Project Design Phase
Proposed Solution

Date	29 October 2025
Team ID	**NM2025TMID06552**
Project Name	Optimizing User, Group, and Role Management with Access Control and Workflows
Maximum Marks	2 Marks

S.No.	Parameter	Description
1.	**Problem Statement (Problem to be solved)**	In traditional access management systems, manual user, group, and role operations often lead to inconsistent access levels, redundant permissions, and workflow delays. Lack of automation causes security risks, inefficient audits, and difficulty maintaining accurate access control records.
2.	**Idea / Solution Description**	The proposed system integrates **automated workflows and access control mechanisms** for optimized management of users, groups, and roles. It introduces rule-based dependency validation, workflow-driven approvals, and real-time access synchronization. Whenever a user is created, updated, or removed, corresponding group and role permissions are automatically adjusted while maintaining audit trails for accountability.
3.	**Novelty / Uniqueness**	The solution combines **workflow automation** with **Role-Based Access Control (RBAC)**, ensuring access requests, modifications, and revocations follow a structured approval process. It eliminates manual intervention by auto-validating dependencies before changes are applied. This hybrid model enhances both **security and operational efficiency**.
4.	**Social Impact / Customer Satisfaction**	By automating access control and improving transparency, the system minimizes unauthorized access and administrative errors. Users experience faster onboarding, role assignment, and issue resolution, while organizations benefit from improved data security and compliance with governance standards.
5.	**Business Model (Revenue Model)**	Though primarily designed as an internal optimization system, it can evolve into a **subscription-based SaaS model** for enterprise-level access control management. The solution reduces operational costs, enhances compliance, and prevents productivity losses caused by misconfigured user roles.

Conclusion

The proposed system **optimizes user, group, and role management** by merging **access control** with **workflow automation**, resulting in a secure, transparent, and efficient access governance model.

By automating validation, approval, and synchronization processes, the solution significantly reduces administrative burden and minimizes security vulnerabilities.
It ensures that every access change — from user onboarding to deactivation — is traceable, approved, and compliant with organizational policies.

In conclusion, this project delivers a **robust, scalable, and intelligent access management framework** that strengthens organizational security, improves operational efficiency, and provides a sustainable foundation for enterprise-level identity governance.

Solution Description:

To address inefficiencies and security gaps in access management, this project proposes an **automated, workflow-driven user, group, and role management system**.
The system is designed to:

- Validate user-role dependencies dynamically.
- Enforce access control policies using RBAC logic.
- Trigger workflow approvals for every critical access change.
- Maintain comprehensive audit trails for transparency.
- Synchronize access privileges across all linked modules automatically.