Project Design Phase-II

Solution Requirements (Functional & Non-functional)

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

Functional Requirements:

FR No.	Functional Requirement (Epic)	Detailed Sub Requirement / Story (Expanded)
FR-1	Family Expenses Table	- Design and create a main master table named *Family Expenses* to store summarized data for each day, including the date, total amount, and expense details. - Implement a logic to automatically calculate and display the total daily expense amount based on entries recorded in the *Daily Expenses* sub-table.
FR-2	Daily Expenses Table	- Create a sub-table named *Daily Expenses* to record detailed daily transactions, including date, individual expense amount, comments, and responsible family member. - Each record must be linked to its corresponding entry in the *Family Expenses* table using a date or reference relationship
FR-3	Business Rule Automation	- Develop and configure ServiceNow Business Rules to automate the process of calculating total daily expenses whenever a new record is added, updated, or deleted in the *Daily Expenses* table.
FR-4	Auto Number Generation	- Configure Number Maintenance in ServiceNow to enable automatic record numbering for both tables. - Example formats: *MFE0001* for Family Expenses and *DFE0001* for Daily Expenses.
FR-5	Relationship Management	- Define a one-to-many relationship between *Family Expenses* (parent table) and *Daily Expenses* (child table). - Ensure

		relational integrity so that when a parent record (Family Expense) is deleted, associated child records (Daily Expenses) are also handled appropriately.
FR-6	Form Customization	- Customize the form layouts for better user interface and accessibility. - Make number fields read-only to protect auto-generated values. - Set date and amount fields as mandatory to ensure data accuracy. - Organize form sections logically (e.g., General Info, Expense Details, Summary).
FR-7	Reports and Dashboards	- Design interactive reports that display daily, weekly, and monthly summaries of expenses. - Create dashboards using ServiceNow's Reporting Module to visualize total spending trends, top expense categories, and member contributions
FR-8	Data Validation and Error Handling	- Implement validation rules to ensure all required fields are filled before record submission. - Prevent entry of negative or non-numeric values in amount fields. - Provide user-friendly error messages and field highlights for invalid entries.
FR-9	Security and Access Control	- Configure role-based access controls (RBAC) to ensure that only authorized users (e.g., Admin, Family Member) can create, modify, or delete records. - Implement read-only views for non-admin users to prevent accidental changes.
FR-10	System Scalability and Maintenance	- Ensure the system design supports scalability for additional features such as budget limits, category-specific charts, and expense notifications. - Enable periodic data archiving to maintain performance

Non-Functional Requirements:

NFR No.	Non-Functional Requirement	Detailed Description (Expanded)
NFR-1	Usability	The system interface should be intuitive, user-friendly, and accessible for all family members regardless of their technical expertise. Forms and dashboards must have clear labels, consistent layouts, and simple navigation to allow users to record or view expenses easily without prior training.

NFR-2	Performance	The Business Rule automation and data processing must execute efficiently, updating expense totals in real time without noticeable lag. Page loads and data submissions should complete within a few seconds, even when handling multiple records simultaneously.
NFR-3	Reliability	The system should ensure high data integrity and consistent performance at all times. Expense data must not be lost or corrupted, even during concurrent access or system restarts. Scheduled backups should be maintained to guarantee data recovery if needed.
NFR-4	Security	Access to the system should be controlled through role-based permissions in ServiceNow. Only authorized users (e.g., family administrator) can create, modify, or delete expense records. Sensitive information should be protected from unauthorized access through secure login and encrypted data handling.
NFR-5	Availability	The application should be available 24/7 via the ServiceNow instance with minimal downtime. System maintenance or upgrades should be scheduled during off-peak hours to avoid service interruption. Users must be able to access their data from any device with internet connectivity.
NFR-6	Scalability	The architecture must support future expansion — allowing additional family members, expense categories, or new modules (like budgeting and notifications) without degrading system performance.
NFR-7	Maintainability	The application must be easy to maintain and update. Configuration items, business rules, and scripts should be well-documented and modular to simplify future enhancements or bug fixes.
NFR-8	Accuracy	All automated calculations and reports must produce precise results. Totals displayed in the Family Expenses table should always match the aggregated values from Daily Expenses.
NFR-9	Compatibility	The system should be fully compatible with standard web browsers (e.g., Chrome, Edge, Firefox) and responsive for desktop and tablet screens. Integration with ServiceNow modules must function smoothly without dependency errors.
NFR-10	Auditability	All financial actions (add, update, delete) must be logged and traceable for transparency. Audit trails should record user information, timestamps, and modification details for every change in expense data.