

# Project Design Phase

## Proposed Solution

Date: 02 November 2025

Team ID: NM2025TMID02609

Project Name: Optimizing-User-Group-and-Role-Management-with-Access-Control and Workflows

Maximum Marks: 2 Marks

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### Proposed Solution

S.No.	Parameter	Description
1.	<b>Problem Statement (Problem to be solved)</b>	In project environments, managing user groups, roles, and access levels often becomes chaotic when workflows are not properly defined. Lack of structured access control results in confusion, unauthorized actions, and poor accountability.
2.	<b>Idea / Solution Description</b>	The solution introduces a structured <i>Role-Based Access Control (RBAC)</i> and <i>Workflow Management System</i> to clearly define permissions for each role (e.g., Project Manager, Team Member). Automated workflows will control task assignments, approvals, and status tracking. The system will ensure that every user action aligns with their assigned privileges.
3.	<b>Novelty / Uniqueness</b>	Unlike traditional static access systems, this solution dynamically links roles, user groups, and workflow states. It supports automatic escalation, audit trails, and easy configuration without coding. Integration of role optimization and workflow automation enhances usability and reduces human error.
4.	<b>Social Impact / Customer Satisfaction</b>	The solution promotes collaboration and accountability within teams by ensuring each member operates within defined responsibilities. It minimizes conflicts, improves project transparency, and enhances trust in digital project management environments.

5.	<b>Business Model (Revenue Model)</b>	This can be implemented as a scalable SaaS module or integrated into existing project management tools. Businesses save time and costs by reducing task duplication, access mismanagement, and communication delays — resulting in higher operational efficiency.
6.	<b>Scalability of the Solution</b>	The system can be extended to handle enterprise-level access management, department-based workflows, and multi-level approvals. It can also integrate with existing authentication systems like LDAP, OAuth, or ServiceNow role structures for large-scale deployment.

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### Solution Description

To optimize user, group, and role management in project workflows, this system establishes a clear role hierarchy integrated with access control mechanisms. Each role is granted permissions tailored to its responsibilities, ensuring that users can only perform actions relevant to their role.

Automated workflows streamline task assignment, approval, and progress tracking, reducing dependency on manual updates. Role optimization ensures balanced workload distribution and transparency in project execution.

The proposed system enhances data integrity, accountability, and collaboration while preventing unauthorized operations and confusion within the team. Its modular design allows integration with existing platforms and easy customization for diverse organizational needs.