

Project Design Phase-II

Data Flow Diagram & User Stories

Date	2 November 2025
Team ID	NM2025TMID07923
Project Name	Calculating Family Expenses using ServiceNow
Maximum Marks	4 Marks

Dataflow :

The **Family Expense Tracker** system uses a structured and automated data flow to manage and summarize financial information efficiently. The **Data Flow Diagram (DFD)** represents how expense data moves from the user input stage to the automated processing layer and finally to summarized outputs such as reports and dashboards.

The core objective of this dataflow is to ensure that **each daily expense entry** directly contributes to an **accurate and real-time monthly total**, minimizing human intervention while improving data consistency, transparency, and reliability.

This logical flow enhances user experience by simplifying data entry and ensuring that every transaction is reflected instantly in the family's financial summary.

Dataflow Description

1. User Input (Daily Expense Entry):

The process begins when a family member or user records their daily expenses through the *Daily Expenses Form*. Each entry typically includes the **Date, Amount, Category, and Comments**.

2. Daily Expenses Table (Data Storage Layer):

The submitted data is stored in the **Daily Expenses Table**, which acts as the repository for individual expense transactions. Each record is automatically assigned a unique ID (e.g., *DFE001, DFE002*, etc.) through Number Maintenance.

3. Business Rule Execution (Processing Layer):

Once a new record is added to the Daily Expenses Table, a **Business Rule** is triggered automatically. This rule performs background calculations to sum up all daily entries for the same date or month. It then updates the corresponding **Family Expenses Table** entry.

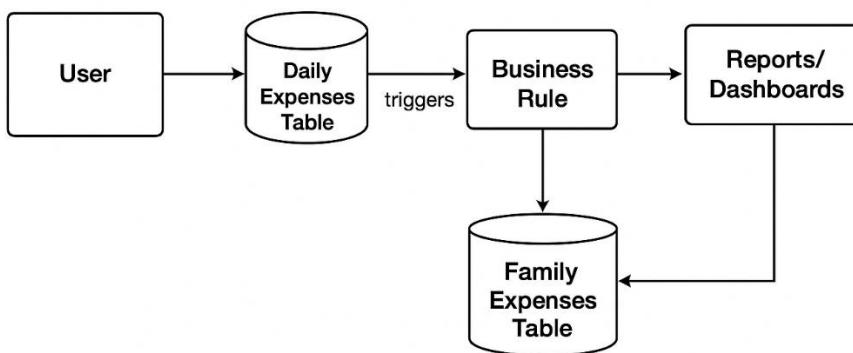
4. Family Expenses Table (Summarization Layer):

This table aggregates and stores **monthly or daily totals**. The Business Rule updates the total expense field dynamically, ensuring that the overall expense data remains synchronized and up to date. Each record has a unique ID (e.g., *MFE001, MFE002*, etc.).

5. Output (Visualization & Reporting Layer):

Once the Family Expenses Table is updated, the summarized data is displayed through **dashboards**, **reports**, and **analytics views**. Users can monitor their spending trends, view total monthly expenditures, and download reports for financial planning.

Dataflow Diagram:



- ② The user enters expense data → System stores it in the *Daily Expenses Table*.
- ② The **Business Rule** is triggered → Automatically processes and updates *Family Expenses Table*.
- ② The *Family Expenses Table* serves as a data source for *Reports and Dashboards*, providing real-time expense summaries.

User Stories:

User Type	Functional Requirement (Epic)	User Story No.	User Story / Task	Acceptance Criteria	Priority	Release
Family Member (User)	Record Daily Expenses	USN-1	As a user, I want to enter daily expenses with details like date, category, amount, and location.	System should allow adding new daily expense records easily.	High	Sprint-1

			amount, and comments.			
System (Automation)	Auto Calculation	USN-2	As the system, I must calculate and update the total amount automatically when a new expense is added.	Total in Family Expenses should update automatically after each entry.	High	Sprint-1
System (Validation)	Data Relationship Maintenance	USN-3	As the system, I must link each Daily Expense entry with the correct Family Expense record based on date.	Family Expenses table should reflect correct totals for the same date.	High	Sprint-1
User (Viewer)	View Summaries	USN-4	As a user, I want to view my monthly expense summaries and totals in a dashboard.	Dashboard should show accurate total and breakdown of expenses.	Medium	Sprint-2
System (Reporting)	Generate Reports	USN-5	As the system, I want to generate downloadable reports of monthly and daily expenses.	Reports should display correct data and be exportable in common formats.	Medium	Sprint-2