MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed to be university)

NAAC Accrediated with A++ Grade

Minor Project Report

on

"MITS NOC PORTAL"

(Streamlining NOC Requests for Students and Administrators)

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CERTIFICATE

This is certified that **Mohit Sharma** (0901CS211069) have submitted the project report titled **MITS NOC PORTAL,** Streamlining NOC Requests for Students and Administrators**,** under the mentorship of **Prof. Mahesh Parmar , Dr. Manish Dixit** in partial fulfilment of the requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering from Madhav Institute of Technology and Science, Gwalior.

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DECLARATION

I hereby declare that the work being presented in this project report, for the partial fulfilment of requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering at Madhav Institute of Technology & Science, Gwalior is an authenticated and original record of my work under the mentorship of

Prof. Mahesh Parmar , Department of Computer Science and Engineering.

I declare that I have not submitted the matter embodied in this report for the award of any degree or diploma anywhere else.

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ABSTRACT

The MITS NOC Portal is an innovative online platform developed to facilitate the seamless acquisition of No Objection Certificates (NOCs) for students within educational institutions. Traditionally, the process of obtaining NOCs has been cumbersome and time-consuming, often involving manual paperwork and administrative overhead. The MITS NOC Portal addresses these challenges by providing students with a user-friendly interface to apply for NOCs, track their application status, and receive timely notifications.

The portal comprises distinct dashboards tailored for students and administrators, including departmental authorities and the Training and Placement (TnP) cell. Upon registration with their institute email IDs, students gain access to a personalized dashboard where they can initiate NOC applications and monitor their progress. Administrators are equipped with tools for reviewing and approving NOC applications, ensuring a streamlined process from submission to approval.

Key features of the MITS NOC Portal include dynamic PDF generation for approved applications, email notifications throughout the application lifecycle, and a comprehensive profile management system accessible to both students and administrators. Additionally, the platform integrates a Superadmin dashboard for managing faculty admin roles and access privileges, bolstering security and data integrity.

Through its intuitive interface and efficient workflow, the MITS NOC Portal aims to enhance the overall NOC application experience for students and administrators at educational institutions. By promoting transparency and expediency, the portal fosters a conducive environment for academic and administrative operations within the institution.

सा र:

यह प्रोजेक्ट एक शिक्षण संस्थान के छात्रों के लिए NOC प्राप्त करने की प्रक्रिया को सुगम बनाने के लिए एक वेब पोर्टल का विकास करता है। इस पोर्टल का उद्देश्य छात्रों को एक सरल और पारदर्शी तरीके से NOC आवेदन करने की सुविधा प्रदान करना है। छात्र एक व्यक्तिगत डैशबोर्ड पर प्रवेश करते हैं और वहां NOC के लिए आवेदन कर सकते हैं, अपने आवेदन की स्थिति को ट्रैक कर सकते हैं, और समय पर सूचनाएं प्राप्त कर सकते हैं। पोर्टल में विभिन्न डैशबोर्ड होते हैं जो विभागों और प्रशिक्षण और स्थानन (TnP) कोष के लिए अलग होते हैं। प्रशासकों को NOC आवेदनों की समीक्षा और स्वीकृति के लिए उपकरण प्रदान किए जाते हैं, जो आवेदन प्रस्तुति से मंजूरी तक की सुविधा सुनिश्चित करते हैं। पोर्टल की मुख्य विशेषताएँ स्वीकृत आवेदनों के लिए डायनामिक पीडीएफ जनरेशन, आवेदन प्रक्रिया के विभिन्न चरणों में ईमेल सूचनाएँ, और छात्रों और प्रशासकों दोनों के लिए व्यक्तिगत प्रोफ़ाइल प्रबंधन सिस्टम शामिल हैं। इसके अलावा, पोर्टल में एक सुपरएडमिन डैशबोर्ड भी शामिल है जो संकाय प्रशासक भूमिकाओं का प्रबंधन करने के लिए उपकरण प्रदान करता है और सुरक्षा और डेटा गोपनीयता को सुदृढ़ बनाता है। यह उपकरण और उत्तरदायित्व का पूरा सार्थक संघ है, छात्रों और प्रशासकों को शिक्षण संस्थानों में NOC आवेदन प्रक्रिया में सुधार लाने के लिए एक संबोधन और अनुकूल प्रोसेस को बढ़ावा देता है। यह पोर्टल छात्रों और प्रशासकों के बीच संचार को बढ़ावा करने के माध्यम से एक अधिक स्पष्ट और निष्पक्ष प्रक्रिया को स्थापित करता है।

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LIST OF ABBREVIATIONS

Abbreviation	Description
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheet
JS	JavaScript

Chapter 1: INTRODUCTION

1.1 Project Overview:

The project, titled "MITS NOC Portal," is an innovative web-based platform aimed at simplifying the process of acquiring No Objection Certificates (NOCs) for students within educational institutions. Traditional methods of obtaining NOCs have been time-consuming and cumbersome, often involving manual paperwork and administrative hurdles. The MITS NOC Portal seeks to address these challenges by providing students with an intuitive and transparent interface for applying for NOCs, tracking application statuses, and receiving timely notifications.

Key features of the MITS NOC Portal include separate dashboards tailored for students and administrators, including department authorities and the Training and Placement (TnP) cell. Upon registration using their institute email IDs, students gain access to a personalized dashboard where they can initiate NOC applications, monitor their progress, and receive updates. Administrators, including departmental authorities and TnP cell members, are equipped with tools for reviewing and approving NOC applications, ensuring a streamlined process from submission to approval.

The portal also includes dynamic PDF generation for approved applications, email notifications at various stages of the application process, and a comprehensive profile management system accessible to both students and administrators. Additionally, a Superadmin dashboard is integrated into the portal for managing faculty admin roles and access privileges, enhancing security and data integrity.

The MITS NOC Portal aims to improve the overall NOC application experience for students and administrators within educational institutions. By promoting transparency, efficiency, and communication, the portal fosters a conducive environment for academic and administrative operations. It serves as a comprehensive solution for streamlining the NOC application process and facilitating collaboration between students and administrators.

Key Features:

1. **Personalized Student Dashboard:** Students have access to a personalized dashboard upon registration, where they can initiate NOC applications, track application statuses, and receive notifications.

2. **Administrative Review Workflow:** Administrators, including department authorities and the Training and Placement (TnP) cell, can review and approve NOC applications, ensuring a streamlined process from submission to approval.

3. **Dynamic PDF Generation:** Approved NOC applications trigger dynamic PDF generation, providing students with customized certificates containing relevant details.
4. **Email Notifications:** Automated email notifications are sent to students at various stages of the application process, keeping them informed about their application statuses and any updates.
5. **Profile Management:** Both students and administrators have access to a profile management system, allowing them to update personal details and manage account settings.
6. **Superadmin Dashboard:** A dedicated Superadmin dashboard facilitates the management of faculty admin roles and access permissions, ensuring secure and efficient administration of the portal.
7. **Enhanced Communication:** The portal promotes communication and collaboration between students and administrators, fostering transparency and efficiency in the NOC application process.

These key features collectively contribute to the effectiveness and usability of the "MITS NOC Portal," providing a seamless experience for students and administrators alike.

1.2 Objective of Project:

The objective of the "MITS NOC Portal" project is to revolutionize the process of acquiring No Objection Certificates (NOCs) within the educational institution by leveraging modern web-based technologies. The primary goal is to streamline and simplify the cumbersome NOC application process, which traditionally involves manual paperwork and administrative bottlenecks. By providing students with a user-friendly online platform, the project aims to enhance efficiency, reduce processing times, and eliminate the need for physical documentation. Additionally, the portal seeks to improve transparency by offering real-time updates on application statuses to both students and administrators, fostering accountability and trust. Furthermore, the project prioritizes security and data integrity, implementing robust authentication

mechanisms and access controls to safeguard sensitive information. Through enhanced communication features and scalable design, the "MITS NOC Portal" aims to facilitate seamless collaboration between students and administrators, ultimately optimizing the NOC application experience and contributing to the overall efficiency of the educational institution.

Chapter 2: TECHNOLOGIES USED

2.1 Tech Stack:

The project utilizes a stack of modern web technologies to deliver a robust and efficient application:

- Frontend: HTML, CSS, JavaScript, Bootstrap, Data Tables
- Backend: Python, Django, Django-rest
- Database: SQL (Structured Query Language)
- Frameworks and Libraries: Bootstrap for responsive design and enhanced UI elements, Django for server-side scripting, and SQL for database management.

2.2 Software Used:

The "MITS NOC Portal" utilizes a comprehensive tech stack to deliver a seamless user experience. On the frontend, HTML, CSS, JavaScript, and Bootstrap are employed to create responsive and visually appealing user interfaces, with Data Tables enhancing data presentation. The backend is powered by Python and Django, facilitating server-side scripting and robust application logic implementation. Django-rest is utilized for building RESTful APIs, enabling smooth communication between the frontend and backend components. SQL is chosen as the database management system, ensuring efficient data storage, retrieval, and management. Bootstrap is further leveraged for responsive design and enriched UI elements, complementing Django's functionality. This tech stack combines powerful tools and frameworks to deliver a scalable, secure, and feature-rich NOC portal tailored to the needs of students and administrators.

Chapter 3: METHODOLOGY

3.1 Design and Development Phase:

Design Phase: During the design phase, extensive planning and analysis are conducted to define the requirements and conceptualize the portal's architecture and user interface. This phase involves collaboration between designers, developers, and stakeholders to establish the portal's overall look and feel, as well as its functionality and user experience. Wireframes and mockups are created to visualize the portal's layout and navigation, ensuring clarity and consistency in design. Additionally, database schemas and system architectures are designed to support the portal's functionalities and scalability. The design phase concludes with the approval of the design artifacts by stakeholders, providing a solid foundation for the development phase.

Development Phase: In the development phase, the design specifications are translated into functional code by the development team. Based on the Agile methodology, development work is organized into iterative sprints, typically lasting 1-2 weeks each. During each sprint, developers work collaboratively to implement user stories and features prioritized from the product backlog. Continuous integration and testing practices are employed to ensure code quality and functionality throughout the development process. Regular sprint reviews and retrospectives are held to assess progress, gather feedback, and make necessary adjustments. The development phase continues iteratively until all planned features are implemented, tested, and ready for deployment.

3.2 Implementation Phase:

1. **Frontend Development:**
    - Frontend development begins with the creation of user interfaces using HTML, CSS, JavaScript, and Bootstrap.
    - Design elements such as navigation menus, forms, and interactive components are implemented based on the finalized design specifications.
    - Data Tables are integrated to enhance data presentation and user interaction for improved usability.

2. **Backend Development:**
    - Backend development involves setting up the server-side logic and APIs using Python and Django.
    - Django-rest framework is utilized to build RESTful APIs for seamless communication between the frontend and backend components.

- Business logic, authentication mechanisms, and data processing functionalities are implemented to support the portal's features and workflows.

3. **Database Setup and Management:**
   - The SQL database management system is configured and integrated into the backend to store and manage application data.
   - Database schemas are designed and implemented to ensure efficient data storage, retrieval, and management, aligning with the portal's requirements.

4. **Integration and Testing:**
   - Integration of frontend and backend components is performed to ensure seamless communication and functionality.
   - Comprehensive testing is conducted to validate the portal's features, functionalities, and user interactions.
   - Unit testing, integration testing, and user acceptance testing (UAT) are carried out to identify and resolve any bugs or issues.

5. **Deployment and Launch:**
   - Once development and testing are completed, the portal is prepared for deployment to the production environment.
   - Deployment scripts and procedures are executed to deploy the portal to the hosting server.
   - Post-deployment checks and monitoring are performed to ensure the portal is functioning as expected in the production environment.

These implementation phases ensure the successful development and deployment of the "MITS NOC Portal," aligning with the project's objectives and requirements.

3.3 Testing, Deployment, and Ongoing Development:

During the testing phase, the "MITS NOC Portal" undergoes thorough evaluation to ensure its functionality, reliability, and usability. Developers conduct unit tests on individual components and integration tests to verify interactions between modules. Real users participate in user acceptance testing (UAT) to assess the portal's usability and provide feedback for improvements. Performance testing is conducted to evaluate the portal's responsiveness and scalability under various load conditions. Bugs and issues identified during testing are addressed promptly by the development team. Regression testing is performed to ensure that new changes do not impact existing functionality. Documentation of testing activities is prepared to provide a record of the testing process and outcomes. Through collaborative efforts, the portal is refined and prepared for deployment to the production environment.

Chapter 4: RESULTS AND CONCLUSION

4.1 Prototype of Project:

Fig 1 Landing Page (Student Side and Admin Side)

For both students and Admins to login from email, and also for students to login from Enrollment Id and Password.

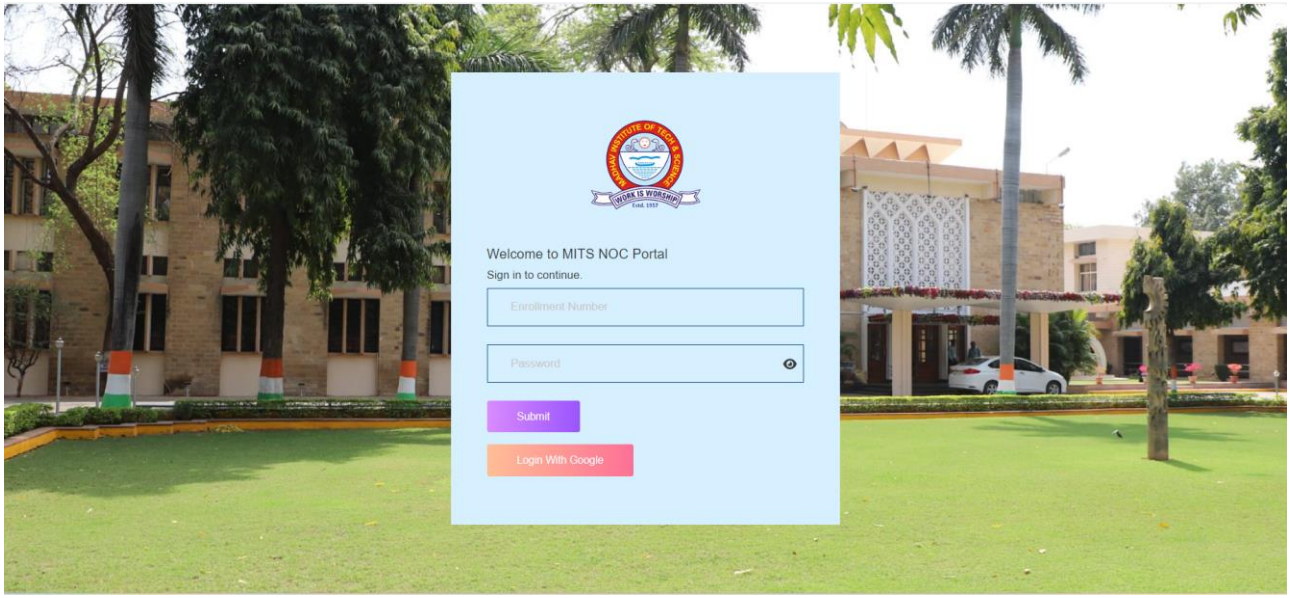


Fig 2 Sign Up page (Student Side)

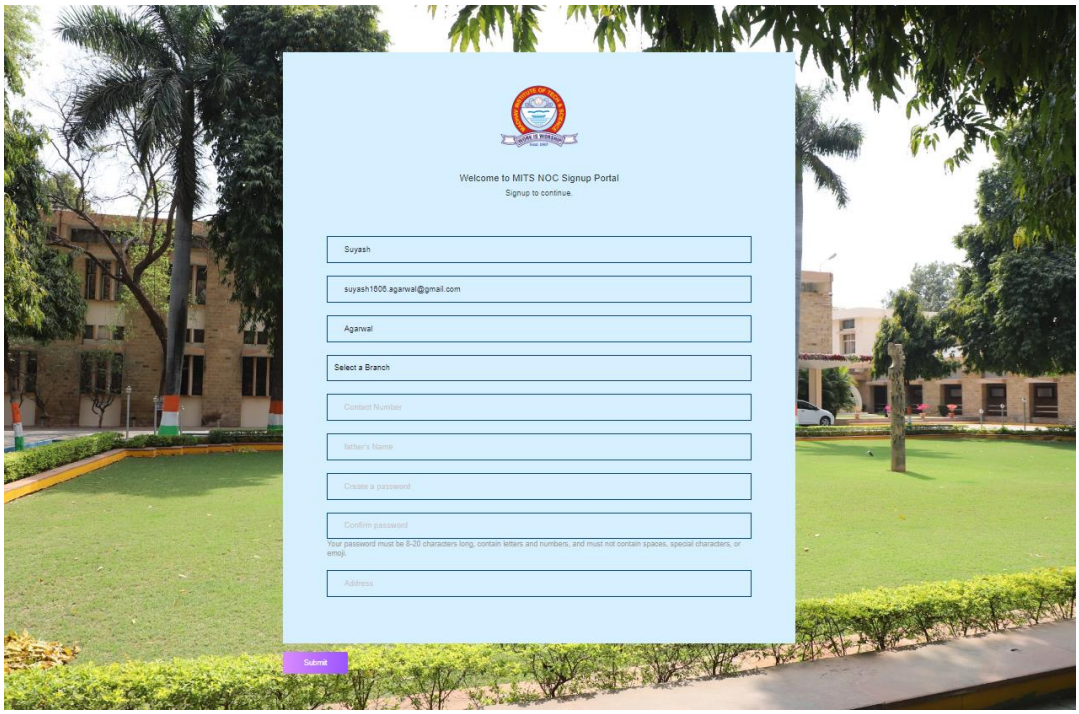
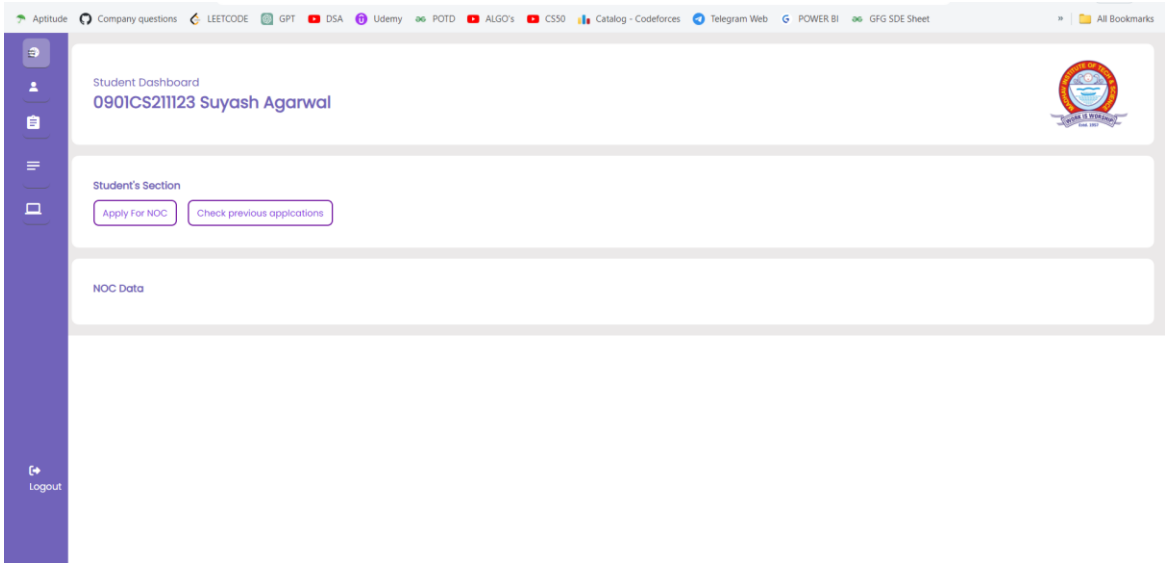
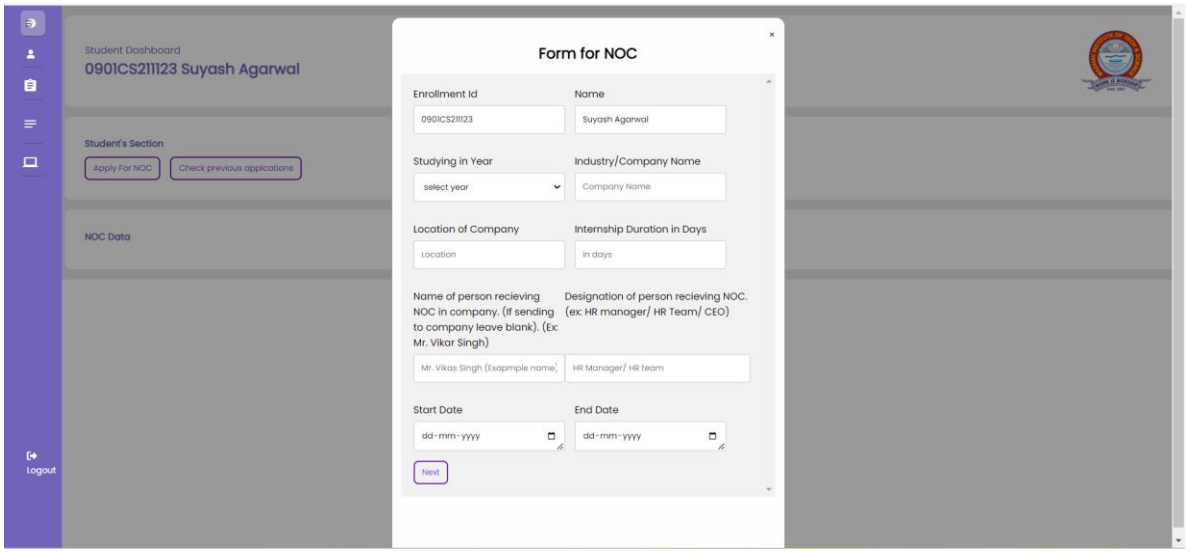
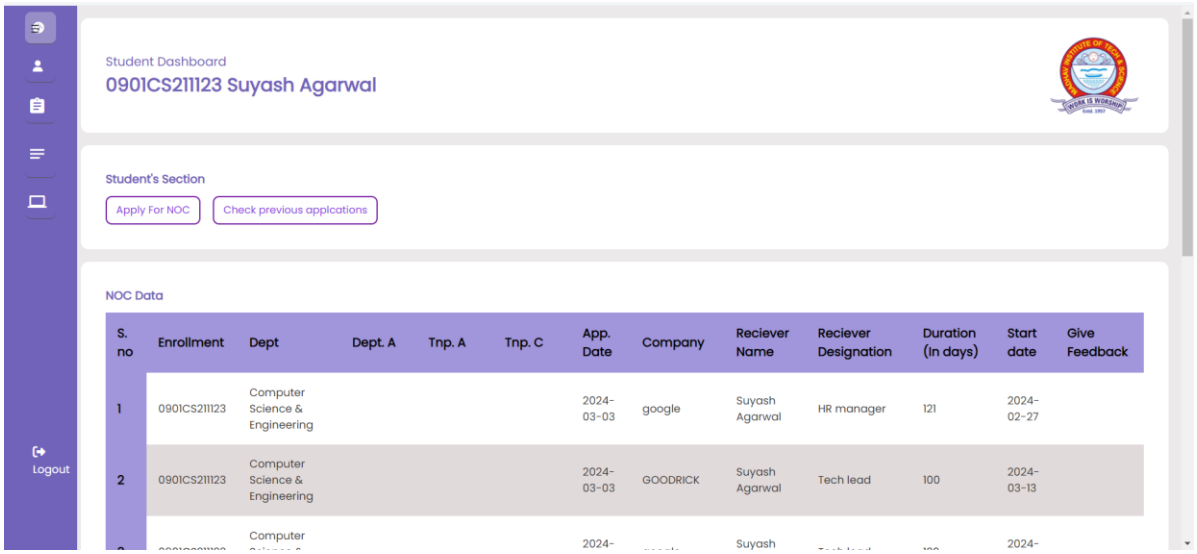


Fig 3 Dashboard (Student Side)





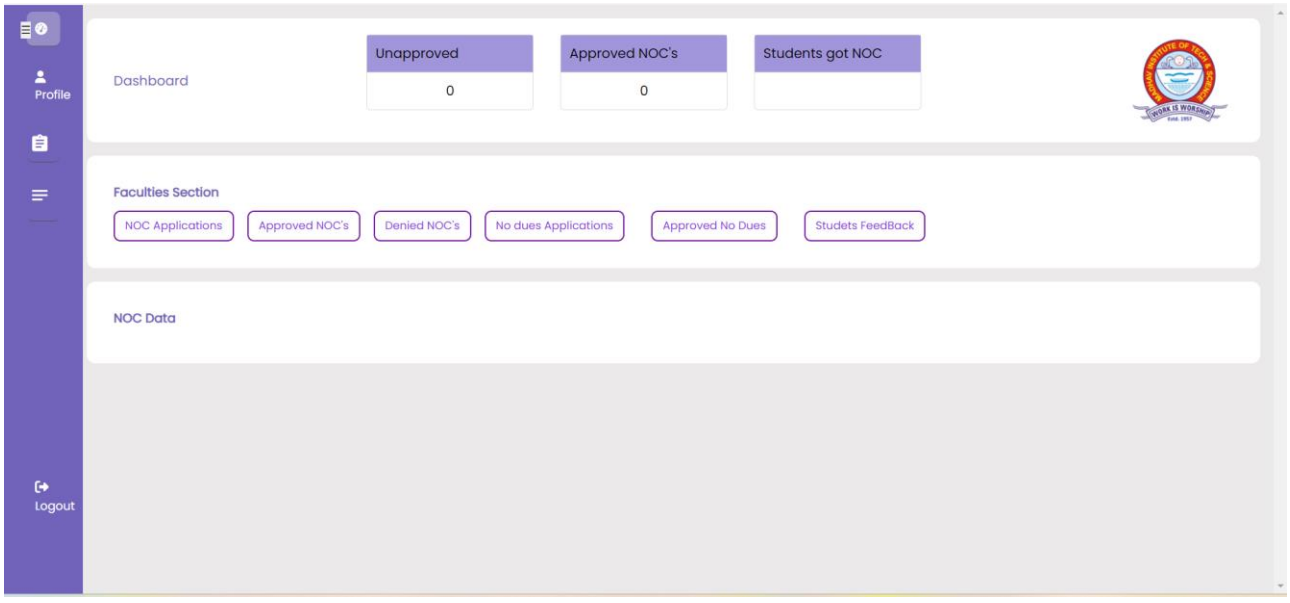


S. no	Enrollment	Dept	Dept. A	Tnp. A	Tnp. C	App. Date	Company	Reciever Name	Reciever Designation	Duration (In days)	Start date	Give Feedback
1	0901CS211123	Computer Science & Engineering				2024-03-03	google	Suyash Agarwal	HR manager	121	2024-02-27	
2	0901CS211123	Computer Science & Engineering				2024-03-03	GOODRICK	Suyash Agarwal	Tech lead	100	2024-03-13	
		Computer				2024-		Suyash			2024-	

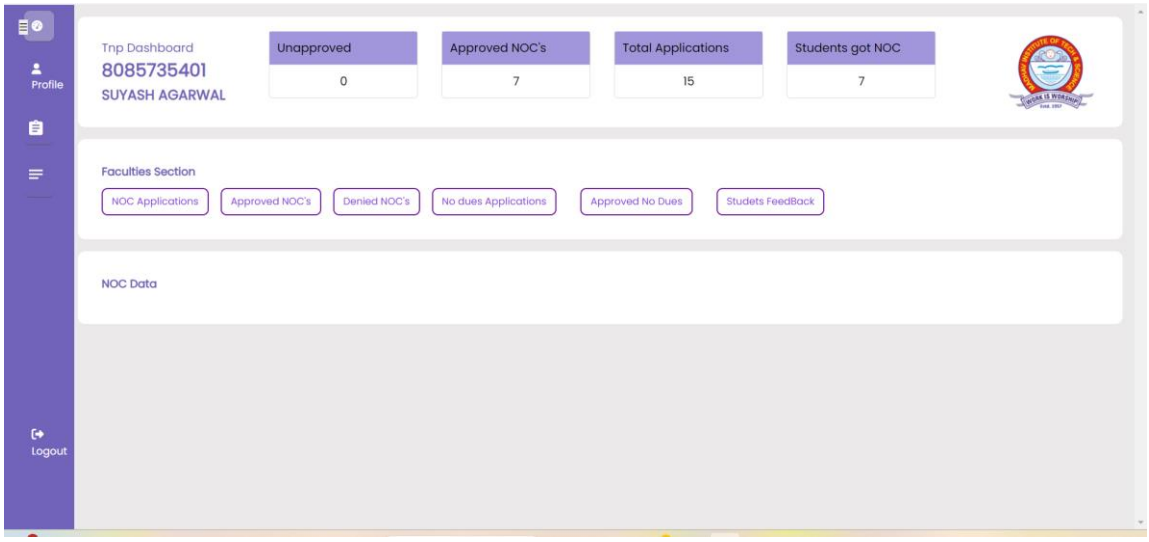
Fig 4 Signup Page (Admin Side)

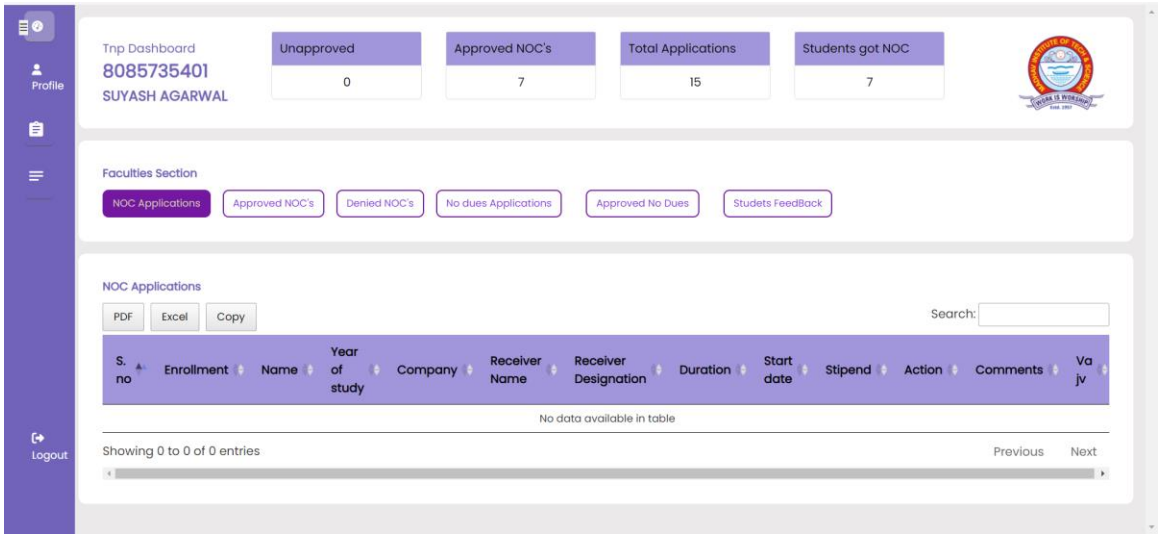
Fig 5 DashBoard (Admin Side)

(BEFORE ACTIVE STATUS)



(After ACTIVE STATUS)
(Data can be seen only when the status is active)





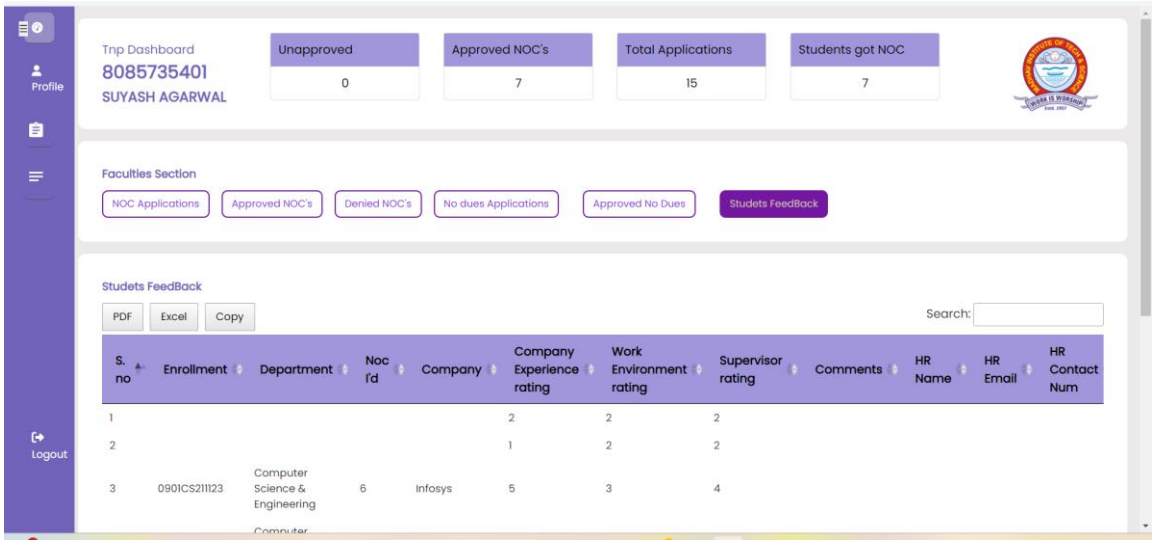
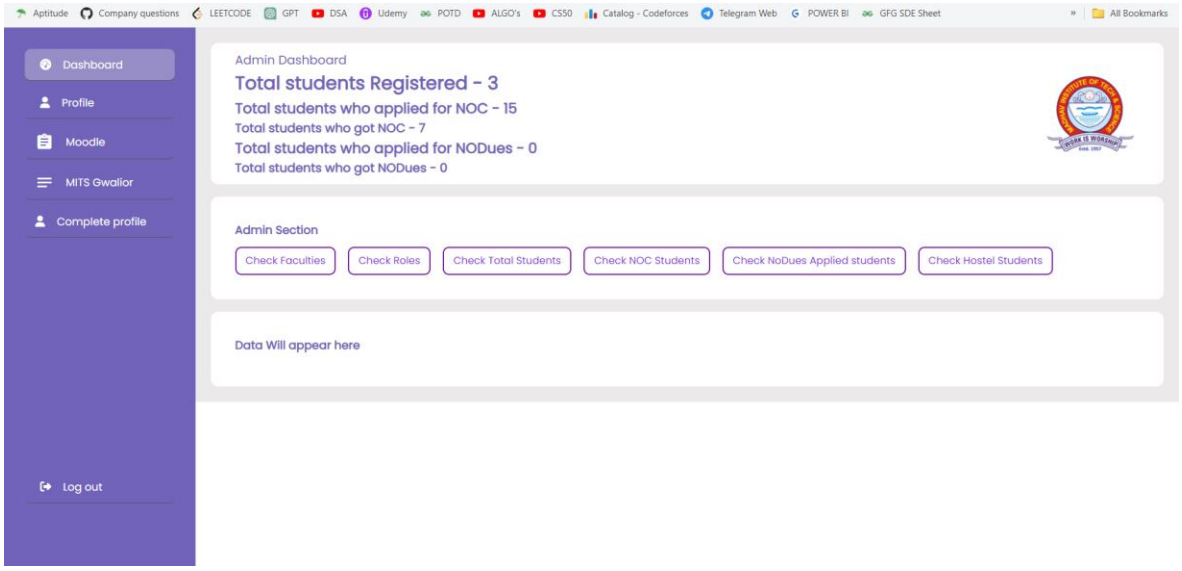
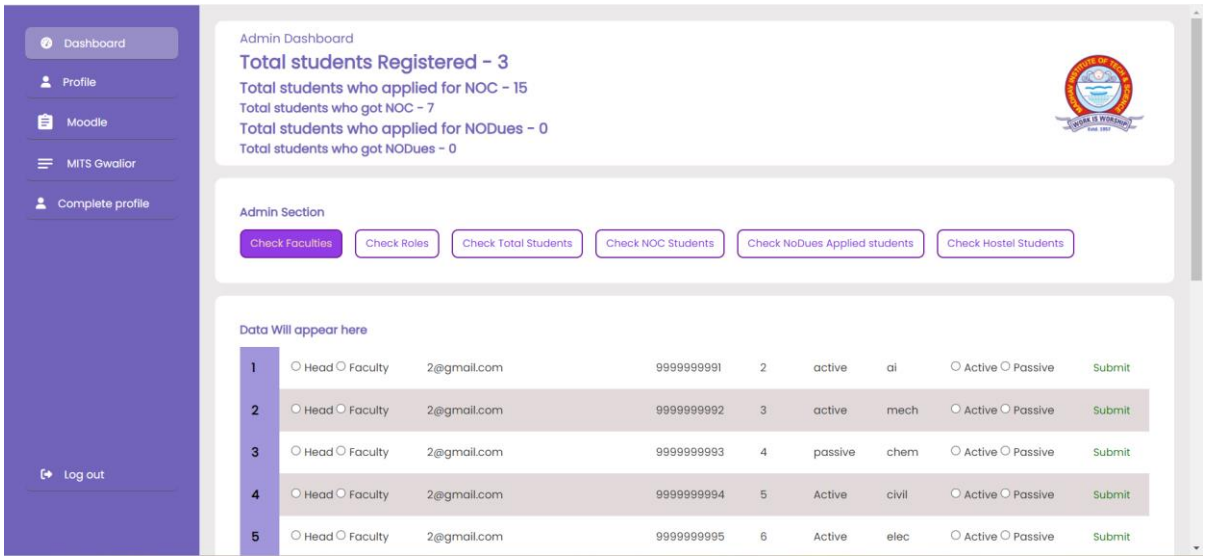
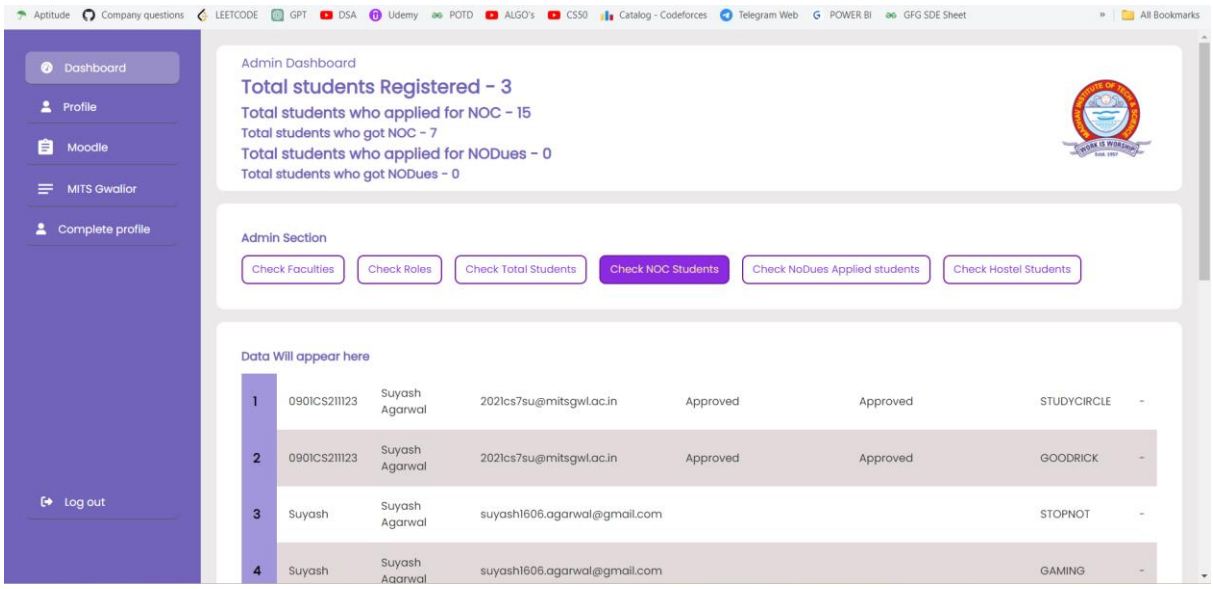


Fig 6 Super Admin (Dashboard)







4.2 Result and Discussion:

In the "MITS NOC Portal" project, the testing phase yielded several key results and discussions:

Functional Validation: The portal underwent rigorous testing, including unit testing, integration testing, and user acceptance testing (UAT). Results showed that the portal's functionalities met the specified requirements, with minimal bugs and issues identified during testing.

Usability Assessment: Feedback from UAT participants highlighted the portal's user-friendly interface and intuitive navigation. Users appreciated the clear layout and ease of use, contributing to a positive user experience.

Performance Evaluation: Performance testing revealed that the portal maintained responsiveness and stability under varying load conditions. Scalability tests indicated that the portal could accommodate increased user traffic without significant degradation in performance.

Bug Resolution: Any bugs or issues identified during testing were promptly addressed by the development team. Through collaborative efforts, bugs were resolved, and necessary adjustments were made to ensure the portal's functionality and reliability.

Documentation and Reporting: Comprehensive documentation of testing activities, including test plans, test cases, and test results, was prepared. This documentation provides a record of the testing process and outcomes, facilitating transparency and accountability.

Feedback Incorporation: Feedback gathered during testing, including user suggestions and observations, was carefully considered for future enhancements. Iterative improvements based on user feedback aim to further enhance the portal's usability and effectiveness.

Discussion on Deployment Readiness: Based on the results of testing and bug resolution, the "MITS NOC Portal" is deemed ready for deployment to the production environment. The portal has undergone thorough validation and

refinement, positioning it for successful implementation and use by students and administrators.

Overall, the testing phase of the "MITS NOC Portal" project has provided valuable insights into the portal's functionality, usability, and performance. Through rigorous testing and collaborative efforts, the portal is primed for deployment, promising to streamline the NOC application process and enhance the overall user experience within the educational institution.

4.3 Conclusion and Scope:

The "MITS NOC Portal" project has reached a successful conclusion following rigorous development, testing, and validation phases. The portal offers students and administrators an intuitive platform to streamline the NOC application process, enhancing efficiency and transparency within the educational institution. With robust functionality, user-friendly interface, and seamless communication channels, the portal is poised for deployment to the production environment. Moving forward, the scope of the project extends to ongoing maintenance, support, and potential enhancements to address evolving needs and optimize performance. The "MITS NOC Portal" stands as a valuable resource, facilitating administrative processes and improving the overall user experience within the institution.

Scope for Future Work:

While the "MITS NOC Portal" project has achieved its initial objectives, there are several avenues for future work and enhancements. This includes:

1. **Integration with Additional Systems:** Explore integration with other institutional systems, such as student databases or academic records, to streamline data exchange and enhance overall administrative efficiency.
2. **Enhanced Reporting and Analytics:** Implement advanced reporting and analytics features to provide insights into NOC application trends, processing times, and user behaviors, facilitating informed decision-making and process optimization.

3. **Mobile Application Development:** Develop a mobile application version of the portal to extend accessibility and convenience to users, allowing them to initiate and track NOC applications on-the-go.

4. **Enhanced Communication Features:** Integrate additional communication channels, such as real-time chat or notifications, to facilitate seamless interaction between students and administrators, improving responsiveness and user engagement.

5. **Expand Functionality for Administrators:** Enhance administrative tools and functionalities, such as advanced user management, customizable workflows, and bulk processing capabilities, to further streamline NOC processing and management tasks.

6. **Accessibility and Localization:** Ensure the portal's accessibility compliance and explore options for localization to accommodate users from diverse backgrounds and ensure inclusivity.

7. **Continuous Improvement and User Feedback:** Establish mechanisms for collecting user feedback and prioritize continuous improvement based on user needs and preferences, ensuring the portal remains aligned with evolving requirements and user expectations.

By focusing on these areas for future work, the "MITS NOC Portal" can continue to evolve and adapt to meet the dynamic needs of the educational institution, further enhancing administrative processes and user experiences.

References

1. https://www.kaggle.com/
2. https://www.netflix.com/
3. https://github.com/