

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

|               |   |
|---------------|---|
| Date          | 01 Nov 2025   |
| Team ID       | NM2025TMID07925   |
| Project Name  | Optimizing User, Group, and Role Management with Access Control and Workflows |
| Maximum Marks | 4 Marks   |

### Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

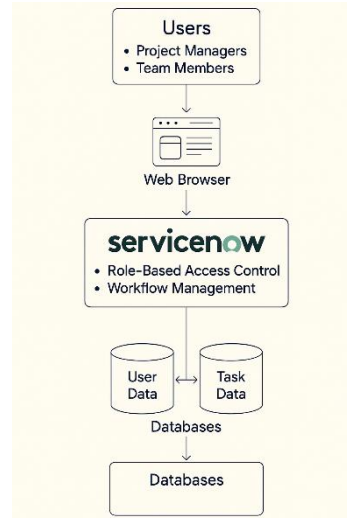


Table-1: Components & Technologies

| S.No | Component                     | Description  | Technology / Platform                               |
|------|-------------------------------|--|---|
| 1    | User Interface                | Web-based interface for Project Manager and Team Members       | ServiceNow UI Builder, HTML5, CSS, JavaScript       |
| 2    | Application Logic-1           | Workflow orchestration and role assignment logic               | ServiceNow Flow Designer, Business Rules            |
| 3    | Application Logic-2           | Notification and task lifecycle automation                     | ServiceNow Notification Engine, Script Actions      |
| 4    | Application Logic-3           | Access validation based on roles                               | Access Control Rules, ACLs in ServiceNow            |
| 5    | Database                      | Stores user data, roles, and task information                  | ServiceNow CMDB and Tables (MySQL under the hood)   |
| 6    | Cloud Database                | Cloud-based storage with automated backups                     | ServiceNow Platform-as-a-Service (PaaS)             |
| 7    | File Storage                  | Attachment handling and storage                                | ServiceNow Attachments Module                       |
| 8    | External API-1                | Integration with notification channels (e.g., email, MS Teams) | Email API, IntegrationHub connectors                |
| 9    | External API-2                | Optional integration for identity verification                 | OAuth2, Azure AD, or Aadhar API                     |
| 10   | Machine Learning Model        | Intelligent routing of tasks or anomaly detection (if used)    | ServiceNow Predictive Intelligence (optional)       |
| 11   | Infrastructure (Server/Cloud) | Cloud deployment and scalability                               | ServiceNow Cloud Infrastructure (Multi-tenant SaaS) |

Table-2: Application Characteristics

| S.No | Characteristics        | Description   | Technology Used                          |
|------|------------------------|---|--|
| 1    | Open-Source Frameworks | Use of client-side scripting frameworks (if extended beyond ServiceNow) | AngularJS (in Service Portal), Bootstrap |

| S.No | Characteristics          | Description  | Technology Used                     |
|------|--------------------------|--|-------------------------------------|
| 2    | Security Implementations | Role-based access control, ACLs, authentication protocols                              | LDAP, SSO, OAuth2, ACLs, Encryption |
| 3    | Scalable Architecture    | Modular design with scalable workflows and table structures                            | ServiceNow Scoped Apps, REST APIs   |
| 4    | Availability             | Highly available via distributed ServiceNow cloud infrastructure                       | Load-balanced SaaS Architecture     |
| 5    | Performance              | Designed for fast response times with limited API calls and efficient table structures | GlideAjax, Scheduled Jobs, Indexing |

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