

Project Design Phase Solution Architecture

Date	02 November 2025
Team ID	NM2025TMID08531
Project Name	Calculating Family Expenses using ServiceNow
Maximum Marks	4 Marks

Solution Architecture:

Goals of the Architecture

- Enable users to efficiently **track and manage family expenses** in a centralized ServiceNow application.
- Maintain **data integrity** between *Daily Expenses* and *Family Expenses* tables.
- Automate **expense calculation and total amount updates** using Business Rules.
- Minimize **manual monitoring** by automating updates and relationships between tables.

Key Components:

- **Family Expenses table (u_family_expenses)** – stores total daily expense details.
- **Daily Expenses table (u_daily_expenses)** – stores each family member's individual expenses.
- **Business Rule (before Insert/Update)** – calculates and updates total amount in the Family Expenses table.
- **Script logic** – automatically adds or updates Family Expense records based on Daily Expense entries.
- **Relationship Configuration** – links *Daily Expenses* to *Family Expenses* for relational tracking.

Development Phases:

1. **Create necessary tables:** *Family Expenses* and *Daily Expenses*.
2. **Configure auto-numbering** for both tables using *Number Maintenance*.
3. **Establish relationship** between Family Expenses and Daily Expenses tables.
4. **Create and implement Business Rule** to automatically update Family Expenses on each Daily Expense insert/update.
5. **Configure forms and related lists** for easy navigation and display.
6. **Test functionality** by adding multiple expense records and verifying total calculations.

Solution Architecture Description:

The **Family Expense Management System** is designed to simplify and automate financial tracking within a family using the **ServiceNow platform**. The architecture leverages ServiceNow's tables, relationships, and Business Rules to ensure accurate and automated expense calculations.

Two main tables — *Daily Expenses* and *Family Expenses* — form the foundation. When a family member adds a new expense in the *Daily Expenses* table, a **Business Rule** executes automatically to check if a record for that date already exists in the *Family Expenses* table. If it exists, the system updates the total amount and appends the expense details; otherwise, a new record is created.

This architecture enhances **data consistency**, **automates financial tracking**, and ensures **real-time expense monitoring**. It reduces manual effort, improves accuracy, and provides a scalable solution for managing family budgets and daily spending through ServiceNow's low-code environment.

Example - Solution Architecture Diagram:

