

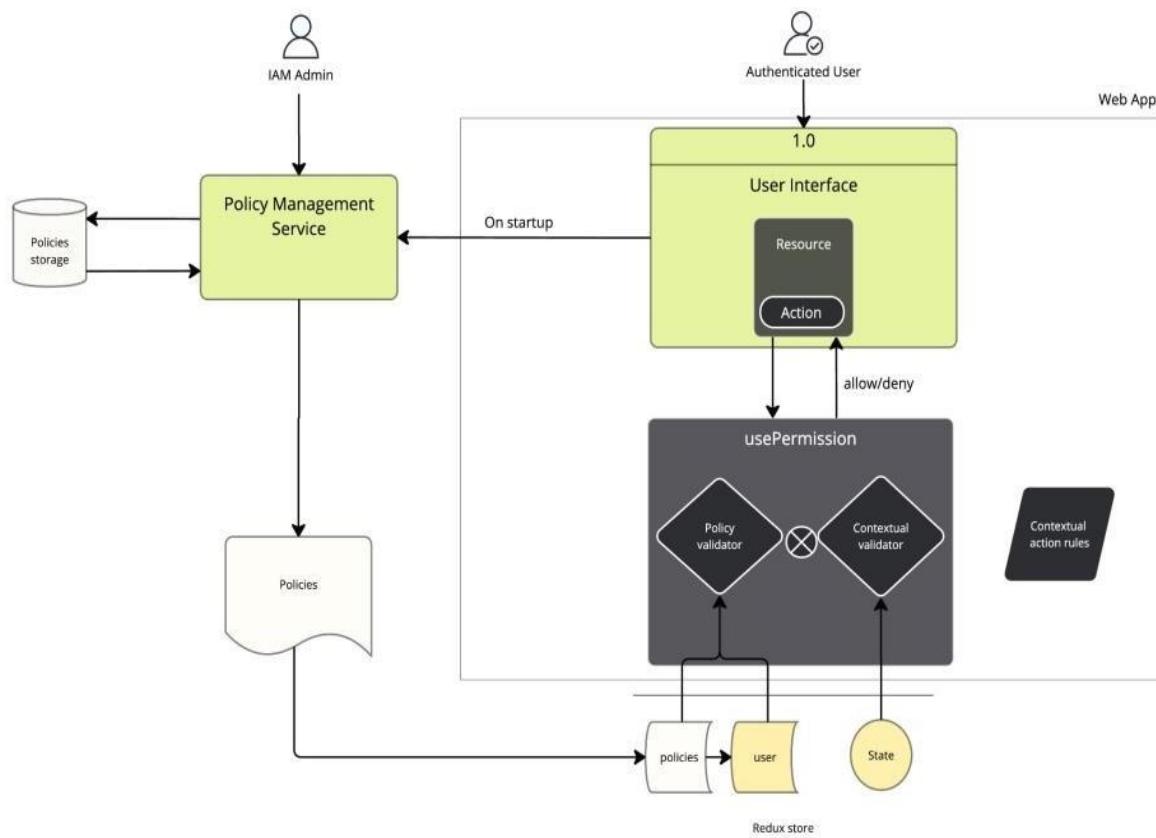
## Project Design Phase-II Technology Stack (Architecture & Stack)

Date	02 Nov 2025
Team ID	NM2025TMID04960
Project Name	Optimizing User, Group, and Role Management with Access Control and Workflows
Maximum Marks	4 Marks

### Technical Architecture:

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

### Example:



Attribute-based Access Control Workflow

## Components & Technologies:

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

## Application Characteristics:

S.No	Characteristic	Description	Technology (ServiceNow)
1	<b>No-Code/Low-Code Support</b>	Enables rapid development of workflows and automation without heavy coding	Flow Designer, UI Policies, UI Actions
2	<b>Security &amp; Compliance</b>	Ensures data protection with built-in access control and compliance tools	ACL Security, Contextual Security, GRC
3	<b>Scalability</b>	Scales automatically with growing enterprise requirements	ServiceNow Cloud
4	<b>High Availability</b>	Provides redundancy and consistent uptime across distributed cloud instances	SaaS Multi-instance Architecture, ServiceNow Cloud Infrastructure
5	<b>Performance Optimization</b>	Handles enterprise-scale datasets efficiently with asynchronous processing and caching	GlideRecord, Query Optimization, Caching
6	<b>Maintainability</b>	Simplified maintenance using modular configuration and reusable scripts	Scoped Apps, Update Sets
7	<b>Integration Ready</b>	Easily connects with both internal and external systems	IntegrationHub, REST/SOAP APIs
8	<b>Auditability</b>	Tracks all changes with native audit logging and version control	Audit History, System Log Tables
9	<b>Mobile Support</b>	Allows access and approvals via mobile for on-the-go management	ServiceNow Mobile App