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Empowering Student Success with a Unified Campus Platform for Campus Placement

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ABSTRACT

As the pressure rises today, colleges and universities are need to connect what students learn in college and universities with what they do for a living. Traditional campus placement processes are not very good at collecting data by hand, communicating well, or keeping track of who is eligible, which makes it harder for students to move up in their careers. This paper presents a Unified Campus Placement Management System, a web-based platform that centralized and automated key placement activities. Students can log in, look at job openings, send in their resumes through Google Forms, and take eligibility tests to specifying departments that are organized by placement coordinators. It can be useful to cluster the students and identified easily to train the students by the placement team. It can use a full dashboard to keep an eye on student records, look over resumes, and make test banks. This system is compared to the previous problems cut the time it took to collect resumes by 87% and raised the number of people who took the test by 34%, making the whole placement process better.

Keywords *— Unified Platform, Resume Management, Role-Based Access, Eligibility Test, Google Forms Integration, Department wise Access.*

1. INTRODUCTION

The process of placement on the campus is regarded as one of the most important services provided by higher educational institutions, and it serves as the key link between academic and professional training. The process of campus recruitment is regarded as being in a state of disarray and highly manual in nature at most educational institutions. The management of placements is an important part of an educational institution, and most of the work is done in a highly manual manner, thus requiring considerable manpower and time even for basic activities such as collecting data on student eligibility and preparing shortlists for visiting companies, according to Sunny et al. (2020) [1]. This, in turn, causes avoidable errors and delays in every step of the process.

The proliferation of cheap web technologies offers a tremendous opportunity to revamp these processes. A centralized role-based web application has the potential to integrate all aspects of the placement process under one umbrella. Students can find available drives, submit their resumes, and even attempt their eligibility tests under one login ID. So, the student can learn quickly where they made mistake and also they resolved their corrections to improve themselves by using this application. Similarly, the administration can post their recruitment advertisements, track enrollments, schedule tests for specific departments, and track the results, all under one umbrella.

The development of such a system is discussed in the following paper. The novelty of the proposed system over existing solutions is the live company recruitment advertisement visible to eligible students, the resume enrollment process through a Google Forms-based pipeline, and the ability to schedule department-specific aptitude and technical tests for the academic departments where the drive is most relevant.

2. RELATED WORK

A detailed analysis of recent studies on the various placement systems in campus recruitment has been carried out in order to identify the various approaches that have been made in the past and their pros and cons. The papers that have been referred to in this study are as follows: Sunny et al. proposed a web-based system that enabled the registration of students and the development of student profiles while facilitating the application process for the students in the placement drives. The system proved the feasibility of the centralized management of the data of the students through the web platform. The system lacked the presence of any eligible list of the companies and the testing module in the system. The resumes were collected manually as well. The lack of automatic enrollment tracking forced the placement officers to track the enrollment of the students manually.

The researchers, Banu and Bargavi, proposed a centralized web-based application that would minimize the administrative load on the placement coordinators by computerizing the student records and drive management. Their proposed system, although it improved the accessibility of the student records, did not deal with the student resume submission process or the structure of the student eligibility tests. The researchers recognized the need for a human intervention process to verify the student resumes, as well as the lack of student self-view of their placement status, with no test distribution mechanism for the departments being implemented.

The limitations of the currently deployed placement tools were studied by Gaikwad et al., and the results indicated that students were able to enroll in drives without any admin approval workflow, that the placement records were often not accurate due to infrequent manual updates, and that sorting and searching student data from exported spreadsheets was often erroneous. The paper proposed a structured role-based system with an automated approval workflow. However, Google Forms integration and department-targeted test assignment were not included. The resume upload mechanism was implemented via server storage instead of a structured form pipeline.

This system was the closest in scope to the current work, which included the Examination Cell module along with job postings, student profile management, and administrative dashboards. However, the examination module was based on the evaluation of all the students without specific targeting based on departments. In addition, the resume management was done through direct server upload, which lacked the advantage of structured data entry through form pipelines. There was no integration with third-party services such as Google Forms or Sheets, which would have allowed data entry to be done outside the system

Nicholine et al. proposed a sophisticated system based on advanced placement, which included job alert systems, qualification filtering, application tracking, resume analysis through artificial intelligence, and cloud deployment. However, the system was based on the availability of artificial intelligence services, which would have been a problem in deploying the system in resource-constrained engineering colleges.

The SPMS also introduced multi-factor authentication and a Decision Support System module to support forecasting of placement trends. These are significant enhancements to security and analytics capabilities over their predecessors. However, the resume collection mechanism still used a direct upload to the server approach instead of using a structured and familiar form-based approach that tools such as Google Forms provide. Real-time review of resumes without a need to download them was not supported.

Khale et al. designed a modern campus placement portal with the support of the Flask framework, React, and MongoDB database, which included student and administrator dashboards with features such as company listing, student application, and CSV export. The project indicated the effective application of modern frameworks and data export mechanisms. The gap in the application was the

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lack of an in-platform examination feature, and all the examination mechanisms had to be handled externally. The department-wise routing of the examination was not taken into consideration.

3. SYSTEM ARCHITECTURE

In this system followed a three-tier client-server model to achieve an efficient distribution of presentation, application logic, and data. The Presentation Layer includes a responsive web interface based on multiple web designing languages with SQL server.

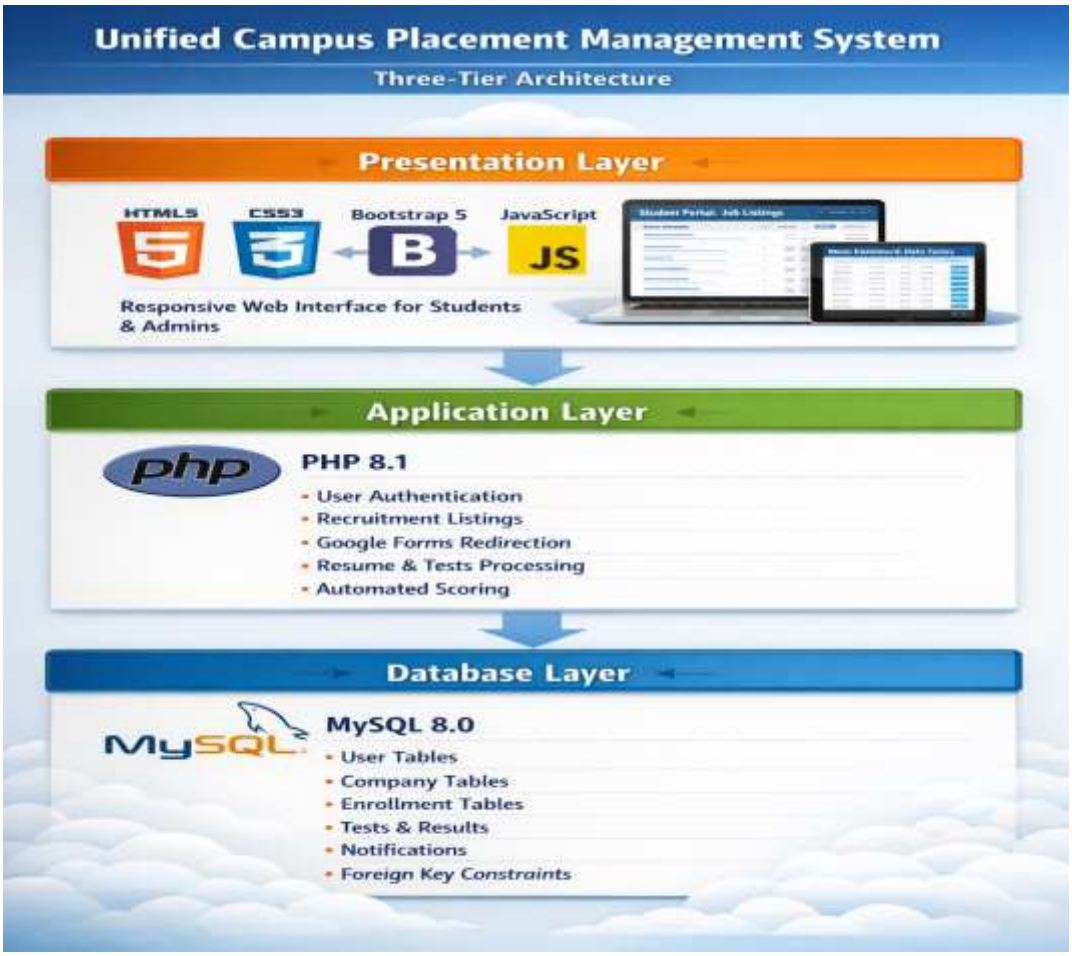

Fig 3. Architecture view

This layer is designed to support both students and administrators. The interface is tailored to students to display recruitment listings, while administrators use it to interact with data tables. The Application Layer is based on PHP 8.1. This layer is used to produce for both admin and student login, including user authentication, displaying recruitment listings, redirecting to Google Forms, retrieving resumes, routing tests, and automated scoring. The Database Layer is based on MySQL 8.0. This layer is used

to manage tables for users, companies, enrollments, tests, results, and notifications. The referential integrity of data is ensured by foreign key constraints.

4. SYSTEM MODULES

4.1 Student Module

Once authenticated with a verified email from an institution, students are provided with a personalized interface with four main functionalities:

- Company Recruitment Listings: Students are provided with an updated listing of active recruitment drives, including the name of the company, available roles, offers, and requirements, to name a few.
- Resume Enrollment via Google Forms: Students can enroll in various recruitment drives by clicking on the Enroll button, which directs the student to a Google Form to input their personal and academic information, with the data stored in a Google Sheet for administrators to access.
- Department-Specific Eligibility Tests: Students can attempt tests for their department, including questions on various subjects, according to the settings provided by the administrator.
- Placement Status Tracker: Students are provided with real-time information on their enrollment in various drives, test results, and placement statuses through a panel on the interface.

4.2 Administrator Module

The administrator module gives placement coordinators full control over the entire placement process. It also gives them full control over company recruitment through the creation and editing of company recruitment postings, which include URLs to collect resumes, departments that can apply, job description, criteria, and deadlines. The resume review dashboard is a table of all responses to a Google form that can be filtered and searched to easily shortlist resumes. Administrators can also create tests with specific question banks to ensure that tests are relevant to specific departments. Students' records, including their academic history and placement status, are stored in a directory that can be searched. Lastly, the placement analytics dashboard gives administrators aggregate statistics such as enrollments, test pass rates per department, and overall percentages to help them make decisions.

4.3 Authentication and Role Management Module

Each user has a unique role assigned in the form of 'Student' or 'Administrator' through the registration process and stored in the users table. The user can be routed based on the session variables in PHP, ensuring that the user does not access routes that are restricted based on the role assigned. The registration process ensures that the user has a valid email address belonging to the institution. The password for the user is stored in the SHA-256 hash format using salted SHA-256 hashing.

4.4 Notification Module

When the administrator publishes a recruitment drive or assigns a test for the department, the system automatically sends notifications for all the eligible students within the system. The system also has the ability to send notifications through the PHP Mailer system for timely notifications for the students. The students can view all the notifications through the notification panel in the system.

5. END-TO-END PLACEMENT WORKFLOW

The lifecycle of a recruitment drive follows several steps:

- The placement administrator logs in to the platform and makes a recruitment listing by inputting various key values such as the name of the company, the role of the job, and the application deadline, among others.
- Students who are eligible are notified about the new recruitment drive, which appears in their recruitment listings section.
- The students are then required to enroll by filling out a Google Form associated with the recruitment drive, with the data entered being stored in a Google Sheet.
- The administrator then assigns test questions to various departments, with only eligible students able to access and write the tests.
- The students are then required to write the tests within a specified period, with the results being automatically recorded in the test_results table.
- The administrator then shortlists the candidates and enters the final results of the placements, thus completing the lifecycle of the recruitment drive.

6. IMPLEMENTATION

6.1 Technology Stack

Technology	Role in System	Rationale
PHP 8.1	Server-side logic & routing	Mature; broad hosting support

MySQL 8.0	Relational data storage	ACID compliance; efficient joins
HTML5 / CSS3	Markup and styling	Semantic structure; responsive
JavaScript (ES6)	Client-side interaction	Dynamic UI; inline validation
Bootstrap 5	UI component framework	Responsive grid; rapid prototyping
Google Forms / Sheets	Resume collection pipeline	Zero cost; student-familiar
Google Sheets API	Resume data retrieval	Structured JSON responses
XAMPP	Local dev environment	Bundled Apache and MySQL

6.2 Database Schema Overview

Six primary tables form the relational schema. The users table stores account credentials, role flags, and department identifiers. The companies table holds all recruitment listings, including a departments JSON column that lists eligible department codes and a google_form_url column pointing to the enrollment form. The enrollments table records each student-company pair with a timestamp, enabling administrators to see exactly when each student enrolled. The tests table stores questions, multiple-choice options, correct answers, and a departments field for routing. The test_results table persists per-student scores with references to both the student and the relevant test. The notifications table drives the in-platform alert system with read/unread status tracking.

6.3 Google Forms Resume Pipeline

For each recruitment drive, the administrator generates a Google Form and pastes its shareable link into the company listing. When a student clicks Enroll, the application constructs a redirect URL, optionally using Google Forms pre-fill parameters to embed the student's name and roll number as URL query fields, reducing manual entry. All responses aggregate in a linked Google Sheet. The admin resume dashboard calls the Google Sheets API, parses the tabular response into an associative PHP array, and renders it as a searchable HTML table within the platform, giving administrators a single pane of glass for all submissions.

6.4 Department-Specific Test Routing

Each test record stores a target departments array. When a student authenticates, a SQL query joins their department code against the departments field of all active tests to return only those relevant to

them. Administrators select target departments from a multi-select control when creating or editing a test. This mechanism means that an aptitude test designed for a software product company reaches only Computer Science and Information Technology students, while a test for a manufacturing firm is directed exclusively to Mechanical Engineering and Production Engineering students. No additional configuration is required from the student side.

7. RESULTS AND DISCUSSION

The process was implemented with a pilot among undergraduate students of all departments, with administrators helping to collect data via server logs, Google Sheets timestamps, automated records, and a student questionnaire. The process of administrative efficiency was seen to improve considerably, with a decrease in the duration of collecting resumes from an average of working days to marking an 87% reduction. The distribution and processing times of tests also decreased to under 30 minutes from days. The students also became more participatory, with 91% finding the dashboard intuitive to use. The confidence level of students was also seen to improve, with 88% increase due to instant confirmation of submissions. New notifications of tests also increased student participation compared to the previous semester.

Data accuracy was also seen to improve, with transcription errors eliminated by automated scoring. The process of correcting resumes for administrators also decreased, leading to a 70% reduction in data clean-up times. The security of the process was also tested, with 14 cross-role access attempts successfully blocked via PHP session validation. Salted SHA-256 hashing was used to ensure no plaintext credentials were stored in the database.

8. CONCLUSION

The paper outlined the design and evaluation of the Unified Campus Placement Management System, which aggregates various activities such as company recruitment listings, resume enrollment through Google Forms, administrative resume reviews, and specific eligibility tests in a unified online platform. This system improves real-time visibility and offers students self-service application management, thus improving administrative efficiency and data accuracy. Interestingly, the department-specific tests are routed to the appropriate students, thus reducing the workload on coordinators. As the higher education sector shifts towards digital transformation, unified platforms like this offer a low-cost solution to achieve this without incurring additional costs on proprietary systems.

9. FUTURE WORK

Upcoming development enhancements include a mobile application for Android and iOS, enabling push notifications and student access to listings and tests. An AI-based resume screening module will score Google Form submissions against job descriptions to lessen manual reviews. Direct REST API integrations will automate job listings from recruitment platforms. Predictive placement analytics will utilize machine learning to forecast student placement probabilities and recommend preparations. An integrated video interview module will facilitate preliminary screening interviews within the platform, streamlining coordination.

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