Project Design Phase-II Technology Stack (Architecture & Stack)

Date	02 Nov 2025
Team ID	NM2025TMID00760
Project Name	Optimizing User, Group, and Role Management with Access Control and Workflows
Maximum Marks	2 Marks

Technical Architecture:

This project is designed to streamline and secure the management of users, groups, roles, and permissions within an enterprise application. It integrates access control and workflow automation to ensure that all role assignments and user modifications are handled in a controlled and auditable manner.

Example:
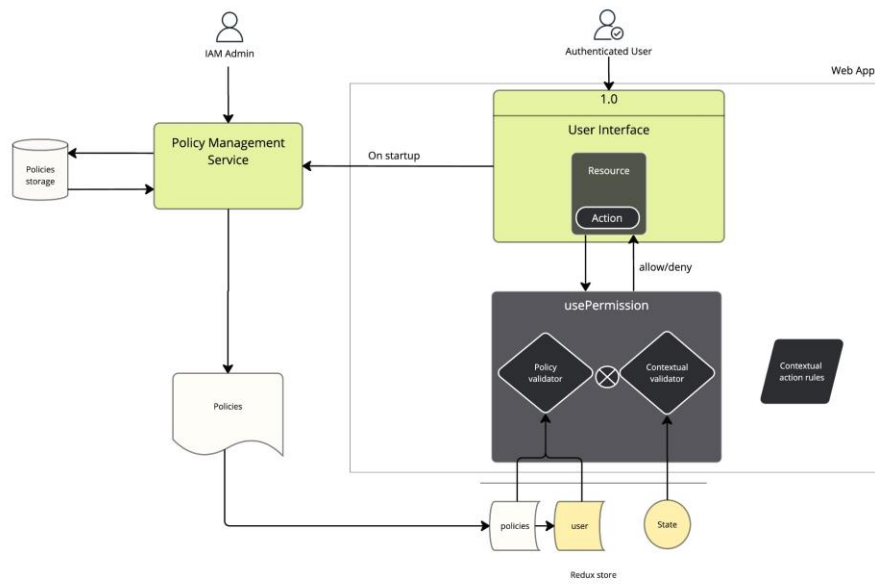
Attribute-based Access Control Workflow

Components & Technologies:

S.No	Component	Description	Technology (ServiceNow)
1	User Interface	Interface for admins to manage users, groups, and roles	ServiceNow Web UI (Forms, Lists, Dashboards)
2	Application Logic	Manages workflows and access control logic	Flow Designer, Business Rules, Script Includes
3	Role-Based Access	Defines access permissions based on roles	ACLs, RBAC (Role and Group Management)
4	Workflow Engine	Automates approval workflows for new access and role assignments	Flow Designer, Workflow Editor (Legacy)
5	Data Storage	Stores user, group, role, and workflow records	ServiceNow CMDB, sys_user, sys_user_grmember
6	Authentication Service	Handles secure login and integrates with external identity providers	SSO (SAML, OAuth 2.0), Multi-Factor Auth
7	Integration Layer	Syncs data with external apps such as HRIS or Active Directory	IntegrationHub, REST API, MID Server
8	Notification System	Notifies users and admins of workflow status changes	ServiceNow Notifications, Email, SMS APIs
9	Audit Logging	Maintains history of user changes and role assignments	System Logs, Audit Tables
10	Hosting & Deployment	SaaS-based cloud deployment managed fully by ServiceNow	ServiceNow Cloud (PaaS/SaaS)

Application Characteristics:

S.No	Characteristic	Description	Technology (ServiceNow)
1	No-Code/Low-Code Support	Enables rapid development of workflows and logic without heavy coding	Flow Designer, UI Policies, UI Actions
2	Security & Compliance	Provides in-built role-based access and platform security compliance	ACL Security, Contextual Security, GRC
3	Scalability	Automatically scales with enterprise needs through ServiceNow's cloud	SaaS Multi-instance Architecture
4	High Availability	Offers redundancy and high uptime across distributed instances	ServiceNow Cloud Infrastructure
5	Performance Optimization	Optimized for enterprise-scale datasets using async processing and indexing	GlideRecord, Query Optimization, Caching
6	Maintainability	Modular logic using configuration, workflows, and reusable script includes	Scoped Apps, Update Sets
7	Integration Ready	Easily integrates with internal and external systems using APIs	IntegrationHub, REST/SOAP APIs
8	Auditability	Native support for change history and access control logs	Audit History, System Log Tables
9	Mobile Support	Accessible via mobile app for on-the-go approvals and management	ServiceNow Mobile App