Project Design Phase – II

Technology Stack (Architecture & Stack)

Date: 02 November 2025
Team ID: NM2025TMID02114
Project Name: Optimizing User, Group, and Role Management with Access Control and Workflows
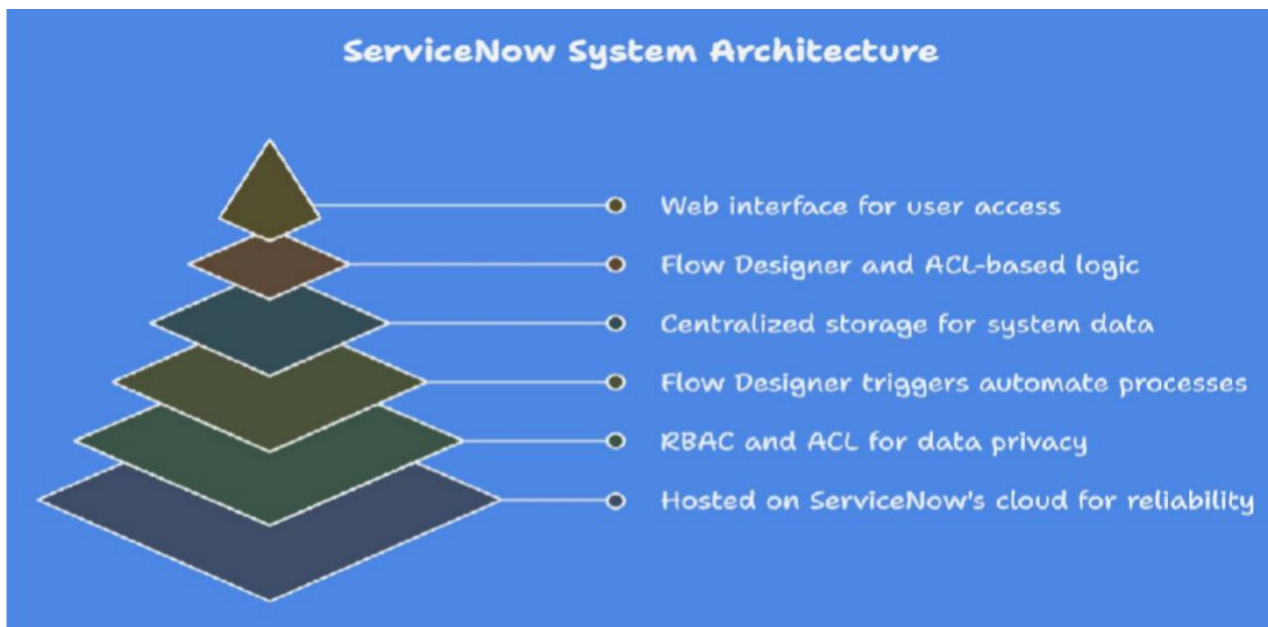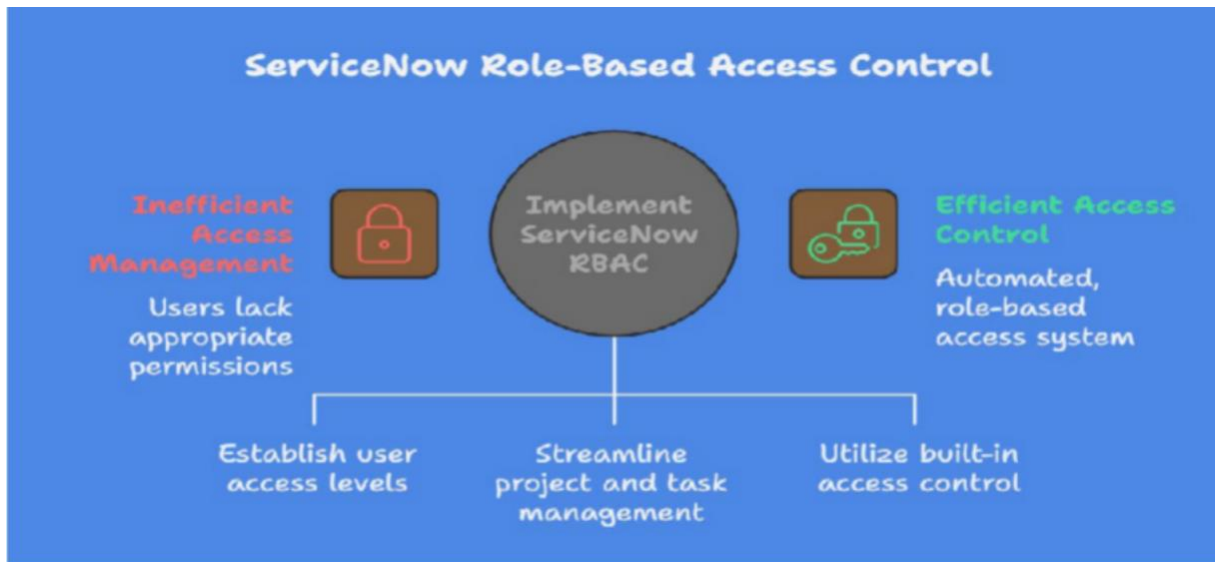**Maximum Marks:** 4 Marks

Technical Architecture:

Table 1: Components & Technologies

S.No	Component	Description	Technology
1.	**User Interface**	Users and administrators interact via the ServiceNow Web Dashboard for creating users, groups, and managing workflows.	ServiceNow Web UI
2.	**Application Logic - 1**	Handles user, group, and role creation with proper mapping for access control.	ServiceNow System Security Modules
3.	**Application Logic - 2**	Implements workflow logic for task assignment and approval using Flow Designer.	ServiceNow Flow Designer
4.	**Application Logic - 3**	Enforces access control through ACLs and role validation for project and task tables.	ServiceNow ACLs, Script Includes
5.	**Database**	Stores user, group, role, and task data securely within ServiceNow tables.	ServiceNow Database Tables
6.	**Cloud Database**	Managed and hosted by ServiceNow's cloud infrastructure ensuring high reliability.	ServiceNow Cloud Backend
7.	**File Storage**	Used for maintaining logs, configuration, and audit records within the platform.	ServiceNow System Logs
8.	**External API - 1 (Optional)**	Could integrate with HRMS or project tools for user synchronization.	ServiceNow REST API Integration
9.	**External API - 2**	Not applicable for current project scope.	–
10.	**Machine Learning Model**	Not applicable for this project.	–
11.	**Infrastructure (Server / Cloud)**	Fully hosted and managed on ServiceNow's SaaS cloud platform.	ServiceNow Cloud (SaaS)

Table 2: Application Characteristics

S.No	Characteristics	Description	Technology
1.	**Open-Source Frameworks**	Not applicable since ServiceNow is a proprietary platform.	–
2.	**Security Implementations**	Role-based access control and ACL rules protect data from unauthorized access.	ACLs, Scoped Applications
3.	**Scalable Architecture**	ServiceNow's SaaS architecture supports horizontal scalability for multiple users and roles.	ServiceNow Cloud Architecture
4.	**Availability**	Highly available and managed by ServiceNow's global cloud infrastructure.	Load-balanced Cloud Instances
5.	**Performance**	Optimized through background scripts, indexed tables, and asynchronous workflow execution.	GlideRecord, Flow Designer