International Journal of Research and Development in Engineering Science
ISSN: 2582 - 4201(Online) , http://www.ijrdes.com/
Regular Issue, Vol. 7, Issue. 4 (July – August), 2025 , Pages: 31 – 38
Received: 28 October 2024 ; *Accepted:* 14 May 2025 ; *Published:* 12 August 2025
https://doi.org/10.63328/IJRDES-V7RI4P6
Original Paper : Causal Research – Problem-Solution Research Paper

Smart Hire : A Platform To Bridge Freelancers and Software Projects

K.S Jayanth

Mohan Babu University, Tirupati , Andhra Pradesh India;

**Corresponding Author:* jayanthk7824@gmail.com

Abstract: This project is an interactive job and internship portal developed using the MERN stack with custom Admins, Jobseekers/Students, and Recruiters/Companies modules. The portal has been designed to transform the recruitment industry by eliminating the inefficiencies of the conventional recruitment procedures and creating a hassle-free, user-friendly portal. By incorporating advanced features like individualization-based job suggestions, web-based testing, and live application status, the portal provides maximum convenience and transparency to all the stakeholders. Admin module provides a good group of admin features with functionality to enable recruiters to control recruiter activity, user registrations, and job postings. This has the advantage of data integrity, system security, and simplicity of platform functions. Job candidates, via the User module, can establish extensive profiles, find the right job by qualification, and be suggested by skill and interest level. They can also attempt online tests organized by the recruiters, inquire about the application status, and receive real-time feedback on their performance during the recruitment procedure. The Recruiter module aids organizations in job posting functionalities, designing and administering web-based tests, and efficiently screening candidate resumes. Test scores and candidate qualifications are now utilized by recruiters to make the hiring decision, making the recruitment process more streamlined. Development was carried out through a platform incorporating MERN stack that combines MongoDB with Express.js and React.js and Node.js —such a setting supports the latest web technology in delivering optimum performance, scalability, and interfaces. It tackles the diversity of recruiter and applicant requirements through abilities such as recommendations based on skill and web tests that simplify recruitment and make the process more streamlined. The project not only meets the requirement of filling the gap for end-to-end recruitment but also raises the challenge of compliance with next-gen technology in next-gen recruitment trends.

Keywords: Admin, Jobseeker/Student, Recruiter/Company, MERN Stack, Online Assessments.

1. Introduction

There are several challenges that impede the recruitment teams and employment hunters to make their hiring processes better in the current competitive employment selection environments. As an antidote to the challenges, Leveraging the MERN stack the project developed an interactive platform to make hiring processes easier for firms and job seekers via the Mongo DB, Express.js, React.js, Node.js framework. The site employs three main modules: The application employs three distinct sections: Admin, Jobseeker/Student and Recruiter/Company to meet the specific user requirements. Admin module provides effective administration of the system, such as monitoring recruiter activity, job postings, and user registration. Job seekers, employing the User module, are able to post their profiles, search for a job based on skills, apply for a job, and track application status.

In addition to this , the site employs job recommendations and live and online testing available so that candidates can show skills through taking standardized tests. From the employer's standpoint, employers will be able to post job openings, create and send tests to applicants, and view candidate profiles and test results. Recruiters will have the ability to make employment decisions based on test performance and other metrics of applicants. With online examination, application status, and job recommendations according to personal interests, this project will strive to streamline the recruitment and job application process to be quicker, with a smooth, seamless, and simple experience for everyone.

ISSN: 2582 - 4201(Online) , http://www.ijrdes.com/ , IJRDES, Vol. 7, Issue 4, 2025 , https://doi.org/10.63328/IJRDES-V7RI4P6

1.1. Problem Statement

The current recruitment process is most often ineffective, time-consuming, and transparent, which results in inefficient job matching as well as inefficient interaction between the employers and the employees. There needs to be an end-to-end solution that provides personal recommendations, online tests, and immediate feedback in order to improve the recruitment process and make it efficient as well as easy to use.

1.2. Objective Of The Project

The most important task of this project is the designing phase to develop a job portal from which there will be seamless interaction between job seekers, recruiters, and admins. The portal would streamline the recruitment process by providing functionality such as personal job suggestion, online tests, and application tracking, and thus enhancing efficiency and user experience for all

1.3. Scope

The goal of the project is to build an online hiring system for admins, recruiters, and job seekers. It makes the process feature-enabled like suggesting jobs based on skills, practicing tests, and monitoring job applications in real time. The system will be giving an effective and convenient solution for the recruiters, job seekers, and administrators at the time of hiring.

1.4. Motivation

This project addresses loopholes in traditional workforce hiring procedures that fail to meet inefficient candidate-job matching, no real-time tracking, and ineffective candidate screening. With the aid of modern technologies and an integrated platform with a holistic solution, this project aims to simplify and streamline the recruitment process for both job seekers and recruiters and eventually contribute to better employment prospects and hiring efficiency.

2. Literature Survey

2.1. Related Work

Gasparėnienė, L., Matulienė, S., Žemaitis, E. (2021): This study on the "Opportunities of Job Search through Social Media Platforms and its Development in Lithuania" highlights the growing use of platforms like LinkedIn for job searches. It discusses how these platforms enable personalized recommendations but also raise concerns over privacy and limited feedback for job seekers. The study's findings reflect the transition from traditional job-seeking methods to social media-centric approaches in Lithuania, offering recommendations for enhancing these platforms.

Opportunities of Job Search through Social Media Platforms and its Development in Lithuania.

Outcome: The study discusses the emergence of social media platforms such as LinkedIn in the job searching scenario. It emphasizes the feature that these sites offer wider outreach and networking and provide job seekers with personalized job suggestions.

Limitations: The research identifies data privacy issues and no candidate feedback when an application is rejected.

Hamdane, A., Belhaj, N., El Hamdaoui, H., El Bekkali, M. (2022), Big Data Based Architecture to Bringing Together In their work on "Big Data Based Architecture for Connecting Graduates and Recruiters in Morocco," the authors propose a system leveraging advanced analytics to bridge the gap between university graduates and potential employers. While efficient in connecting job seekers and recruiters, they point out the high computational costs and data security concerns as key challenges.

Recruiters and Graduates: Moroccan University Case. Result: The paper suggests an architecture for big data that can efficiently match the recruiters with graduates. The paper employs complicated analytics by redesigning candidates to proper jobs according to interests and background.

Drawbacks: Significant drawbacks are the cost of computations utilized in handling real-time data as well as the security of big data sets.

Kendle, A. S., Nagare, M. S., Patre, H. G., Zanwar, R. S. (2022)., Training and Placement Cell ERP System for Institutions of Learning.

Outcome: The paper suggests implementing an ERP system to automate the placement process in institutions of learning. It illustrates how the system assists in uploading student details, monitoring applications, and gives the power to recruiters for posting job notices and following up on candidates.

Disadvantages: The system faces challenges in scaling, handling big data, and giving seamless student-recruiter interaction during high usage.

Hamdane, A., Belhaj, N., El Hamdaoui, H., El Bekkali, M. (2022), In their work on "Big Data Based Architecture for Connecting Graduates and Recruiters in Morocco," the authors propose a system leveraging advanced analytics to bridge the gap between university graduates and potential employers. While efficient in connecting job seekers and recruiters, they point out the high computational costs and data security concerns as key challenges.

Heggo, I. A., Abdelbaki, N. (2018), Hybrid Information Filtering Engine for Personalized Job Recommender System. The study on a Hybrid Information Filtering Engine for Personalized Job Recommender Systems

ISSN: 2582 - 4201(Online) , http://www.ijrdes.com/ , IJRDES, Vol. 7, Issue 4, 2025 , https://doi.org/10.63328/IJRDES-V7RI4P6

presents a blend of content-based and collaborative filtering techniques to enhance job recommendations. Despite its success in reducing irrelevant job offers, the computational intensity of this hybrid approach is a significant drawback.

Outcome: The paper suggests a hybrid filtering mechanism by using content-based and collaborative filtering to provide personalized job recommendations. It reduces the amount of job postings presented to users, which are not relevant, significantly.

Disadvantages: The hybrid method is often computationally expensive and thus time-consuming to provide recommendations, particularly in big data.

Kaur, D., Kaur, R. (2023): The paper examines the role of Electronic Word-of-Mouth (eWOM) in influencing the adoption of e-recruitment platforms. It underscores how positive reviews increase platform credibility, although managing fake or biased reviews remains a challenge in maintaining user trust.

Does Electronic Word-of-Mouth Affect E- Recruitment Adoption?

Outcome: This article examines how e-recruitment websites gain from electronic word-of-mouth (eWOM). Positive comments regarding sites enhance their reputation, and thus they become more appealing to recruiters and candidates alike.

Drawbacks: The issue still lies in managing false or biased comments, which may result in mistrust of the site.

Hamdane, A., Belhaj, N., El Hamdaoui, H., El Bekkali, M. (2022): This paper titled "Big Data Based Architecture to Bringing Together Graduates and Recruiters: Case of Moroccan University" explores how big data is being utilized to connect graduates with recruiters efficiently. It highlights the challenges of real-time data analysis and data security.

Ghanouane, K., & Benkaraache, T. (2024): The study "Big Data Education Landscape for Graduates in Morocco: Insights from 2022 Offerings" analyzes the education programs in Morocco focused on big data. It emphasizes the need to balance technical skills like programming with functional skills like communication and change management.

Heggo, I. A., Abdelbaki, N. (2018): This research on a "Hybrid Information Filtering Engine for Personalized Job Recommender System" provides a solution for personalized job recommendations using both content-based and collaborative filtering. The system reduces irrelevant job suggestions but faces computational intensity challenges.

Khlebarodava, H., & Remeikiene, R. (2021): This article "Opportunities of E-recruitment through Social Media Platforms and its Development in Lithuania" reviews the growing role of social media in job searches. It explores both the benefits of democratized access to job listings and the privacy concerns users face.

MassHire JobQuest (2024): The MassHire JobQuest system has been a crucial tool for job seekers in Massachusetts, offering features like skill matching, job recommendations, and career planning to help users navigate the job market more effectively.

Implementation: Admin Module: Admin module provides admin a whole interface to operate the job portal for efficient working. The admins can view the registered users, companies, and live job postings. Even the admins have the luxury of tracing and applying data integrity throughout the system for smooth and efficient working.

User Module (Student/Job Seeker): User module facilitates job seekers and students to register on the portal, create user profiles, and login for applying suitable jobs according to the skill of users.

The system suggests jobs according to the skill of users to make the recruitment more efficient. Apart from that, users are even enabled to apply for a job, conduct virtual tests, view application status, and view their present status.

Recruiter Module (Company): The Recruiter module allows firms to register themselves and log onto the portal. Recruiters are able to input job specification for a position, post a new job posting, and define online tests (MCQs) for recruits. They can view candidate resumes, view performance analysis, and take a recruitment decision by rejecting or accepting a candidate on their performance and educational qualification.

Suggested Method: In this, a web-based job portal using the MERN stack, i.e., recruiter, job seeker, and admin modules, is suggested.

The system gives job recommendations according to the user skills, allows recruiters to develop online tests, and offers job seekers virtual tests. It offers real-time job application tracking, thereby making the interaction between recruiters and job seekers efficient.

The platform is designed to enhance efficiency, transparency, and overall user experience in the recruitment process.

ISSN: 2582 - 4201(Online) , http://www.ijrdes.com/ , IJRDES, Vol. 7, Issue 4, 2025 , https://doi.org/10.63328/IJRDES-V7RI4P6

2.2. Work Flow of Proposed System

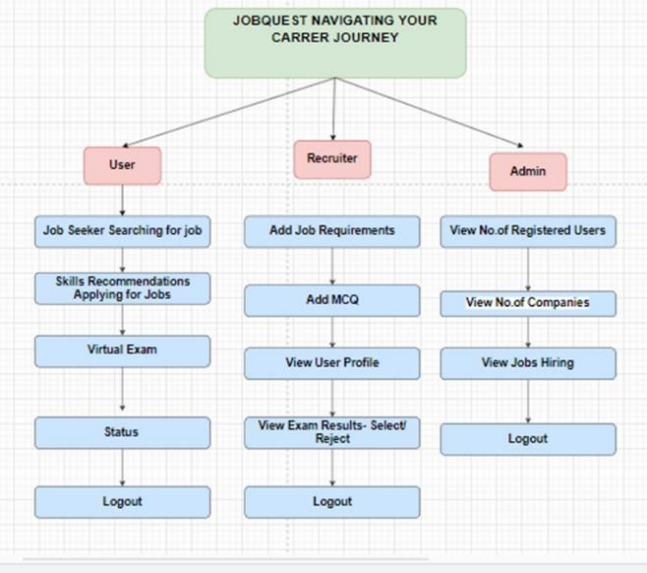

Fig.1

Admin Module: In the above fig-1

Admin can log in securely to the system.

- The administrative page enables viewing and controlling the registered user database.
- Admin has access to view and handles registered company lists.
- Admin can view and monitor active job postings.
- Admin has the ability to remove inappropriate content (job postings or user profiles).
- Admin can monitor the integrity of data across the system (e.g., ensure correct user-job relationships).
- Admin can generate reports on the number of registered users, companies, and jobs.

User Module (Jobseeker/Student): In the above fig-1

- Users can register by providing personal and professional details.
- Users can log in with valid credentials.
- Users can create and edit their profiles (including adding qualifications, skills, and experience).
- Users can search for jobs based on their skills, experience, and location preferences.
- Users receive skill-based job recommendations.
- Users can apply for job postings.
- Users can participate in virtual exams (such as MCQs) as part of the recruitment process.
- Users can view the status of their job applications.
- Users can track their progress in real time (application status, interview, and offer status).

Recruiter Module (Company): In the above fig-1

- Recruiters can register and log in with a company profile.
- Recruiters can post new job openings and update job details.
- Recruiters can create online assessments, such as MCQs, for applicants.
- Recruiters can view user profiles (candidates who have applied).
- Recruiters can evaluate the results of virtual exams.
- Recruiters can accept or reject candidates based on exam results and profiles.

Recruiters can communicate with applicants regarding interview schedules or offer letters.

System Design and Architecture

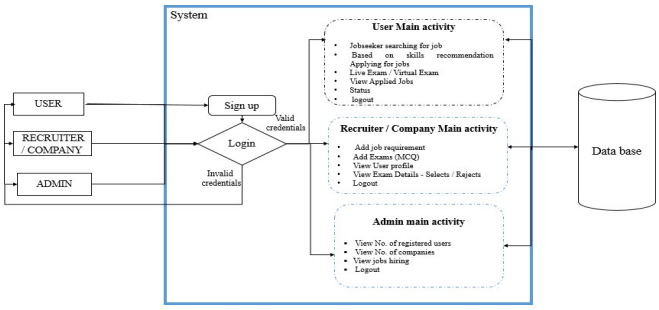

Fig-2

2.3. Introduction of Input Design

In an above fig-2 information system, input is the raw data Information systems of above fig-2 interpretation yield output through processing unprocessed inputs. When developing input design developers need to evaluate what input devices such as PC, MICR, OMR and others will receive information.

System input quality directly affects the resulting quality of system output. Several essential characteristics characterize well designed input forms and screens including –

- The application needs to execute vital functions including information storage and recording in addition to database retrieval.
- Correct and precise completion outcomes are obtained through this method.A simple form design should both be easy to complete along with being straightforward in nature.
- It should be easy to fill and straightforward.
- The design approach must prioritize three elements: maintenance of user attention and consistent style with self-explanatory simplicity.
- Ruling system design elements with basic knowledge grants fulfillment of these three objectives while defining system input specifications.?

The reactions of end users toward various form and screen components.

2.4. Objectives for Input Design:

The primary goals of designing input processes include –

- Development of data entry systems along with related procedures constitutes the main goal of this process. design data entry and input procedures

ISSN: 2582 - 4201(Online) , http://www.ijrdes.com/ , IJRDES, Vol. 7, Issue 4, 2025 , https://doi.org/10.63328/IJRDES-V7RI4P6

- The creation of data capture tools through source document planning and alternative data capture strategy development serves as this activity's objective. other data capture methods
- Modeling input forms, data entry screens and user interface elements and visual presentation becomes a key responsibility.
- The development of effective input control systems and validation checks must be implemented.

Output Design: Any system's success depends heavily on designing appropriate output features. System developers determine necessary output types during development and design appropriate output controls alongside prototype reporting interfaces during this phase.

2.5. Objectives of Output Design

The objectives of input design are:

- The development of output design must follow a purposeful creation path which removes unnecessary output from production.
- The team should create output designs which fulfill user requirements.
- The organization needs three things to deliver correct output quantities.
- The process transforms output into proper formats which are routed to appropriate recipients. propriate format and direct it to the right person.
- The availability of timely-generated results helps decision-making processes.

3. Results

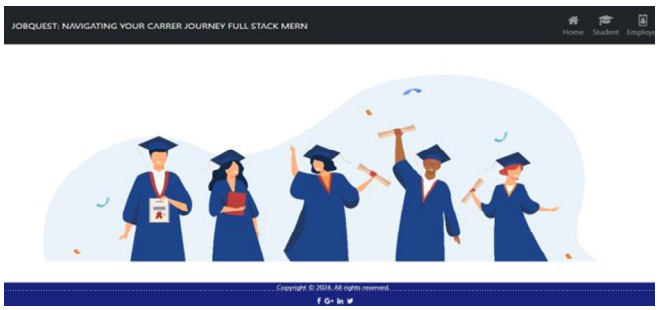

Fig.1

Landing Page : The fig.1 When the Execution started this is the landing page.

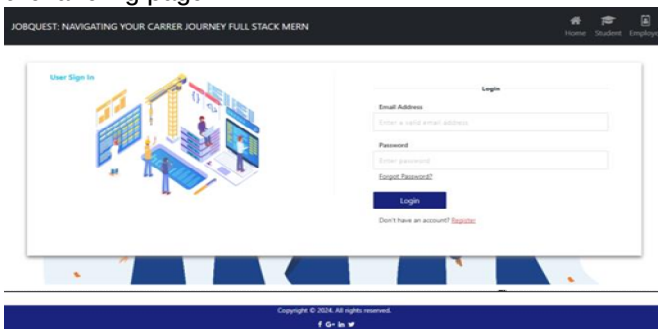

Fig.2

User login page : The fig.2 This is the user login page the registered user can login.

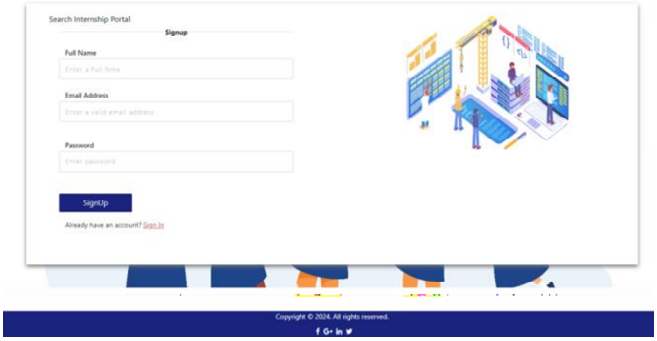

Fig.3

User Register page : The fig.3 This is the user register page here users can be registered and can login.

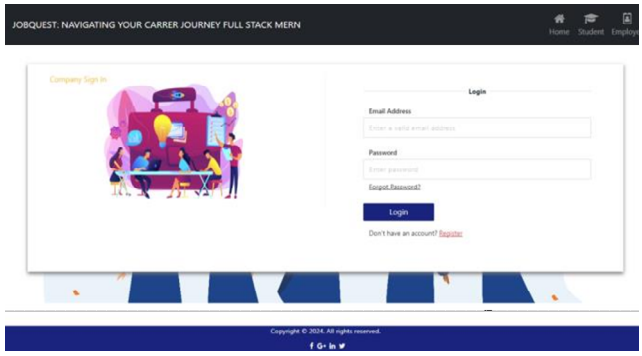

Fig.4

Employer login page : The fig.4 This is the employer login page here the registered employers can login.

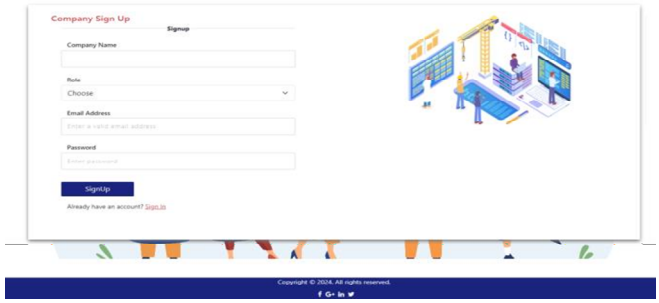

Fig.5

Employer Register page : This is the employer register page here the employers can register.

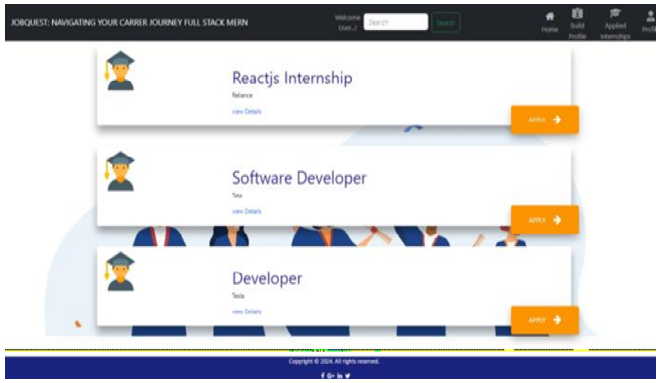

Fig.6

ISSN: 2582 - 4201(Online) , http://www.ijrdes.com/ , IJRDES, Vol. 7, Issue 4, 2025 , https://doi.org/10.63328/IJRDES-V7RI4P6

User landing page : The fig.6 this is the user page after successful login.

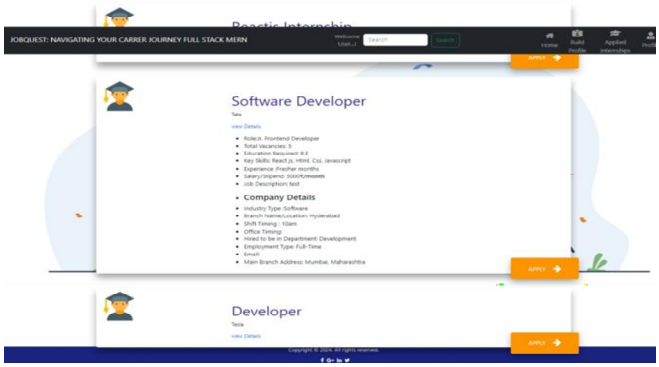

Fig.7

User Page : The fig.7 this is the user page after successful login. The internship details will be displayed.

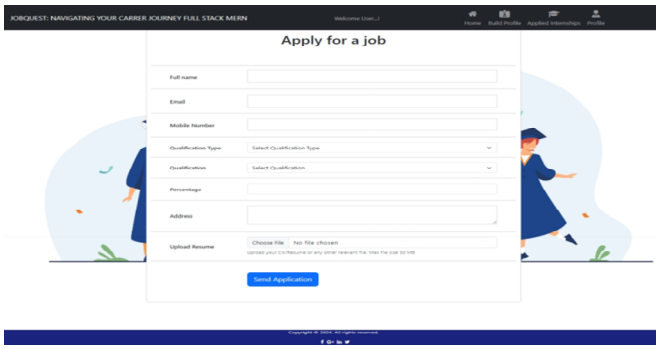

Fig.8

User apply page : The fig.8 In this page the user can apply for a job.

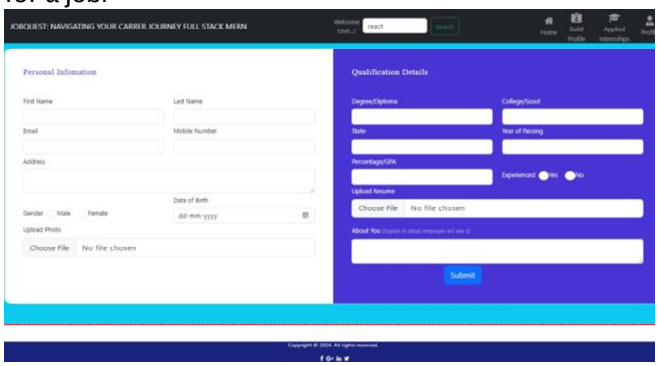

Fig.9

User personal page : The fig.9 In this the user will add the personal details of name, email and phone numbers, qualification details etc..

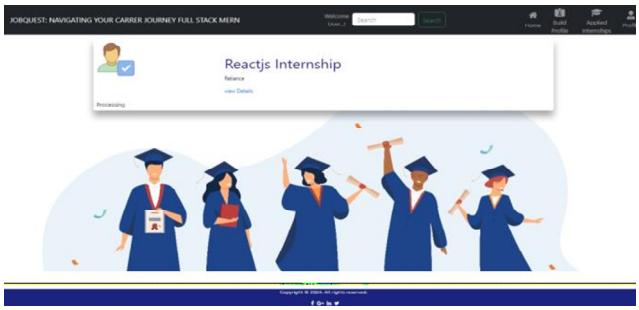

Fig.10

User apply page : The fig.10 In this the applied internship details will be displayed here.

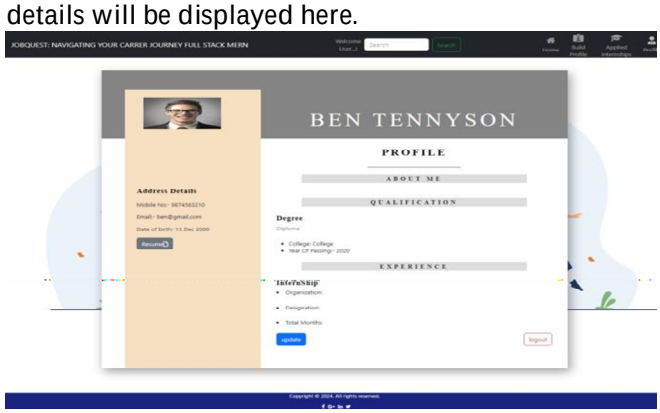

Fig.11

User profile page : The fig.11 In this after adding all the personal details a profile will be created and displayed in profile page.

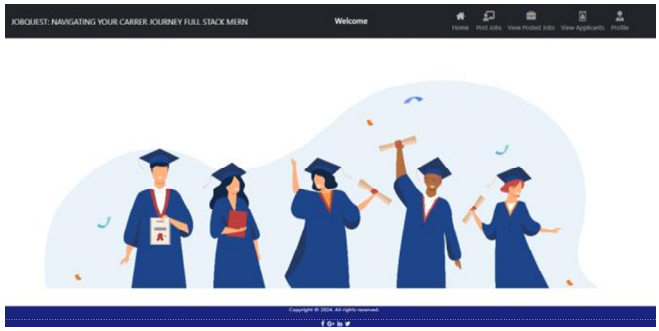

Fig.12

Employer landing page : The fig.12 this is the employer page after successful login.

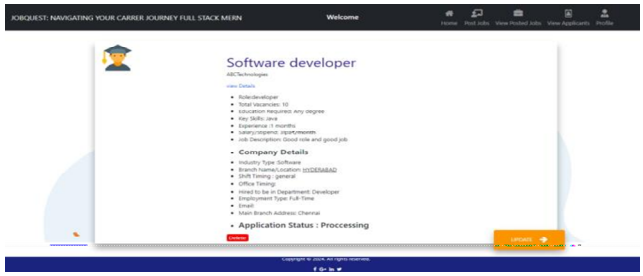

Fig.13

Employer recruitment page : The fig.13 In this is the employer will add the recruitment details of company details and role,location,salary etc..

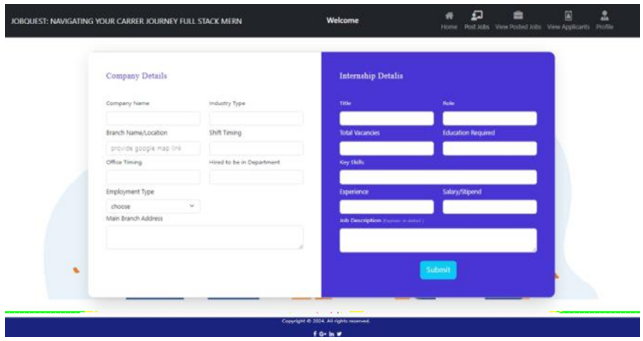

Fig.14

ISSN: 2582 - 4201(Online) , http://www.ijrdes.com/ , IJRDES, Vol. 7, Issue 4, 2025 , https://doi.org/10.63328/IJRDES-V7RI4P6

Employer recruitment details page : The fig.14 in this the added hiring details of a company will be displayed.

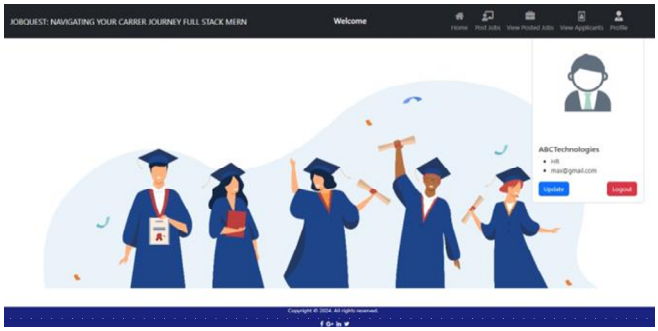

Fig.15

Employer profile page : The fig.15 this is the employer profile page.

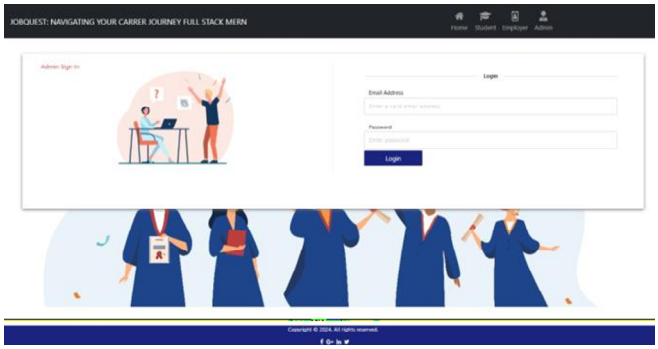

Fig.16

Admin login page : The fig.16 this is the admin login page.

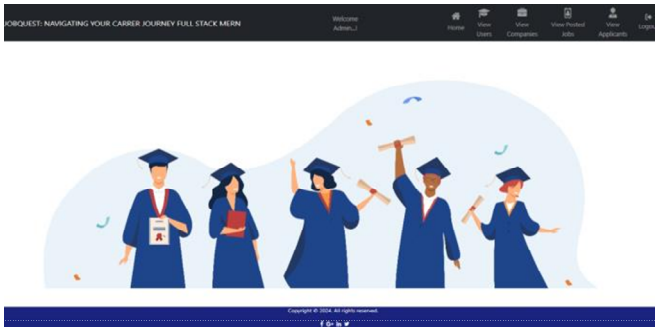

Fig.17

Admin landing page : The fig.17 this is the admin landing page after successful login.

Fig.18

Admin view users page : The fig.18 In this admin can view the registered users .

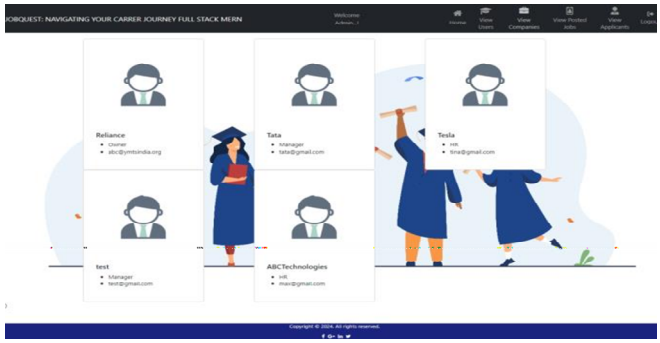

Fig.19

Admin view company page : The fig.19 In this the admin can see the registered companies.

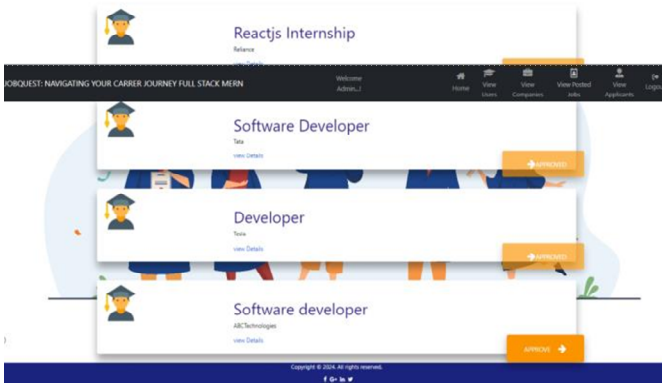

Fig.20

Admin Job posts page : The fig.20 In this the admin can see the posted jobs.

Fig.21

Admin Job posts page : The fig.21 In this the admin can see the posted jobs with company details , roles and responsibilities and can approve.

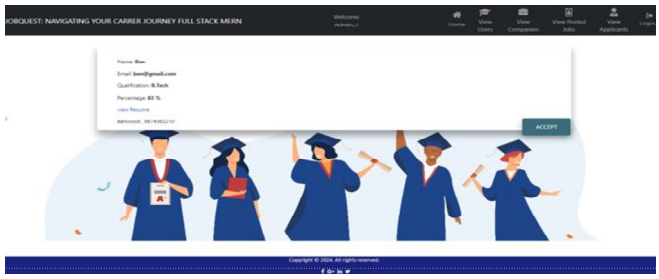

Fig.22

Admin applicants page : The fig.22 In this the admin can see the applicants and can accept them.

ISSN: 2582 - 4201(Online) , http://www.ijrdes.com/ , IJRDES, Vol. 7, Issue 4, 2025 , https://doi.org/10.63328/IJRDES-V7RI4P6

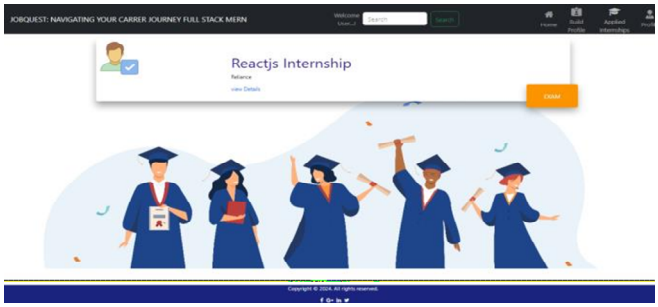

Fig.23

User applied page : The fig.23 In this the user applied job will be displayed and after the approval the user should attempt a exam conducted by company.

Fig.24

User exam page : The fig.24 In this the user applied job will be displayed and after the approval the user should attempt a exam conducted by company and exam page will be displayed.

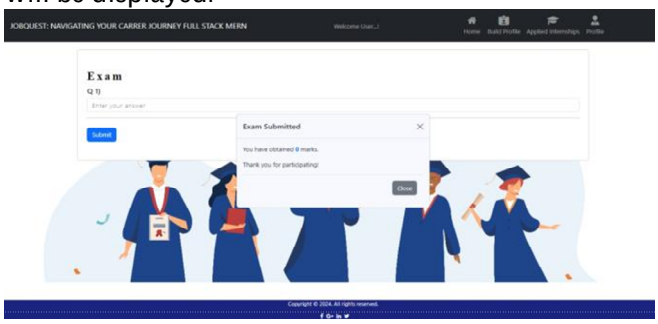

Fig.25

User applied page : The fig.25 In this after completing the exam a popup will be displayed as submitted successfully.

4. Conclusion and Future Scope

4.1. Conclusion

This is, in general, an interactive career and internship portal, designed on the MERN stack, providing an extensive and efficient platform for both the recruiters and the job seekers. Due to its simplicity in providing important features such as job searching, handling the recruitment, tracking the jobs applied, and user signing up, the system provides an effortless experience to all. Job applicants can browse, apply and find a job based on qualification levels, give tests, and track their application status, while hiring managers are able to post jobs easily, design exams, and filter job applicants. Admin module maintains the system organized and updated at all times. With its simplicity and offering such beneficial features like job recommendations, instantaneous testing, and application upgrade, this career site makes employment finding easier, simplifies hiring, and thereby becomes a worthy utility for employees as well as employers.

4.2. Future Enhancement

Future enhancement for this An interactive job and internship website may include the incorporation of newer features and technologies to take the user interface to another level and make the hiring process even simpler. An integration of various machine learning algorithms may be one of the key updates to provide job suggestions and candidate matching more effectively. Through user profile analysis, employment history, and application, the system could suggest jobs that are closer to a candidate's ability and interest, increasing relevance. The portal can also leverage AI-driven chatbot to assist users in answering repetitive questions, guide them through the applications, and search for jobs, at 24/7 and with less human agent intervention. One of the potential upgrades can be the inclusion of video interview functionality, in that remote interviews are a platform feature. Not only is it time-saving, but it also enables companies to test candidates remotely without the cost of travel. Also included on the platform are the tools that recruiters use to gauge candidate performance with live coding challenge, collaborative whiteboard, and behavior testing, once more making the hiring process better.

References

[1]. L. Gasparėnienė, S. Matulienė, and E. Žemaitis, "Opportunities of job search through social media platforms and its development in Lithuania," 2021.
[2]. A. Hamdane, N. Belhaj, H. El Hamdaoui, and M. El Bekkali, "Big data based architecture for connecting graduates and recruiters in Morocco," 2022.
[3]. A. S. Kendle, M. S. Nagare, H. G. Patre, and R. S. Zanwar, "ERP system for automating the placement process in educational institutes," 2022.
[4]. I. A. Heggo and N. Abdelbaki, "Hybrid information filtering engine for personalized job recommender systems," 2018.
[5]. D. Kaur and R. Kaur, "Role of electronic word-of-mouth (eWOM) in influencing adoption of e-recruitment platforms," 2023.
[6]. A. Hamdane, N. Belhaj, H. El Hamdaoui, and M. El Bekkali, "Big data based architecture to bringing together graduates and recruiters: Case of Moroccan university," 2022.
[7]. K. Ghanouane and T. Benkaraache, "Big data education landscape for graduates in Morocco: Insights from 2022 offerings," 2024.
[8]. I. A. Heggo and N. Abdelbaki, "Hybrid information filtering engine for personalized job recommender system," 2018.
[9]. H. Khlebarodava and R. Remeikiene, "Opportunities of e-recruitment through social media platforms and its development in Lithuania," 2021.
[10]. MassHire JobQuest, "MassHire JobQuest system," 2024. [Online]. Available: https://jobquest.dcs.eol.mass.gov/jobquest/ [Accessed: Oct. 16, 2025].