| Date | 02 Nov 2025 |
|---|---|
| Team ID | NM2025TMID01191 |
| Project Name | Calculating Family Expenses using ServiceNow |
| Maximum Marks | 4 Marks |

## Solution Architecture:

### Goals of the Architecture

- Automate family expense calculations using ServiceNow tables and business rules.

- Maintain data accuracy and real-time synchronization between daily and total expenses.

- Eliminate manual entry errors and ensure transparency in household financial management.

- Provide centralized tracking and analysis of daily and monthly expenses.

### Key Components

- **Daily Expenses Table (`u_daily_expenses`)** – Stores individual expense details such as date, amount, member name, and comments.

- **Family Expenses Table (`u_family_expenses`)** – Maintains aggregated daily totals and overall expense details.

- **Business Rule (after Insert/Update on Daily Expenses)** – Automatically updates or creates total expense records in the Family Expenses table.

- **Number Maintenance** – Ensures each record has a unique auto-generated ID for better traceability.

- **Relationships & Related Lists** – Connects both tables for seamless data viewing and management.

- **Reports & Dashboards** – Provide visual insights into spending patterns and total expenditure.

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### Development Phases

1. **Create Family Expenses Table** with fields: Number, Date, Amount, Expense Details.

2. **Create Daily Expenses Table** with fields: Number, Date, Expense, Family Member Name, and Comments.

3. **Establish Relationship** between both tables (one-to-many).

4. **Implement Business Rule** on *Daily Expenses* table to auto-update *Family Expenses* totals.

5. **Test Scenarios:**

   ○ Add new daily expenses and verify automatic total update.

   ○ Update existing entries and confirm reflected changes.

   ○ Check real-time synchronization and report generation.

✖ **Solution Architecture Description**:

The *Calculating Family Expenses using ServiceNow* solution architecture is built to automate the process of expense calculation and ensure real-time financial tracking. The architecture consists of two interconnected tables — *Daily Expenses* and *Family Expenses*. When a new daily expense entry is added, a **Business Rule** triggers automatically to update or insert the total daily expense in the *Family Expenses* table.

This integration maintains data accuracy, eliminates manual aggregation, and promotes financial visibility. The relationship between the tables enables users to view daily spending details under each total record, while dashboards and reports provide analytical insights.

By leveraging ServiceNow's built-in automation capabilities, this architecture ensures scalability, reduces human error, and offers a robust foundation for expanding into advanced family budgeting systems in the future.

**Example - Solution Architecture Diagram:**



Calculatinfing Family Expenses using ServiceNow – Solution Architecture

**Daily Expenses Table**
- Date
- Amount
- Family Member
- Comments

**Auto-Update Aggregation Logic**

**Family Expenses Table**
- Date
- Total Amount
- Expense Details

**Reports & Dashboards**