

## Project Design Phase-II

### Data Flow Diagram & User Stories

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

### Data Flow Diagrams

A **Data Flow Diagram (DFD)** represents how data moves within the system. It shows the flow of expense information between users, tables, and automated rules in ServiceNow. The DFD ensures that every transaction—from expense entry to summary generation—is accurately visualized.

In the project “**Calculating Family Expenses using ServiceNow,**” the DFD illustrates how daily expense data is collected from users, processed by the system, and stored in the database. It also shows the relationship between **Family Expenses** and **Daily Expenses** tables, including how total amounts are updated automatically.

#### DFD Level 0 (Context Diagram)

- The **User (Admin/Family Member)** enters expense details such as date, amount, and comments.
- The **ServiceNow System** validates and stores these details in the **Daily Expenses Table**.
- The **Business Rule** automatically updates the **Family Expenses Table** with total daily expenses.
- The **Admin** can view summarized reports or individual expense entries from the dashboard.

#### DFD Level 1 (Process Breakdown)

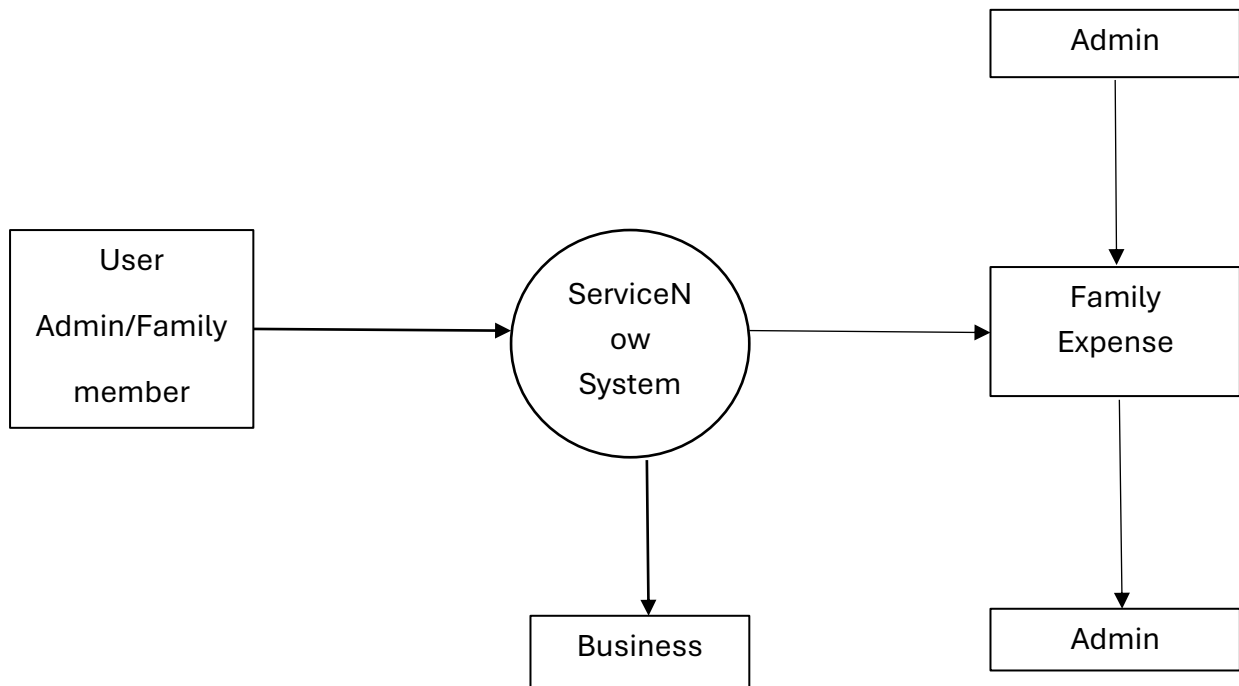
1. **Input Process:**  
User adds expense data through a ServiceNow form.
2. **Validation Process:**  
System checks if mandatory fields (Date, Amount) are entered correctly.
3. **Computation Process:**  
Business Rule aggregates all daily expenses for each date and updates Family Expenses.

4. **Storage Process:**

Both Daily and Family Expense records are stored securely in the ServiceNow database.

5. **Output Process:**

The updated expense summary is displayed on the Family Expenses dashboard for user review.



**DFD level 0 (Context Diagram)**

## User Stories

User stories define the functional behavior of the system from different user perspectives. They ensure that the system supports expense tracking, daily updates, and summary management effectively.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance Criteria	Priority	Release
Family Member	Expense Entry	USN-1	As a family member, I want to add my daily expense with date, amount, and comments so that my spending can be tracked.	The system should allow expense entry only with all mandatory fields filled.	High	Sprint-1
System (Business Rule)	Automatic Update	USN-2	As a system, I must automatically update the Family Expenses table whenever a new daily expense is added.	When a daily expense is inserted, the total amount and details in the Family Expenses table should update instantly.	High	Sprint-1
Administrator	Expense Summary Management	USN-3	As an admin, I want to view a summarized daily total of all expenses so that I can analyze	The Family Expenses dashboard should show total amount and itemized details for each date.	Medium	Sprint-2

			family spending patterns.			
System (Validation)	Data Integrity	USN-4	As a system, I must ensure that date and amount fields are mandatory to prevent incomplete records.	The form should not submit without valid date and amount entries.	High	Sprint-1
Family Member	Edit / Update Expense	USN-5	As a family member, I want to update or delete an existing expense entry if there's a correction needed.	Updates or deletions should trigger recalculati on of total amount in Family Expenses.	Medium	Sprint-2