

**Project Design Phase**  
**Solution Architecture**

Date	02 NOVEMBER 2025
Team ID	NM2025TMID03685
Project Name	Calculate Family Expenses using ServiceNow
Maximum Marks	4 Marks

**Solution Architecture:**

**Goals of the Architecture**

- Automate calculation of daily and monthly family expenses.
- Maintain data integrity between *Family Expenses* and *Daily Expenses* tables.
- Reduce manual monitoring by applying a Business Rule that auto-updates totals.
- Provide a user-friendly interface for adding and viewing expenses.

**Key Components**

**Family Expenses Table (u\_family\_expenses):** Stores total amount and expense details per date.

**Daily Expenses Table (u\_daily\_expenses):** Stores individual expense entries (date, amount, comments, family member).

**Business Rule:** Automatically updates Family Expenses totals whenever a new Daily Expense is added or modified.

**Relationship Configuration:** Ensures synchronization between both tables for accurate data linkage.

**Form Design:** Customized for ease of use, with mandatory and read-only fields where appropriate.

**Development Phases:**

- **Create ServiceNow Developer Instance.**
- **Build Tables:** Family Expenses and Daily Expenses.
- **Add Fields:** Number, Date, Amount, Expense Details, Comments, and Family Member.
- **Set Auto-Numbering:** Generates unique IDs for records.
- **Create Relationship:** Link both tables using “Date.”
- **Implement Business Rule:**

```

(function executeRule(current, previous) { var
family = new GlideRecord('u_family_expenses');

family.addQuery('u_date', current.u_date);

family.query(); if (family.next()) { family.u_amount
+= current.u_expense;

    family.u_expense_details += " > " + current.u_comments + ": Rs." + current.u_expense +
"/-";

family.update();

} else { var newFamily = new

GlideRecord('u_family_expenses'); newFamily.u_date =
current.u_date; newFamily.u_amount =
current.u_expense;

newFamily.u_expense_details = " > " + current.u_comments + ": Rs." +
current.u_expense + "/-";

newFamily.insert();

}
}

})(current, previous);

```

- **Test Functionality:** Add daily entries and verify that Family Expenses table updates automatically.
- **Finalize Forms and Related Lists:** Ensure all records display in connected views.

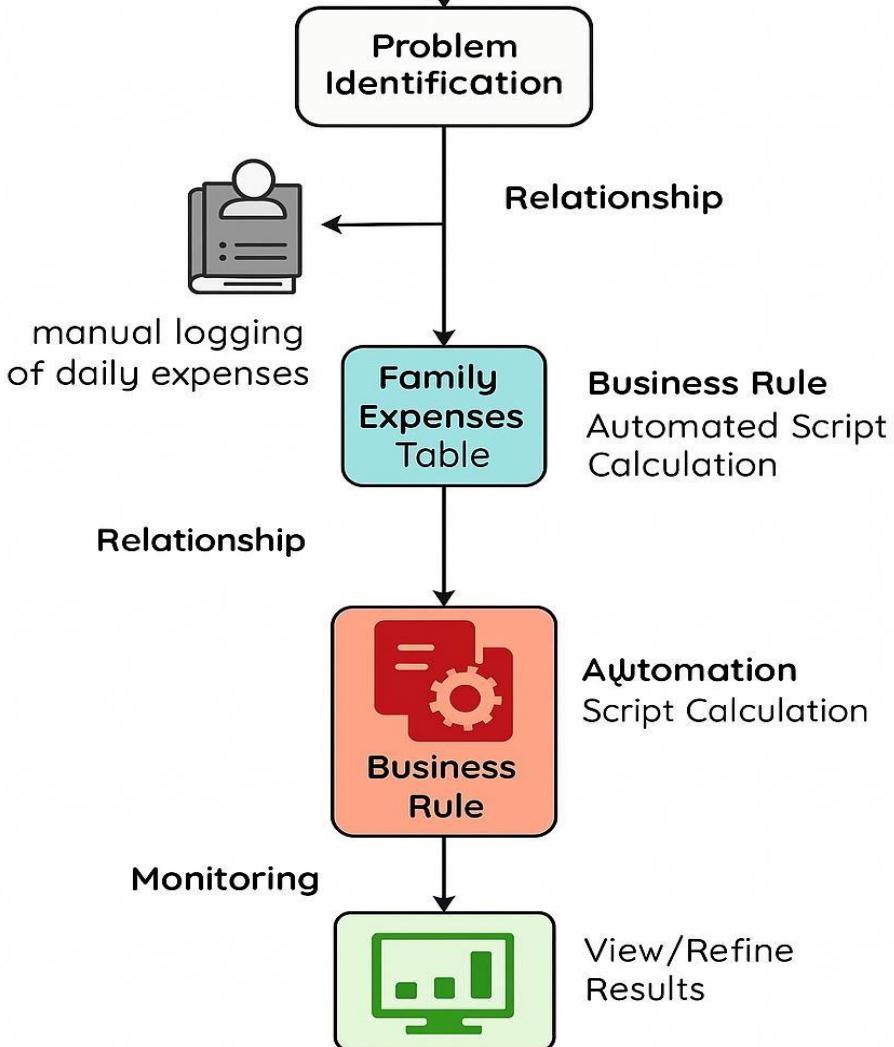
#### **Solution Architecture Description:**

The architecture is designed around the ServiceNow platform's data and logic layers. When a daily expense is entered, the business rule triggers automatically to aggregate the total and update the summary table. This ensures seamless synchronization and real-time tracking.

The design supports scalability for future enhancements like dashboards, charts, and reports.

#### **Example - Solution Architecture Diagram:**

## Calculate Family Expenses using ServiceNow



Conclusion: Accurate, Real-Time Family Budgets

Figure 1: Architecture and data flow of the voice patient diary sample application Reference:

- 1) <https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-by-ai-on-aws-part-1-architecture-and-design-considerations/>
- 2) [https://developer.servicenow.com/dev.do#!/learn/courses/utl\\_best\\_practice\\_design\\_of\\_tables\\_and\\_data\\_modeling](https://developer.servicenow.com/dev.do#!/learn/courses/utl_best_practice_design_of_tables_and_data_modeling)