

Project design phase

Solution Architecture

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Team ID : NM2025TMID01129

Project Name : Calculating Family Expenses using Service Now

Maximum Marks: 4marks

Goals of the Architecture:

- ✓ Implement an automated and user-friendly **calculating family expenses system** within ServiceNow.
- ✓ Simplify financial management by automating income, expense, and balance calculations.
- ✓ Enable category-wise expense tracking and report generation for better budget planning.
- ✓ Improve data accuracy, transparency, and usability through structured table relationships.
- ✓ Enhance financial awareness among family members through visual dashboards and summaries.

Key Components:

- ✓ **Income Table:** Stores details of all income sources such as salary, business income, or other contributions.
- ✓ **Expense Table:** Records daily expenses with fields like category, amount, and date.
- ✓ **Family Member Table:** Maintains information about each family member contributing to or spending from the budget.
- ✓ **Relationship Configuration:** Links income and expense tables under a family profile for organized management.
- ✓ **Business Rules:** Automates the calculation of total income, total expenses, and remaining balance.
- ✓ **Flow Designer:** Triggers automatic updates and recalculations when a new record is added or modified.
- ✓ **Reports & Dashboards:** Provides visual representations of spending patterns and monthly summaries.
- ✓ **ServiceNow Cloud:** Offers a scalable and secure platform for storing and processing all financial data.

Development Phases:

- ✓ Create custom tables — **Family Member**, **Income**, and **Expense** — in ServiceNow.
- ✓ Define relationships among tables to link income and expense records to each family.
- ✓ Implement **Business Rules** to automatically calculate totals and update balances dynamically.
- ✓ Configure **Flow Designer** workflows to trigger real-time calculations and notifications.
- ✓ Design **Reports and Dashboards** to visualize monthly income and expense summaries.
- ✓ Test the system by entering sample data and verifying automatic updates and report accuracy.
- ✓ Validate that the balance and summaries adjust correctly when new transactions are added.

Solution Architecture Description:

The **solution architecture** focuses on automating financial management through structured data organization and workflow automation within the **ServiceNow platform**.

Custom tables—**Income**, **Expense**, and **Family Member**—form the core data model. Each expense record is linked to a family profile to maintain clear financial tracking. **Business Rules** are used to calculate the total income, total expenses, and remaining balance automatically whenever a record is created or updated.

The **Flow Designer** handles automated actions, such as recalculating balances, generating alerts, and updating reports. Visual **dashboards and reports** display summarized data, allowing users to analyze spending patterns easily.

This architecture ensures **accuracy, automation, and simplicity**, empowering users to manage finances efficiently. It minimizes manual effort, eliminates calculation errors, and provides transparency through structured financial data visualization.

Reference:

- ✓ <https://developer.servicenow.com/dev.do#!/guides/quebec/nowplatform/workflow/flow-designer>
- ✓ https://docs.servicenow.com/bundle/utah-platformsecurity/page/administer/security/concept/c_AccessControl.html
- ✓ https://developer.servicenow.com/dev.do#!/learn/learningplans/rome/app_store_learnv2_buildmyfirstapp_rome_creating_application_logic

Example – Solution Architecture Diagram:

Figure 1: Architecture and data flow of the *ServiceNow-based Family Expense Calculation System*.

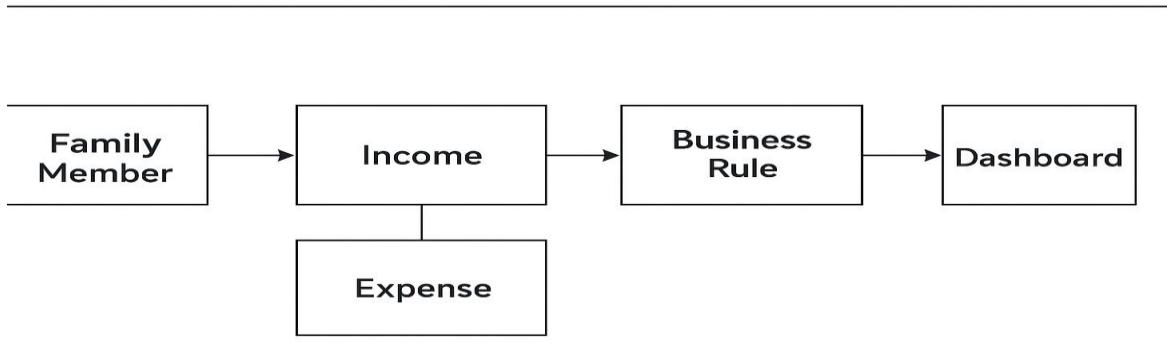


Figure 1: Architecture and data flow of the ServiceNow-based Family Expense Calculation System