iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 14 **Issue:** V **Month of publication:** May 2026

DOI: https://doi.org/10.22214/ijraset.2026.81725

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue V May 2026- Available at www.ijraset.com

Design and Implementation of a Web-Based Job Portal System Using ASP.NET Core MVC

Sneha Verma[1], Shivani Kumari[2], Shilpi Kumari[3], Giri Tanya[4], Mr. Niraj Singh[5]
[1, 2, 3, 4]*B.Tech Final Year, Dept. Of Computer Science and Technology, AIMT Lucknow, India*
[5]*Asst. Professor, Dept. of Cs, AIMT Lucknow*

Abstract: ***The rapid advancement of web technologies has significantly transformed recruitment processes. Traditional hiring methods are often inefficient, time-consuming, and lack centralized management. This paper presents the design and implementation of a web-based job portal system developed using ASP.NET Core MVC and Entity Framework Core. The system enables employers to post job vacancies and job seekers to search and apply efficiently. In addition, this research includes a detailed literature survey of existing job portal systems, analyzing their architecture, features, and limitations. The proposed system focuses on scalability, usability, and efficient data handling. The results demonstrate improved performance in job search and application tracking compared to traditional methods. The system can be further enhanced with advanced features such as AI-based recommendations and resume parsing.***

Keywords: Job Portal, Web Application, ASP.NET Core MVC, Recruitment System, Literature Survey, Entity Framework Core

I. INTRODUCTION

In the modern digital era, the internet has become a primary medium for recruitment. Organizations increasingly rely on online job portals to advertise vacancies and manage applications. Job seekers prefer online platforms due to ease of access and faster response times. Traditional recruitment processes involve manual handling of resumes, physical applications, and limited reach. These methods are inefficient and prone to errors. Web-based job portal systems address these issues by providing a centralized platform for job management. This research focuses on analyzing existing job portal systems and designing a scalable and efficient web-based solution using ASP.NET Core MVC framework.

II. LITERATURE REVIEW

Several studies have explored the development of web-based job portal systems and recruitment platforms. Research indicates that most modern job portals use MVC architecture to ensure separation of concerns, which improves maintainability and scalability.
Technologies such as ASP.NET, Java Spring, and PHP frameworks are commonly used.
Existing platforms provide key features such as :

- Job posting
- Job search
- Application submission

However, literature highlights several limitations:

- Lack of advanced filtering mechanisms
- Limited personalization
- Poor user interface design in some systems
- Inefficient handling of duplicate applications

Studies also emphasize the importance of database management systems such as SQL Server and MySQL for handling large datasets.
This research aims to overcome these limitations by implementing an efficient and user-friendly system.

III. PROBLEM STATEMENT

Traditional recruitment systems suffer from inefficiencies such as manual processing, lack of centralized data storage, and limited accessibility. Existing online systems also face issues related to scalability, filtering, and user experience.
There is a need for a web-based system that provides efficient job search, application tracking, and easy management of job data.

©IJRASET: All Rights are Reserved

IV. OBJECTIVES

The main objectives of this research are:

1) To analyze existing job portal systems
2) To design a web-based job portal system
3) To implement efficient search functionality
4) To manage job applications effectively
5) To improve user experience and system performance

V. SYSTEM DESIGN AND METHODOLOGY

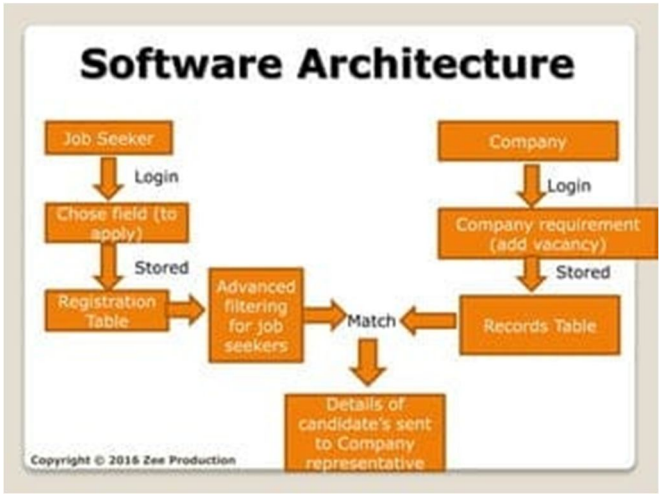
A. Architecture Overview

The system follows the MVC (Model-View-Controller) architecture:

1) Model: Represents data (Job, Application)
2) View: Handles user interface
3) Controller: Manages business logic

This architecture ensures modular design and easy maintenance.

Fig. 1: Job portal System Architecture



B. Technology Stack

1.	Frontend: HTML, CSS, Bootstrap
2.	Backend: ASP.NET Core MVC (C#)
3.	Database: SQL Server
4.	ORM: Entity Framework Core

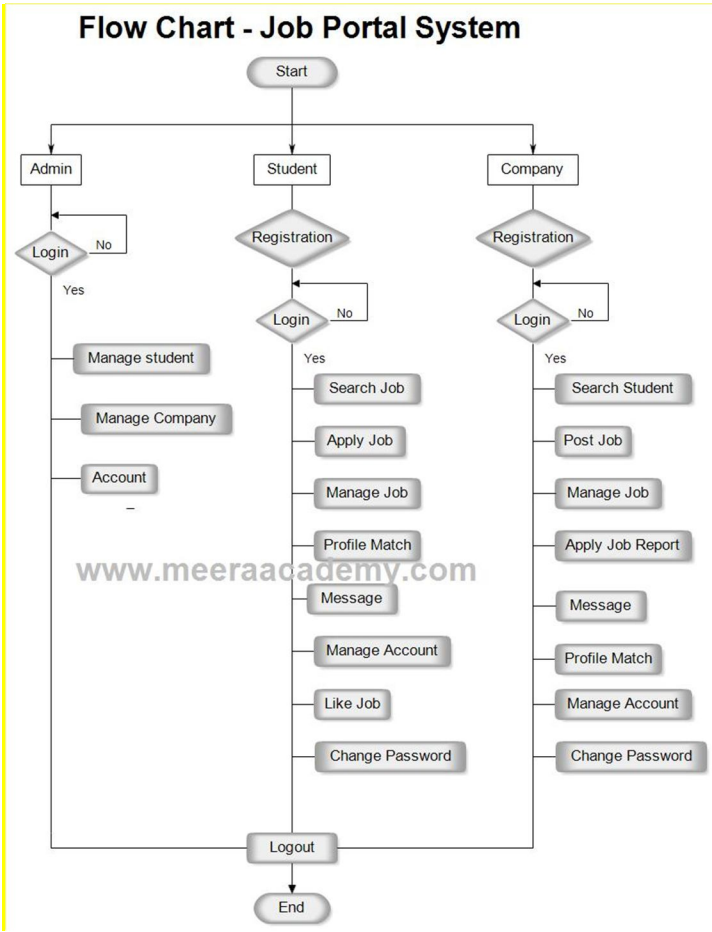
C. Workflow

1) User opens the application
2) Jobs are displayed from database
3) User searches jobs
4) User applies for a job
5) Data is stored in database
6) User views applied jobs

The workflow of the proposed job portal system describes the sequence of operations performed by the user and the system. The process begins when the user accesses the application through a web browser. The system retrieves available job listings from the database and displays them on the homepage.

The user can search for jobs using keywords, which are processed by the system to filter relevant results. Upon selecting a job, the user proceeds to apply by submitting the required details. The application data is then validated and stored in the database.
After successful submission, the user can view all applied jobs through the "My Applications" section. This workflow ensures efficient job search and application management

Fig. 2: Data Flow Diagram — Job portal system Information Flow



VI. SYSTEM DESIGN

A. Module

The system consists of the following module

1) Job Module

- Add job
- Edit job
- Delete job
- View jobs

2) Application Module

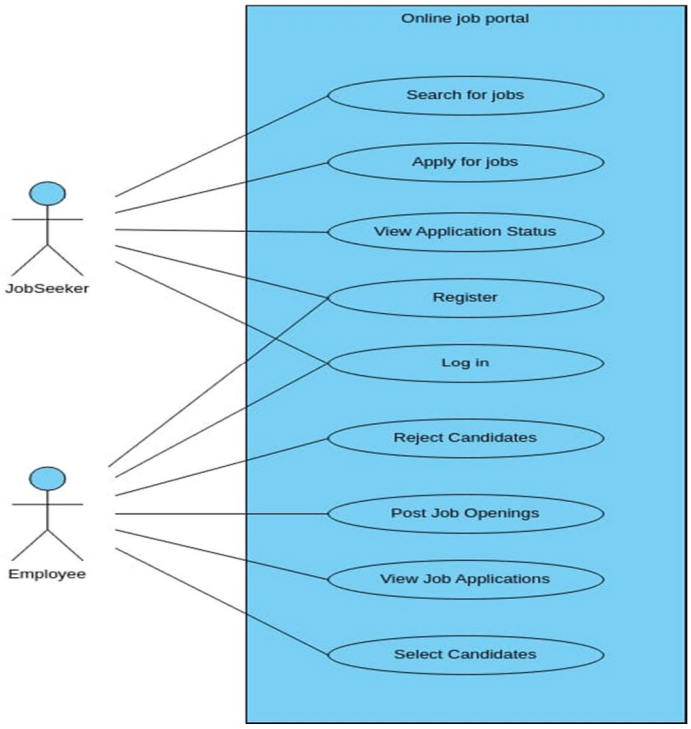
- Apply for job
- Store application

3) Search Module

- Search jobs using keywords

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue V May 2026- Available at www.ijraset.com

Fig. 3 : Use case Diagram — Job portal system



B. Database Design

The database includes:

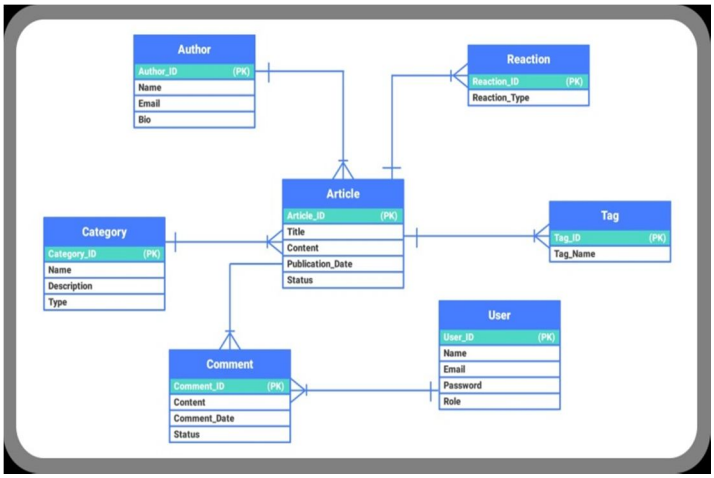
Jobs Table

- JobId (Primary Key)
- Title
- Company
- Description

Applications Table

- AppId (Primary Key)
- JobId (Foreign Key)
- ApplicantName

Fig. 4 : ER-Diagram — Job portal system



©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue V May 2026- Available at www.ijraset.com

VII. IMPLEMENTATION

A. Job Management

Admin users can create, update, and delete job postings.

B. Job Search

Users can search jobs using keywords. The system filters results using LINQ queries.

C. Job Application

Users can apply for jobs. The system:

- Stores application data
- Prevents duplicate applications

D. Notificaton System

Displays messages like:

- “Applied Successfully”
- “Already Applied”

VIII. RESULTS AND DISCUSSION

The developed system provides:

1) Faster job search
2) Efficient data storage
3) Improved user interface
4) Accurate application tracking

Compared to manual systems, the proposed system significantly reduces time and effort.

IX. COMPARATIVE ANALYSIS

Feature	Traditional System	Existing Portal	Proposed System
Job Search	Manual	Basic	Advanced
Application Tracking	No	Limited	Efficient
UI	Poor	Moderate	User-Friendly
Duplicate Handling	No	No	Yes

©IJRASET: All Rights are Reserved

X. RESEARCH GAP

The literature survey reveals that many existing systems lack:

1) Advanced filtering
2) Personalized job recommendations
3) Efficient duplicate application handling

This research addresses these gaps by implementing a structured and scalable solution.

XI. FUTURE SCOPE

The system can be enhanced with:

1) AI-based job recommendations
2) Resume upload feature
3) User authentication
4) Email notifications
5) Advanced filtering system

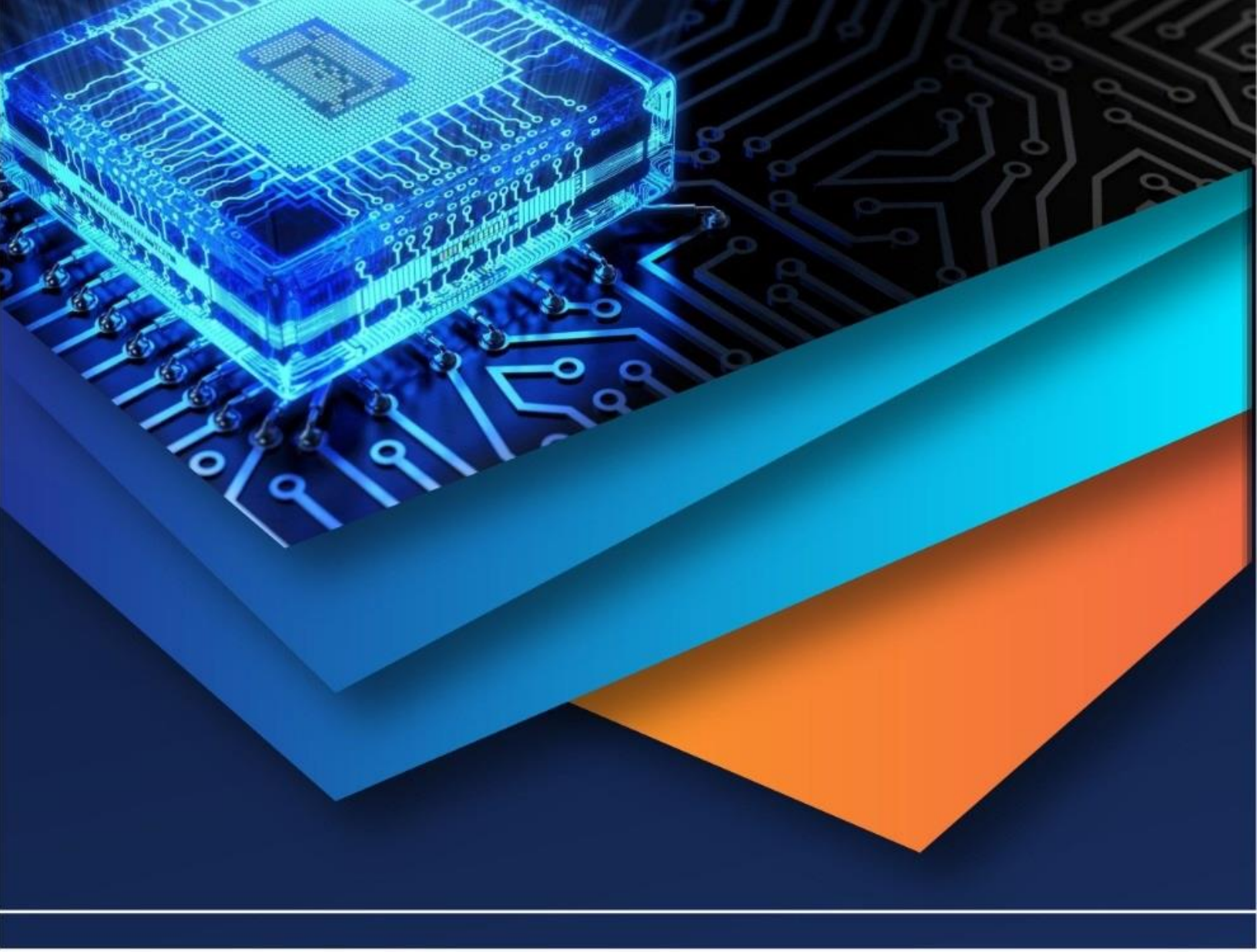
XII. CONCLUSION

This research presents the design and implementation of a web-based job portal system using ASP.NET Core MVC. The system successfully improves recruitment efficiency by providing a centralized and user-friendly platform. The use of modern technologies ensures scalability and maintainability. Future enhancements can further improve system capabilities.

REFERENCES

[1] Microsoft Docs – ASP.NET Core
[2] Sommerville, Software Engineering
[3] Pressman, Software Engineering: A Practitioner's Approach
[4] Online Job Portals (LinkedIn, Naukri)

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)