Project Design Phase

Solution Architecture

Date	31/10/25
Team ID	NM2025TMID09014
Project Name	Optimization User, group and role management with access control and workflow
Maximum Mark	4 Marks

Solution Architecture:

Goals of the Architecture

Optimize user and group management using automated business rules for assignments and permissions.

Introduce clear role-based access controls and workflow for efficiency and compliance.

Enable real-time monitoring and audit trails for decision making and security enforcement.

Key Components

User Management: Create, update, delete users; associate users with groups based on attributes or rules.

Group Management: Define groups (e.g., departments, teams); auto-assign users based on business rules.

Role Management: Map roles to users/groups to govern access levels across applications and datasets.

Access Control Engine: Enforce permissions according to configured roles and groups; integrate workflow approvals for critical changes.

Workflow Engine: Automate user/group/role assignment changes, trigger notifications, and escalate tasks for manual approval when required.

Development Phases

User and Group Data Model Design Define schemas and APIs for users, groups, roles.

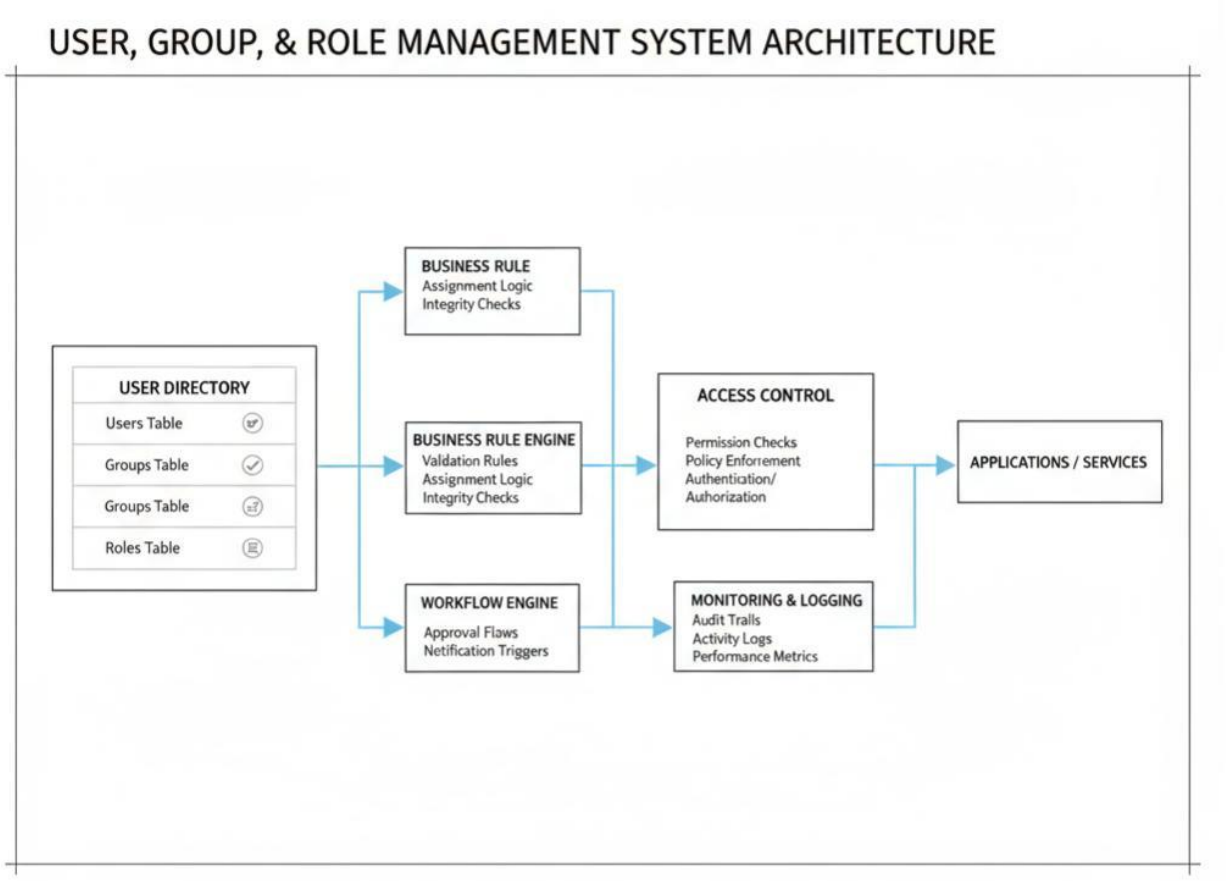
Business Rule Implementation Automate assignments and workflow triggers. Access Control & Workflow Integration Build, test, and deploy integrated components with approval steps. Monitoring and Reporting Set up dashboards and alerts.

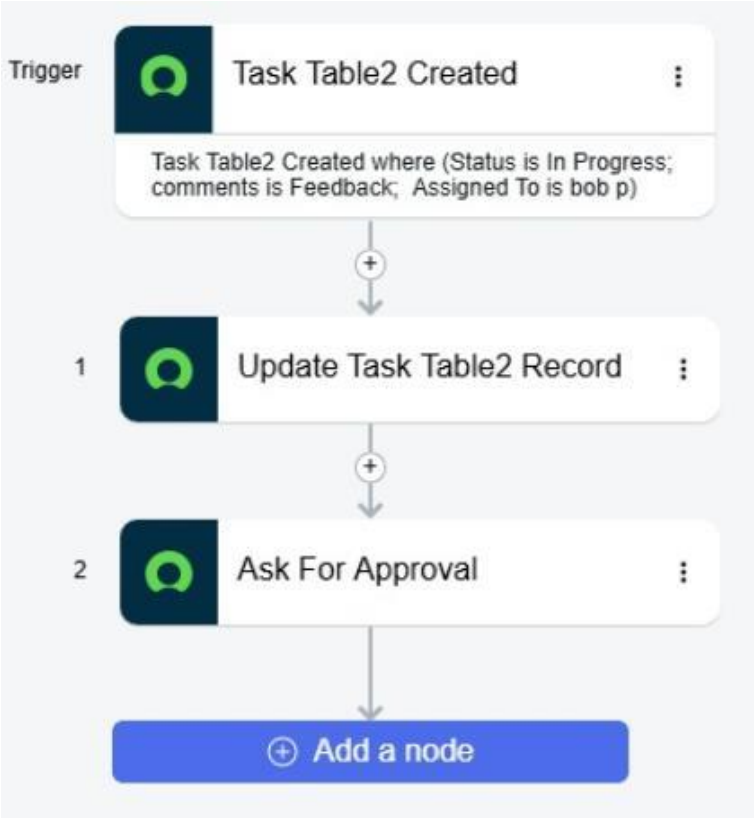
Solution Architecture Description

The solution leverages centralized user/group/role repositories and business rule engines to automate membership assignments and enforce principle of least privilege accordingly. Access requests and critical role changes flow through a workflow engine to ensure proper authorization before activation.

All activities are logged for compliance, and real-time notifications/alerts are configured in monitoring modules. The architecture supports scalability for enterprise environments, enables granular and dynamic access control, and is adaptable to integration with existing ITSM or IAM systems.

Example Solution Architecture Diagram




Trigger
Task Table2 Created
Task Table2 Created where (Status is In Progress; comments is Feedback; Assigned To is bob p)
1
Update Task Table2 Record
2
Ask For Approval
Add a node