ONLINE JOB PORTAL

A PROJECT REPORT

Submitted by

SRILEKHA PERUMAL KANDASAMY (8115U23AM051)

in partial fulfillment of requirements for the award of the course

CGB1201 - JAVA PROGRAMMING

in

DEPARTMENT OF

COMPUTER SCIENCE AND ENGINEERING

(ARTIFICAL INTELLIGENECE AND MACHINE LEARNING)

K. RAMAKRISHNAN COLLEGE OF ENGINEERING

(An Autonomous Institution, affiliated to Anna University Chennai and Approved by AICTE, New Delhi)

SAMAYAPURAM – 621 112

DECEMBER - 2024

K. RAMAKRISHNAN COLLEGE OF ENGINEERING (AUTONOMOUS)

SAMAYAPURAM – 621 112

BONAFIDE CERTIFICATE

Certified that this project report on **"ONLINE JOB PORTAL"** is the bonafide work of **SRILEKHA PERUMAL KANDASAMY (8115U23AM051)** who carried out the project work during the academic year 2024 - 2025 under my supervision.

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Submitted for the end semester examination held on …….

INTERNAL EXAMINER

EXTERNAL EXAMINER

DECLARATION

I declare that the project report on **"ONLINE JOB PORTAL"** is the result of original work done by us and best of our knowledge, similar work has not been submitted to **"ANNA UNIVERSITY CHENNAI"** for the requirement of Degree of **BACHELOR OF ENGINEERING**. This project report is submitted on the partial fulfilment of the requirement of the completion of the course **CGB1201 - JAVA PROGRAMMING.**

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Signature

_____

SRILEKHA PERUMAL
KANDASAMY

Place: Samayapuram

Date:

ACKNOWLEDGEMENT

It is with great pride that I express our gratitude and in-debt to our institution "**K.Ramakrishnan College of Engineering (Autonomous)**", for providing us with the opportunity to do this project.

I glad to credit honourable chairman **Dr. K. RAMAKRISHNAN**, **B.E.,** for having provided for the facilities during the course of our study in college.

I would like to express our sincere thanks to our beloved Executive Director **Dr. S. KUPPUSAMY, MBA, Ph.D.,** for forwarding to our project and offeringadequate duration in completing our project.

I would like to thank **Dr. D. SRINIVASAN, B.E, M.E., Ph.D.,** Principal, who gave opportunity to frame the project the full satisfaction.

I whole heartily thanks to **Dr. B. KIRAN BALA, B.Tech., M.E., M.B.A., Ph.D., M.I.S.T.E., U.A.C.E.E., IAENG** ,Head of the department, **Artificial Intelligence and Machine Learning** for providing her encourage pursuing this project.

I express our deep expression and sincere gratitude to our project supervisor **Mr.P.GEETHA M.E,** Department of **Artificial Intelligence and data Science,** for his incalculable suggestions, creativity, assistance and patience which motivated us to carry out this project.

I render our sincere thanks to Course Coordinator and other staff members for providing valuable information during the course.

I wish to express our special thanks to the officials and Lab Technicians of our departments who rendered their help during the period of the work progress.

INSTITUTE VISION AND MISSION

VISION OF THE INSTITUTE:

To achieve a prominent position among the top technical institutions.

MISSION OF THE INSTIITUTE:

M1: To best owstandard technical education par excellence through state of the art infrastructure, competent faculty and high ethical standards.

M2: To nurture research and entrepreneurial skills among students in cutting edge technologies.

M3: To provide education for developing high-quality professionals to transform the society.

DEPARTMENT VISION AND MISSION

DEPARTMENT OF CSE (ARTIFICIAL INTELLIGENCEAND MACHINE LEARNING)

Vision of the Department

To become a renowned hub for Artificial Intelligence and Machine Learning Technologies to produce highly talented globally recognizable technocrats to meet Industrial needs and societal expectations.

Mission of the Department

M1: To impart advanced education in Artificial Intelligence and Machine Learning, Built upon a foundation in Computer Science and Engineering.

M2: To foster Experiential learning equips students with engineering skills to Tackle real-world problems.

M3: To promote collaborative innovation in Artificial Intelligence, machine Learning, and related research and development with industries.

M4: To provide an enjoyable environment for pursuing excellence while upholding Strong personal and professional values and ethics.

Programme Educational Objectives (PEOs):

Graduates will be able to:

PEO1: Excel in technical abilities to build intelligent systems in the fields of Artificial Intelligence and Machine Learning in order to findnew opportunities.

PEO2: Embrace new technology to solve real-world problems, whether alone or As a team, while prioritizing ethics and societal benefits.

PEO3: Accept lifelong learning to expand future opportunities in research and Product development.

Programme Specific Outcomes (PSOs):

PSO1: Ability to create and use Artificial Intelligence and Machine Learning Algorithms, including supervised and unsupervised learning, reinforcement Learning, and deep learning models.

PSO2: Ability to collect, pre-process, and analyze large datasets, including data Cleaning, feature engineering, and data visualization..

PROGRAM OUTCOMES(POs)

Engineering students will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics,science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:**Identify,formulate,review research literature ,and Analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
3. **Design/development to solutions :**Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectivelyon complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparationand ability to engage in independent and life-long learning in the broadest context of technological change.

ABSTRACT

The Online Job Portal is a digital platform that connects job seekers with employers, streamlining the recruitment process for both parties. Job seekers can search for job opportunities based on their skills, experience, and location, while employers can post vacancies, review applications, and manage candidate communications. The portal features advanced search functionalities, personalized job recommendations, real-time application tracking, and tools for candidate evaluation, enhancing the efficiency of job matching and recruitment. Job seekers can upload resumes, track application statuses, and receive updates, while employers can manage screenings, interviews, and feedback. With accessibility on both desktop and mobile devices, the platform provides a user-friendly experience, improving job search and hiring processes in a dynamic labor market.

ABSTRACT WITH POs AND PSOs MAPPING

ABSTRACT	POs MAPPED	PSOs MAPPED
This project involves the development of an online job portal that bridges the gap between job seekers and employers, offering features such as job listings, profile management, and application tracking. The portal integrates advanced search functionalities and AI-based personalized job recommendations, ensuring a user-friendly experience. It is designed with robust data security measures to handle sensitive user data and provides scalability for a growing user base. Built using modern web technologies and adhering to ethical and technical considerations, the portal emphasizes intuitive design and efficient system performance to meet the needs of both job seekers and recruiters.	**PO 1** **PO 2** **PO 3** **PO 4** **PO 5** **PO 6**	**PSO 1** **PSO 2** **PSO 1** **PSO 3**

Note: 1- Low, 2-Medium, 3- High

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CHAPTER 1

INTRODUCTION

1.1 Objective

The objective of the Online Job Portal is to create a seamless, efficient, and user-friendly platform that bridges the gap between job seekers and employers. The portal aims to facilitate job searches, applications, and recruitment processes by providing job seekers with personalized job recommendations, real-time application tracking, and easy access to relevant job opportunities. For employers, the platform seeks to streamline the recruitment process by enabling easy job posting, candidate screening, application management, and communication. Ultimately, the goal is to enhance the overall hiring experience, ensuring both job seekers and employers can efficiently find suitable matches, reduce time-to-hire, and contribute to a more dynamic labor market.

1.2 Overview

The Online Job Portal is an integrated platform designed to connect job seekers and employers, offering a seamless solution for job searching, recruitment, and application management. The portal provides job seekers with an easy-to-use interface to explore job opportunities tailored to their skills, experience, and preferences, making the job search process more efficient and personalized. Features such as advanced search filters, job alerts, and resume uploads enhance the user experience, allowing job seekers to track applications and stay informed about job openings.

For employers, the portal offers tools for posting job listings, managing applications, screening candidates, and scheduling interviews. Employers can quickly evaluate resumes, communicate with candidates, and streamline the recruitment process to reduce time-to-hire. The platform is designed to be accessible on both desktop and mobile devices, ensuring users have flexibility and convenience in managing their job search or recruitment efforts. Ultimately, the portal aims to simplify the job market, improving the overall efficiency of matching talent with opportunities for both job seekers and employers.

For Job Seekers

The portal is designed to simplify the job search process, providing tools that cater to individual needs and preferences. Job seekers can create detailed profiles highlighting their skills, experiences, and career aspirations. With advanced search capabilities, users can refine their job searches based on parameters like location, industry, salary expectations, and job type (full-time, part-time, freelance, or remote).

For Employers

The portal provides employers with a centralized solution to manage their recruitment efforts. From posting job listings to tracking applications and shortlisting candidates, the platform streamlines the hiring process. Employers can create comprehensive job postings that effectively convey their needs and attract the right talent. Tools such as automated candidate screening, AI-powered resume matching, and analytics help recruiters identify top candidates quickly and efficiently.

1.3 Java Programming Concepts

1.Object-Oriented Programming (OOP)

- **Classes and Objects:** The core of any Java-based application is the use of classes and objects. In a job portal, you could have classes such as JobSeeker, Employer, JobPosting, Application, and Interview.
- **Encapsulation:** To keep the job portal data secure, encapsulation is used by defining private fields and providing public getter and setter methods for accessing and modifying them.
- **Inheritance:** Java's inheritance feature allows different classes to share common functionality. For example, both JobSeeker and Employer could inherit from a common User class that manages login, registration, and profile management.
- **Polymorphism:** Methods in the portal can have different implementations, such as an employer viewing applications vs. a job seeker applying for a job.

2. Exception Handling

- **Try-Catch Blocks**:
    - To handle errors gracefully, such as invalid data entry (e.g., if a job seeker submits an incomplete application form).
- **Custom Exceptions**:
    - Defining custom exceptions like JobNotFoundException or ApplicationAlreadyExistsException to handle specific business logic errors in the portal.

3. Database Connectivity (JDBC)

- **JDBC (Java Database Connectivity)**: Enables communication between the portal and the database (e.g., MySQL, PostgreSQL) to fetch, insert, update, or delete data related to job listings, user profiles, and applications.
- **Example**: Connecting to the database and retrieving a job listing.

4. Multithreading

- **Concurrency**: Handle multiple users accessing the portal simultaneously, especially when processing applications, updating job listings, or managing real-time notifications.
- **Example**: Handling multiple users logging in or submitting applications at the same time without blocking the system.

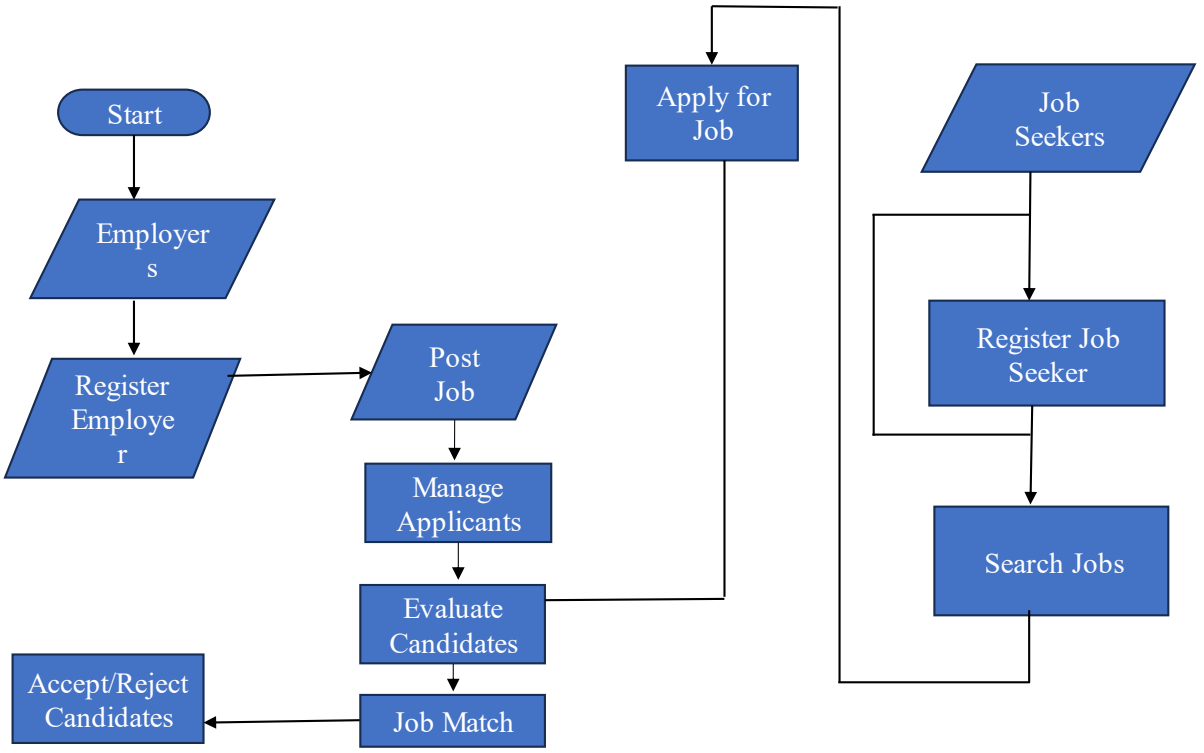
CHAPTER 2
PROJECT METHODOLOGY

2.1 Proposed Work

The proposed work involves developing an online job portal to connect job seekers with employers, facilitating job searches, applications, and recruitment processes. The system will offer a user-friendly platform with distinct features for job seekers (such as profile creation, job search, and application submission) and employers (including job posting, application management, and candidate evaluation). The portal will be built using Java technologies, including Object-Oriented Programming (OOP) for system design, JDBC for database interaction, and Java Servlets for backend logic. Frontend development will utilize JavaFX or JSP for creating interactive user interfaces. Security measures like password hashing and session management will ensure safe user authentication, while the system will undergo rigorous testing to ensure functionality, performance, and security.

Security will be a top priority, with measures like **encrypted data storage**, **secure authentication**, and compliance with data privacy laws to protect user information. The job portal will be developed with a focus on scalability and performance, allowing it to grow alongside user demand and technological advancements. With its intuitive interface, robust features, and emphasis on security, the portal will not only help job seekers find the right job but also enable employers to hire the best talent in an efficient and organized manner.

2.2 Block Diagram



CHAPTER 3
MODULE DESCRIPTION

3.1 MODULE 1 : USER REGISTRATION AND AUTHENTICATION

This module allows job seekers and employers to create their accounts and log in to the portal. The registration process collects essential details such as name, email, password, contact information, and for job seekers, resume details, while employers are required to provide company-specific information. The system ensures secure user authentication by validating credentials at login and managing user sessions. Passwords are stored securely using hashing techniques, and users are assigned roles (job seeker or employer) based on the type of registration. The module also includes a forgot password feature and email verification to enhance account security and ensure valid user data.

Key Features:

- **Registration:**
  - Job Seekers: Enter details such as name, email, phone number, password, and upload a resume or LinkedIn profile link.
  - Employers: Provide company details such as company name, email, contact number, location, and a brief description.
- **Authentication:**
  - Implement secure login using email/password or two-factor authentication (optional).
  - Passwords are stored securely using hashing algorithms such as bcrypt.

3.2 MODULE 2 : JOB POSTING AND MANAGEMENT

This module is designed for employers to post job vacancies and manage their job listings on the portal. Employers can create detailed job postings by providing information such as job title, job description, required skills, qualifications, salary range, location, and job type (full-time, part-time, freelance). The system also allows employers to edit or delete their postings, view applications received, and manage the visibility of job openings. Additionally, employers can track the status of each job listing (active, closed, or expired).

Key Features:

Post Management:

- View a dashboard with active, expired, and draft job postings.
- Edit or delete existing job posts.

Application Tracking:

- Monitor the number of applications received for each job posting.

Status Updates:

- Update job post status to "Active," "Closed," or "Expired."

3.3 MODULE 3 : JOB SEARCH AND FILTERING

The Job Search and Filtering module allows job seekers to search and filter job listings based on multiple criteria. The search functionality enables users to input keywords (job title, skills, company), select locations, define salary ranges, and filter by job type (full-time, part-time, remote, etc.). The system returns relevant job listings that match the search criteria, ensuring that job seekers are presented with the most applicable opportunities. Additionally, search results can be sorted by relevance, posting date, or salary. Job seekers can also save their favorite jobs and apply directly from the search results page.

3.4 MODULE 4 : APPLICATION MANAGEMENT

The Application Management module allows job seekers to apply for jobs and track their application status, while employers can review and manage applications. Job seekers can submit their resumes, cover letters, and other relevant documents through the application process. The system tracks the status of each application (e.g., submitted, under review, shortlisted, rejected) and notifies the job seeker of any updates. For employers, this module provides tools to manage incoming applications, review candidate details, and make decisions on which candidates to shortlist, schedule interviews, or reject. The system also allows employers to filter applicants by criteria such as experience, qualifications, or keywords.

Key Features:

- Apply for Jobs:
  - Submit applications with a resume, cover letter, and optional attachments.
- Application Tracking:
  - Track application status (e.g., Submitted, Under Review, Shortlisted, Rejected).
- Application History:
  - Access a log of all applied jobs, including dates and application outcomes.
- Notification Alerts:
  - Get alerts for status changes or additional requests from employers.

3.5 MODULE 5 : COMMUNICATION AND MESSAGING

The Communication and Messaging module facilitates seamless interaction between job seekers and employers. This module allows employers to send messages to candidates, and vice versa, ensuring smooth communication throughout the recruitment process. Job seekers can receive notifications about the status of their application, interview requests, and feedback. Employers can message applicants about interview schedules, job offers, or other important details. The system will also have an internal messaging platform where both parties can exchange questions,

clarifications, or additional information without leaving the portal. The messaging system can be linked to email notifications to ensure timely communication.

Key Features:

- In-Platform Messaging:
  - Employers and job seekers can exchange messages securely within the platform.
  - Messages are organized by conversations for easy tracking.
- Notification Integration:
  - Send email and in-app notifications for unread messages.
- Interview Communication:
  - Employers can send interview requests with detailed instructions.

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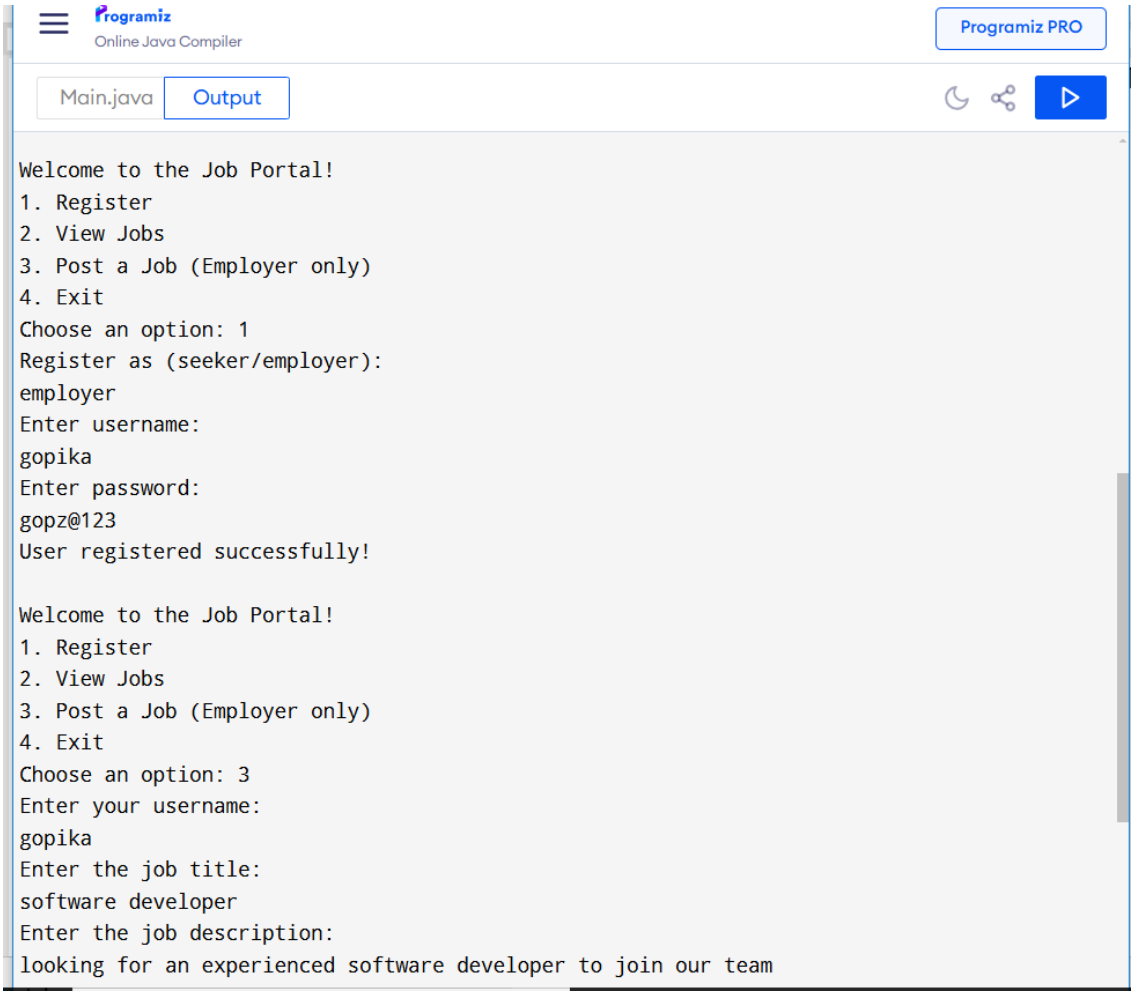
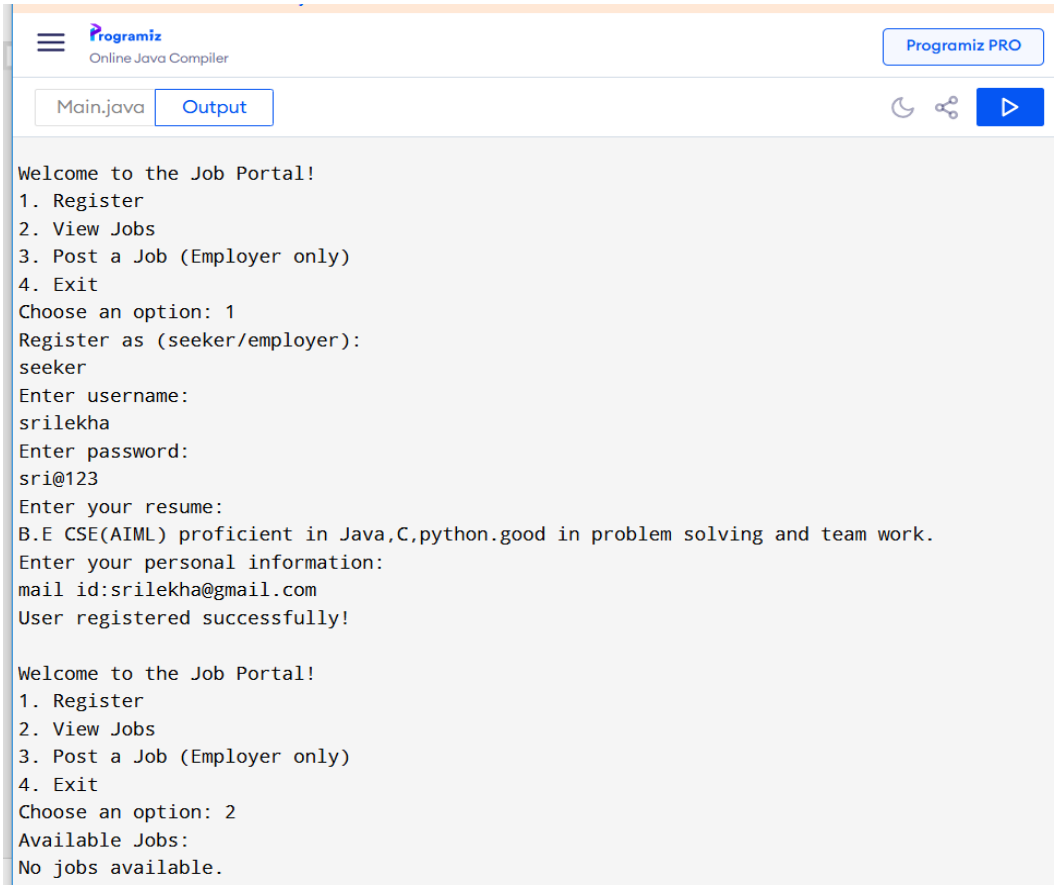
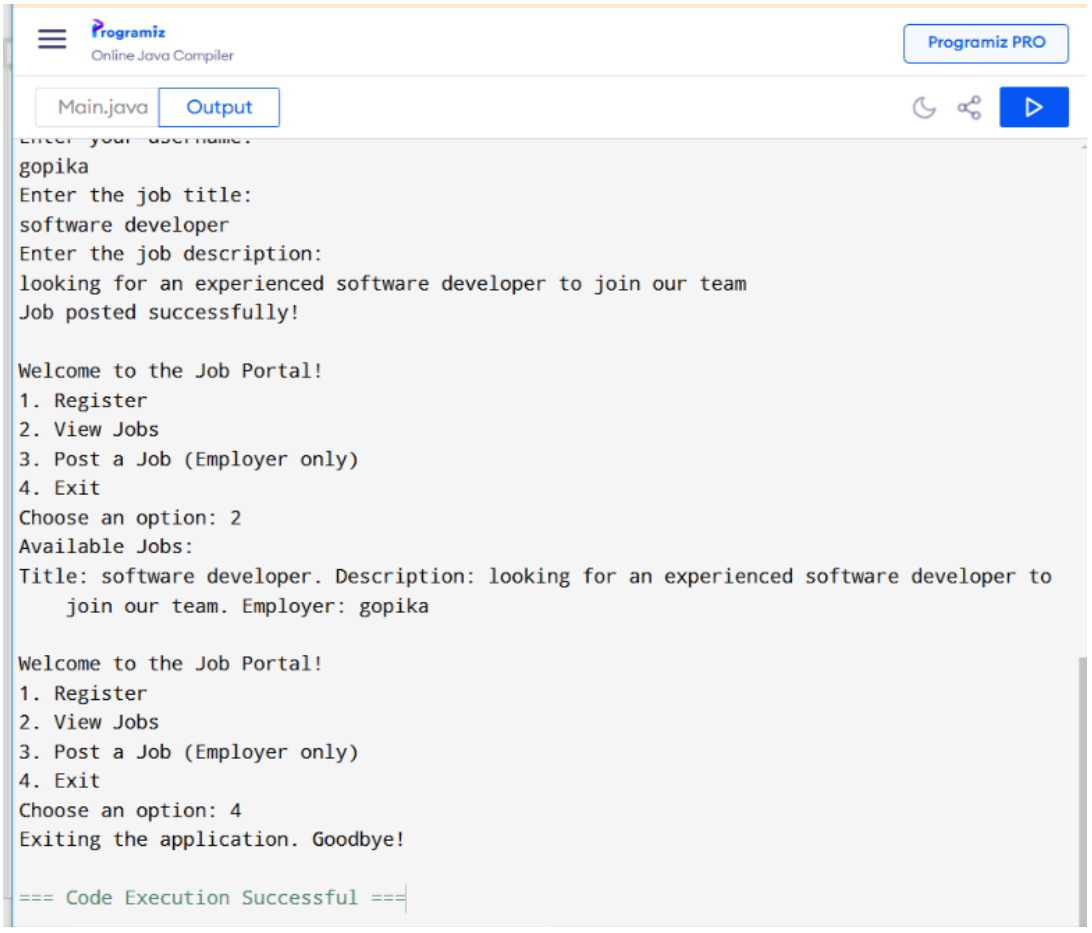
CHAPTER 4

RESULTS AND DISCUSSION




Programiz
Online Java Compiler
Programiz PRO
Main.java
Output
Welcome to the Job Portal!
1. Register
2. View Jobs
3. Post a Job (Employer only)
4. Exit
Choose an option: 1
Register as (seeker/employer):
seeker
Enter username:
srilekha
Enter password:
sri@123
Enter your resume:
B.E CSE(AIML) proficient in Java,C,python.good in problem solving and team work.
Enter your personal information:
mail id:srilekha@gmail.com
User registered successfully!
Welcome to the Job Portal!
1. Register
2. View Jobs
3. Post a Job (Employer only)
4. Exit
Choose an option: 2
Available Jobs:
No jobs available.


Programiz
Online Java Compiler
Programiz PRO
Main.java
Output
gopika
Enter the job title:
software developer
Enter the job description:
looking for an experienced software developer to join our team
Job posted successfully!
Welcome to the Job Portal!
1. Register
2. View Jobs
3. Post a Job (Employer only)
4. Exit
Choose an option: 2
Available Jobs:
Title: software developer. Description: looking for an experienced software developer to
join our team. Employer: gopika
Welcome to the Job Portal!
1. Register
2. View Jobs
3. Post a Job (Employer only)
4. Exit
Choose an option: 4
Exiting the application. Goodbye!
=== Code Execution Successful ===

CHAPTER 5

CONCLUSION

In conclusion, the Job Portal project serves as a fundamental example of how to implement a basic job listing and registration system using Java programming. By employing key concepts of object-oriented programming (OOP), such as classes, objects, and methods, this project showcases the creation of a user-driven system where job seekers and employers can interact with each other. The project consists of two main entities: the User class and the Job class. The User class is designed to store and manage user-related data, including the role of the user (either a job seeker or an employer), their credentials, and additional information like resumes for seekers. The Job class manages job listings posted by employers, capturing details such as the job title, description, and the employer's information. The system provides a simple user interface through the command line, where users can register, view jobs, and, for employers, post job opportunities. This structure effectively handles the core functionality of a job portal, with job seekers able to browse available job postings, while employers can create new listings.

APPENDIX

```
import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;

class User {
    String username;
    String password;
    String role; // Either "seeker" or "employer"
    String resume;
    String personalInfo;

    User(String username, String password, String role, String resume, String personalInfo) {
        this.username = username;
        this.password = password;
        this.role = role;
        this.resume = resume;
        this.personalInfo = personalInfo;
    }
}

class Job {
    String title;
    String description;
    String employer;

    Job(String title, String description, String employer) {
```

```
        this.title = title;
        this.description = description;
        this.employer = employer;
    }
}

public class Main {
    static List<User> users = new ArrayList<>();
    static List<Job> jobs = new ArrayList<>();

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        while (true) {
            System.out.println("\nWelcome to the Job Portal!");
            System.out.println("1. Register");
            System.out.println("2. View Jobs");
            System.out.println("3. Post a Job (Employer only)");
            System.out.println("4. Exit");
            System.out.print("Choose an option: ");

            int choice = Integer.parseInt(scanner.nextLine());

            switch (choice) {
                case 1:
                    registerUser(scanner);
                    break;

                case 2:
```

```
                viewJobs();

                break;

            case 3:
                postJob(scanner);
                break;

            case 4:
                System.out.println("Exiting the application. Goodbye!");
                scanner.close();
                return;

            default:
                System.out.println("Invalid choice. Please try again.");
        }
    }
}

private static void registerUser(Scanner scanner) {
    System.out.println("Register as (seeker/employer): ");
    String role = scanner.nextLine().toLowerCase();

    while (!(role.equals("seeker") || role.equals("employer"))) {
        System.out.println("Invalid role. Please enter 'seeker' or 'employer': ");
        role = scanner.nextLine().toLowerCase();
    }

    System.out.println("Enter username: ");
```

```
        String username = scanner.nextLine();
        System.out.println("Enter password: ");

        String password = scanner.nextLine();

        String resume = "";
        String personalInfo = "";

        if (role.equals("seeker")) {
            System.out.println("Enter your resume: ");
            resume = scanner.nextLine();

            System.out.println("Enter your personal information: ");
            personalInfo = scanner.nextLine();
        }

        users.add(new User(username, password, role, resume, personalInfo));
        System.out.println("User registered successfully!");
    }

    private static void viewJobs() {
        System.out.println("Available Jobs:");
        if (jobs.isEmpty()) {
            System.out.println("No jobs available.");
        } else {
            for (Job job : jobs) {
                System.out.println("Title: " + job.title + ". Description: " + job.description + ".
Employer: " + job.employer);
                } }
```

```
 private static void postJob(Scanner scanner) {

    System.out.println("Enter your username: ");
    String username = scanner.nextLine();

    User user = findUserByUsername(username);

    if (user != null && user.role.equals("employer")) {
        System.out.println("Enter the job title: ");
        String title = scanner.nextLine();
        System.out.println("Enter the job description: ");
        String description = scanner.nextLine();
        jobs.add(new Job(title, description, user.username));
        System.out.println("Job posted successfully!");
    } else {
        System.out.println("You must be an employer to post a job.");
    }
 }
 private static User findUserByUsername(String username) {
    for (User user : users) {
        if (user.username.equals(username)) {
            return user;
        }
    }
return null;
 }
```

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