Project Design Phase – II

Data Flow Diagram & User Stories

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Project Name: Calculating the Family Expenses in ServiceNow

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1. Introduction

The **Project Design Phase-II** focuses on defining how data moves through the system (Data Flow Diagram) and the user interactions (User Stories) that shape the functionality of the *Calculating the Family Expenses in ServiceNow* module. This phase ensures that all user actions—such as adding, viewing, categorizing, and analyzing expenses—are logically structured and supported by ServiceNow workflows, validations, and rules.

The aim is to create a seamless experience for all family members, ensuring financial accuracy, transparency, and automation within the platform.

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2. Data Flow Diagram (DFD)

The **Data Flow Diagram** illustrates the logical movement of data between system components, ensuring smooth communication between users, processes, and databases.

Level 0 – Context Diagram

The system interacts primarily with **Family Members** who input their expenses. The data flows into the **ServiceNow Expense Management Module**, which stores records in the **Expense Database** and provides summarized results through the **Dashboard**.

Key Entities:

- **Actors:** Family Members, System Administrator
- **Processes:** Expense Entry, Expense Validation, Categorization, Reporting
- **Data Stores:** Expense Records, Family Member Details, Monthly Reports

Flow Summary:

1. Family Members submit expense details via the ServiceNow portal.
2. The system validates entries through built-in business rules.
3. Valid expenses are categorized and stored in the database.
4. Reports and summaries are generated and displayed on the dashboard.
5. Admins can monitor, approve, or modify data if required.

Level 1 – Detailed Flow

- **Input:** Expense details (amount, category, date, family member).
- **Process 1:** Validate entries for correctness and duplication.
- **Process 2:** Assign expenses to respective categories and users.
- **Process 3:** Store validated data in ServiceNow tables.
- **Output:** Generate category-wise reports and insights for budgeting.

This DFD ensures each expense record flows through controlled and traceable processes, maintaining **data integrity** and **transparency** throughout.

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3. User Stories

User stories define the real-world actions users perform within the system. Each story aligns with ServiceNow capabilities to improve the household financial workflow.

- **As a Family Member,** I want to enter my daily expenses so that I can track my spending habits.
- **As a Family Member,** I want to categorize my expenses (e.g., groceries, travel, bills) to understand where I spend most.
- **As a System Administrator,** I want to validate and prevent duplicate or incomplete expense entries.
- **As a Family Member,** I want to generate a monthly report to analyze total spending and savings.
- **As a User,** I want the system to block deletion of expenses linked to financial reports for data security.
- **As a Family Head,** I want to view consolidated dashboards to make informed budget decisions.

These user stories guide the functional development of the module, ensuring a user-centered design that reflects real household budgeting needs.

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4. Conclusion

The **Data Flow Diagram** and **User Stories** together define the blueprint of how the *Calculating the Family Expenses in ServiceNow* project operates. The system is structured to handle expense input, processing, storage, and reporting efficiently—promoting automation, financial discipline, and collaborative visibility for all family members.