



**ANJALAI AMMAL MAHALINGAM ENGINEERING COLLEGE**  
**DEPARTMENT OF INFORMATION TECHNOLOGY**  
**NM-SERVICE NOW ADMINISTRATOR**

**TITLE: CALCULATING FAMILY EXPENSES**  
**USING SERVICENOW**

S.NO	NAME	REGISTER NO
1	M.SIVANANDAM	820422205076
2	G.SRIROOBANITHI	820422205079
3	M.SUDHARSAN	820422205082
4	M.VIKNESH	820422205092

## 1. Abstract

The project titled “**Calculating Family Expenses Using ServiceNow**” focuses on designing and implementing a digital, automated system for efficiently managing and analyzing household financial activities. Traditional methods of expense tracking — such as notebooks, spreadsheets, or mobile notes — often result in scattered data, manual errors, and limited analytical insight. These methods also make it difficult for families to identify spending patterns, control budgets, or make informed financial decisions.

To address these limitations, this project leverages the **ServiceNow platform**, a cloud-based low-code/no-code environment typically used for IT service management but capable of supporting custom application development. The goal is to demonstrate how ServiceNow can be repurposed as a personal finance management tool to automate expense tracking and provide real-time visibility into financial trends.

The system allows users to **record daily or monthly expenses** through a custom **Service Catalog form**, which stores data in a dedicated table. Each record captures essential details such as the date, category, amount, payment mode, and a brief description. Automated workflows and scripts validate entries, calculate totals, and generate summary reports for easy review. Dashboards and reports further enable the visualization of expenses by category, time period, or user.

This project not only streamlines the process of tracking expenses but also emphasizes the flexibility and adaptability of the ServiceNow platform beyond its conventional IT scope. Through automation, structured data storage, and reporting tools, families can make smarter budgeting decisions, reduce manual effort, and achieve better financial awareness. The project demonstrates the potential of **ServiceNow as a universal application platform**—capable of transforming routine, non-IT tasks into efficient digital workflows.

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## 2. Introduction

Tracking family expenses is a vital part of financial planning and control. Without a structured method, individuals and families often lose track of where their money goes, leading to unnecessary expenditures and poor budgeting. In the digital age, while many mobile applications exist for this purpose, they often lack customization, data security, or integration with personal workflow systems.

Most families still depend on manual methods — such as maintaining notebooks or entering transactions in Excel sheets. These methods are **time-consuming, error-prone, and lack analytical power**. They provide no automation for categorizing or summarizing data and require manual effort to calculate totals or generate reports.

**ServiceNow**, on the other hand, offers a cloud-based platform that combines workflow automation, form creation, database management, and reporting — all in one environment. Although it is primarily used in enterprise IT service management, its **low-code/no-code** capabilities make it highly adaptable for non-IT applications like expense management.

By using ServiceNow for tracking family expenses, users can benefit from:

- Centralized and secure data storage.
- Automated workflows for recording and summarizing expenses.
- Real-time visibility through dashboards and reports.
- Role-based access (e.g., Admin and Family Members).
- Accessibility from any device, anywhere.

This background sets the foundation for exploring how ServiceNow can be effectively customized to meet the needs of personal financial management. It proves that enterprise-grade platforms can be repurposed to solve day-to-day household problems — providing automation, structure, and intelligence to simple tasks like expense tracking.

## 2.1 Why ServiceNow?

ServiceNow was chosen for this project due to its:

- **Low-code/no-code development environment** using ServiceNow Studio.
- **Strong workflow automation engine** for approval and data management.
- **Service Catalog and form design** for user interaction.
- **Reporting and dashboard tools** for data visualization.
- **Cloud-based accessibility**, ensuring secure and easy access from anywhere.

## 2.2 Objectives

- To design a custom application within ServiceNow to manage family expenses.
- To automate expense data entry, tracking, and reporting.
- To create user-friendly interfaces and forms for quick data input.
- To generate monthly and yearly analytical reports.
- To provide transparency into family spending patterns.

### 3. Problem Statement

Managing family expenses manually has always been a challenging task for households. Most families depend on traditional methods such as maintaining notebooks, using spreadsheets, or relying on memory to record their day-to-day expenses. These approaches are **time-consuming, prone to human error, and lack automation or analytical insights**. As a result, individuals often struggle to track spending accurately, identify unnecessary expenditures, or plan budgets effectively.

In today's digital world, the absence of a centralized system for managing personal finances leads to several issues, such as:

- Difficulty in maintaining **consistent and accurate expense records**.
- Lack of **real-time visibility** into how income is distributed across various categories (e.g., rent, groceries, utilities, transport, etc.).
- Inability to **analyze spending patterns** and generate reports for monthly or yearly comparisons.
- Manual effort required for **data entry, verification, and total calculations**.
- Limited options for **data sharing or collaborative expense management** among family members.

To overcome these challenges, there is a need for a **digital, automated, and user-friendly system** that can record, categorize, and analyze family expenses seamlessly. The proposed project — “**Calculating Family Expenses Using ServiceNow**” — aims to develop such a solution using the **ServiceNow platform**, which provides cloud-based automation, database management, and reporting tools.

This system will enable users to:

- Record expenses through a structured online form.
- Automatically store and categorize expense data.
- Generate visual reports and summaries for better financial insights.
- Reduce manual effort and ensure data accuracy.

Thus, the project addresses the core problem of inefficient manual expense tracking by leveraging ServiceNow's capabilities to create a **smart, automated, and reliable family expense management solution**.

## 4. Methodology / System Design

### 4.1 Design Approach

The system was designed using a modular and user-centric approach. The key modules include:

- **Service Catalog Form:** For entering expense data.
- **Custom Tables:** For storing all expense records with fields like date, category, amount, and description.
- **Workflow Engine:** For approving or processing expense entries automatically.
- **Reports and Dashboards:** For visualizing spending trends.
- **User Roles:** Such as *Admin* and *Family Members* with specific access permissions.

#### ServiceNow Features Used

- ServiceNow Studio
- Service Catalog
- Flow Designer
- Notifications and UI Policies
- Reporting & Performance Analytics

### 4.2 System Architecture

The architecture consists of the following layers:

Layer	Component	Description
Presentation	Service Catalog UI	Interface for entering expenses
Business Logic	Flow Designer	Automates approvals and notifications
Data Layer	Custom Tables	Stores expense data
Reporting	Dashboards	Displays analytics and trends

Integration (optional) Email/Excel Export For report sharing

The system follows a **client-server model**, where ServiceNow acts as a cloud-based server handling all business logic, while users interact via the web interface.

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### 4.3 User Interface (UI) and User Experience (UX)

- **UI Design:**

The expense form includes fields for:

- Expense Date
- Category (Groceries, Rent, Utilities, etc.)
- Amount
- Payment Mode (Cash, Card, UPI)
- Description

- **UX Considerations:**

- Simple and intuitive form design.
- Dropdowns for category selection.
- Automated field population (e.g., current date).
- Confirmation message after saving data.

## 5. Implementation Details

### 5.1 Platform Setup

Steps followed:

1. Created a **Developer Instance** from the ServiceNow Developer portal.
2. Configured user roles:
  - *admin* (full control)
  - *user* (family member).
3. Created a new **Application: Family Expense Tracker** in ServiceNow Studio.

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### 5.2 Development and Customization

#### Custom Tables

A table named `u_family_expense` was created with fields:

- `u_date`
- `u_category`
- `u_amount`
- `u_payment_mode`

- u\_description
- u\_created\_by

### Catalog Form

- Built a Service Catalog item named *Add Expense Entry*.
- Linked it to the u\_family\_expense table.
- Added UI policies for mandatory fields and dynamic visibility.

### Scripting

- Used **Client Scripts** to validate that the amount entered is positive.
- Used **Business Rules** to automatically set the logged-in user in the u\_created\_by field.

Example script:

```
if (current.u_amount < 0) {  
    gs.addErrorMessage('Amount cannot be negative');  
    current.setAbortAction(true);  
}
```

---

## 5.3 Workflow Implementation

### Flow Designer

- Created a flow triggered on record creation in the u\_family\_expense table.
- Flow sends a confirmation email to the user.
- Updates a summary table to track total monthly expenses.

### Notifications

Automatic notifications configured for:

- Expense entry creation.
- Monthly summary report.

**Approvals (Optional)**

- For shared family accounts, the admin can approve or reject high-value entries.
- 

**Results and Discussion**

After implementation:

- Family members can add expenses via a single form.
- The system automatically records all details and calculates totals.
- Dashboards display total spending by category and month.
- Reports can be exported to Excel or viewed online.

**Sample Output Reports**

**Month      Total Expense (₹)      Major Category**

Jan 2025	52,000	Rent
Feb 2025	47,500	Groceries
Mar 2025	49,800	Education

These reports provide visibility into monthly trends and help identify overspending areas.

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**Testing**

**Test Scenarios**

Test Case Description		Expected Result	Status
TC01	Submit expense form	Record saved successfully	Passed
TC02	Enter negative amount	Error message displayed	Passed
TC03	Generate monthly report	Report generated accurately	Passed
TC04	Email notification	User receives confirmation	Passed



## **User Feedback**

Family members found the application easy to use and appreciated the automated reports.

## **Advantages**

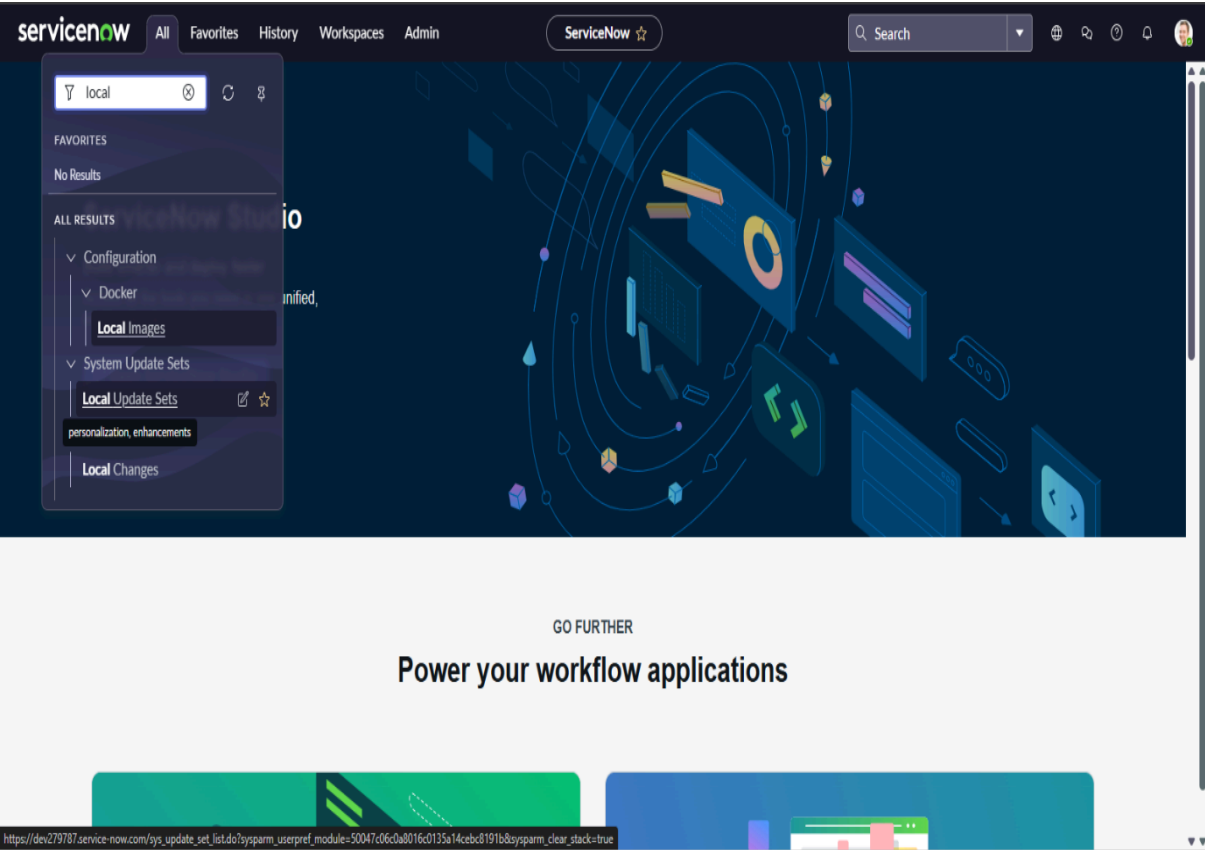
- Automation of manual data entry.
- Easy access and management of data.
- Real-time analytical dashboards.
- Secure and role-based access.
- Cloud-based solution requiring no installation.

## **Limitations**

- Internet connection required.
- Limited to ServiceNow platform users.
- Graphical reports can be enhanced with integration tools like Power BI.

## **Future Scope**

- Integration with Google Sheets or bank APIs for automatic expense import.
- Adding AI-based prediction of future expenses.
- Mobile-friendly UI through ServiceNow Mobile App.
- Voice input for quick expense logging.



ServiceNow interface showing the 'Update Set - Create New Update Set' form. The form includes the following fields and controls:

- Name:** Family Expenses
- State:** In progress
- Parent:** (Searchable field)
- Release date:** (Calendar icon)
- Description:** (Large text area)
- Application:** Global
- Buttons:** Submit, Submit and Make Current

The form is titled 'Update Set - Create New Update Set' and includes a search bar and navigation links at the top.

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AllFavoritesHistoryWorkspacesAdmin

Update Sets

Search

Update Sets

NameSearch

Actions on selected rows...

New

All

	Name	Application	State	Installed from	Created	Created by	Parent	Batch Base
	Default	Security Center	In progress		2025-08-22 01:09:18	system	(empty)	(empty)
	Default	Pipeline	In progress		2025-10-29 20:00:01	admin	(empty)	(empty)
	Default	Global	In progress		2025-08-21 23:00:25	system	(empty)	(empty)
	Family Expenses	Global	In progress		2025-10-29 21:25:29	admin	(empty)	(empty)

Related Links

[Merge Update Sets](#)

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AllFavoritesHistoryWorkspacesAdmin

Table - New Record

Search

Submit

Cancel

ServiceNow recommends creating custom tables in scoped applications. To learn more about creating scoped applications, click [here](#).

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More Info](#)

\* LabelFamily Expenses

\* Nameu\_family\_expenses

Extends table

ApplicationGlobal

Create module

Create mobile module

Add module to menu-- Create new --

New menu nameFamily Expenditure

ColumnsControlsApplication Access

Table Columnsfor textSearch

Dictionary Entries

	Column label	Type	Reference	Max length	Default value	Display
	Number	String				false
	Date	Date				false
	Amount	Integer				false
	Expense Details	String		800		false
	Insert a new row...					

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AllFavoritesHistoryWorkspacesAdmin

Table - New Record

Search

Table

Save

Save record and remain here

Configure

Export

Create Favorite

Copy URL

Copy sys\_id

Reload form

Custom tables in scoped applications. To learn more about creating scoped applications, click [here](#).

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More info](#)

LabelFamily Expenses

ApplicationGlobal

Create module☒

Create mobile module☒

Add module to menu-- Create new --

New menu nameFamily Expenditure

Extends table

ColumnsControlsApplication Access

Table Columnsfor textSearch

Dictionary Entries

	Column label	Type	Reference	Max length	Default value	Display
X	Number	String				false
X	Date	Date				false
X	Amount	Integer				false
X	Expense Details	String		800		false
+	Insert a new row...					

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AllFavoritesHistoryWorkspacesAdmin

Table - Family Expenses

Search

Table

Family Expenses

DeleteUpdateDelete All Records

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More info](#)

\* LabelFamily Expenses

ApplicationGlobal

\* Nameu\_family\_expenses

ColumnsControlsApplication Access

Table Columnsfor textSearch

1 to 10 of 10

New

Dictionary Entries

	Column label	Type	Reference	Max length	Default value	Display
	Sys ID	Sys ID (GUID)	(empty)		32	false
	Created by	String	(empty)		40	false
	Created	Date/Time	(empty)		40	false
X	Amount	Integer	(empty)		40	false
X	Number	String	(empty)		40	false
X	Expense Details	String	(empty)	800		false
	Updated by	String	(empty)		40	false
	Updates	Integer	(empty)		40	false
	Updated	Date/Time	(empty)		40	false

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AllFavoritesHistoryWorkspacesAdmin

Dictionary Entry - Number

Search

Dictionary Entry

Number

View: Advanced

Delete Column

Update

Alters the behavior of a field or functionality that depends on the field. [More Info](#)

Attributes

Choice List Specification

Calculated Value

Default Value

The Default value specifies what value the field has when first displayed.

Use dynamic default ☒

Dynamic default valueGet Next Padded Number

Delete Column

Update

Related Links

[Show Table](#)

[Run Point Scan](#)

[Default view](#)

Access Controls

Choices

Attributes

Labels (1)

Name

Search

Access Controls

Name	Decision Type	Operation	Type	Active	Updated by	Updated
------	---------------	-----------	------	--------	------------	---------

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AllFavoritesHistoryWorkspacesAdmin

Table - Family Expenses

Search

ber Maintenance

Delete

Update

Delete All Records

A table corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More Info](#)

ApplicationGlobal

Columns

Controls

Application Access

Table Columns

for text

Search


1 to 10 of 10

New

Dictionary Entries

Column label	Type	Reference	Max length	Default value	Display
Sys ID	Sys ID (GUID)	(empty)	32		false
Created by	String	(empty)	40		false
Created	Date/Time	(empty)	40		false
Amount	Integer	(empty)	40		false
Number	String	(empty)	40	javascript:getNextObj()NumberPadded();	false
Expense Details	String	(empty)	800		false
Updated by	String	(empty)	40		false
Updates	Integer	(empty)	40		false
Updated	Date/Time	(empty)	40		false


https://dev279787.service-now.com/sys\_number\_list.do?sysparm\_userpref\_module=10e86ef9c61122750035c9c7f4d00dc&sysparm\_clear\_stack=true

* Table	Family Expenses	 
Prefix	MFE	
* Number		1,000
Application	Global	
Number of digits		7

Submit

Related Links

[Show Counter](#)



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AllFavoritesHistoryWorkspacesAdmin

Numbers

Search

Family Expenses

No Results

ALL RESULTS

Family Expenditure

Family Expenses

	Number of digits	Table	Updated
	0	7 Email Watermark	2008-12-04 17:48:49
	0	7 MID Deployment Request	2021-09-13 08:41:40
	0	8 Scan Result	2019-07-12 15:26:02
	0	7 MID Server Profile	2021-09-14 17:37:21
	0	7 Guided Tour	2019-08-12 02:58:31
	0	9 Indicator	2016-07-25 05:14:42
K8S_DEPLOY	0	7 MID K8s Deployment Request	2021-09-20 01:09:58
	0	0 Text Index	2011-10-12 12:17:02
	0	9 Breakdown	2016-07-26 04:14:35
MID_	0	5 MID Server	2021-09-22 15:32:12
SLAR	0	7 SLA Repair Log	2015-02-24 07:31:34
EVALEXEC	1	8 A/B Testing Evaluation Execution	2023-02-02 13:19:26
TEMPLATE	1	Template	2005-09-16 14:12:42
IMS	1	7 Interaction	2018-01-23 22:52:22
EVAL	1	7 A/B Testing Evaluation	2023-02-02 13:36:43
EC	1,000	8 Execution Context for Scheduled Import	2021-02-19 10:01:14
CCR	1,000	7 Service Category	2013-11-09 07:30:37
SOG	1,000	7 Scriptable Order Guide Failures	2013-12-05 12:21:58

14 of 137

https://dev279787.service-now.com/u\_family\_expenses\_list.do?sysparm\_userpref\_module=f1e02813c33832104d51d9d6050131ac&sysparm\_clear\_stack=true

Family Expenses [u\_family] Default view

Form Design

Undo Save

FieldsField Types

Filter

Fields

Created

Created by

Updated

Updated by

Updates

Formatters

Activities (filtered)

Contextual Search Results

Ratings

Family Expenses [u\_family\_expenses]2 Column

Number

Date

Amount

Expense Details1 Column





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AllFavoritesHistoryWorkspacesAdmin

Number - New Record

Search

<

≡

Number

New record

Submit

\* Table

Daily Expenses

0

Prefix

DFE

\* Number

1,000

Application

Global

0

Number of digits

7

Submit

Related Links

[Show Counter](#)

Daily Expenses [u\_daily\_e]

Default view

Form Design

Undo

Save

Save the form

Fields

Field Types

Filter

Fields

Created

Created by

Updated

Updated by

Updates

Formatters

Activities (filtered)

Contextual Search Results

Ratings

Daily Expenses [u\_daily\_expenses]

2 Column

Number

Date

Expense

1 Column

Comments

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Business Rule - New Record

Search

Business Rule

New record

Submit

A business rule is a server-side script that runs when a record is displayed, inserted, deleted, or when a table is queried. Use business rules to automatically change values in form fields when the specified conditions are met. [More Info](#)

Name

Family Expenses BR

Application

Global

Table

Daily Expenses [u\_daily\_expenses]

Active

☒

Advanced

☒

When to run

Actions

Advanced

Specify whether the business rule should run on Insert or Update. Use Filter Conditions to specify under which conditions the business rule should run.

When

before

Order

100

Insert

☒

Update

☒

Delete

☐

Query

☐

Filter Conditions

Add Filter Condition

Add "OR" Clause

-- choose field --

-- oper --

-- value --

Role conditions

javascriptvoid()

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Relationship - New Record

Search

Relationship

Save

Cont. Save record and remain here

Export

Create Favorite

Copy URL

Copy sys\_id

Reload form

Relationship

Daily Expenses

Advanced

☐

Application

Global

Applies to table

Family Expenses [u\_family\_expenses]

Queries from table

Daily Expenses [u\_daily\_expenses]

Submit

This script will populate the related list. For more information about it, its parameters and control variables, see [the documentation](#). See also the article about the [recommended form of the script](#).

Query with

☒ Turn on ECMAScript 2021 (ES12) mode

1

2

3

4

5

(function refineQuery(current, parent) {

// Add your code here, such as current.addQuery(field, value);

})(current, parent);

Submit

0

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AllFavoritesHistoryWorkspacesAdmin

ServiceNow

Search

<

Configuring related lists on Family Expenses form

CancelSave

Available

Attachments  
Daily Expenses

>  
<

Selected

Daily Expenses

^  
v

CancelSave

View name: 

Default view

Related Links

[Show versions](#)

servicenow

AllFavoritesHistoryWorkspacesAdmin

Business Rule - New Record

Search

<

Business Rule  
New record

Submit

A business rule is a server-side script that runs when a record is displayed, inserted, deleted, or when a table is queried. Use business rules to automatically change values in form fields when the specified conditions are met. [More Info](#)

Name

Family Expenses BR

Application

Global

Table

Daily Expenses [u\_daily\_expenses]

Active

☒

Advanced

☒

When to run

Actions

Advanced

Condition

Script

☒ Turn on ECMAScript 2021 (ES12) mode

```
1 (function executeRule(current, previous /*null when async*/) {  
2  
3   var FamilyExpenses = new GlideRecord('u_family_expenses');  
4   FamilyExpenses.addQuery("u_date",current.u_date);  
5   FamilyExpenses.query();  
6   if(FamilyExpenses.next())  
7   {  
8     FamilyExpenses.u_amount += current.u_expense;  
9     FamilyExpenses.u_expense_details += ">" +current.u_comments+"-"+current.u_expense+"/-";  
10    FamilyExpenses.update();  
11  }  
12  else  
13  {  
14  }
```

Name

Application

Advanced ☐

Applies to table

Queries from table

This script refines the query in current that will populate the related list. For more information about it, its parameters and control variables, see [the documentation](#). See also the article about the [recommended form of the script](#).

Query with ☒ Turn on ECMAScript 2021 (ES12) mode



```
1 (function refineQuery(current, parent) {
2
3 // Add your code here, such as current.addQuery(field, value);
4 current.addQuery("u_date",parent.u_date);
5 current.query();
6
7 })(current, parent);
```

Related Links

[Run Point Scan](#)

## **Conclusion**

This project successfully demonstrates how ServiceNow can be used beyond ITSM — as a platform for personal finance automation. The *Family Expense Tracker* automates recording, categorization, and reporting of expenses, improving transparency and saving time. The project not only enhances productivity but also showcases ServiceNow's flexibility as a rapid application development tool for daily life use cases.