long flow line back to a source. An alternative way is to repeat the source symbol as a destination. Since it is used more than once in the DFD it is marked with a short diagonal.
3. When a process is exploded into lower-level details, they are numbered.
4. The names of data stores and destinations are written in capital letters. Process and dataflow names have the first letter of each work capitalized A DFD typically shows the minimum contents of data store. Each data store should contain all the data elements that flow in and out. Questionnaires should contain all the data elements that flow in and out. Missing interfaces redundancies and like is then accounted for often through interviews.

SAILENT FEATURES OF DFD'S

1. The DFD shows flow of data, not of control loops and decision are controlled considerations do not appear on a DFD.
2. The DFD does not indicate the time factor involved in any process whether the dataflow take place daily, weekly, monthly or yearly.
3. The sequence of events is not brought out on the DFD.

TYPES OF DATA FLOW DIAGRAMS

1. Current Physical
2. Current Logical
3. New Logical
4. New Physical

CURRENT PHYSICAL:

In Current Physical DFD process label include the name of people or their positions or the names of computer systems that might provide some of the overall system-

processing label includes an identification of the technology used to process the data. Similarly, data flows and data stores are often labels with the names of the actual physical media on which data are stored such as file folders, computer files, business forms or computer tapes.

CURRENT LOGICAL:

The physical aspects at the system are removed as much as possible so that the current system is reduced to its essence to the data and the processors that transform them regardless of actual physical form.

NEW LOGICAL:

This is exactly like a current logical model if the user were completely happy with the user were completely happy with the functionality of the current system but had problems with how it was implemented typically through the new logical model will differ from current logical model while having additional functions, absolute function removal and inefficient flows recognized.

NEW PHYSICAL:

The new physical represents only the physical implementation of the new system.

RULES GOVERNING THE DFD'S PROCESS

1) No process can have only outputs.
2) No process can have only inputs. If an object has only inputs than it must be a sink.
3) A process has a verb phrase label.

DATA STORE

1) Data cannot move directly from one data store to another data store, a process must move data.

2) Data cannot move directly from an outside source to a data store, a process, which receives, must move data from the source and place the data into data store
3) A data store has a noun phrase label.

SOURCE OR SINK

The origin and /or destination of data.

1) Data cannot move direly from a source to sink it must be moved by a process
2) A source and /or sink has a noun phrase land

DATA FLOW

1) A Data Flow has only one direction of flow between symbols. It may flow in both directions between a process and a data store to show a read before an update. The latter is usually indicated however by two separate arrows since these happen at different type.
2) A join in DFD means that the same data comes from any of two or more different processes data store or sink to a common location.
3) A data flow cannot go directly back to the same process it leads. There must be at least one other process that handles the data flow produce some other data flow returns the original data into the beginning process.
4) A Data flow to a data store means update (delete or change).
5) A data Flow from a data store means retrieve or use.

5.2. SOLUTION & TECHNICAL ARCHITECTURE

A solution architecture (SA) is an architectural description of a specific solution. SAs combine guidance from different enterprise architecture viewpoints (business, information and technical), as well as from the enterprise solution architecture (ESA).

The solution architecture helps ensure that a new system will fit the existing enterprise environment. To perform this task, a solution architect has to understand how all parts of the

business model work together including processes, operating systems, and application architectures.

Design solutions that mesh ideally with an enterprise environment. Recommend best practices for the entire solution. Comply with all technical and business requirements. Scrutinize project constraints to analyse alternatives, mitigate risks, and conduct process re-engineering as necessary.

Based on the complexity of the deployment, a solution architecture diagram may be a set of diagrams documenting various levels of the architecture. The diagram relates the information that you gather on the environment to both physical and logical choices for your architecture in an easily understood manner.

Solution Architects are most like project managers, ensuring that all parties, including stakeholders, are on the same page and moving in the right direction at all stages. Technical architects manage all activities leading to the successful implementation of a new application.

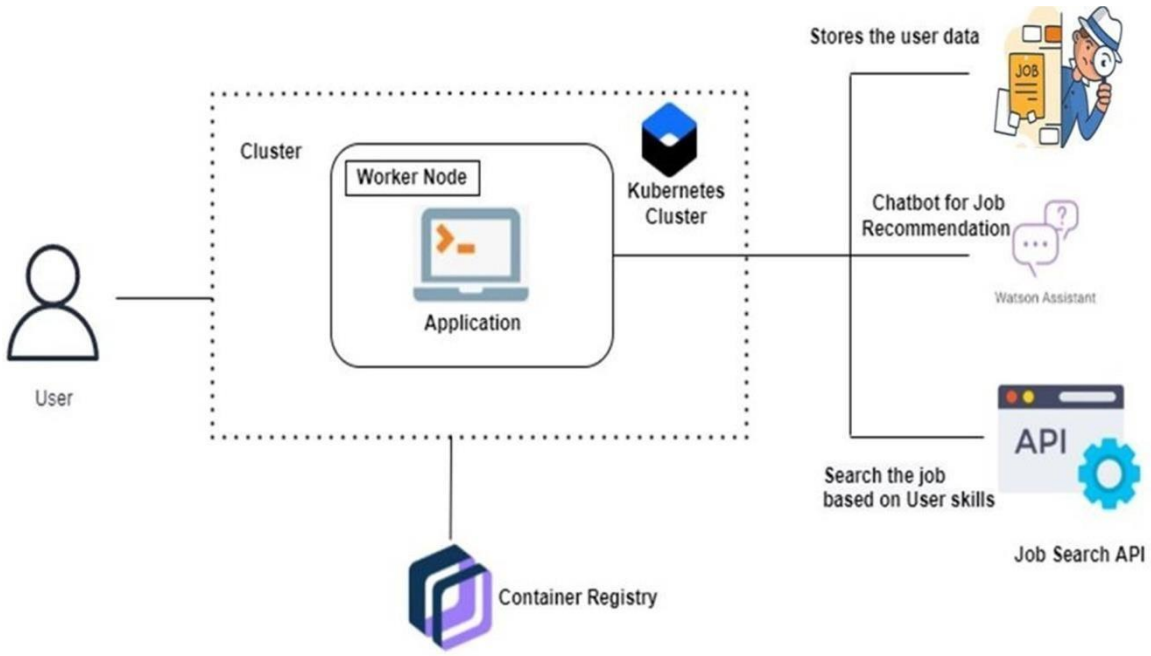


Figure 5.2.1 Solution and Technical Architecture

Based on the complexity of the deployment, a solution architecture diagram may be a set of diagrams documenting various levels of the architecture. The diagram relates the

information that you gather on the environment to both physical and logical choices for your architecture in an easily understood manner.

S.No.	Component	Description	Technology
1	User Interface	The user can interact with our application with the help of chatbot, etc.	HTML, CSS, JavaScript / AngularJs / React Js etc.
2	Application Logic-1	The User can login with application, by previously he should register in our web app.	Javascript
3	Application Logic-2	They can also register with the help of a chatbot.	IBM Watson Assistant
4	Cloud Database	The user data will be stored and retrieved with the help of this database.	IBM DB2, IBM Clouding etc.
5	File Storage	The user documents like photos, resumes and much more will be stored in cloud bucket, etc.,	IBM Block Storage or Other Storage Service or Local Filesystem
6	External API	With the help of API, the user can search the job based on their Skillset.	IBM API, etc.
7	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local, Cloud Foundry, Kubernetes, etc.

Table 5.2.1 Components and Technologies

Application Characteristics:

S.NO	Characteristics	Description
1.	Is it Scalable?	It follows highly scalable technologies that allows application to handle increase in large user data's workload and perform any operation without any problem.
2.	Is it Modifiable?	It is highly Modifiable, and Maintenance requires low cost, compared to other applications.
3.	Is the System Robust?	It does not disturb the performance of the computer by not affecting the operating system. It works in minimal hardware systems.

5.3. USER STORIES

A user story is an informal, general explanation of a software feature written from the perspective of the end user or customer. The purpose of a user story is to articulate how a piece of work will deliver a particular value back to the customer.

User Type	Functional Requirement (Epic)	User Story No.	User Story / Task	Acceptance criteria	Priority	Release
	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		Medium	Sprint-1
			application through Gmail			
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard	USN -6	As a user we can access the dashboard		high	Spirit-2

Table 5.3.1 User Stories Template

CHAPTER – 6

PROJECT PLANNING & SCHEDULING

Project design is an early phase of the project lifecycle where ideas, processes, resources, and deliverables are planned out. A project design comes before a project plan as it's a broad overview whereas a project plan includes more detailed information.

6.1. Project Planning & Scheduling:

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the applicatio	I can access my account / dashboard	High	M.Fairose Parveen K.Shanthi Nisha

			n by entering my email, password, and confirming my password.			
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**	**V.Yuvashree P.Nagalakshmi**
Sprint-2		**USN-3**	**As a user, I can register for the application through Facebook**	**I can register & access the dashboard with Facebook Login**	**Low**	**M.Fairose Parveen K.Shanthi Nisha**
Sprint-3		**USN-4**	**As a user, I can register for the**	**I can receive confirmation**	**Medium**	**V.Yuvashree P.Nagalakshmi**

			application through Gmail	**email & click confirm**		
Sprint-2	**Login**	**USN-5**	**As a user, I can log into the application by entering email & password**	**I can access my account / dashboard**	**High**	**M.Fairose Parveen V.Yuvashree**
Sprint-2	**Dashboard**	**USN-6**	**Create a model set that contains those models, then assign it to a role.**	**Assign that group to the appropriate roles on the Roles page**	**High**	**M.Fairose Parveen K.Shanthi Nisha**
Sprint-4		**USN-7**	**Open, public access, Userauthenticated access, Employee restricted**	**Company public website. App running on the High**	**High**	**V.Yuvashree P.Nagalakshmi**

			access.	**Sharanyaa Devi M S Vishnu Varthiny P company intranet. App with access to customer private information.**		
Sprint-1		**USN-8**	**A customer care executive is a professional responsible for communicating the how's and why's regarding service expectations within a**	**For how to tackle customer queries.**	**Medium**	**V.Yuvashree K.Shanthi Nisha**

			company.			
Sprint-3		**USN-9**	**You can** **Delete/Disable/Enable** **devices in Azure** **Active Directory but you cannot Add/Remove Users in the directory.**	**Ease of use.**	**Medium**	**M.Fairose Parveen** **P.Nagalakshmi**

Table 6.1.1 Sprint planning & Estimation

6.2. Sprint Delivery Schedule

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	15	6 Days	31 Oct 2022	05 Nov 2022	15	05 Nov 2022
Sprint-3	15	6 Days	07 Nov 2022	12 Nov 2022	15	12 Nov 2022
Sprint-4	15	6 Days	14 Nov 2022	19 Nov 2022	15	19 Nov 2022

Table 6.2.1 Sprint Delivery Schedule

6.3. Reports From JIRA

Figure 6.3.1 Reports from JIRA

CHAPTER - 7

CODING & SOLUTIONING

FEATURES 1:

1. **Creating an HTML file**
2. **Converted to a python file using flask.**
3. **Connecting IBM database using the python file.**
4. **Creating a Docker file**

FEATURE 2

1. **Converting the python files to image using Docker Hub.**
2. **Pushing the images to the container register.**
3. **With the help of the Kubernetes Node Port number is obtained**
4. **Web application can be accessed from anywhere.**

DATASCHEMA

1. **User Name**
2. **Email Id**
3. **Password**
4. **Qualifications**
5. **Skills**
6. **Domain**

CHAPTER – 8

TESTING

				Date	18-Nov-22								
				Team ID	PNT2022TMID28680								
				Project Name	Project – Skill/Job Recommender Application								
				Maximum Marks	4 marks.								
Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments	TC for Automation(Y/N)	BUG ID	Executed By
Homepage_TC_001	UI	Home Page	Verify user is able to see the UI elements in the homepage		1.Enter URL and click go 2.Choose login or register button	http://159.122.187.112:3246 7/	Home Page should be displayed.	Working as expected	Pass		N		Nivedhitha M Sharanyaa Devi M S
Homepage_TC_002	Functional	Register page	Verify the user is able to give the credentials to login		1.Enter URL and click go 2.The user should be able to give a)A valid user name b) A valid e-mail ID c)A valid password	http://159.122.187.112:3246 7/register	Application should show below elements: a)Enter a user name b)Enter a email c)Enter a password	Working as expected	Pass		N		Renuga A Vishnu Varthini P
Homepage_TC_003	Functional	Login page	Verify user is able to enter the registered Username and the password		1.Enter URL and click go 2.Enter the Username 3.Enter the password 4.Enter the login button	http://159.122.187.112:3246 7/login	Application should show the Jobs available	Working as expected	Pass		N		Sharanyaa Devi M S Renuga A
Homepage_TC_004	Functional	Available jobs page	Verify user able to apply the selective jobs		1.Enter URL and click go 2.Click on Choose button 3.Click on Apply now	http://159.122.187.112:3246 7/apply	Application should be able to extract the information from the user for applying a job	Working as expected	Pass		N		Nivedhitha M Vishnu Varthini P
chatbot_TC_005	Functional	Chatbot	Verify user is able to communicate with the chatbot		1.Enter URL and click go 2.Click on Choose button 3.choose the chatbot at the corner of the application 4.Interact with the chatbot	http://159.122.187.112:3246 7/	The user must be able to interact with the chatbot so that the user gets a clear idea to proceed with the job search	Working as expected	Pass		N		Sharanyaa Devi M S Renuga A

USER ACCEPTANCE TESTING

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the [ProductName] 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	0	0	0	0	0
Duplicate	0	0	0	0	0
External	0	0	0	0	0
Fixed	0	0	0	0	0
Not Reproduced	0	0	0	0	0
Skipped	0	0	0	0	0
Won't Fix	0	0	0	0	0
Totals	0	0	0	0	0

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
Client Application	5	0	0	5
Security	5	0	0	5
Final Report Output	5	0	0	5
Performance	5	0	0	5

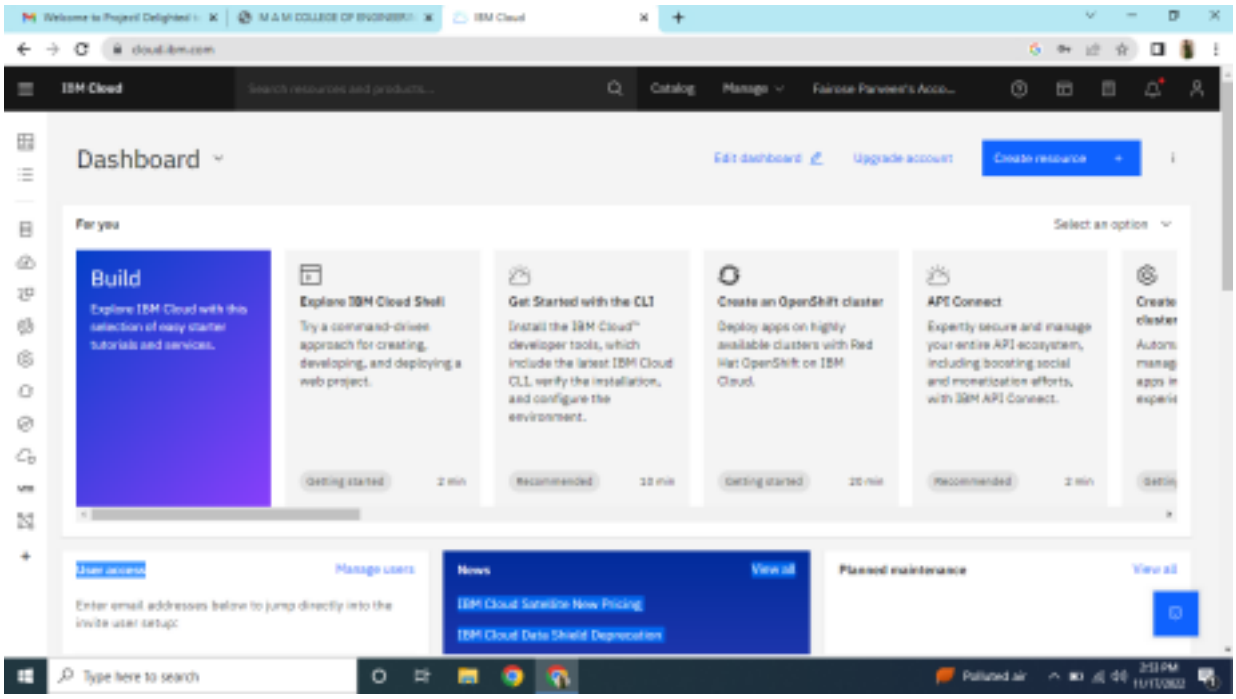
CHAPTER – 9

STEPS:

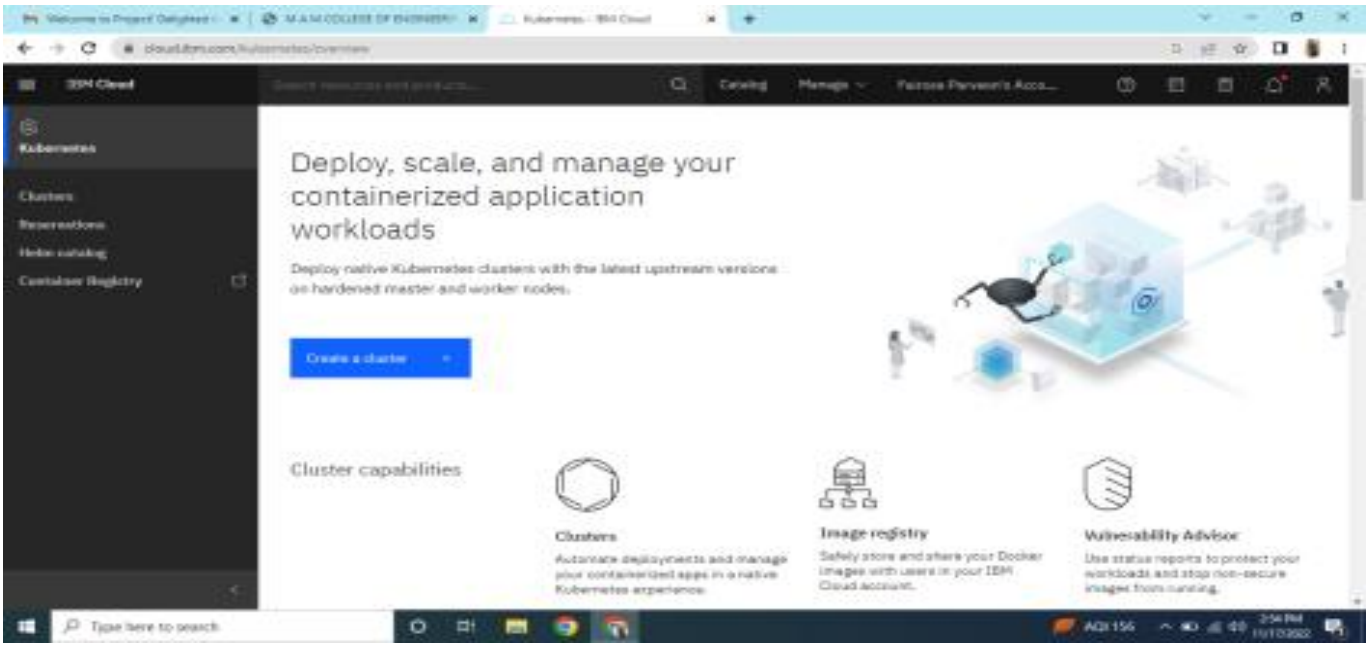
Create a Kubernetes cluster.

Sign into your IBM Cloud Dashboard.

Open **IBM Kubernetes Service.**



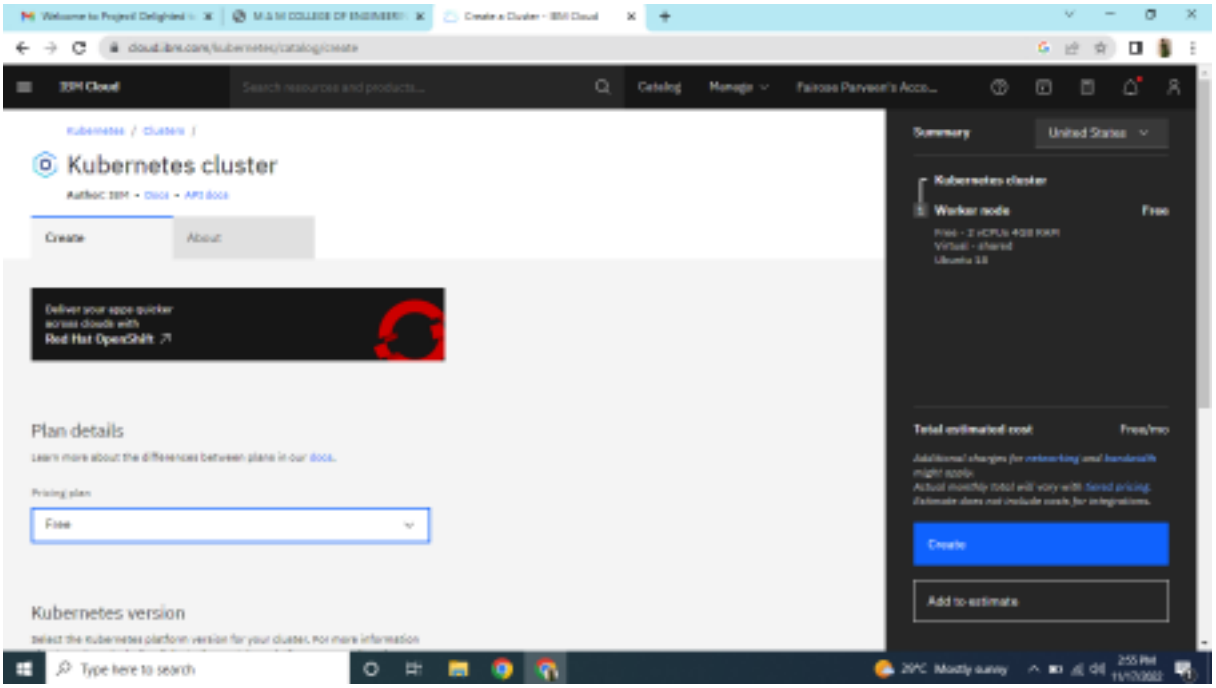
Click Create Cluster



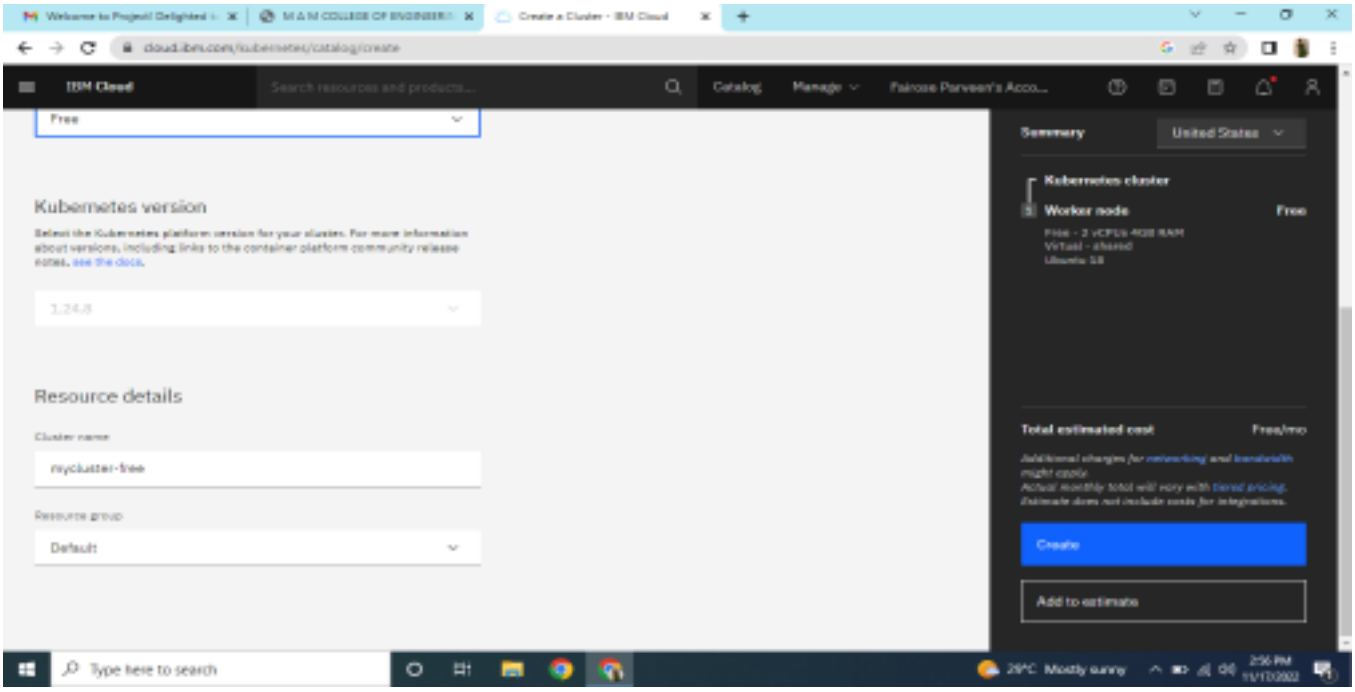
Select the Region where you want to deploy the cluster, type in a name for your cluster, then click Create Cluster.

Select the appropriate cluster type depending on your account.

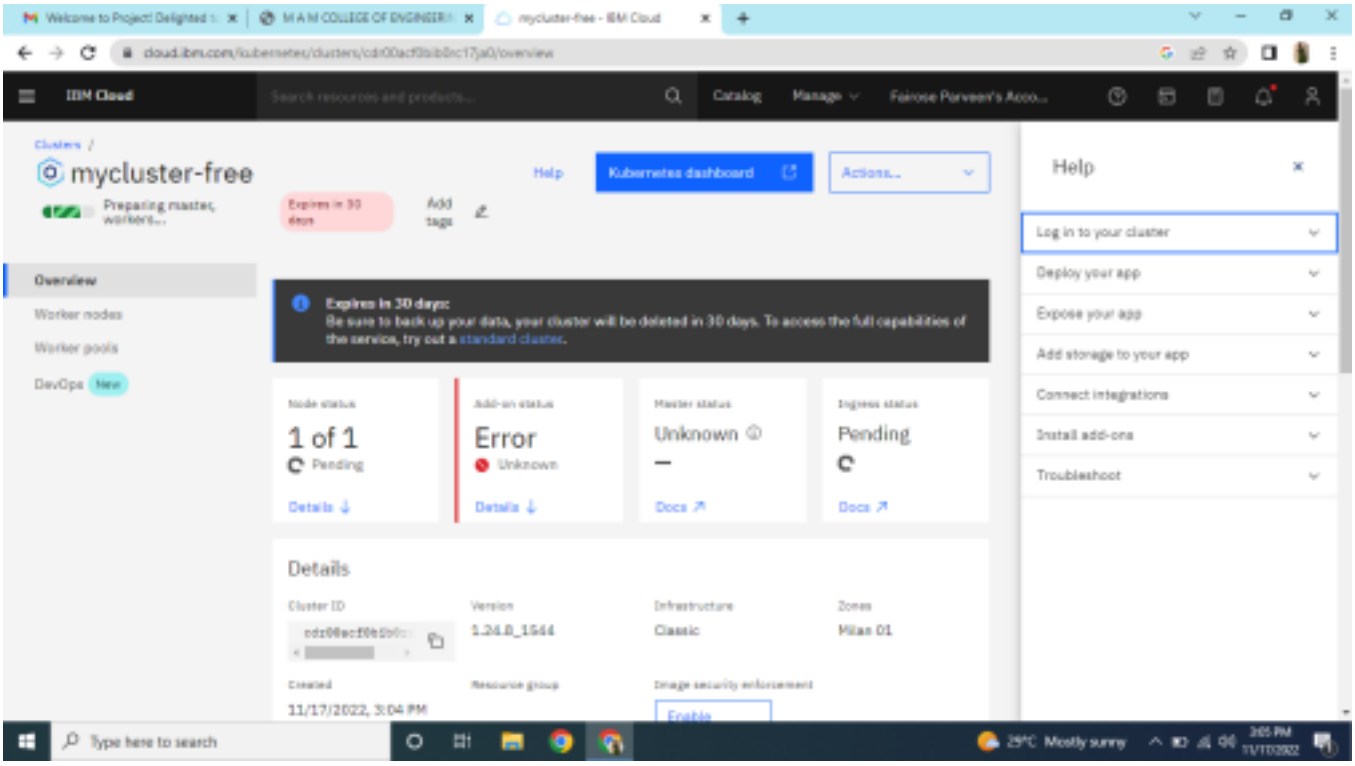
It takes some time for the cluster to get ready (around 30 minutes).

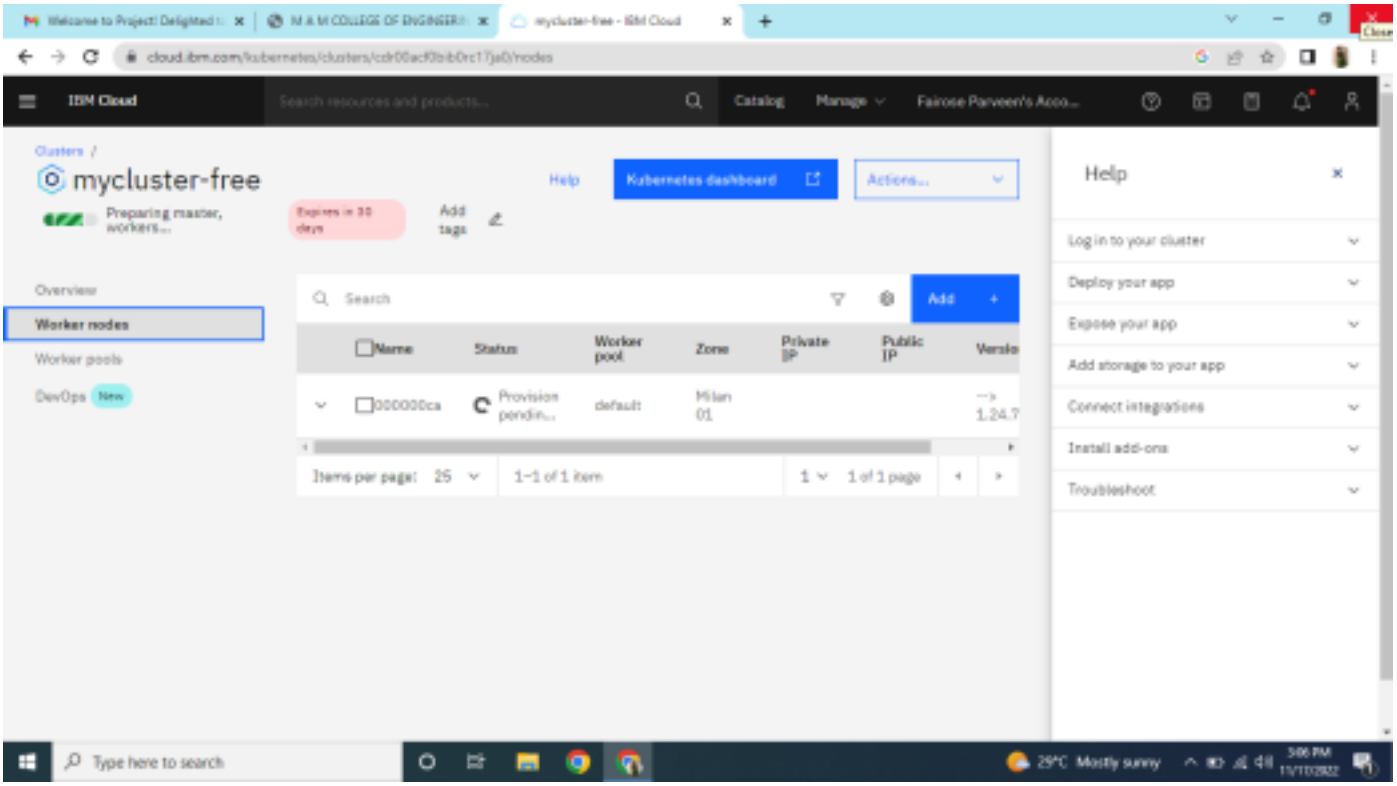


Once the cluster is ready, click on your cluster's name and you will be redirected to a new page with information about your cluster and worker node.



Click on the Worker Nodes tab to note the cluster's Public IP.


IBM Cloud
mycluster-free
Preparing master, workers...
Overview
Worker nodes
Worker pools
DevOps
Help
Kubernetes dashboard
Actions...
Add tags
Expires in 30 days:
Be sure to back up your data, your cluster will be deleted in 30 days. To access the full capabilities of the service, try out a standard cluster.
1 of 1
Pending
Error
Unknown
Unknown
Pending
Details
Cluster ID
Version
1.24.8_1544
Infrastructure
Classic
Zones
Milan 01
Created
11/17/2022, 3:04 PM
Help
Log in to your cluster
Deploy your app
Expose your app
Add storage to your app
Connect integrations
Install add-ons
Troubleshoot
Type here to search


IBM Cloud
mycluster-free
Preparing master, workers...
Overview
Worker nodes
Worker pools
DevOps
Help
Kubernetes dashboard
Actions...
Add tags
Search
Add
Name
Status
Worker pool
Zone
Private IP
Public IP
Items per page: 25
1–1 of 1 item
1 of 1 page
Help
Log in to your cluster
Deploy your app
Expose your app
Add storage to your app
Connect integrations
Install add-ons
Troubleshoot
Type here to search

CHAPTER - 10

ADVANTAGES & DISADVANTAGES

ADVANTAGES

It can speak volumes for a candidate-in-question when they are referred by an existing employee. Not only will the current employee, the referrer, likely want to add to and not detract from company culture, but they'll also vouch for required skillsets and competencies. Here are the top advantages of employee referrals:

1.Your company will save time and money.

Sourcing candidates requires a lot of effort, which means it can cost a company both time and money. It was found in one study that referred candidates are 55% faster to hire, compared with employees sourced through career sites. An advantage of employee referrals is that your current team member makes the connection and saves the recruiter that initial time of sourcing the candidate. Further, the candidate could be a better match compared to other candidates who apply externally. This will also help expedite the process and cut back on the need to find alternative options.

2.Your company will receive qualified, quality candidates.

Employees will want to work with someone who will improve their own output and day-to-day workload. So, in most cases, you can have more confidence in the candidate's ability to perform the necessary tasks. Further, according to research done by Zao, nearly three in ten employers have caught a fake reference on an application. So, a personal recommendation that is already within the company can install confidence that the reference is in fact valid and reputable.

3.Retention rate is typically better.

After two years, retention of referred employees is 45% compared to 20% from job boards. Employee referrals tend to stay around longer, perhaps because they are

personally connected to their peers. That's not to mention that the referrer themselves may feel more respected and valued too after their company takes their recommendation. And when an employee feels respected and valued, they can become more dedicated in turn. You may also want to give an employee referrer a bonus to show your appreciation.

DISADVANTAGES

The disadvantages of employee referrals do not outweigh the benefits, but there are still some to consider. Here are three employee referrals disadvantages to keep in mind when making a hiring decision:

1.You may get a recommendation based on bias.

While in most cases an employee's motives should be "pure," there may be circumstances where a person wants to just work with their friend or receive the referral bonus. This can result in the candidate not being as qualified as either the referrer or referee said they were. The referrer may think that they can make up for the candidate's shortcomings or give them a crash course to level-set their skills. This can impact their own production in a negative way. And now your company may have two underperforming employees and you may have to look to fill both of these positions in the not-so-far-off future.

2.Employee referrals can invite opportunity for negative company politics.

While an advantage of employee referrals is that they+ can positively impact peer morale, they can also cause unnecessary tension. The twosome can be negatively received by their peers especially if the external hire was chosen over an internal promotion. Further, the referrer may be afraid to offer critique to the person they referred. This kind of dynamic can negatively impact their work.

3.Your company could end up losing both the referrer and the referee.

When one goes, the other may follow. Whether one decides to leave because of company politics, personal reasons, or a better opportunity, there is a risk that their counterpart will follow suit. This chance may heighten if problems with team dynamics aren't addressed and resolved. So, it's important to stay involved with a new hire, beyond

any initial onboarding and ensure they are connected to the company and not just the employee who referred them.

CHAPTER – 11

CONCLUSION

Recommender systems are a powerful new technology for extracting additional value for a business from its user databases. These systems help users find items they want to buy from a business. Recommender systems benefit users by enabling them to find items they like. Conversely, they help the business by generating more sales. Recommender systems are rapidly becoming a crucial tool in E-commerce on the Web. Recommender systems are being stressed by the huge volume of user data in existing corporate databases and will be stressed even more by the increasing volume of user data available on the Web. New technologies are needed that can dramatically improve the scalability of recommender systems.

CHAPTER - 12

FUTURE SCOPE

The tremendous growth of both information and usage has led to a so-called information overload problem in which users are finding it increasingly difficult to locate the right information at the right time Thus huge amount of information and easy access to it make recommender systems unavoidable. We use recommender system every day without realizing it and without knowing what exactly happens. Recommender systems have changed the way people find products, information, and even other people. They study patterns of behaviour to know what someone will prefer from among a collection of things he/she has never experienced. Benefits of recommender systems to the businesses using them include: The ability to offer unique personalized service for the customer, increase trust and customer loyalty, Increase sales, click-through rates, conversions, etc., Opportunities for promotion, persuasion and Obtain more knowledge about customers. Recommender systems are software tools and techniques providing suggestions for items to be of use to a user. Job recommender systems are desired to attain a high level of accuracy while making the predictions which are relevant to the customer, as it becomes a very tedious task to explore thousands of jobs, posted on the web.

CHAPTER - 13

APPENDIX

SOURCECODE

HOME PAGE

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Bootstrap Example</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<style>
.right{
position: absolute;
right: 34px;
top: 10px;
display: inline-block;
}
.formwork{
color:blue;
}
.container h5{
font-size: 50px;
color:rgb(0, 0, 0);
font-family: 'Baloo Bhai 2';
```

```
}
.btn{
font-family: 'Baloo Bhai 2', cursive;
margin: 0px 9px;
background-color: rgb(234, 128, 15);
color: white;
text-align:center;
}
.navbar li a{
font-family: 'Baloo Bhai 2', cursive;
color: rgb(197, 35, 35);
}
.container u{
color:rgb(18, 231, 142);
}
</style>
<body style="backgroundimage:
url('https://images.pexels.com/photos/1242348/pexels-photo-
1242348.jpeg?w=2000');">
<nav class="navbar navbar-inverse">
<div class="container-fluid">
<ul class="nav navbar-nav">
<li class="active"><a href="/">HOME</a></li>
<li><a href="/register">REGISTER</a></li>
<li><a href="/login">LOGIN</a></li>
<li><a href="/about">ABOUT US</a></li>
</ul>
</div>
</nav>
<div class="right">
<form action="/contact" method="get" target="_blank">
<button class="btn">contact us</button>
</form>
</div>
<div class="container">
<center><u><h5>JOB PORTAL<h5></u></center>
</div>
<br>
<!-- 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="" alt=""
```

```
height="0px" width="0px">
<!-- <a class="navbar-brand" href="index.html">JobPortal</a> -->
</a>
<section class="our-focus">
<div class="container">
<center><h1 class="text-center mt-3">.....ABOUT US.....</h1></center>
<br>
<br>
<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="..."> -->
<div class="card-body">
<h5 class="card-title">MISSION</h5>
<br>
<b> <p class="card-text">Job recommender is an application that
builds a relation between the candidates and the organisation.
The outcome will be the recommendations based on what domains
and the fields that the candidates are intrested.
This system work in areas like search queries,hashtags and
more.We have integrated with IBM cloud and used some technologies like
python,Docker and more.
</p>
</div>
</div>
</div></b>
<b> <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-imgtop"
alt="..."> -->
<div class="card-body">
<h5 class="card-title">VISSION</h5>
<p class="card-text">Our main objective is to recommend
appropriate jobs for the users and satisfy
their needs by asking them various questions based on the
induvidual's interest on domain,salary pakage,area of interest and the skills the are
filled with.
With this the young talents will be able to find a job and start a
career.It will also support the working employees to develope in their career. </p>
</div>
</div>
```

```
</div></b>
<b><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>
<p class="card-text">Well directed career guidance for the
employees and the freshers;expand employment accross the world;
identify a perfect candidate for a specific job role;to increase the
current industry standards;to make the candidates fly through the employment.</p>
</div>
</div>
</div>
</div>
</div></b>
</section>
<!-- focus section ends -->
<!-- footer starts -->
<!-- Site footer -->
<script>
window.watsonAssistantChatOptions = {
integrationID: "db02aed9-1627-4889-b8c4-5cf30e7ab189", // The ID of this
integration.
region: "au-syd", // The region your integration is hosted in.
serviceInstanceID: "36d66a11-498c-4821-a1a1-6008bddc50e5", // 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>
```

REGISTER PAGE

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Bootstrap Example</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<style>
.right{
position: absolute;
right: 34px;
top: 10px;
display: inline-block;
}
.formwork{
color:green;
}
.container h5{
font-size: 50px;
color:black;
font-family: 'Baloo Bhai 2';
}
.btn{
font-family: 'Baloo Bhai 2', cursive;
margin: 0px 9px;
background-color: rgb(214, 28, 108);
color: rgb(0, 0, 0);
text-align:center;
}
.navbar li a{
font-family: 'Baloo Bhai 2', cursive;
color: red;
}
.container u{
color:green;
}
```

```
</style>
<body style="background-
image:url('https://images.pexels.com/photos/1242348/pexelsphoto-
1242348.jpeg?w=2000');">
<nav class="navbar navbar-inverse">
<div class="container-fluid">
<ul class="nav navbar-nav">
<li class="active"><a href="/">HOME</a></li>
<li><a href="/register">REGISTER</a></li>
<li><a href="/login">LOGIN</a></li>
<li><a href="/about">ABOUT US</a></li>
</ul>
</div>
</nav>
<div class="right">
<form action="/contact" method="get" target="_blank">
<button class="btn">contact us</button>
</form>
</div>
<!-- bootstrap navbar -->
<div class="logo mt-3 text-center">
<a class="main-logo-img mt-5" href="#"><img
src="https://thumbs.dreamstime.com/b/round-181587919.jpg" alt="sheep-logo"
height="120px" width="300px">
<!-- <a class="navbar-brand" href="index.html">JobPortal</a> -->
</a>
</div>
<!-- navbar ends -->
<!-- Login form -->
<div class="login text-center mt-5">
<h2> REGISTER NOW </h2>
<br>
<form action="/register" method="post">
<div class="msg"></div>
<!-- <input type="text" placeholder="fullname" id="fullname"> </br></br> -->
<input type="text" name="username" placeholder="Enter Your Username"
id="username" required></br></br>
<input type="email" name="email" placeholder="Enter Your
Email ID" id="email" required></br></br>
<input type="password" name="password" placeholder="Enter
Your Password" id="password" required></br></br>
</br>
```

```
<button type="submit" id="button" class="btn btn-primary"> Register </button>
</form>
</div>
<br>
<div class="note mt-3 text-center"> <!--Register form -->
<p> already have an account ? please login <a href="/login">login! </a> </p>
</div>
<script>
window.watsonAssistantChatOptions = {
integrationID: "db02aed9-1627-4889-b8c4-5cf30e7ab189", // The ID of this
integration.
region: "au-syd", // The region your integration is hosted in.
serviceInstanceID: "36d66a11-498c-4821-a1a1-6008bddc50e5", // 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 PAGE

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Bootstrap Example</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<style>
```

```
.right{
position: absolute;
right: 34px;
top: 10px;
display: inline-block;
}
.formwork{
color:green;
}
.container h5{
font-size: 50px;
color:black;
font-family: 'Baloo Bhai 2';
}
.btn{
font-family: 'Baloo Bhai 2', cursive;
margin: 0px 9px;
background-color: blue;
color: white;
text-align:center;
}
.navbar li a{
font-family: 'Baloo Bhai 2', cursive;
color: red;
}
.container u{
color:green;
}
</style>
<body style="background-
image:url('https://images.pexels.com/photos/1242348/pexelsphoto-
1242348.jpeg?w=2000');">
<nav class="navbar navbar-inverse">
<div class="container-fluid">
<ul class="nav navbar-nav">
<li class="active"><a href="/">HOME</a></li>
<li><a href="/register">REGISTER</a></li>
<li><a href="/login">LOGIN</a></li>
<li><a href="/about">ABOUT US</a></li>
</ul>
</div>
</nav>
```

```
<div class="right">
<form action="/contact" method="get" target="_blank">
<button class="btn">contact us</button>
</form>
</div>
<!-- bootstrap navbar -->
<div class="logo mt-3 text-center">
<a class="main-logo-img mt-5" href="#"><img
src="https://cengage.force.com/resource/1607465003000/loginIcon" height="150px"
width="250px">
<!-- <a class="navbar-brand" href="home.html">JobPortal</a> -->
</a>
</div>
<!-- navbar ends -->
<!-- Login form -->
<div class="login text-center mt-5">
<u><h2> LOGIN FORM </h2></u>
<br>
<form action="/login" method="post">
<div class="msg"><b> WELCOME TO THE LOGIN PAGE </b></div>
<br>
<input type="text" name="username" placeholder="Enter Your Username"
id="username" required></br></br>
<input type="password" name="password" placeholder="Enter
Your Password" id="password" required></br></br>
</br>
<button type="submit" id="button" class="btn btn-primary"> Login </button>
</form>
</div>
<br>
<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>
<script>
window.watsonAssistantChatOptions = {
integrationID: "db02aed9-1627-4889-b8c4-5cf30e7ab189", // The ID of this
integration.
region: "au-syd", // The region your integration is hosted in.
serviceInstanceID: "36d66a11-498c-4821-a1a1-6008bddc50e5", // 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>
```

DASHBOARD

```
<!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/xicon">
-->
<!-- <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/fontawesome/
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 style="background-image: url('https://images.pexels.com/photos/684314/pexelsphoto-
684314.jpeg?auto=compress&amp;cs=tinysrgb&amp;w=2000');">
<!-- 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="https://encryptedtbn0.
gstatic.com/images?q=tbn:ANd9GcQJYlncUWMljmSKPkZLKJS5P0VQJhZFwj
KbZQ&usqp=CAU" alt="sheep-logo" height="120px" width="300px">
<!-- <a class="navbar-brand" href="index.html">JobPortal</a> -->
</a>
<button class="navbar-toggler" type="button" data-bs-toggle="collapse"
data-bs-target="#navbarSupportedContent" ariacontrols="
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-primary mr-1" id="sponsor"
href="/display">DISPLAY</a>
<a type="button" class="btn btn-primary mr-1"
id="sponsor" href="/logout">LOG OUT</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="..."> -
->
<div class="card-body">
<h5 class="card-title">Front End Developer</h5>
<p class="card-text">Skills for Front End Developer
</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>
<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">
<h5 class="card-title">HR Manager</h5>
<p class="card-text">skills for hr manager</p>
<a href="apply" class="btn btn-primary">Apply Now</a>
</div>
</div>
</div>
</div>
</div>
</section>
<!-- focus section ends -->
<!-- footer starts -->
<!-- Site footer -->
<script>
window.watsonAssistantChatOptions = {
integrationID: "db02aed9-1627-4889-b8c4-5cf30e7ab189", // The ID of this
integration.
region: "au-syd", // The region your integration is hosted in.
serviceInstanceID: "36d66a11-498c-4821-a1a1-6008bddc50e5", // 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>
```

APPLY PAGE

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>JOBPORTAL | APPLY</title>
<!-- favicon -->
<!-- <link rel="shortcut icon" href="/assets/img/favicon.ico" type="image/xicon">
-->
<!-- <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/fontawesome/
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 style="background-image:
url('https://images.pexels.com/photos/1242348/pexelsphoto-
1242348.jpeg?w=2000');">
<!-- bootstrap navbar -->
<div class="logo mt-3 text-center">
<a class="main-logo-img mt-5" href="#"><img src="https://encryptedtbn0.
gstatic.com/images?q=tbn:ANd9GcTkh2hL43fgGUX0V0cA-
2W7lAIqbm10hE_7yg&usqp=CAU&reload=on" alt="" height="150px"
width="400px">
<!-- <a class="navbar-brand" href="home.html">JobPortal</a> -->
</a>
</div>
<!-- navbar ends -->
<!-- Login form -->
<div class="login text-center mt-5">
<h2>Apply Now</h2>
<div class="msg"></div>
<form action="/apply" method="post" class="mt-3">
<!-- <input type="text" placeholder="fullname" id="fullname"> </br></br> -->
<input type="text" name="username" placeholder="Enter Your Username"
id="username" required></br></br>
<input type="email" name="email" placeholder="Enter Your email"
id="email" required></br></br>
<input type="text" name="qualification" placeholder="Enter Your
Qualification" id="qualification" required></br></br>
<input type="text" name="skills" placeholder="Enter Your
skills" id="skills" required></br></br>
<select name ="s">
<option value ="PYTHON">front end Developer</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>
<script>
window.watsonAssistantChatOptions = {
integrationID: "db02aed9-1627-4889-b8c4-5cf30e7ab189", // The ID of this
```

integration.
region: "au-syd", // The region your integration is hosted in.
serviceInstanceID: "36d66a11-498c-4821-a1a1-6008bddc50e5", // 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>

DISPLAY PAGE

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>JOBPORTAL | HOME</title>
<!-- <div class="msg">{{ msg }}</div> -->
<meta charset="UTF-8">
<!-- favicon -->
<!-- <link rel="shortcut icon" href="/assets/img/favicon.ico" type="image/xicon">
-->
<!-- <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/fontawesome/4.7.0/css/font-awesome.css">

```
<!-- css stylesheet -->
<link rel="stylesheet" href="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">
<style>
table, th, td ,tr,thead{
border:5px solid black;
}
</style>
</head>
<body style="background-image:url('https://img.freepik.com/premiumphoto/
magnifying-glass-blue-background-wallpaper-copy-space-symbol-decorationornament-
hr-human-recruitment-research-discovery-work-job-career-resumeinterview-
hiring-employment-choice-focus3d-render_178037-844.jpg?w=1800');">
<!-- 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="" alt="">
<!-- <a class="navbar-brand" href="index.html">JobPortal</a> -->
</a>
<button class="navbar-toggler" type="button" data-bs-toggle="collapse"
data-bs-target="#navbarSupportedContent" ariacontrols="
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>
</div>
</div>
</nav>
<!-- navbar ends -->
<!-- what we focus on -->
<div class="m-4 container">
```

```
<h1><u>Your Details</u></h1>
</div>
<div class="m-4 container">
<table class="table">
<thead>
<tr>
<th scope="col">Sr.No</th>
<th scope="col">Username</th>
<th scope="col">Emailid</th>
<th scope="col">Qualification</th>
<th scope="col">Skills</th>
<th scope="col">Jobs</th>
</tr>
</thead>
<tbody>
{% for row in account %}
<tr>
<th scope="row">{{loop.index}}</th>
<td>{{row[0]}}</td>
<td>{{row[1]}}</td>
<td>{{row[2]}}</td>
<td>{{row[3]}}</td>
<td>{{row[4]}}</td>
</tr>
{% endfor %}
</tbody>
</table>
</div>
</body>
</html>
```

CONTACT PAGE

```
<html lang="en">
<head>
<title>Bootstrap Example</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
```

```
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<style>
.h1{
color:blue;
font-family: 'Baloo Bhai 2';
}
.right{
position: absolute;
right: 34px;
top: 10px;
display: inline-block;
}
.formwork{
color:green;
}
.container h5{
font-size: 50px;
color:black;
font-family: 'Baloo Bhai 2';
}
.btn{
font-family: 'Baloo Bhai 2', cursive;
margin: 0px 9px;
background-color: blue;
color: white;
text-align:center;
}
.navbar li a{
font-family: 'Baloo Bhai 2', cursive;
color: red;
}
.container u{
color:green;
}
</style>
```

```
<body style="background-
image:url('https://images.pexels.com/photos/1242348/pexelsphoto-
1242348.jpeg?w=2000');">
<nav class="navbar navbar-inverse">
<div class="container-fluid">
<ul class="nav navbar-nav">
<li class="active"><a href="/">HOME</a></li>
<li><a href="/register">REGISTER</a></li>
<li><a href="/login">LOGIN</a></li>
<li><a href="/about">ABOUT US</a></li>
</ul>
</div>
</nav>
<footer class="site-footer">
<b><div class="container mt-5">
<div class="row">
<div class="col-sm-12 col-md-6">
<h3>JOB PORTAL</h3>
<p class="text-justify">Contact us to simplify your job search with the our
job recommender system.
Connect with the world's widespread industries and on a professional
system.
Build a bridge with others from your industry on a good professional
network. Apply for jobs, upskill in your area. Find & Apply To New Jobs
and enjoy your career with highest upscales and development with our
Skills/job recommender system. Find the job you need and easily apply for the jobs you
want.</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></b>
</footer>
<script>
window.watsonAssistantChatOptions = {
```

```
integrationID: "db02aed9-1627-4889-b8c4-5cf30e7ab189", // The ID of this
integration.
region: "au-syd", // The region your integration is hosted in.
serviceInstanceID: "36d66a11-498c-4821-a1a1-6008bddc50e5", // 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>
```

ABOUT PAGE

```
<html lang="en">
<head>
<title>Bootstrap Example</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>
<style>
.text-center mt-3 h1{
color:blue;
font-family: 'Baloo Bhai 2';
}
.h1{
color:blue;
font-family: 'Baloo Bhai 2';
}
.right{
```

```
position: absolute;
right: 34px;
top: 10px;
display: inline-block;
}
.formwork{
color:green;
}
.container h5{
font-size: 50px;
color:black;
font-family: 'Baloo Bhai 2';
}
.btn{
font-family: 'Baloo Bhai 2', cursive;
margin: 0px 9px;
background-color: blue;
color: white;
text-align:center;
}
.navbar li a{
font-family: 'Baloo Bhai 2', cursive;
color: red;
}
.container u{
color:green;
}
</style>
<body style="backgroundimage:
url('https://images.pexels.com/photos/1242348/pexels-photo-
1242348.jpeg?w=2000');">
<nav class="navbar navbar-inverse">
<div class="container-fluid">
<ul class="nav navbar-nav">
<li class="active"><a href="/">HOME</a></li>
<li><a href="/register">REGISTER</a></li>
<li><a href="/login">LOGIN</a></li>
<li><a href="/about">ABOUT US</a></li>
</ul>
</div>
</nav>
<div>
```

```
<center><h1 class="text-center mt-3">ABOUT US</h1></center>
</div>
<br>
<center><div class="row ml-3 mt-3">
<b> <div class="col-lg-3 mr-3" id="focus-first">
<div class="card" style="width: 19rem;">
<div class="card-body">
<u><h5 class="card-title">MISSION</h5></u>
<br>
<p class="card-text">Job recommender is an application that
builds a relation between the candidates and the organisation.
The outcome will be the recommendations based on what domains
and the fields that the candidates are intrested.
This system work in areas like search queries,hashtags and
more.We have integrated with IBM cloud and used some technologies like
python,Docker and more..
</p>
</div>
</div>
</div></b>
<b><div class="col-lg-4 mr-4" id="focus-second">
<div class="card" style="width: 20rem;">
<!-- <img src="assets/img/friendship day.JPG" class="card-imgtop"
alt="..."> -->
<div class="card-body">
<u><h5 class="card-title">VISSION</h5></u>
<p class="card-text">Our main objective is to recommend
appropriate jobs for the users and satisfy
their needs by asking them various questions based on the
induvidual's interest on domain,salary pakage,area of interest and the skills the are
filled with.
With this the young talents will be able to find a job and start a
career.It will also support the working employees to develope in their career. </p>
</div>
</div>
</div></b>
<b><div class="col-lg-4 ml-4" 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">
<u><h5 class="card-title">OBJECTIVE</h5></u>
```

```
<p class="card-text">Well directed career guidance for the
employees and the freshers;expand employment accross the world;
identify a perfect candidate for a specific job role;to increase the
current industry standards;to make the candidates fly through the employment.
</p>
</div>
</div>
</div>
</div>
</div></b>
</section>
</center>
<br>
<br>
</footer>
<script>
window.watsonAssistantChatOptions = {
integrationID: "db02aed9-1627-4889-b8c4-5cf30e7ab189", // The ID of this
integration.
region: "au-syd", // The region your integration is hosted in.
serviceInstanceID: "36d66a11-498c-4821-a1a1-6008bddc50e5", // 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>
```

13.2. GitHub & Project Demo Link

GitHub Link: **https://github.com/IBM-EPBL/IBM-Project-26603-1660030583**