Optimizing User, Group, and   
Role Management with   
Access Control and   
Workflows   
   
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Category: Access Control and Workflow Automation   
   
Problem Statement   
Managing users, groups, and roles in modern   
organizations across multiple systems is a complex and   
inefficient task prone to security vulnerabilities. Manual

and decentralized access control processes result in   
excessive permissions, operational inefficiencies,   
compliance challenges with inadequate audit trails,   
scalability issues, and poor user experience due to slow   
access granting.   
Objectives   
Centralize user, group, and role management in one   
platform.   
Implement secure RoleBased Access Control (RBAC)   
policies.   
Automate workflows for provisioning, access   
modification, and revocation.   
Ensure regulatory compliance with detailed audit trails   
and access reviews.   
Reduce manual tasks to improve administrative   
efficiency.   
Design a scalable system for growing organizations.   
Enhance user experience with faster access and   
approval processes.   
Skills Required   
Programming: Python, Java

Database Management: SQL, NoSQL   
Access Control and Security: RBAC, Authentication,   
Authorization   
Workflow Automation and Scripting   
Web Development: HTML, CSS, JavaScript   
API Integration   
Cloud Deployment   
Testing and Debugging   
Project Description:   
This project aims to develop a centralized platform for   
managing users, groups, and roles with integrated RBAC   
and automated workflows. The system streamlines   
access management by automating user onboarding,   
role changes, and access revocation while supporting   
compliance and security requirements. It reduces errors   
caused by manual processing, improves operational   
efficiency, and enhances user experience. The system is   
scalable and adaptable to organizational growth,   
providing audit trails for compliance and security   
assurance.

Milestones and Activities   
Milestone 1: Setup Environment and Architecture   
Configure cloud and development tools.   
Define system architecture including database schema.   
Establish development and testing environments.   
   
Milestone 2: Create User, Group, and Role Entities   
Develop database tables representing users, groups,   
and roles.   
Define RBAC policies and permissions.   
Build administration interfaces.

Milestone 3: Implement Workflow Automation

Design and implement automated workflows for access   
provisioning, modification, and revocation.   
Build approval processes with rolebased approvers.   
Integrate notifications for workflow stages.

Milestone 4: Implement Approval Actions   
Define action to update access task status to   
“completed” upon task completion.   
   
Create “Ask for Approval” actions routed to approvers   
(e.g., Alice P).   
Test approval and rejection scenarios.

Milestone 5: Configure Task and Approval   
Management   
Create task tables and approval interfaces for   
requesters and approvers.   
   
Enable tracking of task statuses from initiation through   
approval.   
   
Milestone 6: Enable Audit Logs and Compliance   
Reporting   
Enable detailed logging of all accessrelated changes.   
Design reports and dashboards supporting compliance   
audits and reviews.   
Example Workflow   
User requests for access trigger workflow actions   
updating task statuses.   
Approval requests are sent to designated approvers via   
automated notifications.   
Approvers review and approve/reject access requests.

Approved requests automatically provision access;   
rejected requests are logged.   
System maintains audit trails for compliance.   
   
   
Conclusion :   
This project demonstrates a comprehensive solution for   
streamlined and secure management of users, groups,   
and roles. Through RBAC and workflow automation, it   
addresses security risks, operational inefficiencies, and   
compliance challenges. The system is scalable to meet   
organizational growth, reduces administrative overhead,   
and improves user productivity.