

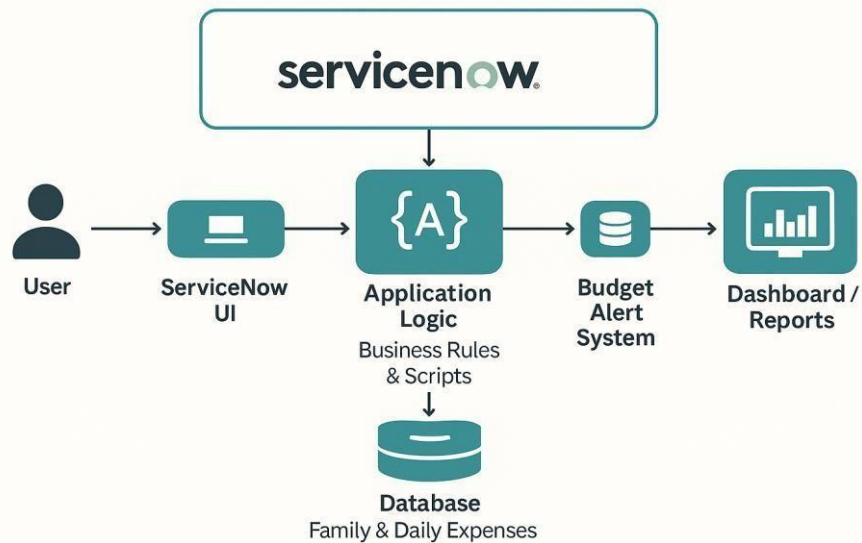
Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	02 NOVEMBER 2025
Team ID	NM2025TMID03685
Project Name	Calculate family expenses using Servicenow
Maximum Marks	4 Marks

Example: Order processing during pandemics for offline mode

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>



Technical Architecture

Guidelines:

Technical Architecture (Guidelines Summary)

The architecture diagram shows all components of the Family Expense Tracking System in ServiceNow.

Users interact with the system through the ServiceNow Web UI. The application logic, implemented using Business Rules and Scripts, processes daily expense entries and updates monthly totals. All data is stored securely in the ServiceNow Cloud Database. A budget alert mechanism triggers notifications when expenses exceed the set limit. The processed data is then displayed to the user through dashboards and reports for expense analysis.

The architecture clearly indicates:

- Application Logic (Business Rules, UI Scripts, Notifications)
- Cloud Infrastructure (ServiceNow SaaS backend)
- Data Storage (Daily Expense Table & Family Expense Summary Table)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1	User Interface	Family members and admin interact through forms and dashboard in ServiceNow.	ServiceNow Web UI
2	Application Logic-1	Records and stores daily expense entries submitted by users.	ServiceNow Form & Client Scripts
3	Application Logic-2	Automatically calculates total monthly expenses whenever a new daily expense is added.	Business Rule (Server-Side Script)
4	Application Logic-3	Compares total expense with monthly budget and triggers alert if the limit is exceeded.	Business Rule + Notification
5	Database (Main)	Stores daily expenses and monthly family expense summary.	Custom Tables in ServiceNow (u_daily_expenses, u_family_expenses)
6	Cloud Database	All expense data is stored and managed securely in ServiceNow cloud.	ServiceNow Cloud Database
7	File Storage	Logs and expense history maintained within system records.	System Logs & Update Sets
8	External API-1 (Optional)	Can integrate with mobile or external finance apps if needed.	REST API Integration (Optional)
9	External API-2	Not applicable currently.	-
10	Machine Learning Model	Not applicable for this project.	-
11	Infrastructure (Server / Cloud)	Hosted and managed under ServiceNow SaaS cloud infrastructure.	ServiceNow Cloud (SaaS Platform)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Not applicable, as ServiceNow is a proprietary platform.	-
2	Security Implementation	Only authorized family admin can modify budget or delete records.	Role-Based Access Control (RBAC), ACLs
3	Scalable Architecture	System can support multiple families and large expense datasets easily.	ServiceNow Multi-Tenant Cloud Architecture
4	Availability	Application remains available online anytime through ServiceNow cloud.	Load-Balanced ServiceNow Instances
5	Performance	Expense calculation and dashboard updates occur instantly.	Indexed Tables, GlideRecord, Business Rules