

Exploring Modern Systems for Campus Placement Management: A Comprehensive Review

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Abstract—The Training and Placement cell at most colleges currently use WhatsApp to communicate a lot of its operations. Although this method of communication is effective, it may not be efficient due to the presence of several groups and messages, some students may overlook a few notices and critical information. The project's main objective is to centralize TnP activities, notifications, job listings, and Resume submissions to streamline and improve the placement process and increase candidates' chances of success.

Keywords—Placement, Management system, TnP, TPO, Campus.

I. INTRODUCTION

In the fast-changing world of education, the way colleges help students find jobs is very important for their future. Traditionally, this process uses manual systems and paper documents, which causes problems with communication and coordination because it was not very efficient. However, as digital technologies have improved, more and more people are realizing the importance of using digitalization to make the placement management process more efficient and effective.

At present, a considerable number of colleges continue to rely on conventional methods of communication, such as posting notifications, utilizing physical documents, and conducting in-person conversations, for placement-related activities. Although these methods have been useful, they have drawbacks such as taking up too much time,

overwhelming with too much information, and the risk of students not noticing important notices. To overcome these difficulties, the project under review aims to explore how to set up a new and up-to-date system for managing campus placements. The new system aims to use the internet and digital tools to bring together and simplify different parts of the placement process. This will make it faster and more accurate and give students more choices for job or school opportunities.

An important part of this digital placement management system is using database management solutions like MongoDB. These solutions help store, find, and analyze a lot of student information. It makes it easier for training and placement officers to make good decisions. An essential element of this digital placement management system entails utilizing database management solutions like MongoDB. This aids TPO officers in making more intelligent choices concerning student placements.

The advantages of using a digital placement management system go beyond just the administrative side. This change will greatly benefit students. Through this system, students can find detailed information about job openings, current trends in different industries, and how to apply for jobs. They can also send their resumes, check their application statuses, and get personal advice, which helps them make better choices and improve their chances of getting a job.

Colleges can improve their placement management process by using technology instead of manual methods. This will help them work more efficiently and effectively. It helps students and placement officers communicate better and see information more easily. Moreover, using advanced technology helps create a workforce that is well-equipped with digital skills needed for today's job market.

In this research, we aim to study the new ways that colleges can manage job placements for students and talk about the good things these new methods can bring. By understanding how digitization changes how students get jobs, colleges can effectively deal with the difficulties and use technology to give students better chances to succeed in their careers.

II. LITERATURE SURVEY

This is a mobile application that is designed to help educational institutions manage their campus placements. It allows students to register for placements and apply to openings, search for candidates, and manage the campus placement process. The system provides a centralized platform for managing the entire campus placement process, from registration to final placement.

Literature review of campus placement management system reveals that there are many different approaches to building such system, ranging from traditional desktop-based software to web based application and mobile apps.

First paper by Nicholine et al. [1] introduces a comprehensive deployment management system consisting of student, administrator, and corporate login modules. The benefits of the system for students, companies and university recruiters are highlighted as it enables efficient registration, data management and recruitment activities.

Chaurasia [2] has introduced the Student Internship Placement Management System "SIPMS". It focuses on providing a safe and efficient platform for students to manage their personal and school information. SIPMS streamlines the deployment process, ensures eligibility checks, automates data entry, and improves overall efficiency. In their research, Panchal et al. [3] describe a deployment management system that minimizes manual work and improves data abstraction, optimization, and security. The system allows students to upload their information, provide companies with a list of requested applicants, and allow administrators to search and approve users' data.

Banu and Bargavi [4] propose a research paper on a career management system that provides her web-based solution to university careers departments. The system efficiently stores student data, reduces manual work, ensures data security, and overcomes the limitations of existing manual systems. Padwal et al. [5] Implement an e-training and employment assistance system designed to automate the college training and employment process. The system provides students and administrative staff with an easy-to-use platform to facilitate communication, exam practice, and efficient assessment-related activities.

Dhopavkar et al. [6] introduces an integrated web application for training and outreach, including features such as one-time registration, automatic notification, and AI prediction. The system streamlines routine tasks, reduces manual work, and improves placement decisions based on test results.

Terri et al. [7] We propose a web-based ERP for referral management that simplifies the referral process, reduces manual work, and ensures effective communication. The system allows students to access information, upload documents, and receive notifications, while recruiters can efficiently manage student data and share internship-related updates.

Rizvi et al. [8] Adopt a placement management system that emphasizes automation and efficiency. The system provides students and administrators with a centralized platform to streamline communications, categorize data, and reduce repetitive tasks.

Said et al. [9] introduces a web-based application for college internship management that takes into account the limitations of traditional systems. The system provides easy access, security, and accurate information for students and recruiters, and integrates features such as resume writing, proficiency testing, and graduate support. Sunny et al. [10] We propose a placement management system for campus recruitment that aims to automate the placement process via a web portal. The system gives students access to job listings, alerts, and accurate information, and allows recruiters to efficiently manage student and company data.

In summary, the reviewed literature highlights the importance of a digitized solution in revolutionizing placement management systems. These papers propose innovative approaches to automate and improve various aspects of placement, including student enrollment, data management, proficiency testing, and communication. By streamlining processes, reducing manual work, and ensuring data accuracy and security, these systems provide a comprehensive solution to the challenges educational institutions face in effectively managing internships & placements. The integration of features such as practice tests, AI predictions, and alumni support further improve overall efficiency and convenience for both students and internship workers.

III. PURPOSE

Colleges frequently use campus recruitment, but it can be stressful for both students and placement officers. The traditional process of manually entering student information and selecting qualified candidates in accordance with company requirements can result in mistakes and omissions. These issues are resolved by the placement management system, which enables students to create accounts and submit their information for administrator approval. This automated solution reduces redundancy, increases efficiency, and gives immediate visual proof of security. The admin module is crucial in updating information and verifying student enrollment.

The placement management system aims to make it easier to manage student data for college placements. By automating the process of keeping student information, lowering the manual workload, and saving time and effort on report creation and data collection, it improves the current system. This will lower the possibility of error while ensuring that all crucial information is readily available to students. With the right login credentials, the system will be available throughout the campus and may be used to effectively manage student information.

IV. OBJECTIVE

The primary goal of the placement management system is to speed up and improve the placement process by minimizing manual work and saving time. To accomplish this, the system has the features listed below:

- a) The list of qualified students participating in the drives is simple to locate.
- b) Management of student records, placement training, and placement details.
- c) Saving faculty and placement officers' time.
- d) Minimizing manual labour
- e) Enhancing the protection of student data
- f) Distributing significant alerts and updates regarding the placement procedure.

V. EXISTING SYSTEM

Currently, institutions use manual techniques to manage placements, like keeping records in Excel sheets. This causes several issues, such as challenges with data redundancy, updating records, and searching for and sorting information. As a result of the existing approach, it is ineffective to find qualified students, students are unaware of training and placement chances, there are a significant communication gaps between students and placement officers, and the placement officer has a tremendous task. The current system is manual and non-computerized, which makes it difficult and time-consuming. The greatest solution to issues like these is to automate the existing system.

VI. METHODOLOGY

The system intends to offer a few new features while fixing the shortcomings of the current systems. The proposed system for a placement management system mobile application is a comprehensive solution for handling the campus placement process. The system would consist of two key modules: a student module and an admin module i.e., TPO module.

The key idea of the system is to simplify the complex and manual process of campus placement. The admin module will be responsible for posting notifications including notifications about companies visiting campus and job profiles and webinars conducted by the TnP cell. In the student module, the students will be able to create their profile, read notifications posted by the TPO, upload and update their resume and apply for jobs according to their criteria.

After registering, students can upload their resumes and all relevant details and then according to the details provided, their criteria will be determined and so will their eligibility to apply for an interview. The student's dashboard will provide all information regarding hiring events, placement plans, and interview times, etc. Overall, the proposed system would provide a comprehensive solution for campus placement management, allowing for efficient and effective management of the placement process.

An Android app for a campus placement management system with student and TPO modules can be developed using Kotlin as the programming language and Android Studio as the development environment. UI design can be accomplished using Android Jetpack Compose and XML layout files. Backend development can be handled with server-side frameworks like Node.js with Express.js, Ruby on Rails, Django, or Laravel, along with databases like MySQL, PostgreSQL, or MongoDB. User authentication can be managed using Firebase Authentication, while API connectivity can be facilitated through Retrofit. Firebase Cloud Messaging can be employed for push notifications. Additional libraries such as Gson, OkHttp, Room, ViewModel, and LiveData can be utilized. Version control can be maintained using Git.

VII. SYSTEM DESIGN

System Modules: TPO (Training & Placement Officer) module and Student Module. The TPO and Student modules are designed to simplify different TNP (Training and Placement) tasks in the system. Both modules share a common login page, where users can enter their login ID and password to access the system.

Login- Both the TPO and Student modules share the same login page. The user needs to enter their login ID and password to log in to the system.

TPO Module- The TPO module is a crucial part of the TNP system and plays the role of the system administrator. The module is designed to perform the following tasks:

- a) Update TNP notifications: The TPO can post updates regarding placement activities, job profiles, and required skills to keep students, companies, and placement officers informed.
- b) Manage company visits: The TPO can schedule and manage company visits to the campus for recruitment.
- c) Monitor attendance: The TPO can monitor the attendance of placement training sessions and keep track of academic attendance provided by the department.
- d) Store performance records: The TPO can store the performance of students in aptitude/technical tests.
- e) Reporting and analytics capabilities: The module offers reporting and analytics capabilities that help make informed decisions.

Student Module- The Student module is designed to provide the following features:

- Create and edit profile: Students can create and edit their profile with personal and academic information.
- Record of personal information: Students can maintain their record of personal and academic information.
- Update profile: Students can update their profile information as and when required.
- Upload and update resumes and other relevant documents: Students can upload and update their resumes and other relevant documents for campus placements.
- Apply for campus recruitment: Eligible students can apply for campus recruitment.
- Keep track of interviews: Students can keep track of the interviews they have given through campus placements.
- Placement notification: When a student is placed, they will be notified through the system.

VIII. SCOPE

The Placement Management System's objective is to make the hiring process more efficient and streamlined. The technology lowers manual labor and eliminates the potential of mistakes by digitizing student information. Access to student data is made simple, which facilitates searching and sorting through massive amounts of data. The system's user-friendly interface enables the placement officer to carry out tasks quickly and effectively without having to concentrate on maintaining records. The suggested system automates user activation and deactivation, as well as user-to-user communication. The administrator has the power to verify user data, produce student lists in accordance with company standards, and offer company information.. The solution also enables alumni data management and online feedback. The project's overall goal is to completely automate the training and placement department's workflow, eliminating the need for human labor and paper documentation.

IX. ARCHITECTURE

The figure below accurately reflects the focus of the report on the technical design and functionality of a system designed to streamline the college recruitment process through automation and database management.

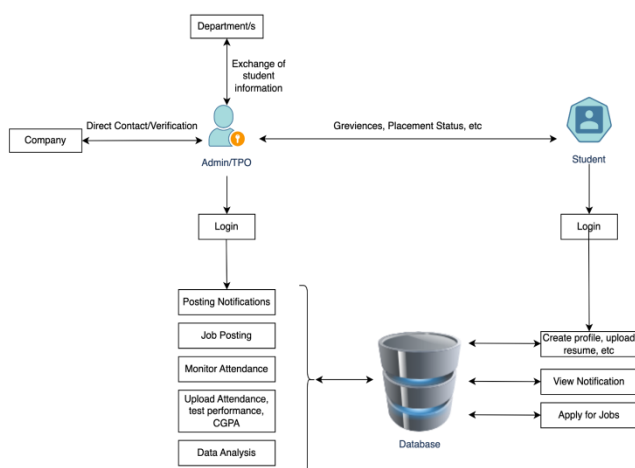


Fig 1 Block Diagram of Organization Placement Management System

X. RESULT

The following comparative analysis examines existing campus placement management systems identified in the literature survey alongside a proposed system design. This analysis evaluates the key features and functionalities offered by each system. The existing systems range from web-based applications to comprehensive deployment management solutions, aiming to streamline registration, data management, and recruitment activities. The proposed system intends to address the limitations of current systems, offering simplified campus placement processes for students and efficient management tools for Training and Placement Officers (TPOs). By comparing these systems, we aim to identify innovative approaches and potential enhancements to optimize campus placement management for educational institutions.

Table 1: Comparative Analysis of Campus Placement Management Systems

System	Modules	Key Features
Nicholi ne et al. [1]	Student, Admin, Corporate	Efficient Registration, Data Management
Banu and Bargavi [4]	Career Management	Web-based, Efficient Data Storage, Reduced Manual Work, Enhanced Security
Padwal et al. [5]	E-training and Employment Assistance	Automated Training, College Efficient Communication, Assessment
Terri et al. [7]	Web-based ERP for Referral Management	Simplified Referral Process, Effective Communication
Proposed System	TPO Module, Student Module	Posting Notifications, Managing Company Visits, Monitoring Attendance, Storing Performance Records, Reporting and Analytics, Profile Creation and Editing, Resume Upload and Update, Campus Recruitment Application, Interview Tracking, Placement Notifications

XI. CONCLUSION

Currently, most jobs within the placement system are carried out manually , leading to slow processes and difficulties in updating student data, finding, and sorting information and timely communication with students. To address these challenges, the proposed mobile application

aims to automate these processes and provide a more efficient solution. The system enables student registration for upcoming placements, notification to students, user creation, information exchange, privacy protection and administrator validation of data. By centralizing and digitizing all relevant information, the placement manager's task of managing the placement process becomes significantly simplified. The proposed solution also aims to enhance system reliability, making it easier for administrators to track which companies the students have applied to and accepted by. This expected solution is anticipated to have a positive impact on the students by improving the overall efficiency and effectiveness of the placement system. By eliminating the flaws in the current manual system, the suggested mobile application has the potential to streamline processes, improve data accuracy and provide a more convenient and accessible platform for managing campus placements.

XII. FUTURE SCOPE

The future scope of the placement management system project can include:

- a) For a smooth hiring process, integration with other systems is necessary, such as HR management or firm recruitment portals.
- b) supplying data analytics and reporting to assist placement officials and businesses in making wise student placement selections.
- c) Making mobile apps that allow students to obtain information and updates on training and placement activities while they're on the go.
- d) using machine learning and artificial intelligence (AI) technologies to automate placement and provide students individualized suggestions.
- e) Adding services like résumé creation, skill evaluations, and tools for interview practice to the site to make it a one-stop shop for students' placement requirements.

The potential of the project is vast, and with ongoing development, it can revolutionize the way placements are managed in colleges and universities.

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