Project Report Format

1. INTRODUCTION :

1.1 Project Overview :

The "Calculating Family Expenses using ServiceNow" project aims to provide a streamlined, automated solution for managing and tracking daily, weekly, and monthly household expenses. Leveraging ServiceNow's powerful platform capabilities such as form-based inputs, workflow automation, and reporting dashboards, this project enables users to input, categorize, and monitor their spending efficiently. The solution supports features like user registration, expense categorization, budget**.**

alerts, data analytics, and visual expense reports, enhancing financial awareness and decisionmaking within families. This project not only simplifies expense management but also ensures data accuracy, accessibility, and real-time updates through ServiceNow's cloud infrastructure.

1.2 Purpose

The purpose of the "Calculating Family Expenses using ServiceNow" project is to develop a centralized and automated system that helps families efficiently record, manage, and analyze their financial expenditures. By utilizing the ServiceNow platform, the project aims to replace manual tracking methods with a user-friendly digital solution that ensures accuracy, transparency, and ease of access. This system is intended to promote better financial planning, help users stay within their budget, and provide insightful reports for smarter decision-making regarding household spending.

2. IDEATION PHASE :

2.1 Brainstorming

The project aims to develop a comprehensive expense calculation system using ServiceNow. This System will enable users to track and manage family expenses efficiently. It will include features such as expense categorization, budget setting, real-time tracking, and reporting capabilities. Utilizing ServiceNow’s robust Platform, the project will ensure seamless integration, user-friendly interface, and scalability to accommodate varying family sizes and financial complexities. The end goal is to empower users with the tools they need to make informed financial decisions and promote financial well-being within the family unit.

2.2 Defining Problem Statement

Managing household expenses involves tracking, categorizing, approving, and analyzing all financial outflows of a family. In many cases, this process is manual—handled via spreadsheets or handwritten notes—making it difficult to maintain accuracy, share information, and analyze trends effectively.

As families grow and financial commitments increase, it becomes essential to have a centralized, automated, and transparent system for managing expenses. However, there is no standardized digital solution for families that enables collaborative financial management with real-time reporting and alerts.

2.3 **Empathy Map Canvas**

Empathy Map Curve plays a crucial role in understanding the users' emotions, needs, and behaviors. It captures what users *say*, *think*, *do*, and *feel* while managing and tracking their household expenses. For example, users may say they want a simple and automated way to log daily expenses, while internally they may feel overwhelmed or anxious about financial planning. Observing their actions, such as manually tracking spending in notebooks or spreadsheets, reveals their struggle with accuracy and time. This insight helps design intuitive and usercentered ServiceNow solutions that simplify expense tracking, provide meaningful insights, and build financial confidence, ultimately leading to a more empathetic and efficient application experience.

3. <u>REQUIREMENT ANALYSIS :</u>

3.1 Customer Journey map

3.2 Solution Requirement

Following are the functional requirements of the proposed solution.

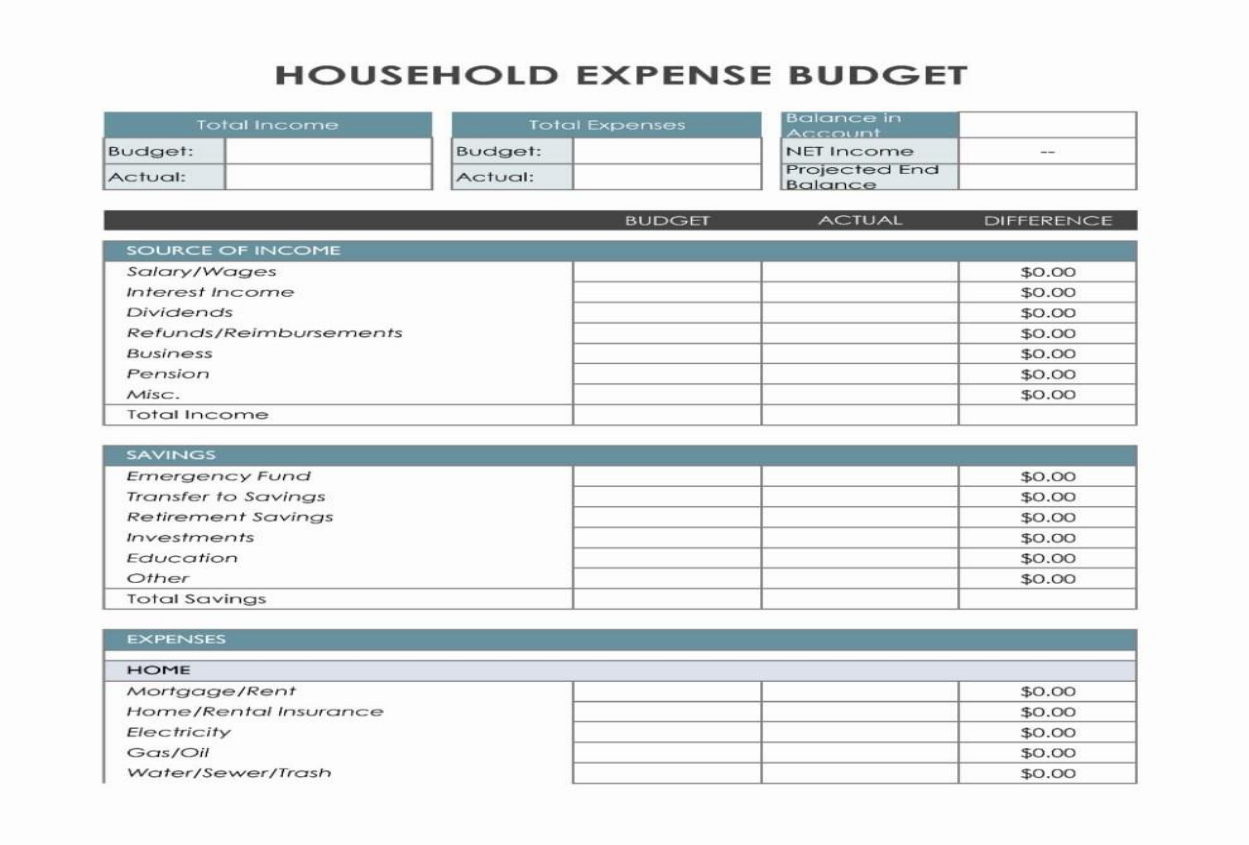
FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Login Page Display	User is shown a form with email/username fields.
FR-4	User Credential Input	User enters credentials or uses Google/LinkedIn OAuth for sign-in.
FR-5	Session Token Creation	On success, system generates a secure login session/token.
FR-6	Redirect to Dashboard	User is redirected to their personal expense dashboard.

3.3 Technology Stack

The "Calculating Family Expenses using ServiceNow" project is built on the ServiceNow platform, leveraging its core features such as Form Designer, Flow Designer, and ServiceNow Tables for data management. The front-end interface is developed using ServiceNow's UI Builder and Service Portal for an interactive user experience. Backend logic is implemented using Server-side scripts, Business Rules, and Script Includes. For data visualization and reporting, Performance Analytics and Dashboard modules are used. Additionally, REST APIs enable integration with external platforms like email services or banking apps. This technology stack ensures scalability, security, and seamless user interaction within the ServiceNow ecosystem.

4. Project Design

4.1 Problem Solution Fit :



HOUSEHOLD EXPENSE BUDGET

Total Income		Total Expenses		Balance in Account	
Budget:		Budget:		NET Income	--
Actual:		Actual:		Projected End Balance	

	BUDGET	ACTUAL	DIFFERENCE
SOURCE OF INCOME			
Salary/Wages			$0.00
Interest Income			$0.00
Dividends			$0.00
Refunds/Reimbursements			$0.00
Business			$0.00
Pension			$0.00
Misc.			$0.00
Total Income			
SAVINGS			
Emergency Fund			$0.00
Transfer to Savings			$0.00
Retirement Savings			$0.00
Investments			$0.00
Education			$0.00
Other			$0.00
Total Savings			
EXPENSES			
HOME			
Mortgage/Rent			$0.00
Home/Rental Insurance			$0.00
Electricity			$0.00
Gas/Oil			$0.00
Water/Sewer/Trash			$0.00

4.2 Proposed Solution :

The proposed template is a structured framework designed to streamline the tracking and management of family expenses using the ServiceNow platform. It includes predefined tables, forms, workflows, and automation scripts tailored to capture various categories of daily expenses, income sources, and financial goals. The template facilitates easy data entry, generates real-time reports, and provides actionable insights through dashboards and analytics. With userfriendly interfaces and automated alerts for budget limits, the template helps families make informed financial decisions. Additionally, it ensures data accuracy, security, and scalability, making it a practical solution for efficient expense management.

4.3 Solution Architecture :

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.

- Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
- Define features, development phases, and solution requirements.
- Provide specifications according to which the solution is defined, managed, and delivered.

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning :

The planning for the "Calculating Family Expenses using ServiceNow" project is structured into multiple sprints following Agile methodology to ensure iterative development and timely delivery. Initial phases focus on requirement gathering, designing the data model, and setting up the ServiceNow environment. Subsequent sprints involve the development of core functionalities like user registration, expense entry forms, and workflow automation for categorizing and summarizing expenses. Later stages include performance optimization, dashboard creation for analytics, and user acceptance testing. Each task is assigned story points based on complexity to ensure proper workload distribution and project tracking, resulting in a robust and user-friendly expense management solution.

5.2 Planning Logic :

The planning logic for the "Calculating Family Expenses using ServiceNow" project follows an Agile-based, sprint-driven development approach. Tasks are broken down into user stories and categorized by complexity using a story point system—1 (very easy), 2 (easy), 3 (moderate), and 5 (difficult). Each sprint includes a set of prioritized tasks based on business value and development effort. This logic ensures that simple foundational tasks like form creation and table setup are completed first, followed by moderately complex items like workflow configuration, and finally more advanced components like dashboard visualization and integrations. The planning logic supports continuous feedback, iterative improvement, and on-time delivery.

6. FUNCTIONAL AND PERFORMANCE TESTING :

6.1 GenAI Functional & Performance Testing :

GenAI functional and performance testing focuses on ensuring that AI-driven features like prompt handling, response generation, and system integration work correctly and efficiently under varying loads. Functional testing verifies that responses are accurate and aligned with user

input, while performance testing evaluates response time, stability, and scalability during high usage. This helps ensure that the GenAI system remains reliable, fast, and effective in real-world scenarios.

6.2 Model Performance Test :

Model performance testing evaluates the efficiency, accuracy, and responsiveness of a GenAI model under various conditions. It involves measuring key metrics like **response time**, **accuracy of outputs**, **latency**, **throughput**, and **resource usage** (CPU, memory). The goal is to ensure the model consistently generates relevant, high-quality responses within acceptable time limits, even when handling multiple or complex user prompts. Testing is done under normal and peak loads to assess scalability and robustness, ensuring optimal performance in production environments.

6.3 Salesforce :

Salesforce can be used to plan and track the performance of a family expenses system by leveraging its tools like **Salesforce Flow**, **Reports & Dashboards**, and **Performance Monitoring APIs**. Custom objects can be created to log expense categories, transaction amounts, and monthly limits, while workflows and automation rules can trigger alerts for overspending or budget deviations. Performance planning involves defining KPIs such as monthly expense trends, category-wise spending, and system response times. Dashboards help visualize these metrics, enabling real-time analysis and optimization of family budget performance using Salesforce's robust, scalable cloud platform.

7. **RESULT:** There is no result for Calculating Family Expenses Using ServiceNow Project

8. **Advantages & DisAdvantages:**

Advantages:

1. **Automation of Tasks:**
   ServiceNow automates data entry, categorization, and report generation, reducing manual effort and errors.
2. **Centralized Data Management:**
   All family expense data is stored in one place, making it easy to track, retrieve, and analyze spending.
3. **Custom Workflows:**

Custom business rules and workflows can be created to handle reminders, approvals, or spending alerts.

4. **Real-Time Reporting:**
   Built-in dashboards and analytics provide real-time insights into expense patterns and budgeting performance.
5. **Scalability:**
   The system can be expanded to include more users, categories, or integrations as family needs grow.

Disadvantages:

1. **Platform Complexity:**
   ServiceNow may be overkill for simple expense tracking, especially for users unfamiliar with enterprise tools.
2. **Cost:**
   Licensing and implementation costs can be high, especially for small or personal use.
3. **Learning Curve:**
   Users need basic training to navigate the platform, create tables, and configure workflows.
4. **Limited Offline Access:**
   ServiceNow is cloud-based, so access to expense data requires internet connectivity.
5. **Customization Overhead:**
   Setting up custom features for family use can take time and may require scripting or admin skills.

9. **Conclusion:**

Calculating family expenses using ServiceNow offers a powerful, automated, and centralized approach to managing household finances. With features like real-time dashboards, customizable workflows, and data accuracy, it transforms traditional budgeting into a smarter, more efficient process. While the platform may introduce some complexity and cost, its scalability and enterprise-grade capabilities make it a valuable solution for families seeking long-term financial clarity and control.

10. **FUTURE SCOPE:**

The future scope of calculating family expenses using ServiceNow includes integrating AIdriven insights for smart budgeting recommendations, linking with bank APIs for automated transaction imports, and adding mobile accessibility for on-the-go expense

tracking. Advanced features like predictive analytics, voice-enabled inputs, and multi-user role access can further enhance usability. Additionally, integrating with platforms like Salesforce or third-party financial tools can expand its functionality, making it a comprehensive personal finance management solution.

11. **APPENDIX:**

Source Code:

ServiceNow Business Rules Script

Source Code :

```
var FamilyExpenses = new GlideRecord('u_family_expenses');


FamilyExpenses.addQuery('u_date',current.u_date);
FamilyExpenses.query();        if(FamilyExpenses.next())
        {
                FamilyExpenses.u_amount += current.u_expense;
                FamilyExpenses.u_expense_details +=
">"+current.u_comments+":"+"Rs."+current.u_expense+"/-";
                FamilyExpenses.update();
        }
        else
        {
                var NewFamilyExpenses = new GlideRecord('u_family_expenses');
                NewFamilyExpenses.u_date = current.u_date;
                NewFamilyExpenses.u_amount = current.u_expense;
                NewFamilyExpenses.u_expense_details +=
">"+current.u_comments+":"+"Rs."+current.u_expense+"/-";
                NewFamilyExpenses.insert();
```

}

Explanation Of The Code :

This Script does the following

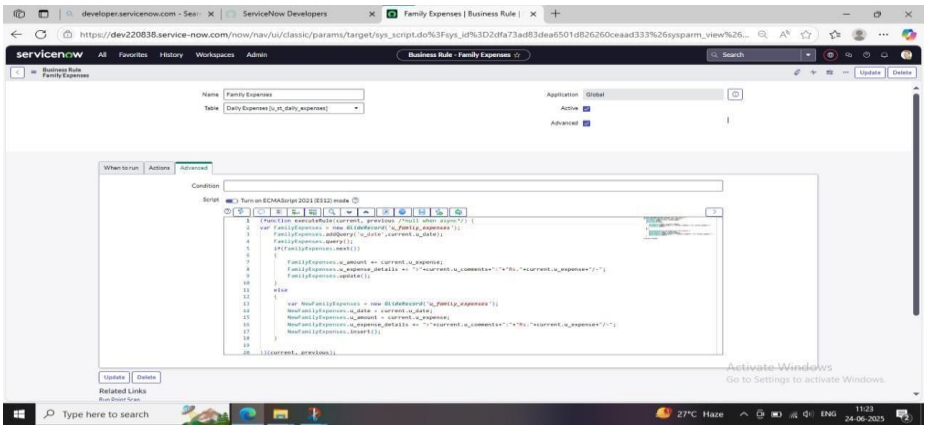
- Checks if a family expense record of the current date(current.u_date) already exists.
- If it exists :
- Add the new expense(current.u_expense) to. total(u_amount).
- Appends the expense detail with comments.
- If it doesn't exists :
- Create a new record with the date,amount and comments.

Example of How the Expense Details Look After Update :

If your current.u_comments = “Grocery” and current.u_expense = 500, then:

- u_expense_details = >Grocery:Rs.500/-

Creation Of Business Rules :



ServiceNow GlideQuery Refinement Function(Configure The Relationship)Script

Source Code :

```
(function refineQuery(current, parent) {
current.addQuery('u_date', parent.u_date);   current.query();
})(current, parent);
```

Explanation Of The Code :

This Script does the following

- (current) refers to the record you're currently working on.
- (parent) refers to the record that is calling this Script.
- (addQuery('u_date',parent.u_date)) tells the system:
  Ony gets Record where (u_date) is equal to the parent's (u_date).

Example of How the Script Works :

Parent Record(event):

- u_name : "Annual Day"
- u_date : "2025-06-21

Child Table(u_participant) :

| u_name | u_date | u_event |

|---|---|---|

| John | 2025-06-24 | Annual Day |

| Mary | 2025-06-24 | Annual Day |

| Alice | 2025-06-20 | Sports Day |

When the Script Runs:

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

It becomes:

current.addQuery('u_date', '2025-06-21');

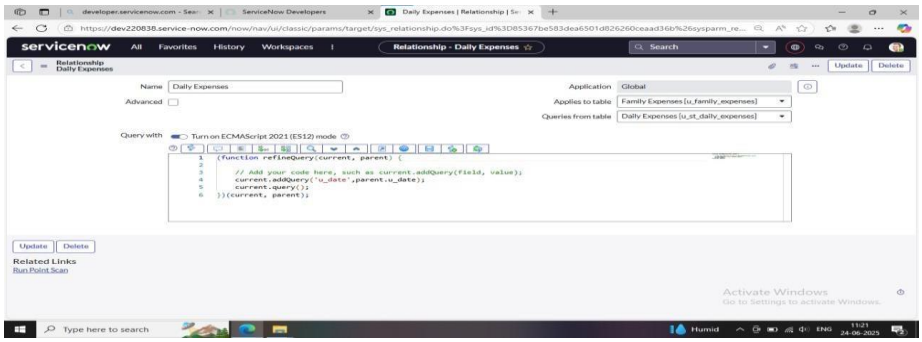
So it only fetches participants with matching u_date, i.e,John and Mary

- These two records will be returned

John(2025-06-21)

Mary(2025-06-21)

Configure The Relationship :



Dataset Link :

https://drive.google.com/file/d/1xRlq0EBRBG1e4NMYSZ8k9zBvExHDmIBB/view?usp=sharing