

Enhanced Recruitment Portal

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Abstract - This paper presents and emphasizes the need for an online employment posting platform for colleges and the efficacy of such a system in connecting students with job possibilities. Historically, Human Resource management has utilized employment websites for candidate sourcing and placement. The current project is an employment website developed for one of the most prestigious engineering schools, which is a variant of such job boards tailored to service the students of the institution. With functions such as job suggestions provided offering learners recommendations based on their skills and candidate filtering to aid employers in application matchmaking, the platform is anticipated to be useful for both students investigating job opportunities and employers locating candidates who are appropriate to the position.

Key Words: job portal, human resources management, application matchmaking, employment recommendation, recruitment

1. INTRODUCTION

Thousands of employment sites have been created as a result of the achievement of employment boards in narrowing the disparity between job seekers and employers. Due to a rise in unemployment, it became apparent that job sites were necessary. In some countries where positions were available, candidates were unaware of them due to a lack of effective communication channels [1]. Due to the lack of a common platform for both employers and job seekers, communication was challenging and timely dissemination of information regarding job openings was impossible.

With the development of web technologies and the widespread availability of the internet, the prevalence of business applications and enterprise systems increased. It was determined that such a system is required to assist businesses and organizations in expanding and connecting with manpower resources to discover the best candidates. In addition, the rising unemployment rate and difficulties in obtaining employment contributed to the development of employment websites [2]. Thus, employment boards and job search engines arose, many of which list job openings in specific industries, such as education, health care, hospital management, academia, and the non-governmental sector. The purpose of these employment sites was to assist job seekers in locating better jobs and employers in locating better candidates [3].

Today's employment websites offer a variety of services, from simple search engines to career counselling and

interviewing. Numerous web portals, including JobsNepal¹, merojob², merocareer³, and others, have been established in Nepal and offer a variety of services. However, there is no job board or portal dedicated to serving college and university students in developing countries, despite the fact that such systems are used in universities in developed nations. This initiative was motivated by the role that such systems can play in assisting students to interact with contemporary market demands. We administered a questionnaire to determine how students felt about the use of an e-recruitment system. It is crucial to understand the factors that motivate pupils to use the e-recruitment system [4].

The purpose of this system is to expedite and streamline the traditional method of collecting applications and posting job announcements. The traditional methods of selecting candidates for a position are tedious, stressful, and ineffective [5]. The email-based announcements and application collection that is currently practiced, in which companies provide employment announcement emails/notices to group mail using the campus department instead of using an individual as an intermediary, had major drawbacks, such as messages going overlooked by a lot of people being required to submit a resume independently in response to each job offer, etc. Likewise, from the employer's perspective, it had been challenging to maintain track of and evaluate all these applicants. The proposed system is anticipated to benefit both campus students and companies seeking potential employees by facilitating the exploration of current market demands requiring engineering solutions and by streamlining tasks such as employment announcements, applicant selection, and hiring procedures. In addition, the system would be of tremendous help to campus departments in tracking students through updated CVs, even after graduation.

The system is designed with three main perspectives for each end user: student, business, and administrator/department. The system offers customized search and filtering capabilities for each category of end user. In addition to being able to filter job postings based on criteria such as job type and location, students receive employment recommendations based on their skill set to assist these individuals discover positions that satisfy their requirements. In a similar vein, businesses may look over prospects for positions requiring a particular skill set and level of experience, and applications can then be additionally screened to reduce chatter as well as refuse unsuitable applications. In addition, the department can monitor system

activity and access the profiles of students and companies, as well as filter positions based on their type, associated companies, and more.

2. LITERATURE REVIEW

Prior to the invention of the internet and other technologies, a variety of methods were used to hire employees. These methods included newspaper, television, and radio advertisements, contacting college officials, and organizing job fairs, among others [6]. These conventional recruiting practices were ineffectual and unproductive. Through the development of web technologies and the proliferation of the internet, numerous employment websites have emerged. Regarding the availability of features, each of them competed with one another. As many businesses merged and adapted to meet the requirements of job-seekers, the situation gradually stabilized. Regarding the job recruitment procedure, things have evolved over the past decade. The attitude of both employers and applicants has shifted. People spend more time on the internet today. Also, the internet is swiftly expanding and becoming more affordable, which has made it a reliable and effective resource for job seekers. They can readily find job-related information on the internet through a variety of websites.

E-recruitment systems are especially beneficial for college students who use the Internet frequently. Although the development of the Internet has greatly aided job seekers, traditional methods of hiring still exist. Also, interviews continue to be recognized as the most effective method for identifying the best candidate for a job. Developing a job recruitment application without first analyzing the current situation and environment may not aid in combating unemployment. A thorough investigation is required to determine the intentions of both job seekers and employers, as well as their familiarity with the current system. This assists in determining the effectiveness of a web-based employment system. It still has quite a ways ahead of it. While certain companies invest enormous sums in online recruitment, their results are variable.

Therefore, the job recruitment system must be more intelligent in order to assist employers in finding the finest candidates. After the system has been constructed, it is crucial to evaluate its performance, dependability, security, and affordability by an ensemble of participants. Employers will post fewer jobs and subsequently hire fewer candidates if they are charged a high fee for job posting. An effective e-recruitment system globalizes the recruitment process. The online hiring method might not prove successful overall job categories. It may cost more in certain circumstances. Nevertheless, if an efficient system is constructed with all extant factors in mind, it can save a substantial amount of money that was previously spent on advertising, which could then be used for career development or employee training. Additionally, employers have a greater chance of employing qualified candidates. Colleges must implement a cost-

effective job portal. It helps more students find employment. The proposed system involves three agents: students, businesses, and the administrator/department. Due to the involvement of a third agent, i.e., a department that can keep track of students, the system is particularly geared toward universities and campuses. By notifying them as soon as a fresh position is posted, the system ensures that every student has an equal opportunity to find an internship, part-time job, or full-time job during or after their academic career.

3. SYSTEM OVERVIEW

This application aims to eliminate the manual process of employing university students and provide each student with an equal opportunity to find a suitable position.

The creation of this system is inspired by experience in a real-world setting. There are three main agents in this system. They are corporations, students, and university personnel. It aids in preserving their coordination. In addition to monitoring their students, university administration oversees the activities of both businesses and students. Students are provided with a user-friendly interface for searching, viewing, and applying for suitable employment. There are no posting fees for employers. In addition, there does not exist a limit on how many jobs a company may publish. Consequently, this increases the likelihood of more positions appearing along with additional candidates being hired.

A. A. Flow of the Employment Application Process

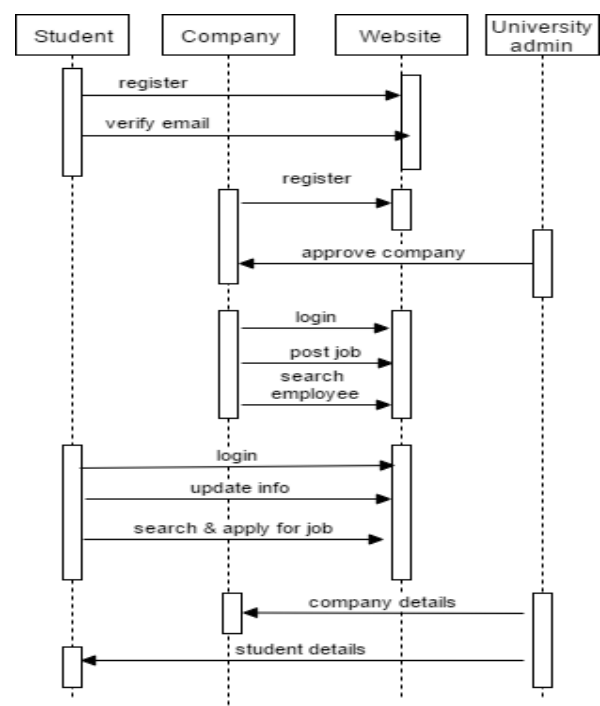


Fig -1: Sequence diagram

Fig. 1 represents a sequence diagram for the structure of the system that provides insight into the system's control mechanisms. Users create a new account first, whether they are students or businesses. One account has been set up by default for university administrators. After establishing a new account, students are required to verify their email address to ensure it belongs to the university domain. Organizations additionally generate fresh accounts to discover the most qualified candidates for open positions. Companies, students, and university administrators, the system's three major agents, perform the following roles.

1. Faculty and Companies

They serve as recruiters. They must create an account, which can be done free of charge. Before they can begin posting jobs, the university administrator must verify their identity after they create a new account to affirm their existence and credibility. Therefore, companies should provide accurate information when creating a new account, as this will enable the administrator to verify their identity. After verification, the company may post as many positions as desired. Companies can view the resumes of students who have submitted job applications. Additionally, they can perform a multi-criteria search to identify the top candidates. Multi-criteria search involves looking on a basis that encompasses multiple domains, such as the candidate's qualifications, skills, and work experience, either individually or in conjunction with one another. Through their interface, companies can view the candidates who submitted applications for different jobs. They can also edit and delete posted positions.

2. The pupils

They are the employment applicants. Students need a campus email address in order to register for the system. After creating an account, users must authenticate their email address by clicking the link sent to their inbox. The link will expire in several hours. When the user's email account is validated, they can semi-automatically generate an impressive CV using the system's features. They can modify and update their resume whenever necessary. Additionally, they can obtain the resume in PDF format using the provided templates. They must adequately list their skills so that the system can recommend the most suitable jobs for them based on their skills. The recommendation aids them and saves them time in their job search. Additionally, they can browse for jobs based on work location, type, and position, either individually or in combination. Types include internship, full-time, and part-time employment. It is beneficial for them to update their resume frequently in order to receive periodic new recommendations.

3. Admin

It regulates the activities of pupils and businesses. Its main objective is to validate companies before allowing them to publish jobs. Additionally, it is responsible for removing dubious accounts. It continues to monitor students even after they have graduated in order to provide the campus with pertinent information regarding the former students.

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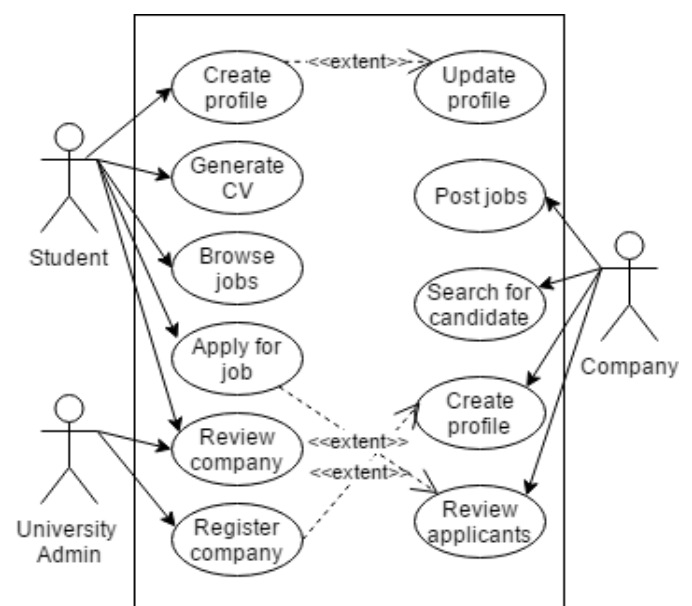


Fig -2: Use case diagram

According to the use case diagram depicted in Fig. 2, the three main system participants are the student, the organization, and the educational institution administrator. Students' main concern is finding employment that matches their skills. Employers have concerns with job postings. Educational administration is concerned with evaluating the profiles of companies.

B. Software Engineering Methodology

The website was created utilizing a prototype paradigm. Due to the high number of consumer relationships it was essential to include them in the design process. This allowed us to integrate as much input from customers as possible into the application, resulting in a system that was usable and widely accepted by the intended users. Additionally, training time for the final user was reduced. We were able to identify errors and features at the beginning of production. At the same time, creation and testing procedures were being carried out.

4. SYSTEM ARCHITECTURE

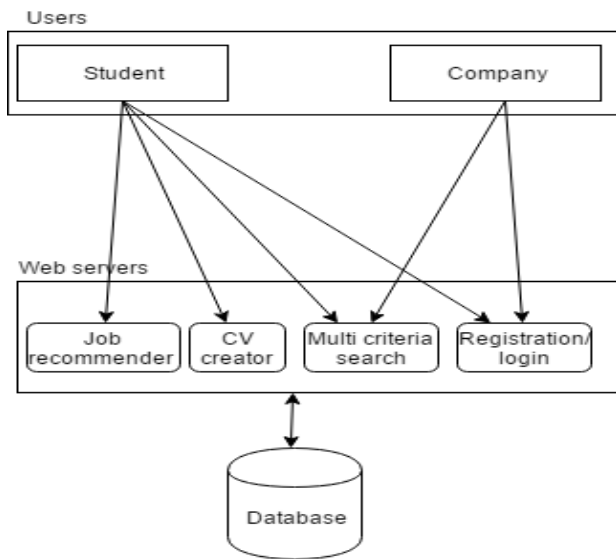


Fig -3: System Architecture

The main software elements are depicted in Fig. 3 system architecture diagram.

Jobs recommendation

This element compares the abilities of a student to the abilities outlined in an organization's job posting. When several businesses post a large number of job openings, it can be time-consuming and challenging for students to review every one of the available positions. Additionally, not every position is suitable for every student. Every pupil may possess a unique set of abilities, making it laborious to investigate each job individually. Thus, the function of the system of suggestions has arrived. It reduces time and simplifies the task of finding the most suitable job for pupils. It is displayed on the student's profile. Each pupil's expertise is broken down into a collection of distinctive skills, followed by job postings that require those competencies to be suggested to the pupil.

Multi-criteria searching

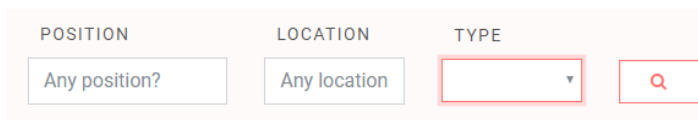


Fig -4: Search with different criteria for Job Seekers

Multiple search categories are available for both pupils and businesses. These fields may be utilized singly or in combination to formulate queries for searching. Students have access to their position, place of residence, and category search options. Role refers to a variety of workplace positions, such as bank manager, graphic designer, project manager, web developer, etc. Locations refer to the employment location, i.e., where a candidate must work if hired. Type includes part-time, full-time, and intern employment.



Fig -5: Search with different criteria for Recruiters

Therefore, pupils can seek to use these requirements. In a similar vein, businesses are given the role, eligibility, skills, and years of expertise of a field's professionals. The position is equivalent to that of an undergraduate. It aids in the identification of applicants who have previously held the desired position. Qualification pertains to the applicant's educational qualifications, such as a bachelor's degree in the field of computer engineering. Skills indicate an applicant's inherent abilities. It aids in finding candidates with the necessary abilities. Years of experience refer to the length of time a person has previously worked for an organization. For a given search term, the system determines the best or closest valid key associated with records and then displays these records as the result of the search.

The distance calculated by Levenshtein was applied to identify a valid keyword that best represents the (approximate) search term in the search query in question. This facilitates the discovery of results using approximate search terms, similar to imprecise matches.

5. RESULTS

The initiative aims to unite pupils and employers on one website and supplant the conventional approach of recruiting pupils on university campuses. The system has been verified using data gathered in immediate form from businesses and pupils.

The Smart Job Recruiting platform could revolutionize the job recruitment process by making it more accessible and efficient for both employers and job seekers. The platform simplifies the hiring procedure by offering a central location for job postings, applications, and communication between employers and candidates.

The possibility for companies to conduct searches for applicants based on particular requirements enables a more targeted approach to recruitment, thereby reducing the amount of time and assets required to find suitable applicants. The ability for job seekers to easily apply to multiple job openings and monitor the progress of their submissions via the website streamlines the job searching process.

According to the findings of this research, the enhanced Job Recruitment platform has the potential to disrupt the traditional job recruitment process and provide a more efficient and effective approach. Additional research is required to ascertain the platform's lasting impacts and identify areas for improvement.

6. CONCLUSIONS

The objective of this system of requirements is to automate the hiring requirement procedure and assist pupils with finding better employment opportunities. In addition, it aids businesses in finding more qualified candidates. It replaces the traditional method of recruiting college students. In addition to providing an exchange of information between pupils and businesses, it keeps the educational institution informed.

This initiative meets the main requirements of the students and businesses. However, there is always room for improvement. Based on the pupil's search history, we can provide collaborative filtering-based recommendations and email updates for new job postings. Since pupils may be interested in creating a strong resume, we can provide them with relevant guidance and data. Additionally, we can enhance job searching and labelling. The application may include a job recommendation algorithm based on users' regular searches. The user functionality can be expanded to include options for saving positions and applying later, uploading numerous files, etc.

REFERENCES

- [1] J. Dorn , T. Naz, "Integration of job portal by Meta-search", in proc 3rd international conf. on Interoperability for Enterprise Software and Applications, Funchal, Portugal, 2007, pp. 401-412
- [2] M. Mansourvar, N.B. Mohd Yasin, "Development of a Job Web Portal to Improve Education Quality", International Journal of Computer Theory and Engineering, January 2014, pp. 43-46
- [3] K. Kopuri, G.M.H. Aqueel, A.S. Jabeen, T.K. Shaik Shavali, "A Online Job portal management system", International Journal of Innovative Research in Technology, Vol. 3 Issue 9, February 2017

- [4] K. Liza, M.A. Uddin, M.A. Mahfuz, "Student's Behavioral Intention and Acceptance of E-Recruitment System: A Bangladesh Perspective", 12th International Conference on Innovation & Management, 2015, pp. 1297-1303
- [5] S. Mauno, U. kinnunen, M. Ruokolainen, "Job demands and resources as antecedents of work engagement: A longitudinal study", Journal of Vocational Behaviour, Vol. 70, 2007, pp. 149-171
- [6] E. Galanki, "The decision to recruit online: a descriptive study", Career Development International, Vol. 7, 2002, pp. 243-251