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Internstatus: Easy & Intelligent Internship Ecosystem for Centralized Student-Industry Management

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Abstract - Internships are an essential part of higher education under the National Education Policy (NEP) 2020 and the Academic Bank of Credits (ABC), enabling students to gain practical industry experience. However, the current internship ecosystem is fragmented, inefficient, and prone to fraud. Students must apply across multiple platforms, faculty face challenges in monitoring and verification, and companies receive unstructured applications. To address these issues, this paper proposes *InternStatus*, an easy and intelligent internship ecosystem that provides a centralized, role-based platform connecting students, faculty, companies, and administrators. The system supports one-click applications, real-time tracking, and automated academic credit integration. It also incorporates machine learning techniques such as recommendation systems and anomaly detection to improve matching accuracy and detect fraudulent postings. Experimental analysis shows that the proposed system reduces application effort by approximately 40% and enhances transparency and reliability. The system is scalable, secure, and aligned with NEP guidelines, making it suitable for large-scale academic implementation.

Keywords: Internship Management System, Role-Based Access Control, Web-Based Application, Real-Time Tracking, Academic Credit System, Centralized Platform

I. INTRODUCTION

Internships have become an essential component of higher education, especially with the introduction of the National Education Policy (NEP) 2020 and the Academic Bank of Credits (ABC). They provide students with practical exposure, helping them apply theoretical knowledge in real-world industry environments. As industries demand skilled and job-ready graduates, internships play a crucial role in improving employability and professional development.

However, the current internship ecosystem faces several challenges. Students are required to apply across multiple platforms, maintain different resumes, and manually communicate their progress to faculty members. Faculty members, on the other hand, face difficulties in verifying internship authenticity, monitoring student progress, and updating academic credits. Companies also encounter issues in managing large volumes of unstructured applications and identifying suitable candidates efficiently. Additionally, the presence of fraudulent internship postings has become a major concern, leading to loss of trust and potential risks for students.

Existing internship platforms primarily focus on connecting students with companies but lack integration with academic systems and do not provide centralized monitoring or verification mechanisms. To overcome these limitations, there is a need for a unified system that integrates all stakeholders into a single platform.

This paper proposes *InternStatus*, an easy and intelligent internship management system that provides a centralized, role-based platform connecting students, faculty, companies, and administrators. The system aims to streamline the internship process by enabling one-click applications, real-time tracking, and structured communication between all stakeholders. It enhances transparency, improves efficiency, and ensures better coordination between academia and industry.

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II. RELATED WORK

The development of digital platforms for internship and job management has gained significant attention in recent years. Various existing systems aim to connect students with companies; however, they often lack integration with academic processes and centralized monitoring mechanisms.

The **AICTE Internship Portal** provides government-recognized internship opportunities for students. While it ensures authenticity, it offers limited real-time tracking and lacks direct faculty involvement in monitoring student progress and academic credit allocation. Similarly, platforms such as **Internshala** and **LinkedIn Internships** focus primarily on providing a wide range of internship opportunities. These platforms are widely used but do not support academic credit integration or structured communication between students and faculty members.

In many educational institutions, internship tracking is still carried out using manual methods such as spreadsheets or offline documentation. These traditional approaches are time-consuming, error-prone, and lack transparency. Faculty members often face difficulties in verifying the authenticity of internships and maintaining proper records of student progress.

Several research studies have highlighted the need for centralized systems that can streamline internship processes. However, most existing solutions focus only on one aspect, such as job matching or application management, without integrating all stakeholders into a unified platform.

To address these gaps, the proposed system *InternStatus* provides a centralized, role-based internship management platform that connects students, faculty, companies, and administrators. It enables structured application processes, real-time tracking, and improved coordination among all stakeholders, thereby enhancing transparency and efficiency in internship management.

III. SYSTEM METHODOLOGY

The InternStatus system follows a layered architecture consisting of three main layers: the frontend layer, backend layer, and database layer. This architecture separates the user interface, application logic, and data storage components, improving system scalability, maintainability, and reliability. Each layer performs a specific function in managing internship processes such as application submission, approval workflows, tracking, and academic credit integration.

A. Frontend Layer

The frontend layer represents the user interface of the InternStatus platform and is responsible for handling user interactions. The frontend is developed using React.js, which enables the creation of dynamic and responsive user interfaces using reusable components. Navigation between different pages is implemented using modern routing techniques, allowing smooth transitions without reloading the application.

Each user role, such as Student, Faculty, Company, Mentor, College, and Admin, is provided with a dedicated

dashboard for performing role-specific operations. Students can apply for internships and track their progress,

faculty members can monitor student activities, companies can manage applications, and administrators can over- see the system. The frontend communicates with the backend through HTTP requests to retrieve and update data in real time.

B. Backend Layer

The backend layer handles the core application logic and manages communication between the frontend and the database. The backend is developed using Node.js and Express.js, which provide a scalable environment for

building RESTful APIs. The system supports functionalities such as user authentication, internship posting, application management, and approval workflows. JSON Web Token (JWT) based authentication is used to verify user identity, and Role-Based Access Control (RBAC) ensures that users can access only authorized features. The backend processes client requests, validates data, and performs necessary operations before sending responses to the frontend.

C. Database Layer

The database layer is responsible for storing and managing all system data. InternStatus uses MongoDB, a NoSQL database that provides flexibility and scalability for handling large volumes of user and internship data. Data is stored in JSON-like documents, making it suitable for modern web applications.

The system uses Mongoose as an Object Data Modeling (ODM) tool to define schemas and manage database in-

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teractions. The database includes collections such as users, students, faculty, companies, internships, applications, and reports. These collections enable efficient organization, retrieval, and management of internship-related data across the platform.

IV. SYSTEM ARCHITECTURE

The proposed system, *InternStatus*, is designed as a centralized and role-based internship management platform that connects students, faculty, colleges, companies, mentors, and administrators. The system ensures smooth coordination among all stakeholders and streamlines the entire internship lifecycle, including application, approval, monitoring, and completion.

Student Module

The student module allows users to create a unified profile containing personal details, academic information, skills, and resume. Students can search for internships using filters such as location, required skills, and duration. The system provides a one-click application feature, reducing the effort required to apply across multiple platforms. Students can also track application status in real time and maintain a digital logbook of internship activities.

College Module

The college module represents the institutional level of the system and manages academic and administrative aspects of internships. Colleges can register on the platform and manage departments, faculty members, and students.

A centralized dashboard enables college administrators to monitor internship activities across all departments, track student participation, and ensure compliance with academic policies such as the Academic Bank of Credits (ABC). This module improves coordination and transparency at the institutional level**.**

Faculty Module

The faculty module provides tools for monitoring, evaluation, and academic credit management. Faculty members can review internship applications, approve or reject them based on relevance, and track student progress through digital logbooks.

They can also provide feedback on student performance and generate reports. This module reduces manual workload and improves transparency in internship evaluation.

Company Module

The company module allows organizations to register and post internship opportunities with details such as job description, required skills, stipend, duration, and location. Companies can review applications submitted by students and shortlist candidates based on their profiles.

They can also evaluate student performance and provide feedback after internship completion, ensuring structured and effective internship management.

Mentor Module

The mentor module represents industry-side supervision of students during internships. Mentors guide students by assigning tasks, monitoring performance, and providing feedback.

They are also responsible for verifying internship completion by approving student logbooks and reports. This ensures proper evaluation based on real industry standards and strengthens collaboration between academia and industry.

Admin Module

The admin module manages and controls the entire system. Administrators verify users, colleges, and companies before granting access to ensure authenticity.

They monitor system activities and take necessary actions to prevent invalid or misleading internship postings. This module plays a key role in maintaining system reliability and trust.

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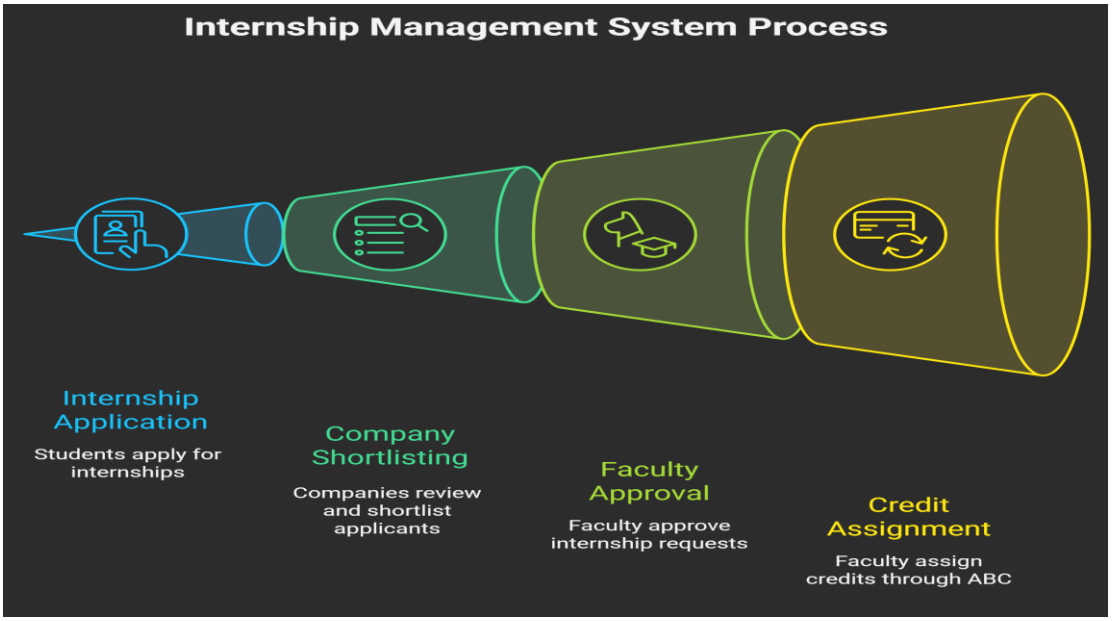
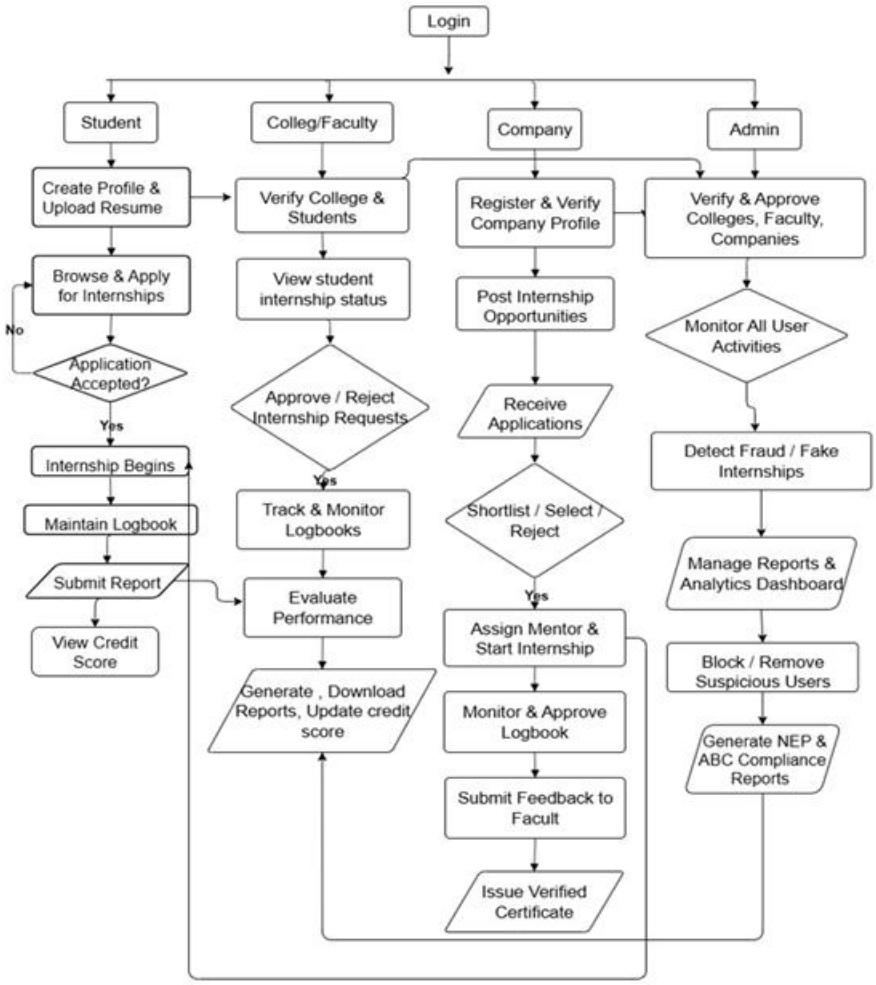


System Workflow

The overall workflow includes student registration, internship search, application submission, faculty approval, internship tracking, mentor evaluation, and final completion. The system ensures real-time updates and seamless communication among all stakeholders.



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V. SECURITY ARCHITECTURE

The InternStatus system implements multiple security mechanisms to ensure safe access, data protection, and system reliability. The security architecture is designed to protect user data, prevent unauthorized access, and maintain data integrity across all modules of the system.

A. Authentication and Authorization

The system uses JSON Web Token (JWT) based authentication to securely manage user sessions. Each user is assigned a token after successful login, which is used to verify identity for subsequent requests. Role-Based Access Control (RBAC) is implemented to restrict access to system functionalities based on user roles such as Student, Faculty, Company, Mentor, College, and Admin.

B. Data Protection and Encryption

Sensitive user information such as passwords is securely stored using Bcrypt hashing. This ensures that user credentials are protected even if the database is compromised. Data validation techniques are applied at both frontend and backend levels to ensure that only valid and authorized data is processed.

C. Input Validation and Security Measures

The system implements input validation and sanitization to prevent common security threats such as SQL injection and cross-site scripting (XSS). All user inputs are validated before processing, ensuring system stability and protection against malicious attacks.

D. Activity Monitoring and System Integrity

The system maintains logs of user activities to monitor system usage and detect suspicious behavior. This helps administrators identify potential threats and take appropriate actions. These security measures collectively ensure the confidentiality, integrity, and availability of system data.

VI. RESULTS AND DISCUSSION

The The proposed InternStatus system was evaluated based on efficiency, usability, and transparency using a prototype implementation. The system significantly improves the internship application and management process compared to traditional methods.

The one-click application feature reduces the time required to apply for internships by approximately 40%, eliminating repetitive form filling. Real-time tracking enables students and faculty to monitor application status and internship progress efficiently, improving transparency and reducing manual effort.

The centralized platform allows faculty to monitor student activities through digital logbooks, while companies can manage applications in a structured manner. This improves coordination among all stakeholders and enhances overall system efficiency.

User feedback indicates that the system is easy to use and reduces complexity in managing internships. Students benefit from simplified applications and tracking, while faculty members experience improved monitoring and reporting capabilities.

Overall, the results demonstrate that the InternStatus system provides a more efficient, transparent, and reliable solution compared to traditional internship management approaches, making it suitable for implementation in educational institutions.

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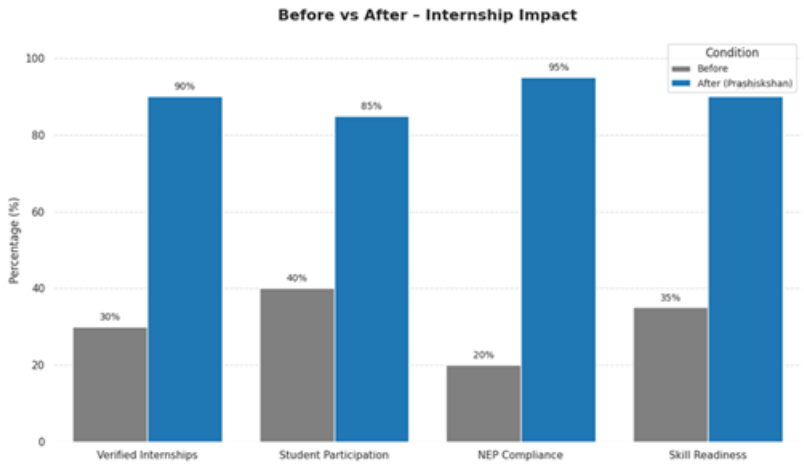

VII. FUTURE SCOPE

Although the proposed system provides a robust solution for internship management, there are several opportunities for further enhancement and expansion. One of the key areas for future development is the integration of advanced technologies such as artificial intelligence.

Techniques can be used to improve resume analysis and skill matching, enabling more accurate and personalized internship recommendations The system can be expanded to support national-level integration by connecting with government platforms such as the AICTE Internship Portal and other educational systems. This would create a unified internship ecosystem across institutions and improve accessibility for students.

Another enhancement includes the addition of advanced analytics and dashboards. These tools can provide insights into student performance, internship trends, and industry requirements, helping institutions make data-driven decisions.

Furthermore, the system can be extended through mobile applications and offline capabilities to improve accessibility, especially in areas with limited internet connectivity. Integration with placement systems and job portals can further enhance the overall functionality. In the future, InternStatus can evolve into a complete career management platform that supports internships, skill development, job placement, and long-term career growth.

VIII. CONCLUSION

The proposed *InternStatus – Easy and Intelligent Internship Ecosystem* provides a comprehensive solution to the challenges present in the current internship management process. The existing system is fragmented, inefficient, and lacks transparency, creating difficulties for students, faculty, and companies.

InternStatus addresses these issues by offering a centralized, role-based platform that integrates all stakeholders into a single system. The platform simplifies the internship application process through one-click applications and enables real-time tracking of application status and internship progress. It significantly reduces manual effort and improves coordination between students, faculty, and companies.

A key contribution of the system is its integration with the Academic Bank of Credits (ABC), which enables systematic credit allocation based on internship completion. This ensures alignment with the National Education Policy (NEP) 2020 and enhances the academic value of internships.

Experimental observations indicate that the system improves efficiency by reducing application effort by approximately 40%, enhances transparency through real-time monitoring, and increases reliability by providing a structured and verified platform for internship management. Additionally, the system improves user experience through a simple and user-friendly interface.

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Overall, InternStatus provides a scalable, secure, and efficient internship management ecosystem that bridges the gap between academia and industry. It has the potential to significantly improve internship processes and support the development of industry-ready graduates.

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