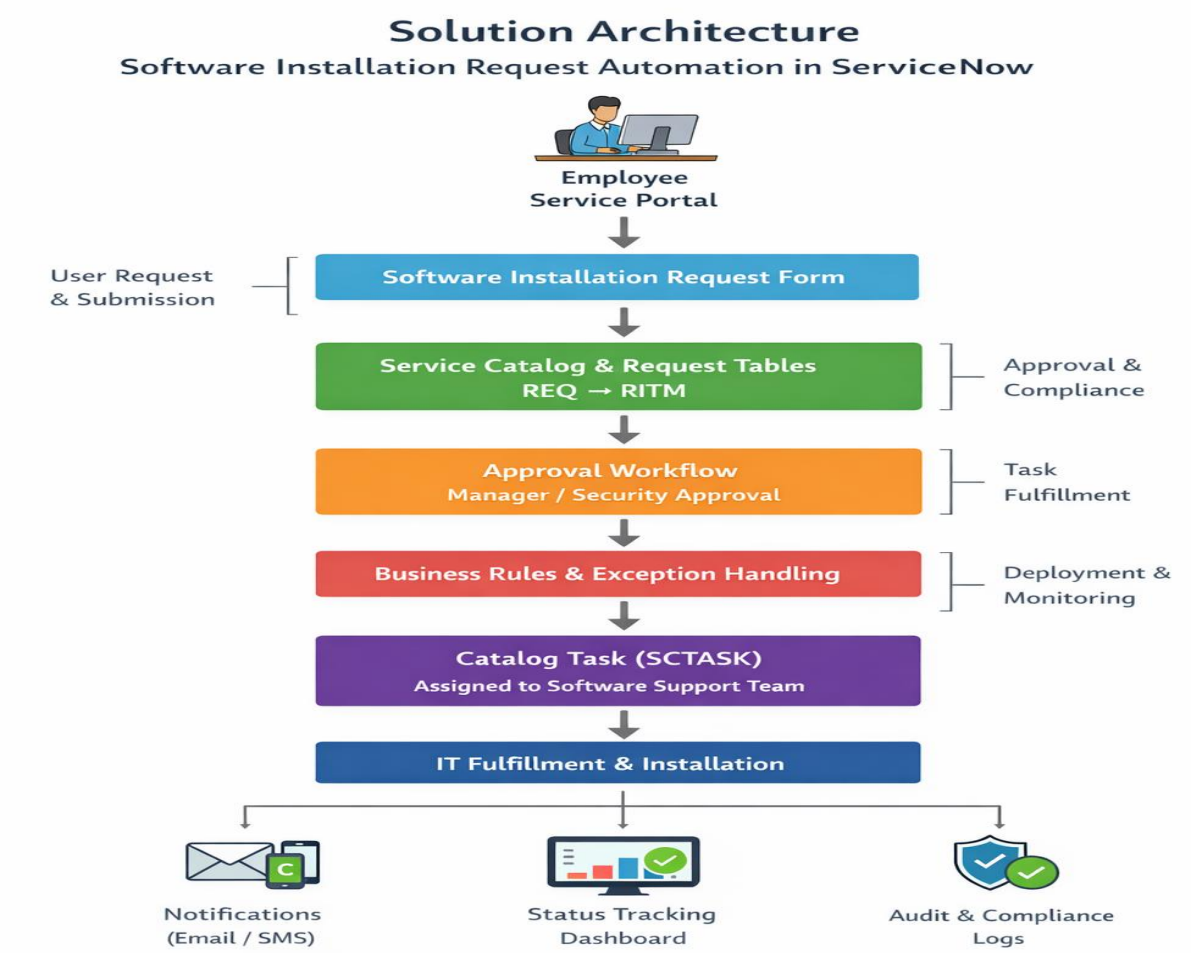
Project Design Phase
Solution Architecture

Date	27 December 2025
Team ID	
Project Name	An employee requests installation of licensed software through the Service Catalog
Maximum Marks	4 Marks

Solution Architecture – Overview

The **Solution Architecture** for the Software Installation Request Automation project defines how different ServiceNow components interact to automate the end-to-end software request lifecycle. The architecture ensures **standardized request intake, automated approvals, controlled fulfilment, compliance enforcement, and real-time visibility** using ServiceNow's native ITSM capabilities.

Example - Solution Architecture Diagram:



Architectural Components & Flow

1. User Layer (Service Portal)

- Employees access the **ServiceNow Service Portal**.
- Users submit software requests through a **Software Installation Catalog Item**.
- Catalog variables capture structured data such as:
    - Software Name
    - Version Required
    - Business Justification
    - Urgency Level

Purpose:
Provides a simple, user-friendly interface for request submission.

2. Service Catalog Layer

- The catalog item (sc_cat_item) validates mandatory inputs.
- UI Policies and Client Scripts ensure data completeness.
- On submission, a **Service Catalog Request (REQ)** is created.

Purpose:
Standardizes request intake and eliminates incomplete submissions.

3. Workflow & Automation Layer

- A **Workflow / Flow Designer** is attached to the catalog item.
- Workflow performs:
    - Approval routing (Manager / Software Admin)
    - Conditional logic based on urgency or license availability
- Business Rules handle exceptions (e.g., request put on hold).

Purpose:
Automates approvals, decision-making, and exception handling.

4. Approval & Compliance Layer

- Approvals are managed using sysapproval_approver.
- Ensures:
    - Licensing compliance

    - IT governance adherence
    - Audit-ready approval trails

Purpose:
Prevents unauthorized or non-compliant software installations.

5. Task Fulfillment Layer

- Approved requests generate **Catalog Tasks (SCTASK)**.
- Tasks are auto-assigned to the **Software Support / IT Team**.
- Task lifecycle:
    - Open → Work in Progress → Completed

Purpose:
Ensures efficient and accountable software installation.

6. Data & Table Layer

The request lifecycle is tracked across core ServiceNow tables:

- sc_request → Request (REQ)
- sc_req_item → Requested Item (RITM)
- sc_task → Catalog Task (SCTASK)

Purpose:
Maintains data integrity, traceability, and reporting.

7. Notification & Visibility Layer

- Automated notifications are sent for:
    - Request submission
    - Approval / Rejection
    - Task completion
- Requesters can track status in real time via Service Portal.

Purpose:
Improves transparency and user satisfaction.

8. Deployment & Configuration Layer

- All configurations captured using **Update Sets**.
- Migrated across environments:

    - Development → Test → Production
- Ensures controlled deployment and rollback.

Purpose:
Supports scalability, maintainability, and governance.

Solution Architecture – Key Benefits

- End-to-end automation of software requests
- Reduced manual intervention
- Improved compliance and auditability
- Faster fulfillment and better user experience
- Scalable architecture for future IT services