

CALCULATING FAMILY EXPENSES USING SERVICE NOW

NAAN MUDALVAN PROJECT

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INTRODUCTION

Managing family expenses is one of the most important aspects of financial planning, yet it is often overlooked or handled in unstructured ways like handwritten notes or spreadsheets. Families frequently face challenges such as overspending, lack of budget control, and difficulty in analyzing where their money goes. To address these issues, technology can play a vital role by providing structured, automated, and user-friendly solutions.

This project, “Calculating Family Expenses Using ServiceNow,” aims to create a digital system that helps track, categorize, and manage family expenses efficiently.

ServiceNow, known for its robust workflow automation and application development capabilities, provides an excellent platform for building such a system. By leveraging ServiceNow, this project transforms expense management into a more streamlined process with features like expense categorization, daily tracking, budget limits, reporting, and automated business rules.

The system will not only simplify financial management for families but also provide real-time insights into spending patterns, allowing better decision-making. With its scalability and flexibility, the solution can be expanded to suit different family structures and even adapted for small business expense management. Ultimately, the project showcases how a powerful enterprise platform like ServiceNow can be applied beyond IT workflows to solve everyday problems in an innovative and practical way.

ABSTRACT

Expense management plays a crucial role in maintaining financial stability within families, yet traditional methods such as manual tracking or spreadsheets often lead to errors, lack of visibility, and poor decision-making. To address this challenge, this project focuses on designing and implementing a Family Expense Management System using ServiceNow.

The application leverages ServiceNow's powerful low-code development environment to create structured tables, relationships, and automated workflows for recording and analyzing expenses. Key features include categorizing expenses (such as food, utilities, and transport), maintaining family member details, linking daily transactions, and applying business rules to validate data and automate calculations. By configuring related lists and creating meaningful reports, the system provides users with a clear overview of their financial habits and budget limits.

The proposed solution not only simplifies day-to-day expense tracking but also provides real-time insights into spending patterns, enabling families to make smarter financial decisions. Furthermore, the project demonstrates the versatility of ServiceNow beyond traditional IT service management, showcasing its potential in solving practical, real-world problems.

PROBLEM STATEMENT

Managing household expenses is often a difficult and time-consuming task for families. Most families rely on manual methods such as notebooks, receipts, or spreadsheets to track their daily spending. These methods come with several challenges:

- Lack of real-time tracking of expenses.
- Difficulty in categorizing and consolidating expenses like food, utilities, rent, and transportation.
- Limited ability to analyze spending patterns or generate reports.
- High chances of errors due to manual data entry.
- No automation to alert families about overspending or exceeding budgets.

As a result, families often lose visibility into their financial flow, making it harder to control budgets or make informed financial decisions. This creates the need for a systematic, automated, and user-friendly solution to manage and calculate family expenses efficiently.

SOLUTION

The proposed solution is to build a Family Expense Management

System on the ServiceNow platform. ServiceNow, being a robust low-code/no-code platform, provides all the tools required to create structured applications without needing extensive programming knowledge.

The solution involves:

- **Creating custom table** to store family member details and daily expenses.
- **Defining relationships** between family members and their respective expenses for easy tracking.
- **Configuring related lists** so that expenses linked to each family member can be viewed in one place.
- **Implementing business rules** to automate calculations, validate entries, and ensure data accuracy.
- **Generating reports and dashboards** to visualize monthly/annual spending and highlight budget deviations.
- **Using update sets** to track and migrate customizations, ensuring proper version control.

PRACTICAL USE

The Family Expense Management System built on

ServiceNow helps families track, categorize, and analyze their expenses in a structured way. It simplifies budgeting, reduces errors from manual tracking, and provides real-time insights into spending patterns. Families can use it to set limits, monitor monthly expenses, and generate reports for better financial decisions. Beyond households, the same system can be adapted for small businesses to manage cash flow and daily transactions effectively, proving the versatility of ServiceNow in solving practical, non-IT problems.

KNOWLEDGE GAINED

- Learned how to setup and configure a ServiceNow developer instance for building applications.
- Understood the importance of update sets for tracking and migrating customizations.
- Gained practical skills in creating custom tables and defining fields to store structured data.
- Learned how to establish relationships between tables for linked data management.
- Practiced configuring related lists for easier navigation and record visibility.
- Understood how to create and apply business rules for automation and validations.
- Gained insights into data modeling and database concepts within ServiceNow.
- Learned how to generate reports and dashboards for real-time analysis.
- Understood how ServiceNow can be applied to non-IT use cases like family expense tracking.
- Improved overall knowledge of workflow automation and low-code development.

MILESTONE1:SETTING UP THE SERVICE NOW INSTANCE

- Go to the official Service Now Developer portal: <https://developer.servicenow.com> and create a developer account.
- After signing in, open the Personal Developer Instance section from the dashboard.
- Select Request Instance to generate a fresh Service Now environment for development.
- Provide the necessary details(like version selection)and confirm your request.
- Wait for the confirmation email containing your instance URL and login credentials.
- Use the credentials to log into your newly created Service Now instance.
- Once inside , explore the interface and begin working on the platform.

MILSTONE2:CREATION OF NEW UPDATE SET

- Log into your Service Now instance and go to the Application Navigator.
- Search for Update Sets and open Local Update Sets under *System Update Sets*.
- Click on New to create a fresh updateset.
- Enter the following details:
 - Name: *Family Expenses*
 - Description: Updateset to capture all configurations related to the Family Expense Management project.
- Save the record and mark it as the Current Update Set, so every change you make is tracked under this set.
- Verify that the update set is active by checking the header at the top of the screen.
- From this point forward, all customizations (tables, relationships, and business rules) will be recorded inside the *Family Expenses* update set.

The screenshot shows the ServiceNow interface for creating a new update set. The browser address bar displays the URL: `dev325422.service-now.com/now/nav/ui/classic/params/target/sys_update_set.do%3Fsys_id%3D898fa2e493f722109d16393efaba10fe%26sysparm_record_target%3Dsys...`. The page title is "Update Set - Family Expenses". The form contains the following fields:

| Field | Value |
|----------------|---------------------|
| Name | Family Expenses |
| State | In progress |
| Parent | |
| Release date | |
| Install date | |
| Installed from | |
| Description | |
| Application | Global |
| Created | 2025-09-02 01:50:30 |
| Created by | admin |
| Merged to | |

Below the form, there is a section for "Related Links" with the following links:

- [Make This My Current Set](#)
- [Merge With Another Update Set](#)
- [Scan Update Set](#)

At the bottom, there is a tabbed interface with the following tabs:

- Customer Updates (27)
- Update Set Logs
- Child Update Sets
- Install History

The "Customer Updates (27)" tab is currently selected, showing a table with columns for "Created" and "Search".

MILSTONE3:CREATIONOFTABLEFAMILY EXPENSES

Activity1 –CreatingtheFamilyExpensesTable

- InyourServiceNowinstance,navigatetoAll>Tables using the filter navigator.
- Click onNewtcreateanew table.
- Fillin therequireddetails:
 - Label:*FamilyExpenses*
 - Name:(Thiswillbeauto-generatedbasedonthe label)
 - NewMenuName:*FamilyExpenditure*
- Savetherecord tocreatethenewtable.

MILSTONE3:CREATIONOFTABLEFAMILY EXPENSES

Activity2–AddingColumnstotheFamilyExpensesTable

Duration:1Hour

SkillTags:TableConfiguration,DataModeling,ServiceNowBasics

- Openthe newly created FamilyExpensestable.
- To add columns, double-click near the existing columns to insert a new row.
- Enter the following details one by one:
 1. ColumnLabel: Number
 - Type: String
 2. ColumnLabel: Date
 - Type: Date
 3. ColumnLabel: Amount
 - Type: Integer
 4. ColumnLabel: ExpenseDetails
 - Type: String
 - MaxLength: 800

MILSTONE3:CREATIONOFTABLEFAMILY EXPENSES

Activity3–MakingtheNumberFieldanAuto-Number Open the Family Expenses table.

- Locatethe Numberfield/columnanddouble-clicktoopenits properties.
- ScrolldownandswitchtotheAdvancedview.
- IntheDefaultValuessection:
 - Checktheboxfor*UseDynamic Default*.
 - SettheDynamicDefaultValueto*GetNextPadded Number*.
- ClickUpdatetosavethe changes.

MILSTONE3:CREATIONOFTABLEFAMILY EXPENSES

Activity4–ConfiguringtheForm

- NavigatetoAll>inthe filter,searchforFamilyExpenses.
- OpentheFamilyExpensestable.
- ClickonNewto createanewformentry.
- Ontheformheader,right-clickandselect:
 - Configure>FormDesign.
- IntheFormDesigner,usedrag-and-dropto:
 - Rearrangefields.
 - Grouprelatedfieldstogether.
 - Addsectionsifrequiredforbetterclarity.
- Savethecustomizedformlayout.

MILSTONE4:CREATIONOFTABLEDAILY EXPENSES

Activity1–CreatingTheDailyExpensesTable

- NavigatetoAll>Tablesusingthefilternavigator.
- ClickonNewtocreate anew table.
- Fillintherequireddetails:
- Label:DailyExpenses
- Name:(Auto-populatedbythesystem)
- AddModuletoMenu:*Family Expenditure*
- Gototheformheader,right-click,andselectSave.

MILSTONE4:CREATIONOFTABLEDAILY EXPENSES

Activity3–MakingNumberFieldanAuto-Number

- Open the DailyExpenses table.
- Locate the Number field/column and double-click to open its properties.
- Scroll down and switch to the Advanced View.
- In the Default Values section:
 - Check the box for Use Dynamic Default.
 - Set the Dynamic Default Value to Get Next Padded Number.
- Click Update to save changes.

Configuring Number

Maintenance:

- Navigate to All > Number Maintenance.
- Click on New.
- Enter the details as follows:
 - Table: FamilyExpenses
 - Prefix: MFE
- Click on Submit.

The screenshot shows the ServiceNow web interface for configuring a Number field. The browser tabs include 'Student', 'ServiceNow Developers', 'Number | Dictionary Entry | Ser...', and 'Form Design'. The URL is 'dev325422.service-now.com/now/nav/ui/classic/params/target/sys_dictionary.do%3Fsys_id%3D6ffc3638933f62109d16393efaba1048%26sysparm_record_list%3DnameONE%...'. The page title is 'Dictionary Entry - Number'. The form is in 'Advanced' view. A blue banner states: 'Alters the behavior of a field or functionality that depends on the field. [More Info](#)'. Below this is an 'Attributes' section with an empty text box. The 'Default Value' tab is selected, showing a description: 'The Default value specifies what value the field has when first displayed.' Under 'Use dynamic default', the checkbox is checked. The 'Dynamic default value' field contains 'Get Next Padded Number'. At the bottom, there are 'Delete Column' and 'Update' buttons. A 'Related Links' section includes 'Show Table' and 'Run Point Scan'. At the very bottom, there are tabs for 'Access Controls', 'Choices', 'Attributes', and 'Labels (1)'.

Student

ServiceNow Developers

New Record | Number | ServiceNow

Form Design

dev325422.service-now.com/how/nav/ui/classic/params/target/sys_number.do%3Fsys_id%3D-1%26sys_is_list%3Dtrue%26sys_target%3Dsys_number%26sysparm_checked_it...

GmailYouTubeMapsWhatsApp

All Bookmarks

servicenow

AllFavoritesHistoryWorkspaces

Number - New Record

Search

Submit

Number

New record

Submit

* Table

Daily Expenses

Prefix

DFE

* Number

1,000

Application

Global

Number of digits

7

Submit

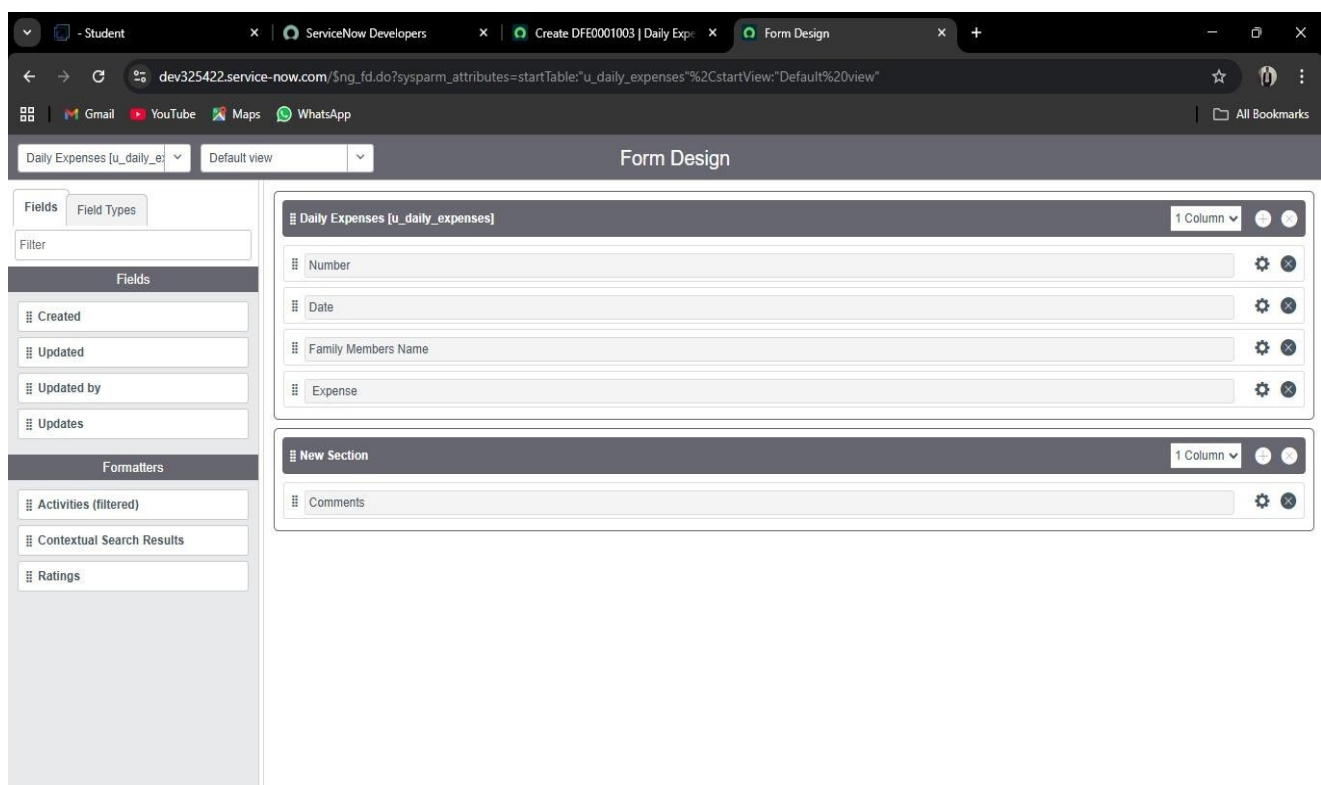
Related Links

[Show Counter](#)

MILSTONE4:CREATIONOFTABLEDAILY EXPENSES

Activity4–ConfigureTheForm

- NavigatetoAll>DailyExpensesusingthefilter.
- OpentheDailyExpensestable.
- ClickonNewtocreateanewformentry.
- Ontheformheader,right-click,thenselect:
- Configure>FormDesign.
- IntheFormDesigner,draganddropfieldstocustomizethe form layout as per requirement.
- Applythefollowingconfigurations:
- NumberField→Setas*Read-Only*byclickingthegeariconand checking Read-Only.
- DateField→Setas*Mandatory*byclickingthegeariconand checking Mandatory.
- FamilyMemberNameField →Setas*Mandatory*usingthe same method.
- ClickSavetoapplythechanges.



MILSTONE5:CREATIONOFRELATIONSHIP BETWEEN FAMILYEXPENSESAND DAILY EXPENSES TABLES

- NavigatetoAll>Relationshipsusingthefilternavigator.
- ClickonNewtocreate anew relationship.
- Fillinthedetailsasfollows:
- Name:DailyExpenses
- AppliestoTable:*FamilyExpenses*
- RelatedListTable:*DailyExpenses*
- ClickSave.

The screenshot shows the ServiceNow interface for creating a new relationship. The browser address bar indicates the URL: `dev325422.service-now.com/now/nav/ui/classic/params/target/sys_relationship.do%3Fsys_id%3D1d15a00d9337a2109d16393efaba109f%26sysparm_record_target%3Dsys_re...`. The ServiceNow header includes the logo, navigation tabs (All, Favorites, History, Admin), a search bar, and a user profile icon. The breadcrumb trail shows 'Relationship - Daily Expenses'. The form fields are as follows:

- Name:**
- Advanced:** ☐
- Application:**
- Applies to table:**
- Queries from table:**

A blue informational banner states: "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](#)."

Below the banner, the 'Query with' section has a toggle for 'Turn on ECMAScript 2021 (ES12) mode' which is currently off. A toolbar with various icons is present above the script editor. The script editor contains the following code:

```
1 <function refineQuery(current, parent) {
2
3
4 // Add your code here, such as current.addQuery(field, value);
5
6 current.addQuery('u_date',parent.u_date);
7
8 current.query();
9
10
11 })(current, parent);
12
13
```

MILSTONE6:CONFIGURINGRELATEDLIST ON FAMILY EXPENSES

- NavigatetoAll>FamilyExpensesusingthefilter.
- OpentheFamilyExpensestable.
- ClickonNewtoopentheformview.
- Ontheformheader,right-click,thenselect:
- Configure>RelatedLists.
- Fromtheavailableoptions,add
DailyExpensestotheSelected Area.
- ClickSavetoapplythechanges.

The screenshot shows the ServiceNow web interface for configuring related lists. The browser tabs include '- Student', 'ServiceNow Developers', 'ServiceNow', and 'Form Design'. The address bar shows a URL from dev325422.service-now.com. The ServiceNow header is visible with navigation links like 'All', 'Favorites', 'History', and 'Workspaces'. The main content area is titled 'Configuring related lists on Family Expenses form' and includes a 'Back' button, 'Cancel', and 'Save' buttons. The interface is divided into two columns: 'Available' and 'Selected'. The 'Available' column contains a list with 'Attachments'. The 'Selected' column contains a list with 'Daily Expenses'. Between the columns are arrows for moving items. Below the columns are 'Cancel' and 'Save' buttons. At the bottom, there is a 'View name:' dropdown set to 'Default view' and a 'Related Links' section with a 'Show versions' link.

ServiceNow

Configuring related lists on Family Expenses form

Back

Available

Attachments

Selected

Daily Expenses

Cancel Save

View name: Default view

Related Links

[Show versions](#)

MILSTONE7:CREATIONOFBUSINESSRULES

- NavigatetoAll>BusinessRulesusingthefilter.
- UnderSystemDefinition,selectBusinessRulesandclickNew.
- Enterthefollowingdetails:
 - Name:FamilyExpensesBR
 - Table:*DailyExpenses*
 - CheckAdvanced.
- IntheWhentorunsection,check:
 - Insert
 - Update

- IntheAdvancedtab,addthefollowingscript:

```
(functionexecuteRule(current,previous/*nullwhenasync*/) {
```

```
    varFamilyExpenses=newGlideRecord('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{
```

```
      varNewFamilyExpenses=newGlideRecord('u_family_expenses');
```

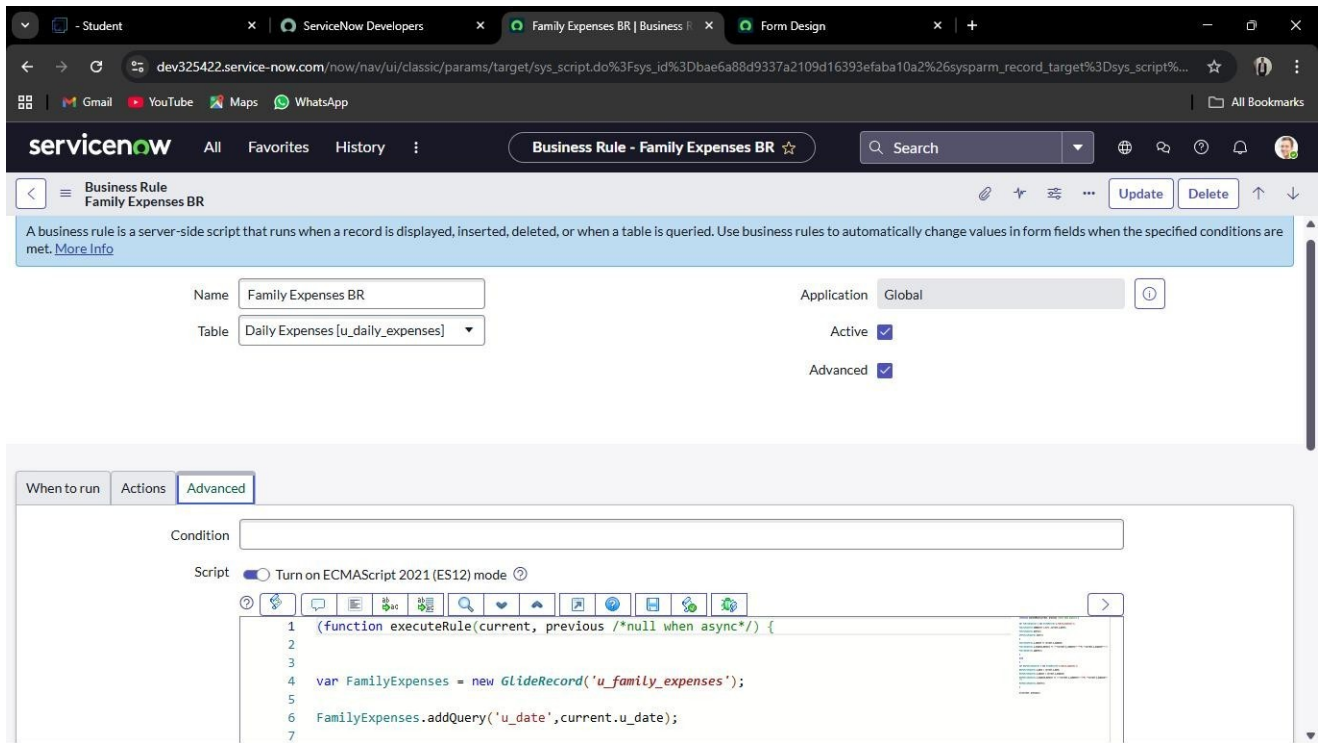
```
      NewFamilyExpenses.u_date = current.u_date;
```

```
      NewFamilyExpenses.u_amount = current.u_expense;
```

```
      NewFamilyExpenses.u_expense_details += ">" +  
current.u_comments+ ":" + "Rs." +current.u_expense+ "/-";
```

```
NewFamilyExpenses.insert();  
  
}  
  
})(current,previous);
```

Goto the form header, right-click, then select Save.



MILSTONE8:CONFIGURETHE RELATIONSHIP

- NavigatetoAll>Relationshipsusingthefilternavigator.
- OpentheexistingDailyExpensesRelationship.
- Updatethedetailsasfollows:
 - AppliestoTable:*FamilyExpenses*
- IntheQuerywith section,enterthefollowingscript:
(function refineQuery(current, parent) {

```
//Addyourcodehere,suchascurrent.addQuery(field,value);  
current.addQuery('u_date', parent.u_date);  
current.query();  
})(current,parent);
```

ClickUpdatetosavethe configuration

The screenshot shows the ServiceNow interface for configuring a relationship. The browser tabs include 'Student', 'ServiceNow Developers', 'Daily Expenses | Relationship', and 'Form Design'. The URL is 'dev325422.service-now.com/now/nav/ui/classic/params/target/sys_relationship.do%3Fsys_id%3D1d15a00d9337a2109d16393efaba109f%26sysparm_record_target%3Dsys_re...'. The page title is 'Relationship - Daily Expenses'. The configuration fields are: Name: 'Daily Expenses', Application: 'Global', Applies to table: 'Family Expenses [u_family_expens...', and Queries from table: 'Daily Expenses [u_daily_expenses]'. A blue informational box states: '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.' Below this, there is a 'Query with' section with a toggle for 'Turn on ECMAScript 2021 (ES12) mode'. The script editor contains the following code:

```
1 (function refineQuery(current, parent) {  
2  
3  
4 // Add your code here, such as current.addQuery(field, value);  
5  
6 current.addQuery('u_date', parent.u_date);  
7  
8 current.query();  
9  
10  
11 })(current, parent);  
12  
13
```


CONCLUSION

The Family Expenses Management System built on ServiceNow demonstrates how the platform can be leveraged beyond IT workflows to solve real-world problems. By systematically creating tables, relationships, forms, and business rules, the project enables seamless tracking of both daily expenses and family-level expenses in an automated manner.

The use of auto-numbering, mandatory fields, related lists, and business rules ensures data integrity, consistency, and accuracy. The relationship configuration further enhances visibility by linking daily records to family-level summaries, providing a clear financial overview.

Through this project, we learned how to apply ServiceNow features such as table creation, form design, field configuration, scripting, and automation to build a complete application. More importantly, it highlights how low-code/no-code platforms like ServiceNow can be extended into personal finance, household management, and non-IT use cases.

Overall, the project provides a practical, scalable, and user-friendly solution for managing family expenses efficiently while also strengthening skills in ServiceNow application development.