

Requirement Analysis

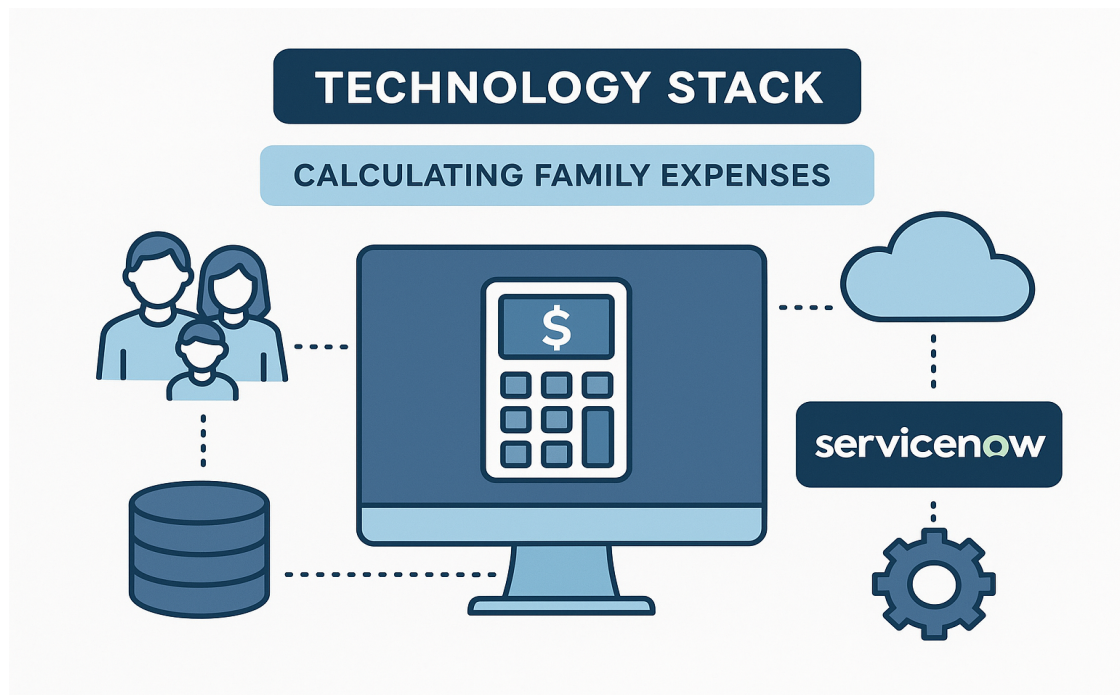
Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	02 November 2025
Team ID	NM2025TMID05455
Project Name	Calculating Family Expenses using ServiceNow
Maximum Marks	4 Marks

Technical Architecture

The Deliverable shall include the architectural diagram as below and the information as per Table 1 & Table 2.



Guidelines:

- Include all the processes (as an application logic / technology block).
- Provide infrastructural demarcation (Local / Cloud).
- Indicate external interfaces (third-party APIs, etc.).
- Indicate data storage components / services.
- Indicate the interface to machine learning models (if applicable).

Table 1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Users interact via a web dashboard in ServiceNow to enter and view family expenses. The UI supports adding members, recording incomes and expenses, and viewing summarized reports and charts within ServiceNow.	ServiceNow Web UI
2	Application Logic – 1	Validates family member data and ensures income/expense records are complete before saving. Uses Flow Designer and scoped server scripts for validation and business rules.	ServiceNow Flow Designer, Script Includes

S.No	Component	Description	Technology
3	Application Logic – 2	Calculates total monthly and yearly family expenses dynamically, supports category-wise breakdowns and summary metrics.	GlideRecord in Server Script
4	Application Logic – 3	Sends notifications or alerts if expenses exceed budget thresholds; integrates with ServiceNow notification engine.	ServiceNow Notifications
5	Database	Stores family member, income, and expense data in custom tables with indexes for efficient querying.	ServiceNow CMDB / Custom Tables
6	Cloud Database	Managed by ServiceNow cloud backend offering backups and maintenance.	ServiceNow Cloud Database
7	File Storage	Minimal use; receipts or reports stored as attachments or in system logs within ServiceNow.	ServiceNow System Logs / Attachments
8	External API – 1	(Optional) Integration with external budgeting or finance tracking APIs for sync and enhanced reporting.	REST API in ServiceNow
9	External API – 2	Not applicable.	-
10	Machine Learning Model	(Optional) For predictive expense analysis or budget forecasting using ServiceNow Predictive Intelligence.	ServiceNow Predictive Intelligence (if enabled)
11	Infrastructure (Server / Cloud)	Hosted and managed on ServiceNow SaaS platform with multi-tenant architecture.	ServiceNow Cloud (SaaS)

Table 2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Not applicable (ServiceNow is proprietary).	-
2	Security Implementations	Role-based access control, ACLs, and secure scripts for protecting sensitive family financial data.	ACLs, Scoped Applications
3	Scalable Architecture	SaaS-based, horizontally scalable via ServiceNow Cloud architecture supporting growth.	ServiceNow Cloud Architecture
4	Availability	Highly available through ServiceNow cloud hosting with standard SLAs.	Load-balanced ServiceNow Instances
5	Performance	Optimized via asynchronous flows, background jobs, and indexed tables to keep the UI responsive.	GlideRecord, Background Scripts