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

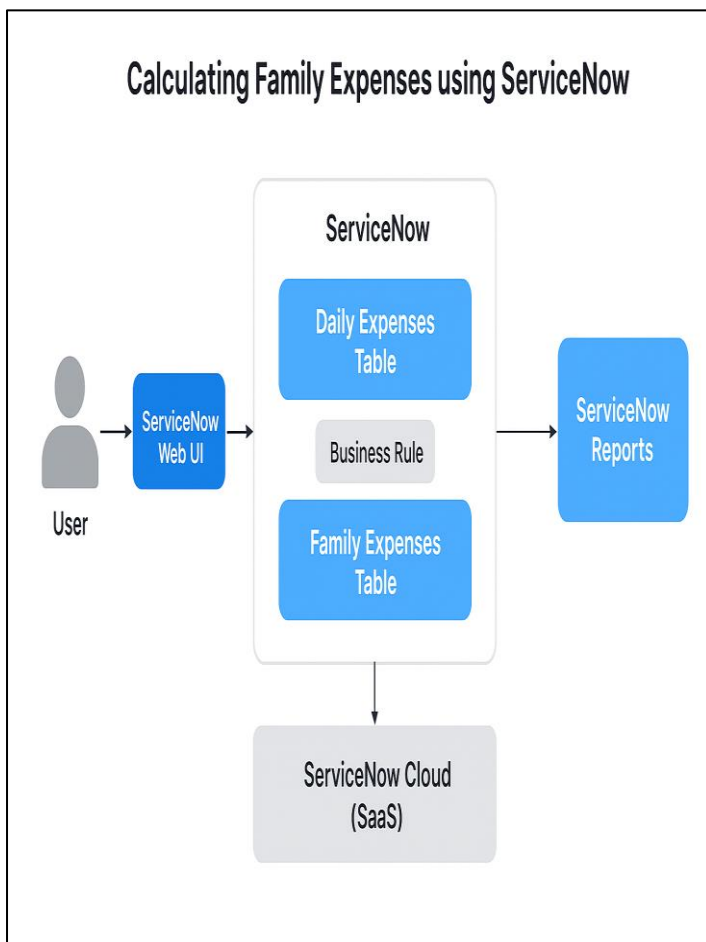|	
Date	06 November 2025
Team ID	NM2025TMID03184
Project Title	Calculating Family Expenses Using ServiceNow
Maximum Mark	4 Marks

Technical Architecture:

The proposed solution, *Calculating Family Expenses using ServiceNow*, is designed to simplify and automate the management of daily and family expenses within a household. It leverages ServiceNow's cloud-based architecture for real-time tracking, data consistency, and seamless integration between tables through automation and business rules.

Example : Calculating Family Expenses Using ServiceNow

Reference : https://developer.servicenow.com/

Calculating Family Expenses using ServiceNow

Guidelines :

User Interface: Family members and admins interact with the system through ServiceNow's Web UI.

Application Logic: Business Rules and Flow Designer automate expense updates between *Daily Expenses* and *Family Expenses* tables.

Data Storage: All records are stored securely in ServiceNow tables, managed by the ServiceNow cloud backend.

Integration: Optional APIs or modules can be integrated for visual reports or analytics dashboards.

Infrastructure: Entire solution is deployed on ServiceNow's SaaS environment ensuring scalability, reliability, and data security.

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Family members and admin interact via a ServiceNow web dashboard for expense entry and viewing.	ServiceNow Web UI
2	Application Logic-1	Automates calculation and updates of total family expenses whenever a new daily expense is added.	ServiceNow Business Rules, Flow Designer
3	Application Logic-2	Manages relationships between *Daily Expenses* and *Family Expenses* tables to sync expense data by date.	GlideRecord in Server Script
4	Application Logic-3	Generates summarized reports of daily, weekly, and monthly family expenses.	ServiceNow Reporting & Dashboards
5	Database	Stores all expense records, details, and totals for each family.	ServiceNow Tables (u_daily_expenses, u_family_expenses)
6	Cloud Database	Managed and secured under ServiceNow's cloud infrastructure.	ServiceNow Cloud Database
7	File Storage	Minimal file use; report logs and records are stored within the ServiceNow environment.	ServiceNow System Logs
8	External API (Optional)	Can integrate with Google Sheets or budgeting APIs for analytics or visualization.	REST API Integration
9	Machine Learning Model	Not applicable for current version (optional enhancement for future expense prediction).	–

S.No	Characteristics	Description	Technology
10	Infrastructure (Server/Cloud)	Entire application hosted on ServiceNow's SaaS platform ensuring high availability.	ServiceNow Cloud (SaaS)

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Not applicable; ServiceNow uses its proprietary development environment.	–
2	Security Implementations	Access controlled through user roles, ACLs, and secure script permissions.	ACLs, Scoped Applications
3	Scalable Architecture	SaaS-based, capable of handling multiple users and large family datasets without performance loss.	ServiceNow Cloud Architecture
4	Availability	Ensured by ServiceNow's high-availability cloud infrastructure and continuous uptime.	Load-balanced ServiceNow Instances
5	Performance	Optimized using asynchronous flows, background scripts, and indexed tables for faster data access.	GlideRecord, Flow Designer, Indexed Tables
6	Maintainability	Admins can easily update categories, thresholds, or UI components via ServiceNow Studio.	Scoped App Studio in ServiceNow
7	Integration Capability	Ready for integration with external apps for analytics and visualization dashboards.	REST API, IntegrationHub