Project Design Phase

Solution Architecture:

Date	2 November 2025
Team ID	NM2025TMID06157
Project Name	Optimizing User, Group, and Role Management with Access Control and Workflows
Maximum Marks	2 Marks

Solution Architecture:

Goals of the Architecture:

• Build a secure Role-Based Access Control (RBAC) system to manage users, roles, and groups effectively.

• Maintain accountability and data integrity through controlled access.

• Automate workflows to minimize manual effort and errors.

• Enable transparent tracking of tasks and responsibilities.

Key Components:

• **User Module:** Stores user details and login credentials.

• **Role Management:** Defines permissions and role hierarchies.

• **Group Management:** Organizes users for collaboration.

• **Workflow Engine:** Automates task approvals and notifications.

• **Task System:** Tracks task status and progress.

• **Database:** Securely stores all user, role, and workflow data.

Development Phases:

• **Define Roles & Groups:** Set up users and their permissions.

• **Design Access Control:** Assign create, edit, and approve rights.

• **Integrate Workflow:** Automate task assignments and approvals.

• **Enable Collaboration:** Link roles with project tasks.

• **Test & Validate:** Ensure secure and accurate role operations.

Solution Architecture Description:

The architecture creates a secure, centralized system for managing users, roles, and workflows.

By integrating Role-Based Access Control (RBAC) with automated workflows, every user action follows predefined permissions, reducing errors and unauthorized access.

It connects key modules — User, Role, Group, Workflow, and Task Management — enabling smooth interaction and automation of approvals and task assignments.

This setup enhances data integrity, accountability, and transparency, while offering a scalable foundation for efficient project management.

Solution Architecture Diagram: