Technology Stack Used

Project Title: Optimizing User, Group, and Role Management with Access Control and Workflows
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1. Overview

The project is developed on the **ServiceNow Platform**, utilizing its native tools and modules to build, automate, and secure user, group, and role management workflows.
 The technology stack combines **ServiceNow-native technologies**, **integration tools**, and **supporting systems** for scalability, security, and automation.

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2. Core Technologies

Layer	Technology / Tool	Purpose / Functionality
Platform	**ServiceNow**	Core development and deployment environment for the solution.
Automation Engine	**Flow Designer**	Automates task assignments, approvals, and workflow routing without scripting.
Scripting & Logic	**Business Rules**, **Script Includes**, **UI Policies**	Implements backend logic, conditional behaviors, and automated field actions.
Access Control	**Access Control Lists (ACLs)**	Enforces secure, role-based permissions for tables, forms, and fields.
Data Management	**Import Sets** and **Transform Maps**	Imports and synchronizes user, group, and role data from external sources.
Database Layer	**ServiceNow Tables** (`u_project_table`, `u_task_table2`)	Stores structured data for projects, users, and workflow states.
User Interface Layer	**ServiceNow Forms**, **Workspaces**, **Dashboards**	Provides interactive user interfaces for admins, managers, and team members.

Testing & Validation	User Impersonation Tool, ACL Testing Framework	Verifies access permissions and workflow behaviors per role.

3. Supporting Tools and Integrations

Category	Tool / Technology	Description
Authentication & Security	LDAP / OAuth Integration	Provides secure single sign-on and user authentication.
Version Control	GitHub	Tracks configuration changes and stores project documentation.
Project Management	Jira / Trello	Used for sprint planning, issue tracking, and progress monitoring.
Documentation & Reporting	Microsoft Word / Excel / PowerPoint	Used for project reporting, requirement tracking, and presentation.
Testing	ServiceNow Test Management	Executes and records test cases for modules and workflows.

4. Optional Technologies (For Scalability & Integration)

Technology	Purpose
REST / SOAP APIs	To integrate with external systems for user data synchronization.
Performance Analytics	To generate dynamic role-based dashboards and reports.
Email Notifications (SMTP)	To trigger automated approval and status alerts.

5. System Environment

Component	Specification
Development Environment	ServiceNow Studio (Cloud Environment)
Execution Mode	Web-Based (Browser Access)
Supported Browsers	Chrome, Edge, Firefox

Hardware Requirement	Minimum 8 GB RAM, Intel i5 or above, Stable Internet Connection
Operating System	Windows 10 / 11 or macOS (Developer Environment)

6. Key Highlights of the Tech Stack

- **No-code / Low-code development:** Built using ServiceNow Flow Designer and ACLs.

- **Secure by design:** Role-based and ACL-driven access ensures least-privilege model.

- **Scalable and modular:** Easily extends to enterprise-level user management.

- **Seamless integration:** Works with LDAP, OAuth, and third-party project management tools.

- **Real-time testing:** ServiceNow's Impersonation Tool ensures quick validation of access controls.

Conclusion

The technology stack leverages **ServiceNow's automation, RBAC, and data management capabilities** to deliver a **secure, scalable, and efficient user access management system**.
 Its integration-ready architecture and low-code development environment make it ideal for enterprise-grade identity and workflow control solutions.