

# Automated Web Portal for On-Duty Request and Approval System

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**Abstract**—The Automated On-Duty (OD) Request System is a comprehensive and user-friendly web-based application developed to modernize and streamline the OD approval process in educational institutions. It provides students with an efficient digital platform to submit, track, and receive approvals for OD requests, eliminating the need for manual paperwork and physical signatures. The system enables students to enter their details through an intuitive online portal, which automatically generates a formatted OD letter based on the submitted information. This letter is then routed digitally to the respective class tutor for initial verification and subsequently to the Head of Department (HOD) for final approval. Upon successful authorization, the approved OD letter is returned to the student in a downloadable digital format. The application is built using HTML and Tailwind CSS for the frontend, offering a clean, responsive, and user-friendly interface, while PHP powers the backend, ensuring dynamic data processing, secure database connectivity, and efficient data management. This automated system not only reduces administrative workload and eliminates paperwork but also ensures transparency, data security, faster turnaround times, and real-time tracking of request status. It promotes an eco-friendly, paperless, and efficient academic workflow by digitizing a process that was traditionally prone to delays and errors. In summary, the Automated On-Duty Request System serves as a reliable, secure, and efficient solution for managing OD approvals, enhancing institutional productivity, and demonstrating the practical application of full-stack web development and automation technologies. Future enhancements may include the integration of real-time notifications, role-based dashboards, and synchronization with institutional attendance management systems to further extend its functionality and usability.

## I. INTRODUCTION

In today's technology-driven era, automation plays a crucial role in improving efficiency across various sectors, including educational institutions. One major administrative challenge in colleges is the manual processing of On-Duty (OD) requests, which requires students to fill out physical forms and obtain multiple handwritten approvals from tutors and the Head of the Department (HOD). This traditional process is time-consuming, error-prone, and often results in delays or miscommunication. To overcome these challenges, the Automated On-Duty Request System has been developed as a web-based solution to streamline and digitize the entire OD approval workflow. The system enables students to submit OD requests online through an intuitive and responsive interface. Once details are entered, a formatted OD letter is automatically generated and routed digitally to the class tutor for verification, followed by HOD approval. Upon successful authorization, the approved OD letter becomes available to the student in digital format. A notable feature of this system is the automated notification sent to all subject-handling faculty

system also includes year- and section-based login authentication, providing secure access and accurate user segregation within departments. Developed using HTML and Tailwind CSS for the frontend and PHP for the backend, the system ensures a clean, responsive interface and reliable backend operations, including data validation, approval processing, and secure database communication. This results in a robust, scalable, and paperless platform that enhances workflow efficiency. 1 By automating the OD approval process, the system reduces administrative workload, minimizes delays,

and improves transparency by allowing students to track request statuses in real time. Overall, the Automated On-Duty Request System bridges the gap between students, tutors, and HODs through a seamless digital workflow, promoting eco-friendly practices and supporting institutional digital transformation. Future enhancements may include real-time notifications, attendance integration, and admin dashboards to further expand its functionality. The system architecture follows a client-server model, ensuring smooth communication between the user interface and the database. Data entered by students is validated and securely stored using structured queries, while the backend manages request routing and approval hierarchies. Each user role—student, tutor, and HOD—has specific permissions to ensure secure and controlled access to data. This modular design allows easy maintenance, scalability, and the integration of new features without disrupting existing operations. The future scope of this project extends beyond OD management. With minor modifications, the same framework can be adapted for other institutional processes such as leave approvals, event permissions, and internal communication workflows. Incorporating AI-driven analytics to track OD trends, integrating with institutional ERP systems, and enabling mobile accessibility through a responsive web app or Android version can further enhance its usability. By promoting digital transformation in academic administration, the system contributes to a more organized, transparent, and sustainable campus environment. Furthermore, features like cloud-based storage, real-time notifications, and role-based dashboards can be introduced to improve accessibility and collaboration. Continuous innovation and feedback-driven updates will ensure the system evolves to meet the changing needs of educational institutions.

## II. LITERATURE SURVEY

### 1. WEB-BASED LEAVE AND ATTENDANCE MANAGEMENT SYSTEM

In today's educational environment, manual leave and attendance[9] management consumes significant time and effort for both students and administrative staff. Traditional paper-based methods require students to fill out forms and obtain multiple approvals, often leading to delays, errors, and difficulty in maintaining

accurate records. To address these challenges, a web-based leave and attendance management system has been proposed. This system enables students to submit leave requests online, specifying the reason and duration, which are then routed digitally[8] to tutors and administrators for verification and approval. The system maintains a comprehensive record of all applications, allows real-time tracking of request status, and updates attendance automatically upon approval. By streamlining[4] the entire process, the system reduces administrative workload, improves transparency, and ensures accurate record-keeping, thereby enhancing overall operational efficiency within educational institutions.

### 2. ROLE-BASED DIGITAL PLATFORM FOR ACADEMIC LEAVE APPROVAL

Academic institutions require structured workflows[5] for leave approvals to ensure proper authorization and accountability. A role-based digital[12] platform provides a secure and organized way to manage leave requests based on hierarchical roles, such as students, tutors, and department heads. Students submit leave requests online, which are then routed automatically to the relevant faculty for review[10]. Tutors can approve, reject, or request additional in form[17]. Department heads can monitor all requests for their respective departments and ensure compliance with institutional policies. Each user[18] has access permissions appropriate to their role, enhancing security and reducing the risk of unauthorized actions.

### 3. ONLINE PORTAL FOR STUDENT ON-DUTY (OD) REQUESTS

Managing On-Duty (OD) requests through manual processes is time-consuming and prone to delays or errors. The online portal for student OD requests offers a digital[13] solution where students can submit their OD applications through a secure web interface. The system automatically generates formatted OD letters and routes them to the class tutor and Head of Department for verification and approval. Once approved, the OD letter is made available to the student in digital format, and attendance[6] records are updated accordingly. The portal also allows students to track the status of their requests in real time, ensuring transparency and minimizing miscommunication[19]. By digitizing the entire OD process, the system reduces administrative burden, enhances operational

efficiency, and supports a paperless[11] campus environment.

#### 4.SMART ON-DUTY TRACKING AND APPROVAL SYSTEM

Managing On-Duty (OD) requests through manual processes is time-consuming and prone to delays or errors. The online portal for student OD requests offers a digital solution where students can submit their OD applications through a use[15] secure web interface. The system automatically generates formatted OD letters and routes them to the class tutor and Head of Department for verification and approval. Once approved, the OD letter is made available to the student in digital[14] format, and attendance records are updated accordingly. The portal also allows students to track the status of their requests in real time, ensuring transparency and minimizing miscommunication. By digitizing the entire OD process, the system reduces administrative burden, enhances operational efficiency, and supports a paperless campus environment.

#### 5.AUTOMATED WORKFLOW SYSTEM FOR STUDENT LEAVE MANAGEMENT

Manual leave management[7] in educational institutions is often inefficient and prone to delays. The automated workflow system for student leave management provides a digital platform where students can submit leave requests online, which are automatically routed to the concerned faculty for verification and final approval. The system maintains a complete record of all applications and allows students and administrators to track leave status in real time. By eliminating manual paperwork and ensuring timely approvals, the system reduces errors, accelerates administrative processes, and improves transparency. The automation[3] of leave workflows also enables educational institutions to maintain accurate records and allocate resources more effectively, supporting a more organized and responsive campus environment.

#### 6.DIGITAL TRANSFORMATION IN LEAVE AND OD MANAGEMENT

With the increasing demand for efficient administrative processes, digital transformation has become essential for managing leave and OD requests. This project focuses on replacing traditional paper-

based methods with a web-based platform that enables students to submit applications digitally, generate formatted documents automatically, and route them for verification and approval. The system includes secure login, real-time tracking, and notification mechanisms to ensure timely processing and transparency. By integrating leave and OD management into a unified digital system, institutions[1] can reduce administrative burden, maintain accurate records, and provide a seamless experience for students and faculty. The digital transformation approach supports eco-friendly practices, improves operational efficiency, and lays the foundation for further technological[2] enhancements in academic administration.

### III. PROPOSED SYSTEM

The proposed Automated On-Duty Request System is a comprehensive and fully digital platform designed to overcome the limitations of the manual system. It simplifies and automates the entire OD approval workflow from student request submission to final approval by the Head of the Department (HOD) through a web-based interface. Students can submit their OD details directly on the portal by entering necessary information such as name, register number, department, year, section, date, and reason for OD. Once the request is submitted, the system automatically generates a formatted OD letter. This digital OD letter is then routed to the class tutor for initial verification. Upon approval, it is forwarded to the HOD for final authorization. After the HOD approves the OD, the system automatically sends notification messages to all subject-handling faculty members of that particular student, informing them about the approved OD. This ensures effective communication across departments and prevents confusion regarding student attendance. Another important feature is that the system allows login access only to students of specific years and sections, ensuring proper authentication and data segregation. The frontend, developed using HTML and Tailwind CSS, provides a clean, responsive, and user-friendly interface that adapts to multiple devices. The backend, developed in PHP,

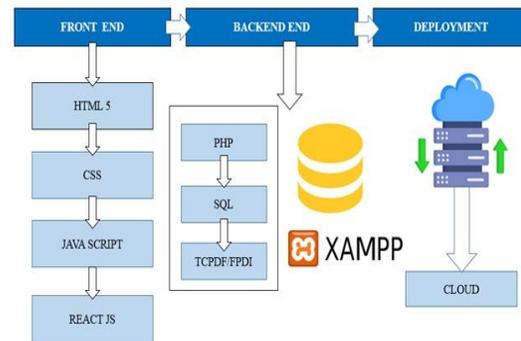
handles all database operations, approval logic, and dynamic processing securely. This proposed system

eliminates paperwork, minimizes manual intervention, and enhances overall efficiency. It provides a transparent and traceable approval process, reducing the time taken for OD verification. Furthermore, it contributes to eco-friendly practices by replacing physical documentation with a fully digital workflow.

#### IV. PROPOSED SOLUTION

The proposed solution aims to fully automate the OD management process using an intuitive, user-centric web application. The system is designed to ensure efficiency, accuracy, and transparency throughout all stages of OD request handling. Students can easily submit and track their requests, while tutors and HODs can review, approve, or reject them digitally with minimal effort. The system incorporates real-time data validation, preventing submission errors and ensuring the accuracy of entered details. Each user has a unique login based on their year and section, allowing only authorized access. Once the OD is approved by the HOD, automated messages are sent to the student’s subject-handling faculty members, ensuring timely communication and reducing the risk of mismanagement. The solution also provides a structured approval hierarchy, ensuring that each OD request passes through the proper chain of authorization—student → tutor → HOD—before final approval. The system’s dashboard displays all pending, approved, and rejected requests, allowing users to track the current status of every application. From a development perspective, the solution leverages modern web technologies to provide scalability and performance. The backend, powered by PHP and MySQL, ensures secure data management, while the frontend, built using HTML and Tailwind CSS, delivers a modern and responsive user experience. This project not only reduces administrative workload but also brings accountability, convenience, and digital transformation to academic workflows. It encourages paperless operations, enhances transparency, and ensures that every OD request is processed efficiently within a unified, secure, and user-friendly environment.

#### MODULES



#### V. IMPLEMENTATION

##### DATA COLLECTION

In the context of the Automated On-Duty Request System, data collection plays a crucial role in managing and processing student OD requests efficiently. The collected data includes inputs from students, tutors, HODs, and system generated.

##### USER-GENERATED DATA

Students provide essential details such as name, register number, department, year, section, and reason for the On-Duty request, along with event information like dates and venue. Tutors and HODs update the request status as approved or rejected, with remarks if needed. This data forms the foundation of the OD management process.

##### SYSTEM-GENERATED DATA

The system automatically generates formatted OD letters once the student submits the request. It records the approval timestamps, maintains the request history, and tracks every stage of the workflow. The system also generates reports that summarize OD requests by student, department, or date, ensuring a complete digital record of all activities.

##### NOTIFICATIONS

Automated notifications are sent to students, tutors, and subject-handling faculty members after each stage of approval. These alerts inform students about request status updates and notify faculty once an OD is sanctioned, ensuring smooth communication between all users.

### DATA INTEGRATION

The system integrates internal modules such as student dashboards, tutor panels, and HOD approval sections. It can also be extended to connect with attendance management systems or institutional databases, ensuring consistent and synchronized data flow across all platforms.

### DATA VALIDATION AND QUALITY CONTROL

To ensure accuracy, the system validates each input field during submission. Invalid data entries, missing fields, or duplicate requests are automatically flagged. Server-side validation further ensures data integrity before storage in the database, maintaining a high level of consistency and reliability.

### PRIVACY AND SECURITY

All collected data is handled securely, following institutional data protection policies. Sensitive information such as login credentials and OD details is encrypted and stored safely in the database. Only authorized users with valid credentials can access or modify the data, ensuring full confidentiality.

### CONTINUOUS DATA COLLECTION

Data collection is a continuous and dynamic process. As students submit new OD requests and tutors or HODs update approvals, the database is consistently refreshed with the latest information. This real-time data management ensures that records remain accurate, up-to-date, and reflective of the current status. The data collection process in this system is well-structured, integrating user inputs, automated generation, validation, and security to deliver a reliable and efficient OD automation platform. It also enables quick retrieval of historical records for auditing and reporting purposes. Furthermore, the structured data allows the system to generate insights, such as frequently requested OD types or peak request periods.

### 1. STUDENT PAGE

This project is a Digital OD (On-Duty) Request Portal developed for students to apply for on-duty permission online. The system allows users to log in, submit OD requests with event details, and automatically generate an OD letter in PDF format. The status of each request can be tracked as Pending, Approved, or Rejected.

This reduces manual paperwork and makes the approval process faster and structured.

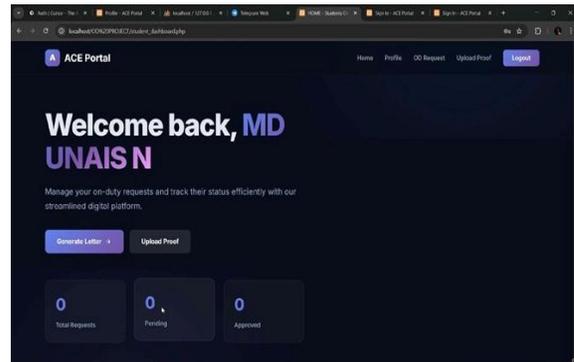


Fig 1.1 Student Login Page

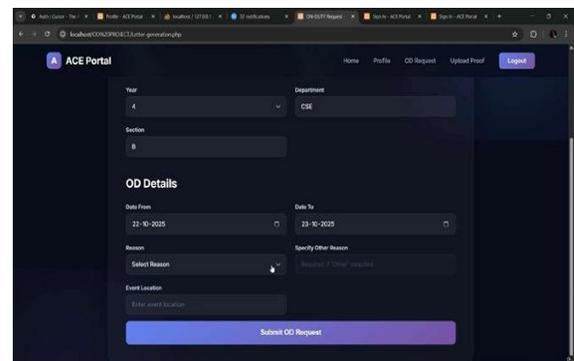


Fig 1.2 Student Form

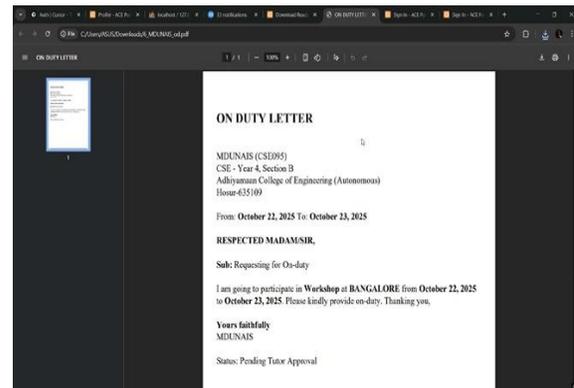


Fig 1.3 Student Letter

### 2. Tutor Page

Developed a Tutor Dashboard module in the ACE Portal where tutors can view, review, and approve students' on-duty requests. The system displays the status of each request Pending, Approved, Rejected and allows tutors to add comments or forward requests to the Head of Department for further action.

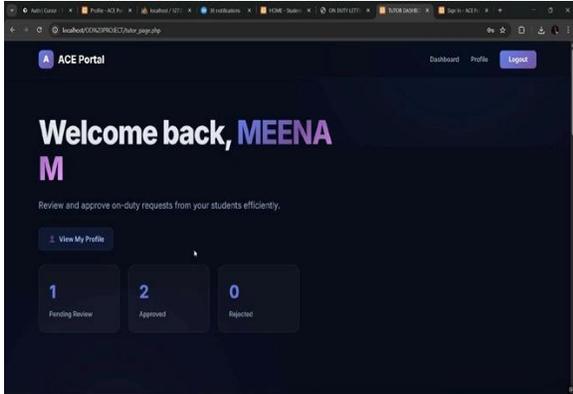


Fig 2.1 Tutor Login Page

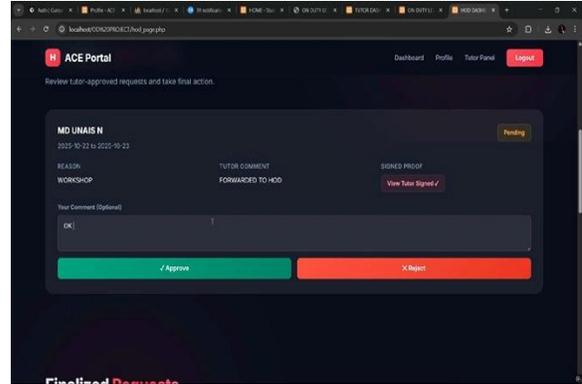


Fig 3.1 HOD Status Page

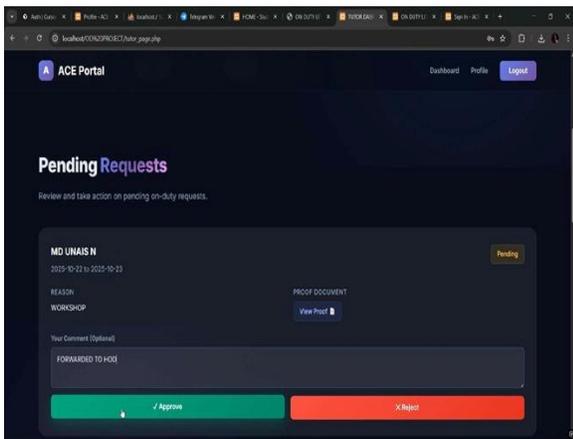


Fig 2.2 Tutor Status Page

### 3.HOD Page

Designed and implemented the HOD Dashboard in the ACE Portal, allowing Heads of Departments to review and take final actions on tutor-approved on-duty requests. The HOD can view tutor comments, verify proof documents, and either approve or reject requests efficiently through an interactive interface.

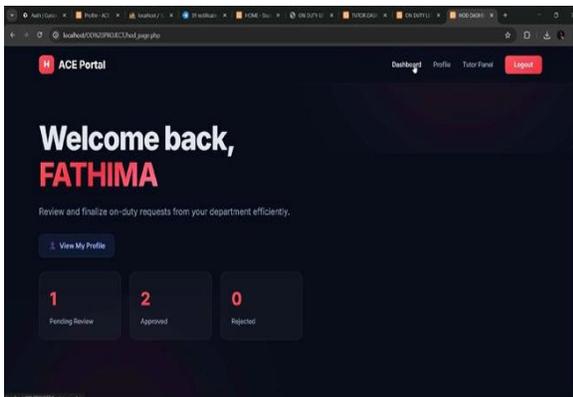


Fig 3.1 HOD Login Page

## VI. CONCLUSION

The Automated On-Duty Request System is a significant step in academic process automation, bridging the gap between students and faculty through technology. It provides a streamlined, paperless solution for managing OD requests, replacing traditional manual methods with handwritten forms and multiple signatures. The intuitive web interface allows students to easily submit requests, while tutors and HODs can efficiently review and approve them. The system enhances operational efficiency, accuracy, and transparency, creating a smoother and faster approval workflow. Key features such as digital letter generation, automated notifications, and role-based authentication make it secure and user-friendly. Real-time tracking keeps students informed about request status, while faculty receive timely updates to manage attendance. Developed using HTML, Tailwind CSS, and PHP, the system offers a robust, scalable, and reliable foundation. It reduces administrative burden, promotes better communication, and minimizes paperwork. By transforming OD management into a smart, efficient, and eco-friendly workflow, the system supports digital transformation and sustainability. Ultimately, it contributes to a more organized, transparent, and technologically empowered academic environment, benefiting students, tutors, and administrators alike.

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