

Project Design Phase

Solution Architecture

Date	NOV 2 2025
Team ID	NM2025TMID03101
Project Name	Calculating Family Expenses Using Service Now
Maximum Marks	4 Marks

Goals of the Architecture:

Automate Expense Logging: Eliminate manual entry by integrating with external financial sources.

Maintain Data Integrity: Ensure expenses are correctly linked to users, categories, and budgets.

Provide Real-Time Visibility: Deliver a current, consolidated view of the shared family balance and spending status.

Key Components:

u_family_member table: A custom table (analogous to sys_user) defining all family members, their roles, and access levels.

u_family_expense table: A custom table (analogous to incident) storing every recorded transaction, including category, amount, date, and the family member who paid.

u_budget_limit table: A custom table storing defined monthly limits for various spending categories (e.g., Groceries, Rent).

IntegrationHub Spoke / REST API: Component responsible for connecting ServiceNow to external banking/financial APIs for automatic expense import.

Business Rule (on Insert/Update of u_family_expense): Script logic that automatically checks the expense amount against the category's active u_budget_limit.

Performance Analytics (PA) Dashboards: Component used to display the real-time shared balance and spending charts.

Development Phases:

Configure Test User Roles: Create test family member records and assign roles (e.g., Lead Payer, Member).

Define Budget Categories: Set up test records in the u_budget_limit table (e.g., set a \$500 Groceries limit).

Implement Integration Logic: Develop and test the inbound data process (simulated bank feed) to populate the u_family_expense table.

Implement Business Rule: Deploy the BR to check new expense inserts against the u_budget_limit table, triggering an Automated Notification if the budget is exceeded.

Develop PA Dashboard: Build the dashboard to visually display the remaining budget and categorized spending.

The solution architecture for the Family Expense Tracker is designed to transform chaotic manual tracking into an automated, single source of financial truth within ServiceNow. It centers on three custom tables: u_family_member, u_family_expense, and u_budget_limit. The architecture relies on

Solution Architecture Description:

IntegrationHub or REST API technology to automate data integrity by pulling transactions directly into the u_family_expense table. A key element is a Business Rule that executes on every new expense record, automatically cross-referencing the expense amount with the defined u_budget_limit and triggering a budget overrun notification if necessary. The development process emphasizes testing the full cycle, from data ingestion to automated notification. Ultimately, this architecture ensures high data integrity, eliminates manual effort, and provides real-time financial insights via Performance Analytics dashboards, promoting greater financial accountability.

Solution Architecture: Calculating Family Expenses (ServiceNow)

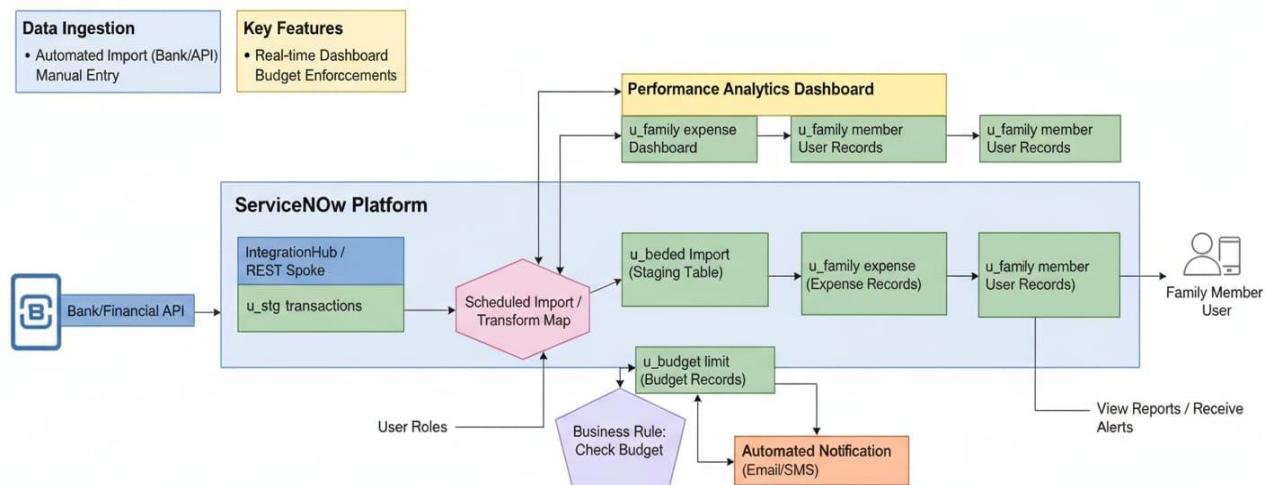


FIG: Architecture and data flow of the family expenses tracker's application.