

Date	30/10/2025
Time id	NM2025TMID07726
Project name	Education organization using servicenow
Maximum mark	4 marks

PROJECT DESIGN PHASE 2

TECHNOLOGY STACK(ARCHITERTURE& STACK)

Technical Architecture :

Key Architectural Layers & Components

The ServiceNow technical architecture is composed of several key layers and components that work together:

- **User Interface (UI) Layer:** The frontend layer that provides a unified, intuitive experience for students, faculty, and staff through various interfaces:
 - **Service Portal:** A self-service portal where users can find answers in knowledge bases, submit service requests (e.g., password resets, facility requests, course registration issues), and track their progress.
 - **Now Mobile App:** Offers mobile access to services and workflows, providing flexibility for the campus community.
 - **Agent Workspace:** A centralized interface for IT, HR, and other service agents to manage and resolve issues efficiently.
- **Application Layer:** This layer hosts the specific products and modules used by different departments:
 - **IT Service Management (ITSM):** Manages incidents, problems, changes, and requests for IT services.
 - **HR Service Delivery (HRSD):** Automates HR processes like faculty onboarding, leave requests, and case management.
 - **Customer Service Management (CSM):** Helps manage student inquiries and support requests, acting as a single point of contact.
 - **IT Asset Management (ITAM):** Tracks and manages hardware and software assets across the institution lifecycle, helping control costs and ensure compliance.

- **IT Operations Management (ITOM):** Provides visibility into the IT infrastructure to proactively monitor performance, prevent outages, and manage the campus network.
 - **App Engine:** A low-code development environment that allows the institution to build custom applications tailored to unique educational needs (e.g., tracking student admissions, research project management).
- **Platform Layer:** The core engine that powers the applications, featuring:
 - **Workflow Engine/Flow Designer:** Automates and orchestrates complex, cross-departmental processes and approvals without extensive coding.
 - **Artificial Intelligence (AI) and Machine Learning (ML):** Used for predictive analysis, powering virtual agents (chatbots) for instant student/faculty support, and prioritizing tasks.
 - **IntegrationHub:** A tool with pre-built connectors to facilitate seamless data exchange with other campus systems, such as student information systems (ERP), learning management systems (LMS), and financial systems.
- **Database Layer:** Stores all institutional data in a centralized manner using a relational database system and the **Common Service Data Model (CSDM)**. The CSDM provides a standardized way to map IT services to the underlying infrastructure, offering a holistic view of the campus IT ecosystem.
- **Security and Compliance Layer:** Ensures data privacy and regulatory compliance through:
 - **Role-Based Access Controls (RBAC):** Defines specific access levels for different user types (students, faculty, IT staff).
 - **Data Encryption:** Protects sensitive information both in transit and at rest.
 - **Audit Logs:** Tracks all changes made in the system to ensure accountability.
- **Cloud Infrastructure Layer:** ServiceNow manages the underlying proprietary cloud infrastructure, ensuring high availability, disaster recovery, and scalability for the institution.

ServiceNow Components and Use Cases in Education

Educational

institutions leverage various ServiceNow components to manage a wide range of services beyond just IT:

- **IT Service Management (ITSM):** This is a primary use case, transforming IT service delivery, managing IT ticketing systems, and providing a single access point for IT support for students, faculty, and staff.
- **IT Asset Management (ITAM):** Used to manage and track IT assets (hardware, software, etc.), lab equipment, books, and other non-IT assets across the campus to control costs and ensure compliance.
- **HR Service Delivery (HRSD):** Streamlines HR processes such as faculty onboarding, leave requests, and other employee services through a unified portal, providing faster resolution of HR-related issues.
- **Customer Service Management (CSM):** Manages student services like course registration, financial aid applications, academic advising, and general inquiries, providing a seamless, self-service experience for students.
- **Campus Facilities Management:** Automates processes related to facilities and campus operations, including room and resource booking, maintenance requests, and space management.
- **AI and Machine Learning (Now Intelligence):** Integrated AI capabilities (like Virtual Agents) help automate common requests, provide instant answers, and allow service desk agents to focus on more complex issues, improving overall efficiency.
- **Configuration Management Database (CMDB) & IT Operations Management (ITOM):** Provides visibility into the IT infrastructure, helps prevent outages, and allows for data-driven decisions regarding resource allocation and system performance.
- **App Engine:** The low-code/no-code development platform allows universities to build custom applications tailored to their specific needs, such as tracking

student progress, research project management, or even a custom application for managing thesis defenses.