

# Project Design Phase

## Solution Architecture

DATE	1 NOV 2025
TEAM ID	NM2025TMID00759
PROJECT NAME	Optimizing User, Group, and Role Management with Access Control and Workflows
MAXIMUM MARKS	4 Marks

### Solution Architecture :

#### Goals of the Architecture :

- **Enforce Role Accountability:** Ensure only the Project Manager (Alice) can perform final task approvals.
- **Maintain Workflow Integrity:** Prevent tasks from skipping or moving backward in the process unintentionally.
- **Clear Visibility:** Provide clear status updates on all tasks for both Alice and Bob.

#### Key Components:

**Users:** Alice (Project Manager), Bob (Team Member).

**Roles:** Project Manager and Team Member (mapped to user accounts).

#### Access Control Logic :

- **Project Manager Role:** Has permissions to Edit Workflow (e.g., move to APPROVED) on all tasks.
- **Team Member Role:** Restricted from moving a task directly from READY FOR REVIEW to DONE.

#### Development Phases:

1. **Define Roles & Users:** Create Alice & Bob accounts and assign them to the Project Manager and Team Member roles, respectively.
2. **Define Workflow:** Create the 5-step workflow with the mandatory APPROVED status.

3. **Implement Access Restriction:** Apply the condition/rule on the transition from READY FOR REVIEW to APPROVED, restricting it to the Project Manager role.

## Solution Architecture Description :

The solution architecture is designed to safeguard workflow integrity and role accountability within the project environment by implementing a Workflow Condition/Business Rule that prevents a Team Member from bypassing the Project Manager's final approval. The architecture focuses on ensuring data consistency and accountability across the tasks by using a "before transition" logic on the project board's workflow. This rule specifically checks the role of the user attempting to move a task from the "**READY FOR REVIEW**" status to the final "**DONE**" status. The transition is blocked unless the user possesses the Project Manager role. The development process involves creating test users (Alice and Bob), assigning them their respective roles, implementing the workflow and its gatekeeping rule, and verifying that the Team Member (Bob) is correctly blocked from final task completion, thereby reducing the need for manual monitoring and enforcing operational accountability.

## Example – Solution Architecture Diagram :

