Ideation Phase

Empathize &Discover

Date	2-10-2025
Team ID	NM2025TMID07413
Project Name	Optimizing User, Group, and Role Management with Access Control and Workflows
Marks	4 Marks

Technical architecture

The system uses a layered architecture with automation, security, and centralized control at its core.

- User Interface Layer: Provides admin dashboards, self-service portals, and approval screens for managing users and roles.

- Application Layer: Contains the workflow engine for onboarding, offboarding, and access approvals, and an RBAC (Role-Based Access Control) module to manage permissions.
- Integration Layer: Connects with HR systems, identity providers (like Azure AD or Google Workspace), and cloud applications for synchronization.
- Data Layer: Stores user profiles, roles, group details, and audit logs securely in a centralized database.
- Security Layer: Handles authentication, authorization, MFA, and continuous monitoring for access activities.

Data Flow Example:

When HR adds a new employee, the workflow engine automatically creates a user account, assigns a role via RBAC, and logs all actions in the audit system. Similarly, offboarding and access requests follow automated, approval-based workflows to maintain security and compliance.

Components and Technologies

Table: Components and Technologies

S.No	Component	Description	Technology Used
1	User Interface	Provides dashboards for admins and users to manage access and approvals.	React.js / Angular
2	Authentication & Authorization	Ensures secure login and role-based access control (RBAC).	Keycloak / Azure AD / OAuth 2.0

S.No	Component	Description	Technology Used
3	Workflow Engine	Automates onboarding, offboarding, and approval processes.	Camunda / Temporal
4	Integration Layer	Connects HR systems and third-party applications for user data sync.	RESTful APIs / SCIM
5	Database	Stores user accounts, roles, groups, and activity logs.	PostgreSQL / MySQL
6	Audit & Compliance Module	Tracks and logs user actions for reporting and compliance.	ELK Stack (Elasticsearch, Logstash, Kibana)
7	Notification System	Sends alerts and approval notifications to users and managers.	Email / Push Notification Service
8	Deployment & Monitoring	Ensures scalable and reliable deployment with performance tracking.	Docker / Kubernetes / Grafana

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