

Project Design Phase

Solution Architecture

Date	2 November 2025
Team ID	NM2025TMID05198
Project Name	Calculating Family Expenses using ServiceNow
Maximum Marks	4 Marks

Solution Architecture

Goals of the Architecture:

- Automate the calculation of daily and monthly family expenses.
- Maintain accurate relationships between *Family Expenses* and *Daily Expenses* tables.
- Reduce manual data entry and calculation errors through automation.
- Provide real-time expense summaries for better financial visibility.

Key Components:

- **Family Expenses Table:** Stores summarized monthly expense records.
- **Daily Expenses Table:** Stores individual daily expense details.
- **Business Rule:** Automatically updates total amount in *Family Expenses* when a new *Daily Expense* is added.
- **Number Maintenance:** Generates unique auto-numbers for both tables.
- **Relationships:** Links both tables using *Date* as the key field for data consistency.
- **Form Design:** Custom forms for user-friendly expense entry and record viewing.

Development Phases:

1. **Set up ServiceNow Developer Instance** and request a personal instance.
2. **Create an Update Set** named *Family Expenses* for tracking changes.
3. **Design Tables:** Create *Family Expenses* and *Daily Expenses* with required fields (Date, Amount, Comments, etc.).
4. **Set Auto Numbering:** Use Number Maintenance for unique expense IDs (MFE for Family, DFE for Daily).
5. **Configure Business Rule:** Automate total expense calculation and update Family Expenses table.
6. **Define Relationship:** Connect Family and Daily Expenses tables based on date.

7. **Form Customization:** Configure forms, make fields mandatory, and set Number fields to read-only.
8. **Testing:** Add new daily expenses and verify that totals are automatically updated in Family Expenses.

Solution Architecture Description:

The **solution architecture** for the *Family Expense Tracker* is built on the **ServiceNow** platform, utilizing its automation and data management features to simplify expense tracking. It consists of two interlinked tables — *Daily Expenses* and *Family Expenses* — connected via a relationship based on the *Date* field.

Whenever a new daily expense record is created, a **Business Rule** triggers automatically to update the total expense and details in the *Family Expenses* table. This design eliminates the need for manual calculation and ensures that all expenses are summarized accurately in real time.

The architecture also includes auto-number generation through **Number Maintenance** and validation rules to make data entry more reliable. By combining automation, data relationships, and form customization, the architecture delivers a robust and efficient system for managing household financial data.

This solution demonstrates how **ServiceNow's enterprise-level features** can be adapted to real-world use cases, reducing manual effort while enhancing accuracy and usability.

Solution Architecture Diagram:

