MAR EPHRAEM COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

NAAN MUDHALVAN

A PROJECT WORK ON

CALCULATING FAMILY EXPENSES USING SERVICE NOW

SUBMITTED BY

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE & DATA SCIENCE

A PROJECT REPORT

2025-2026

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1. Problem Statement

Managing and tracking family expenses manually can often lead to inconsistencies, data loss, and poor visibility into financial activities. Traditional spreadsheets or paper-based methods make it difficult to categorize, analyze, and automate expenses. This project proposes an automated solution using ServiceNow that records, categorizes, and calculates family expenses efficiently.

2. Abstract

In today's digital era, managing family expenses requires a systematic and transparent process. This project, titled "Calculating Family Expenses Using ServiceNow," focuses on leveraging ServiceNow's platform to automate the process of tracking daily and family-based expenses. By using ServiceNow tables, forms, and relationships, the system enables users to enter daily expense details, associate them with specific family members, and automatically compute totals. This ensures accuracy, reduces manual work, and provides a centralized view of financial data.

3. Introduction

Families often struggle to maintain clear and accurate expense records. Manually maintaining these records through spreadsheets or notebooks is prone to errors, duplication, and inefficiency. ServiceNow provides an effective platform to automate such processes by using custom tables, business rules, and relationships. In this project, a Family Expenses application is developed within ServiceNow that automates expense entry, categorization, and calculation for each family member.

4. Objectives

The main objectives of this project are:

1. To automate the process of tracking and calculating family expenses.
2. To provide an easy-to-use interface for recording daily expenses.
3. To maintain relationships between family members and their daily expenses.
4. To enhance visibility and reporting of financial data.
5. To demonstrate how ServiceNow can be applied beyond ITSM for personal and household management.

5. Methodology

The implementation of this project, *"Calculating Family Expenses Using ServiceNow,"* was carried out through a series of structured steps as outlined below:

Step 1: Setting up ServiceNow Instance

• Sign up for a developer account at https://developer.servicenow.com.

• Navigate to **Personal Developer Instance → Request Instance** to create a new ServiceNow instance.

• Fill out the required information and submit the request.
• Once the instance is ready, log in using the provided credentials.
• The instance serves as the base platform for building and testing the Family Expense Management system.

Step 2: Creation of New Update Set
• Go to **All → Local Update Set → New**.
• Enter details:
  Name: *Family Expenses*
• Click **Submit** and then **Make Current** to activate the update set for this project.

Step 3: Creation of Family Expenses Table
• Navigate to **All → Tables → New**.
• Enter details:
  Label: *Family Expenses*
  Name: Auto-Populated
  New Menu Name: *Family Expenditure*
• Save the configuration by right-clicking the header and selecting **Save**.

Step 4: Creation of Columns (Fields)
• Add new fields by double-clicking **Insert a new row** near the Columns section.
  1. Column Label: *Number* → Type: *String*
  2. Column Label: *Date* → Type: *Date*
  3. Column Label: *Amount* → Type: *Integer*
  4. Column Label: *Expense Details* → Type: *String* → Max length: *800*
• Right-click the header and click **Save** to store the column configurations.

Step 5: Making Number Field an Auto-Number
• Open the *Number* field and enable **Advanced View**.
• In **Default Value**, check **Use Dynamic Default** and set **Dynamic Default Value** to *Get Next Padded Number*.
• Navigate to **All → Number Maintenance → New**.
• Enter:
  Table: *Family Expenses*
  Prefix: *MFE*
• Click **Submit** to enable automatic numbering for new records.

Step 6: Configure the Form
• Navigate to **All → Family Expenses → Open Family Expenses → New**.
• Right-click the header → **Configure → Form Design**.

• Customize the layout as required.
• Make *Number* a **Read-Only Field**.
• Make *Date* and *Amount* **Mandatory Fields**.
• Click **Save** to apply the form configuration.

Step 7: Creation of Daily Expenses Table
• Navigate to **All → Tables → New**.
• Enter details:
  Label: *Daily Expenses*
  Name: Auto-Populated
  Add Module to Menu: *Family Expenditure*
• Right-click the header and click **Save**.

Step 8: Creation of Columns (Fields) for Daily Expenses Table
• Add new fields by inserting rows under the Columns section:
  1. Column Label: *Number* → Type: *String*
  2. Column Label: *Date* → Type: *Date*
  3. Column Label: *Expense* → Type: *Integer*
  4. Column Label: *Family Member Name* → Type: *Reference*
  5. Column Label: *Comments* → Type: *String* → Max length: *800*
• Right-click the header and click **Save**.

Step 9: Configure the Form
• Navigate to **All → Daily Expenses → Open Daily Expenses → New**.
• Right-click the header → **Configure → Form Design**.
• Customize as needed.
• Make *Number* field **Read-Only**.
• Make *Date* and *Family Member Name* **Mandatory Fields**.
• Save the changes.

Step 10: Creation of Relationship between Family Expenses and Daily Expenses Tables
• Go to **All → Relationships → New**.
• Enter details:
  Name: *Daily Expenses*
  Applies to Table: *Family Expenses*
  Daily Expenses: *Daily Expenses*
• Click **Save** to establish the relationship.

Step 11: Configuring Related List on Family Expenses
• Navigate to **All → Family Expenses → Open Family Expenses → New**.

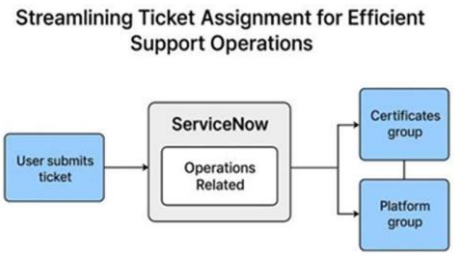
• Right-click the header → **Configure → Related Lists**.
• Add *Daily Expenses* to the selected area.
• Click **Save** to finalize the related list configuration.

Step 12: Creation of Business Rules
• Navigate to **All → System Definition → Business Rules → New**.
• Enter:
Name: *Family Expenses BR*
Table: *Daily Expenses*
• Check **Advanced**, and under *When to run*, check **Insert** and **Update**.
• Add the script in the *Advanced* section.
• Save the business rule to automate the updating of expenses in the *Family Expenses* table whenever a new *Daily Expense* record is added.

Step 13: Configure the Relationship
• Navigate to **All → Relationships → Open Daily Expenses Relationship**.
• Set **Applies to Table** as *Family Expenses*.
• In the **Query with** section, enter the script.
• Click **Update** to save the configuration.

6. Architecture Diagram

The architecture consists of two main tables — Family Expenses and Daily Expenses — linked through a reference relationship. When a new daily expense is added, the system triggers a business rule that recalculates the total expenses for the related family member.



Flow Explanation:

1. User creates a Daily Expense record.
2. The record is linked to a Family Member.
3. The system calculates and updates the total automatically.

7. Workflow Explanation

Manual Process:

- Each family member records expenses manually.
- Summations are calculated periodically by hand.

Automated Process (ServiceNow Implementation): -

- Daily expense entries are automatically linked to family members.
- Total expenses are calculated dynamically via business rules.
- Users can view detailed expense breakdowns per member in real-time.

8. Benefits of Automation

1. Accuracy: Reduces human error in calculations.
2. Efficiency: Eliminates manual summation tasks.
3. Transparency: Provides clear visibility of expenses per family member.
4. Scalability: Can be expanded for monthly or yearly tracking.
5. Integration: Can integrate with dashboards for data visualization.

9. Results and Outcomes

After implementation, the Family Expense Management system achieved:

- Complete automation of expense calculation Improved team coordination.
- Real-time updates to total expenses upon adding daily transactions.
- Simplified data entry and management within ServiceNow
- Enhanced reporting and visibility across family members' expenses.

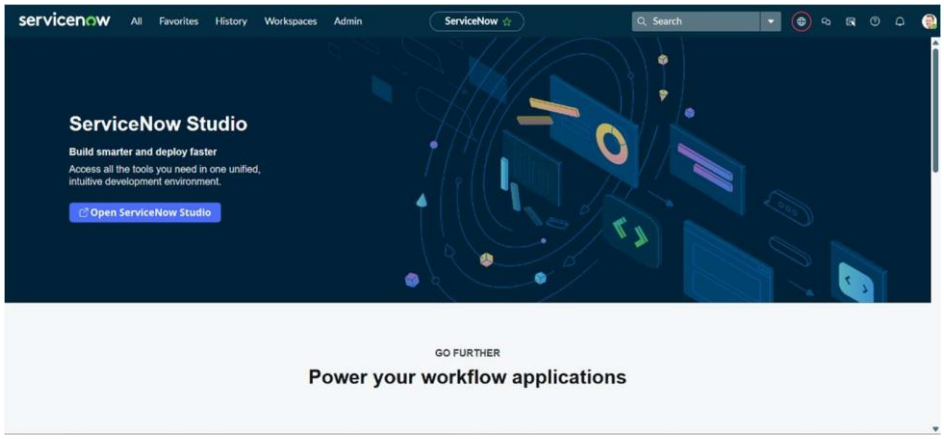
This clearly demonstrates the efficiency and reliability of ServiceNow's automation features in real-world IT service management.

10. Future Scope

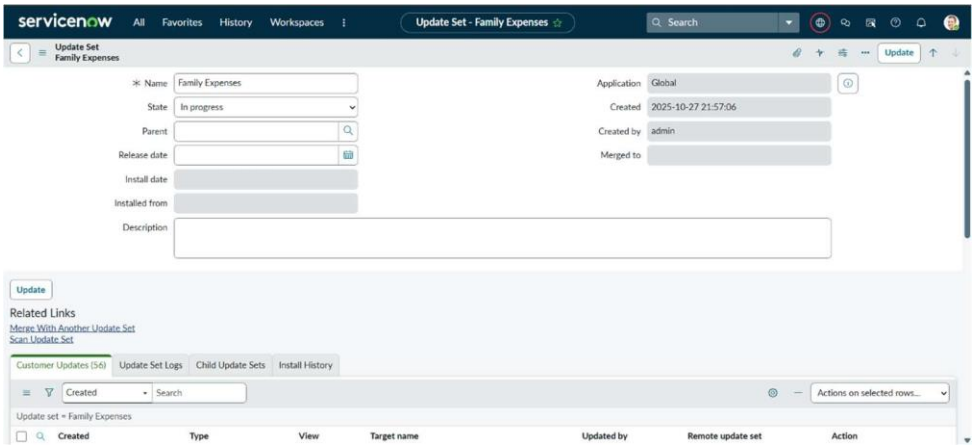
- Integration with ServiceNow reports and dashboards for analytics.
- Adding budget limits and notifications for overspending.
- Creating charts for expense distribution.
- Extending the project for income tracking and savings calculation.
- Integration with external payment or finance tracking APIs

11. Appendix

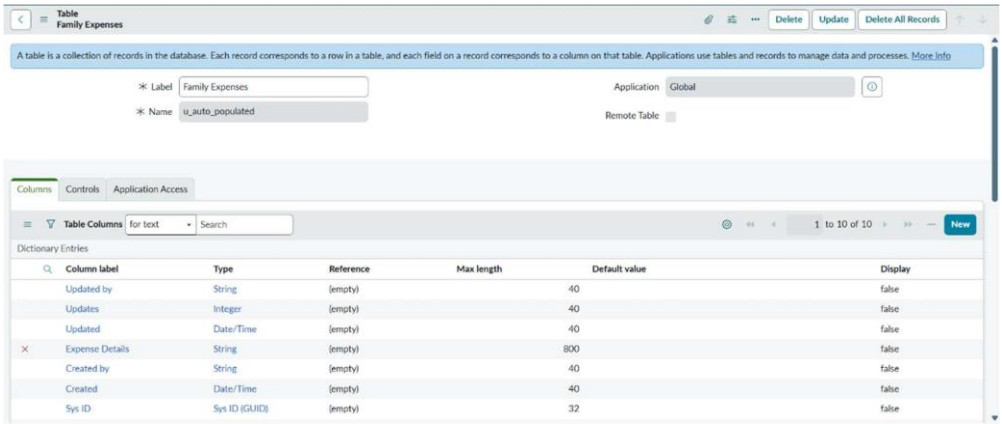
1. Setting up ServiceNow Instance

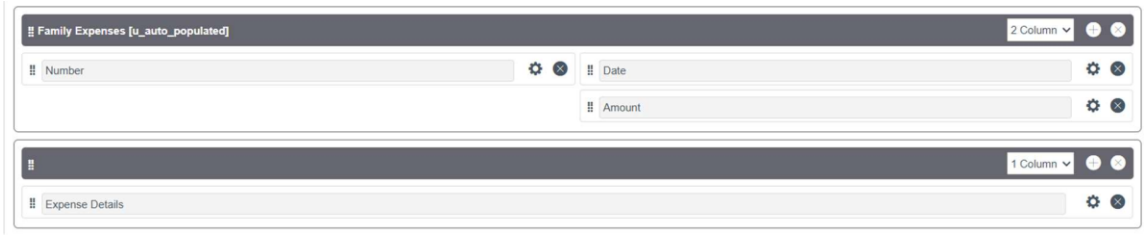


2. Creation of New Update Set

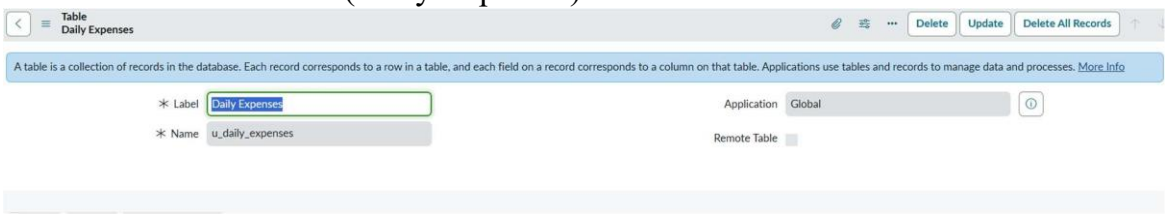


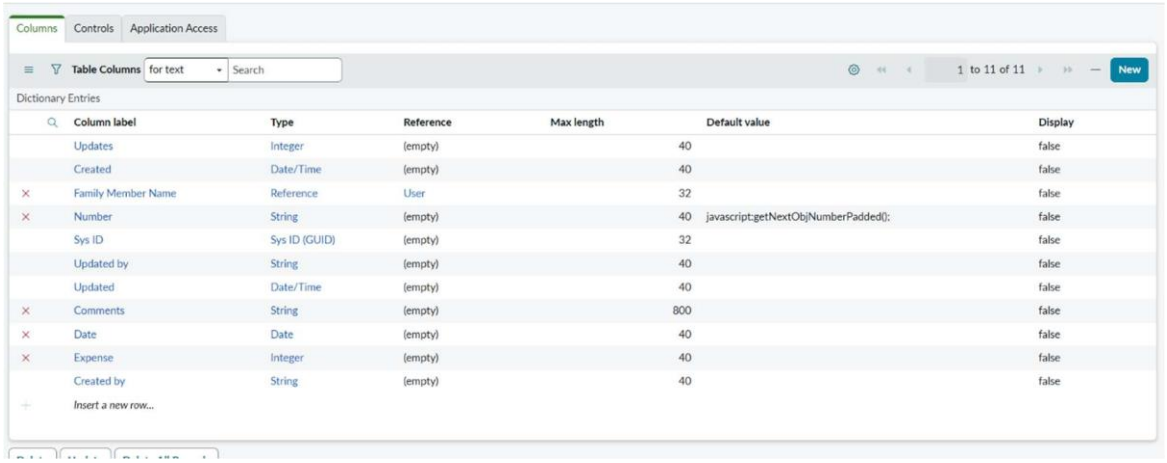
3. Creation of Table

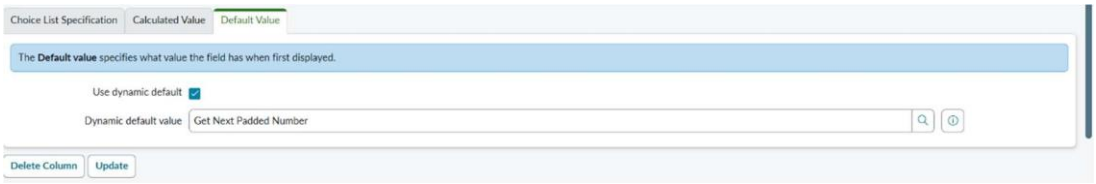


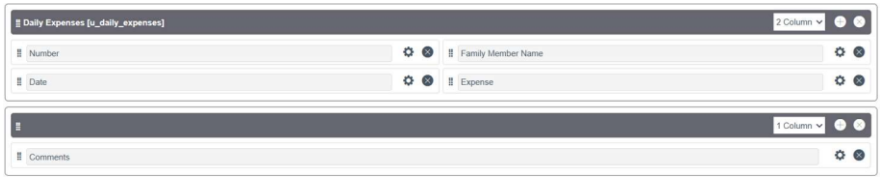


4. Creation of Table (Daily Expenses)



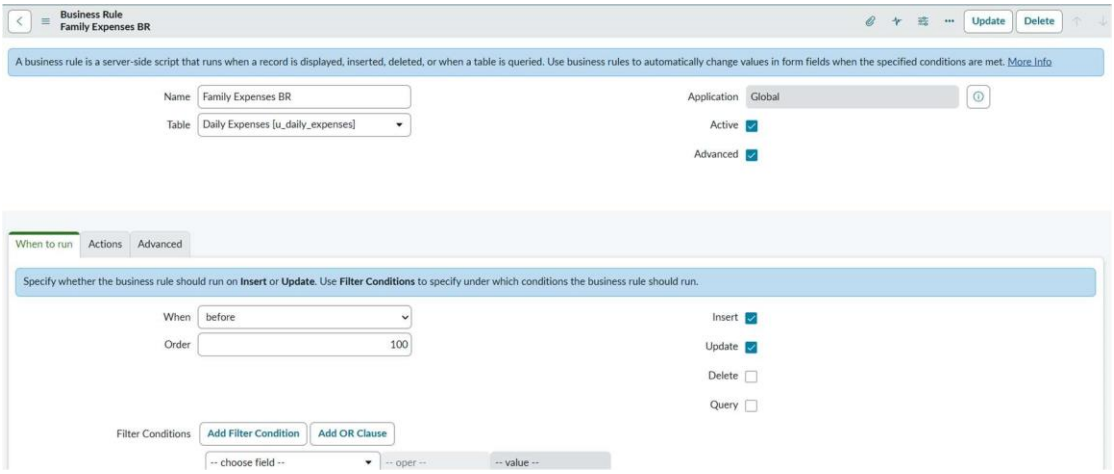


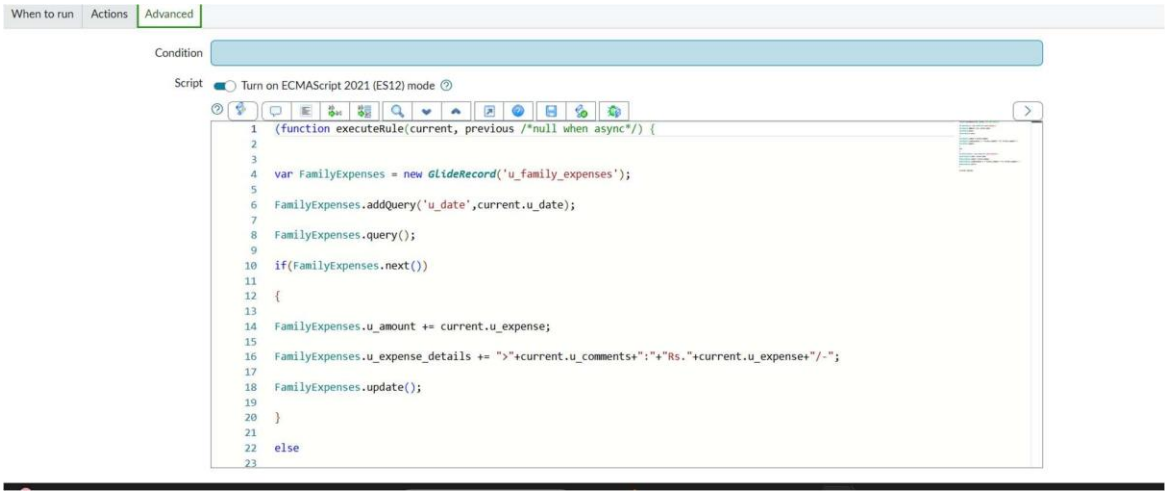




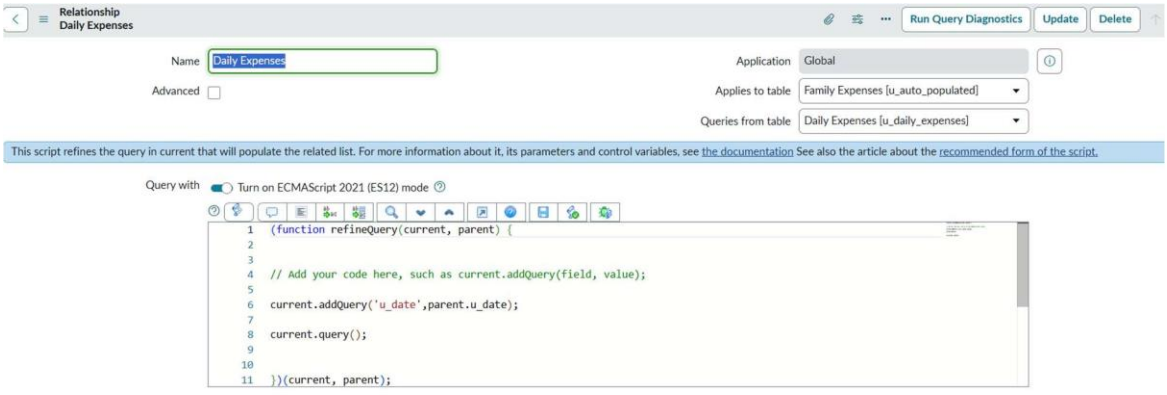
5. Creation of Relationship between Family Expenses and Daily Expenses tables

6. Creation of Business Rules





7. Configure the Relationship



12. Conclusion

The project 'Calculating Family Expenses Using ServiceNow' demonstrates how ServiceNow’s low-code capabilities can be applied to everyday use cases beyond IT operations. By creating custom tables, relationships, and business rules, the system successfully automates the process of recording and calculating family expenses.

This project highlights the versatility and efficiency of ServiceNow as a platform for both organizational and personal automation needs.

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