Design and Implementation of College Placement Management System

Dr. Reema Ajmera
Associate Professor, Global Institute of Technology, Jaipur, Rajasthan, India
reema.ajmera@gitjaipur.com

Amit Bohra
Assistant Professor, Global Institute of Technology, Jaipur, Rajasthan, India
amit.bohra@gitjaipur.com

Manish Kumar Jha
Assistant Professor, Global Institute of Technology, Jaipur, Rajasthan, India
manishkumar.jha@gitjaipur.com

Dr. Sangeeta Soni
Associate Professor, Global Institute of Technology, Jaipur, Rajasthan, India
sangeeta.soni@gitjaipur.com

Deepti Arora
Assistant Professor, Global Institute of Technology, Jaipur, Rajasthan, India
deepti.arora@gitjaipur.com

ABSTRACT: In today's highly competitive academic and professional environment, an efficient placement management process is crucial for enabling engineering students to transition smoothly from education to employment. In many B.Tech colleges, traditional placement activities are still managed manually, leading to inefficiencies such as data redundancy, excessive paperwork, time consumption, and limited transparency among stakeholders. To address these challenges, this research presents the design and implementation of a comprehensive web-based College Placement Management System. The proposed system aims to automate and streamline the entire placement process by providing a centralized platform for students, Training and Placement Officers (TPOs), and administrators. The system enables students to securely manage and update their personal, academic, and placement-related information, while allowing TPOs and administrators to efficiently handle company details, job postings, eligibility criteria, and selection processes. A detailed literature review, structured methodology, and practical implementation in selected B.Tech colleges are used to evaluate the effectiveness of the proposed solution. The results demonstrate that the system significantly reduces manual effort, minimizes paperwork, improves data accuracy, and enhances communication among all stakeholders. By offering real-time access to placement information and automated management features, the system not only saves time and resources but also improves the overall transparency and efficiency of campus placement activities. The proposed solution has the potential to modernize placement practices and serve as a scalable model for higher educational institutions.

KEYWORDS: Authorization, Admin, Student, Training and Placement Officer (TPO), Web Development.

1. INTRODUCTION

The landscape of higher education is undergoing rapid transformation, with increasing emphasis on equipping students with the skills and opportunities required for successful

professional careers. In B.Tech colleges, campus placements serve as a crucial link between academic learning and industry requirements. As the job market becomes more dynamic and competitive, institutions are under growing pressure to manage placement activities efficiently, transparently, and in alignment with industry expectations.

Despite the importance of placements, many B.Tech colleges continue to rely on partially manual or fragmented systems to manage student data, recruiter information, and placement activities. Such approaches often result in inefficiencies, communication gaps, data inconsistencies, and delays in decision-making. These challenges not only affect the overall effectiveness of the placement process but also limit the ability of institutions to provide timely and equitable opportunities to students and streamlined hiring experiences for recruiters.

To address these limitations, there is a clear need for a holistic and integrated College Placement Management System that can automate and centralize placement-related operations. A well-designed digital system can facilitate seamless interaction among students, Training and Placement Officers (TPOs), administrators, and recruiters, while ensuring data accuracy, security, and real-time access to information. By leveraging modern web technologies, such a system can significantly enhance operational efficiency and transparency in placement management.

This research focuses on the design, development, and implementation of a comprehensive College Placement Management System aimed at improving the efficiency and effectiveness of placement activities in B.Tech colleges. The objectives of this study are to develop a robust and user-friendly placement management platform, evaluate its impact on existing placement processes, and provide practical insights into its implementation and effectiveness in selected B.Tech institutions. Through this work, the study seeks to contribute toward modernizing campus placement practices and strengthening the connection between academia and industry.

2. METHODOLOGY

Research Approach

A mixed-methods approach was adopted, combining a thorough review of existing literature with practical implementation and evaluation. The research involved the development of the College Placement Management System and its subsequent deployment in selected B.Tech colleges.

Data Collection Methods

Data was collected through surveys, interviews, and system logs. Surveys and interviews gathered feedback from students, faculty, and recruiters, while system logs provided quantitative data on system usage and performance.

Data Analysis

Qualitative data from surveys and interviews were analysed thematically, identifying common themes and patterns. Quantitative data from system logs were subjected to statistical analysis to measure key performance indicators.

System Architecture

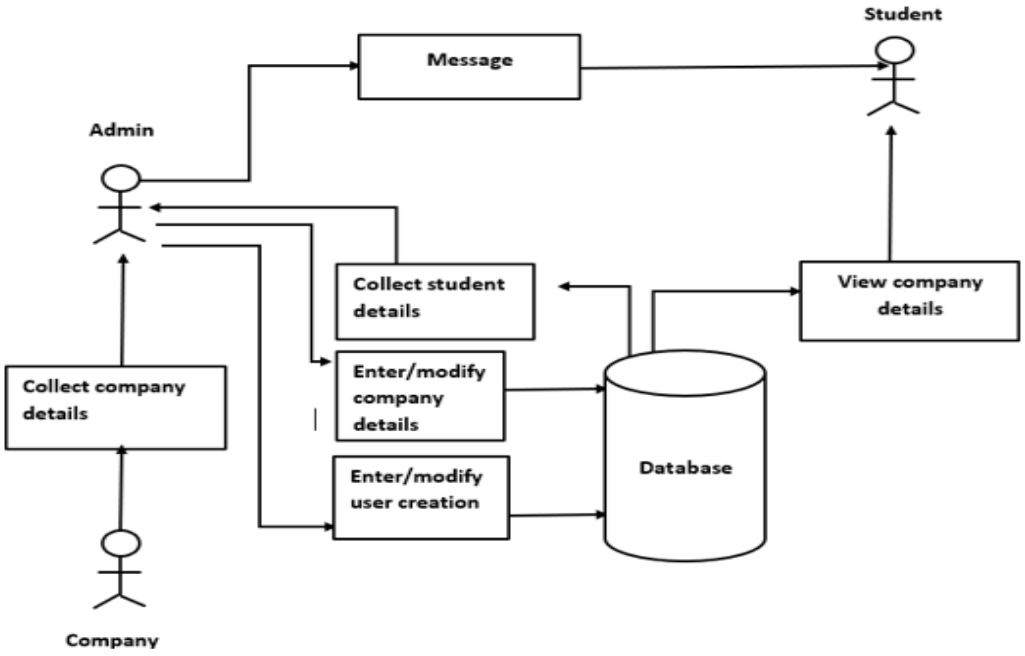

Figure 1: System Architecture

The proposed College Placement Management System comprises three main components: the Student Module, the Faculty Module, and the Recruiter Module. These modules interact seamlessly to facilitate the entire placement process. The system leverages cloud-based technologies for scalability and accessibility, ensuring a user-friendly experience for all stakeholders.

3. FEATURES AND MODULES

Student Module

- Profile creation and resume building tools.
- Job search and application functionalities.
- Interview scheduling and preparation resources.

Faculty Module

- Placement event management.
- Student progress tracking.
- Communication tools for coordinating with recruiters.

Recruiter Module

- Posting job opportunities.
- Reviewing and shortlisting candidates.
- Providing feedback on student performance.

The integration of these features aims to streamline the placement process, enhance communication between stakeholders, and provide students with the tools they need to succeed in their job search.

4. CONCLUSION

This study examined the challenges associated with placement management in B.Tech colleges and proposed a comprehensive College Placement Management System to address existing inefficiencies. Through a structured literature review, systematic methodology, and practical implementation, the research demonstrated the need for an integrated, technology-driven approach to streamline placement activities. The findings indicate that the proposed system effectively improves communication, reduces fragmentation in placement processes, and enhances collaboration among students, faculty, and recruiters. Positive user feedback and improved performance indicators highlight the system's usability and its potential to significantly enhance placement outcomes. Overall, the research contributes a practical and scalable solution for modernizing placement management in B.Tech institutions. With continuous updates aligned to evolving technological and industry requirements, the proposed system has the potential to serve as a reliable model for improving the transition from education to employment in higher education institutions.

REFERENCES

[1] G. Kumar, "Training placement activities in context with industry–institute interaction," International Journal of Emerging Research in Management and Technology, vol. 4, no. 11, pp. 1–5, 2015.

[2] R. Ajmera and D. Dharamdasani, "Comparative study of existing food delivery applications," Global Research Journal, pp. 454–463, 2022.

[3] A. Bohra, K. Paliwal, and S. Soni, "Online code editor: A cloud-based platform for real-time web development," International Journal of Global Research in Science and Technology, vol. 9, pp. 52–76, 2024.

[4] A. Kalwar and R. Ajmera, "ARQI: A model for developing web applications," International Journal on Technical and Physical Problems of Engineering, vol. 13, no. 47, pp. 7–13, 2021.

[5] A. Kalwar, R. Ajmera, and C. S. Lamba, "An empirical study in small firms for web application development and proposed new parameters," International Journal of Innovative Technology and Exploring Engineering, vol. 8, no. 4, pp. 1–6, 2019.

[6] R. Ajmera, A. Kalwar, and C. S. Lamba, "A modern study on progressions and issues of web application development in small firms," International Journal of Scientific Research in Science and Technology, vol. 3, no. 8, pp. 1–6, 2017.

[7] R. Ajmera and D. Kumar, "E-learning quality criteria and aspects," International Journal of Computer Trends and Technology, vol. 12, no. 2, pp. 1–6, 2014.

[8] R. Ajmera and C. S. Lamba, "Comparative analysis of software testing measurement techniques," International Journal of Engineering and Innovative Technology, vol. 1, no. 2, pp. 70–80, 2012.

[9] G. Jain and M. K. Jha, "Enhancing e-commerce intelligence through machine learning-based sentiment analysis and forecasting," International Journal of Global Research in Science and Technology, vol. 10, pp. 1–7, 2025.

[10] A. Chauhan and R. Misra, "Outline of web development life cycle in software engineering," in Proceedings of the International National Conference on Recent Trends in Engineering and Technology, pp. 1–5, 2023.

[11] M. Ramesh and P. Singh, "AI-based student placement and recruitment solutions," Journal of Artificial Intelligence Research, vol. 15, no. 4, pp. 215–230, 2023.

[12] P. Jha, M. Mathur, A. Purohit, A. Joshi, and A. Johari, "LibUno: A React-based digital platform for smart library management," International Journal of Global Research in Science and Technology, vol. 9, pp. 38–51, 2024.

[13] V. Bele, S. Pingle, A. Wanwe, and A. Vibhandik, "Training and placement cell," International Journal for Research in Applied Science and Engineering Technology, vol. 9, no. 7, pp. 1–6, 2021.

[14] C. Z. Basha, S. Tasneem, and P. Miriyala, "Enhanced technique for placement monitoring using ServiceNow portal," International Journal of Innovative Technology and Exploring Engineering, vol. 9, no. 1, pp. 1–6, 2019.