HireEdge Placement Portal

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Abstract

Placement Portal is an ASP.NET Web Forms and C#-based web application that automates and streamlines campus recruitment. It brings recruiters and students together on a single platform for job application, resume creation, and live tracking. Job posts and eligibility are managed by admins, while students sign up, create resumes, and apply. Features include automated checks for eligibility, live alerts, and an integrated resume builder. Designed specifically for campus placements, it minimizes mistakes, ensures transparency, and offers analytics for better decision-making. **Introduction**

HireEdge – The Placement Portal is an extensive web application developed using ASP.NET Web Forms and C# to mechanize and streamline campus hiring. It fills the gap between job-seeking students and recruiters by means of an easy-to-use platform that facilitates registration, resume creation, application status tracking, and eligibility testing. Aimed to promote student employability, it allows access to job announcements, interview times, and application status in real time on the basis of pre-set eligibility. Admins are able to effectively manage company profiles, job specifications, and student activity, cutting down on paperwork and mistakes. Automated eligibility verification, real-time notifications, centralized student data, and resume generation are some of the key features, in addition to analytical placement reports that help institutions assess and enhance recruitment activities. In contrast to generic job boards or manual processes, this solution is specifically designed for campus recruitment, providing an integrated, user-centric platform that benefits students, recruiters, and placement officers equally, with long-term usability, transparency, and measurable results.

Literature Survey

The article "Designing of Web Portal for Training and Placement Cell" introduces a web portal meant to substitute the time-consuming manual placement process in colleges. The portal enables students to register, fill in their profiles, apply for jobs, and monitor applications online. TPOs are able to manage applications, shortlist candidates as per company requirements, and inform students of placement activity. Some other features are resume hosting, timed mock interviews, and placement prediction through machine learning. Automating major processes and providing access to real-time data, the system improves efficiency and transparency in recruiting students.[1]

"Training and Placement Web Portal" refers to the creation of a web application meant to simplify college placement procedures through automation of processes such as updating student records, employer contact, and interview scheduling. The portal allows students to enroll, edit profiles, submit job applications, and monitor applications, while employers can shortlist and view applicants. Automated notifications enhance communication between placement officers and students,

decrease administrative burden, and make the placement process more organized and transparent.[2]

The paper "Placement Portal Management" deals with inefficiencies in conventional placement mechanisms by suggesting a web-based solution. It replaces manual, paper-based processes and enables students to register, maintain profiles, seek jobs, and follow up on applications. Placement officers are able to manage student information, screen applicants as per eligibility, and send notifications. The portal is also equipped with company-specific job postings, real-time event updates, and recruitment metrics, which provide secure access, hassle-free communication, and enhanced transparency in the placement process.[3]

The "CABAL: Training and Placement Departmental Portal" suggests a web-based portal to enhance placement operations in educational institutions. It helps exchange manual record-keeping for an automated portal wherein students can register, update their profiles, apply for placements, and receive notifications for placements. Companies are able to filter students according to eligibility, while administrators are able to generate analytical placement reports with graphical charts. Real-time SMS notifications facilitate better communication, and the system acts as a center for all the placement-related information, encouraging improved coordination and efficient recruitment process.[4]

The "College Training and Placement System Project" proposes an online application to handle college placement procedures. It enables students to register, modify profiles, and apply for job vacancies, and companies can shortlist and view candidates. TPOs can handle records, track placement progress, and publish announcements. The system reduces paper work, enhances handling of data, and gives real-time access to placement statistics, promoting more effective coordination among students, recruiters, and administrators for a smoother placement process.[5]

The "Placement Test Web Portal" article describes an internet-based system that is aimed at automating placement test processes in campus hiring. It manages student intake, testing, grading, and eligibility determination. The system also provides sentiment analysis for assessing feedback on placement tests and training programs. There is a built-in Resume Builder to standardize student resumes. Automating these processes decreases administrative burden, reduces errors, and facilitates real-time analysis of student performance and placement trends.[6]

In "Web Based Placement Portal using C-Sharp", the authors put forward a web system that facilitates college placement operations such as student registration, hiring, and tracking of applications. It minimizes manual intervention, enables TPOs to sift through candidates who meet company specifications, and facilitates instant opportunity communication. Recruiters have limited access to students' profiles in order to make quicker decisions with transparency and easier accessibility for everyone involved.[7]

The article "A Web-Based Portal for Aspiring Students and Potential Employers in.NET & C#" suggests a platform connecting recruiters and students. Employers can view profiles and shortlist, while students can register, upload resumes, and apply. The portal also has features like secure handling of data, real-time notifications, and application tracking and hiring reports generation tools to enhance efficiency and minimize manual mistakes in the hiring process.[8]

Problem Statement:

In most educational institutions, campus placements are still being handled manually by using spreadsheets, emails, and physical postings, resulting in inefficiencies such as data duplication, miscommunication, and lost opportunities. Third-party job sites such as Naukri or LinkedIn are not customized for campus hiring, without integration with academic records and institution-specific requirements. To solve these problems, HireEdge – College Placement Portal provides a centralized, automated system that simplifies student enrollment, job postings, eligibility screening, resume uploads, and real-time placement tracking. This solution minimizes administrative workload, maximizes transparency, and enhances placement results for recruiters and students alike.

Working

The Placement Portal was built based on an iterative approach with the possibility of constant feedback and

improvement. The five main stages involved in the process are Requirement Gathering & Analysis with direct student, recruiter, and coordinator input and an SRS document following that. System Design involves DFDs, ERDs, and UI prototypes being developed. Implementation involves coding basic modules such as authentication, job posting, and application tracking, with APIs for communication. Testing & Debugging consists of unit, integration, and UAT to validate stability. Finally, Deployment & Maintenance deals with deploying the system, tracking performance, and continuous updates for scalability.

Software Tools and Technologies

The Placement Portal has a performance, maintainability, and security layered architecture. ASP.NET WebForms and Bootstrap are used in the frontend to create dynamic and responsive UI. Backend logic is taken care of by C#, and database operations are handled using Entity Framework and ADO.NET with SQL Server. Normalization, stored procedures, indexing, and triggers enhance performance. The security features incorporated are ASP.NET Identity, hashed passwords, RBAC, MFA, JWT tokens, and SSL encryption for secure sessions and data transfer.

Data Structures

The Placement Portal uses layered architecture for efficiency, maintainability, and security. ASP.NET WebForms with Bootstrap are used to create a responsive frontend, and C# is used to perform backend logic and database operations. Data access is achieved through Entity Framework and ADO.NET with valid validation and error handling. SQL Server stores structured data optimized using stored procedures and triggers. Security is maintained through ASP.NET Identity, RBAC, MFA, JWT tokens, and SSL encryption. Alumni information is kept in Excel spreadsheets by graduation year for easy monitoring, networking, and mentoring.

System Architecture

The Placement Portal has a three-tier architecture that includes the Presentation Layer, Business Logic Layer, and Data Layer. The Presentation Layer, which is developed using ASP.NET WebForms, is an easy-to-use interface for students, administrators, and alumni,

accepting user input and rendering data using HTML, CSS, and server controls.

The Business Logic Layer, written in C#, handles primary functions like user authentication, job postings, application tracking, alumni coordination, and event handling. The Data Layer employs SQL Server to store and handle structured data securely.

The layered architecture supports modularity, scalability, and maintainability, along with secure logins, real-time communication, and optimal data retrieval—positioning the portal as an end-to-end solution for campus placements and alumni interaction. **System Workflow**

1. User Registration/Login:

Students, alumni, and administrators register on the platform with secure credentials. Authentication is managed using encrypted login credentials to maintain data privacy and secure access to portal features.

2. Profile Management:

Upon logging in, users can create and edit their profiles with pertinent personal, academic, and professional details like qualifications, skills, job titles, and placement history. This assists in monitoring student progress and alumni careers.

3. Job & Internship Application:

Students search for posted job and internship opportunities by recruiters or admins. They can directly apply through the portal, and their application status is monitored in real-time.

4. Admin Control:

Admins manage the entire portal functions such as confirming user accounts, approving job postings, managing company information, and updating event calendars. They also track student eligibility and placement rates.

5. Event & Drive Management:

The portal enables admins to manage placement drives, webinars, and alumni meets. Users can see event details, register for attendance, and get timely reminders and notifications.

6. Alumni Networking & Mentorship:

Alumni can network with students and other alumni for job referrals and mentorship. The system allows searching alumni by batch, company, or domain.

7. Chat & Notifications:

The users can communicate in real-time by chat or messaging for collaboration purposes. Email and in-app alerts inform users regarding applications, events, and updates to profiles.

8. Reports & Analytics:

Admins have the ability to create analytical reports on placement statistics, student performance, company-wise recruitment, and feedback for constant system improvement.
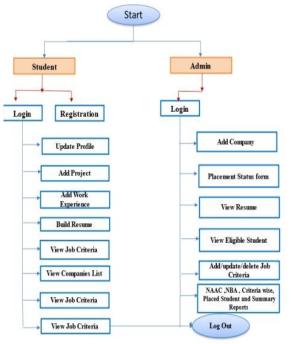
Registration & Verification:

The users (recruiters, alumni, and students) join the portal through the submission of information such as academic year, department, email, and name. An automatic verification email is sent for confirmation, followed by admin validation if necessary. Only the validated users are able to use features like profile management, job postings, placement drives, and alumni interaction, providing secure and trustworthy use of the platform.

System Flow Summary

The system starts with user registration, then secure authentication to verify legitimate access. Once logged in, users are actively engaged in updating their profiles, posting updates, and interacting with peers. The site provides a means for communication between alumni and current students, enabling an informed and collaborative community. Essential modules such as event management, alumni tracking, and placement-related services are included to provide an integrated experience. This stream promotes ongoing interaction and creates a successful network even after graduation.

Result

HireEdge is a smart placement portal that automates student registration, job postings, and application tracking—reducing manual effort and errors. Features like a dynamic resume builder and automated eligibility

checker ensure students apply only to suitable jobs. Recruiters can easily filter and shortlist candidates based on academic and skill-based criteria. The portal enhances transparency with real-time updates on shortlisting and interview status. It uses secure login, role-based access control, and encryption to protect user data. Students

receive personalized job alerts, resume tips, and interview reminders to stay engaged. A placement dashboard offers insights into applications and hiring trends for better decision-making by all stakeholders.

Conclusion

The Placement Portal is a smart one that revolutionizes campus recruitment by making activities such as job postings, application tracking, resume screening, and communication automatic. It makes it easier for students and recruiters via an easy-to-use interface, real-time tracking of applications, and effective management tools. The portal maximizes transparency by exhibiting eligibility, deadlines, and requirements clearly. It minimizes manual labor and accelerates hiring, enabling recruiters to concentrate on selecting candidates. Subsequent upgrades like AI-driven resume grading, video interviewing integration, and mobile application compatibility will continue to enhance usability, accessibility, and equity. Through these, the portal hopes to establish a streamlined, transparent, and effective hiring system for all stakeholders.

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