

Calculating Family Expenses using Service Now

Team ID: NM2025TMID07649

Team Size: 5

Team Leader: Praveen Kumar S

Team member: Ravi P

Team member: Raja Kabin R K

Team member: Rathi A

Team member: Raja Lakshmi A

AIM:

To perform calculating family expenses using ServiceNow Developer.

PROBLEM STATEMENT:

- Managing household finances is essential for every family to ensure financial stability and better planning. This project aims to develop a simple and efficient system using ServiceNow to record, track, and calculate monthly family expenses. ServiceNow, being a powerful cloud-based platform, offers custom application development that can be leveraged for personal finance tracking.

OBJECTIVE:

- To build a Family Expense Management System using ServiceNow that allows users to:
- Enter daily or monthly expenses under different categories (e.g., groceries, rent, transport, education, etc.)
- View summary reports of total and category-wise expenses
- Set monthly budgets and receive alerts if spending exceeds limits
- Generate downloadable reports for any time period

SKILL:

1. ServiceNow Application Development

- Creating custom tables
- Designing forms and views
- Using Flow Designer for automation

2. Workflow & Automation

- Using ServiceNow Flow Designer to automate calculations and notifications

3. Database Management

- Creating and managing custom tables for storing expenses and budgets

4. Reporting & Dashboard Design

- Designing ServiceNow reports

Building graphical dashboards for data visualization

TASK INITIATION:

STEP 1: Setting up ServiceNow Instance

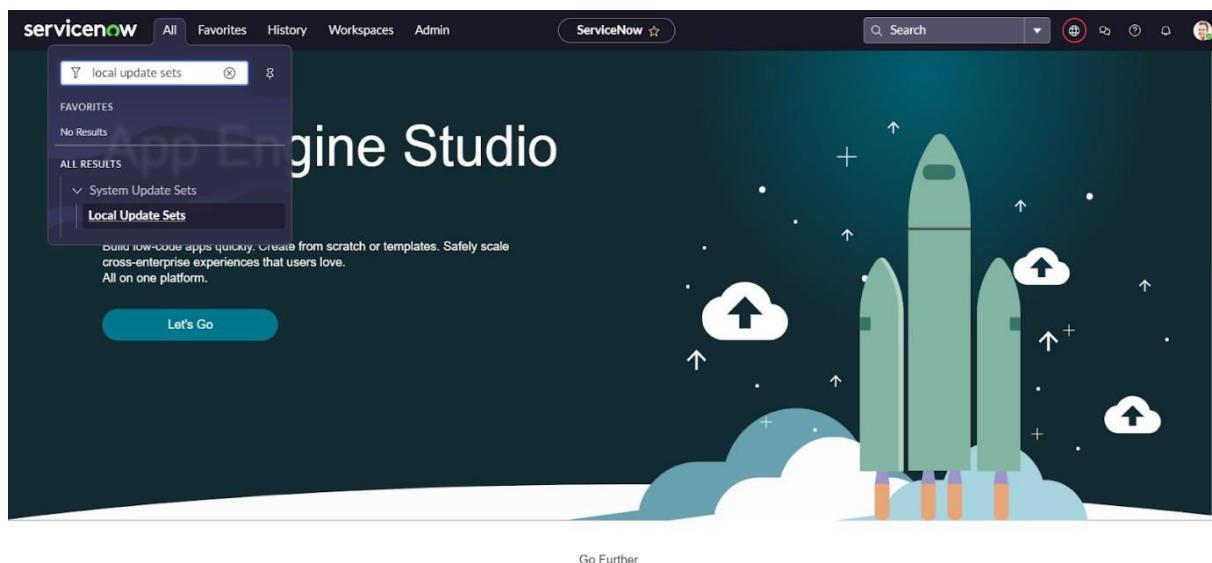
ACTIVITY 1: Setting up ServiceNow Instance

1. Sign up for a developer account on the ServiceNow Developer site "<https://developer.servicenow.com>".
2. Once logged in, navigate to the "Personal Developer Instance" section.
3. Click on "Request Instance" to create a new ServiceNow instance.
4. Fill out the required information and submit the request.
5. You'll receive an email with the instance details once it's ready.
6. Log in to your ServiceNow instance using the provided credentials.
7. Now you will navigate to the ServiceNow.

STEP 2: Creation of New Update Set

ACTIVITY 1: Creation of New Update Set

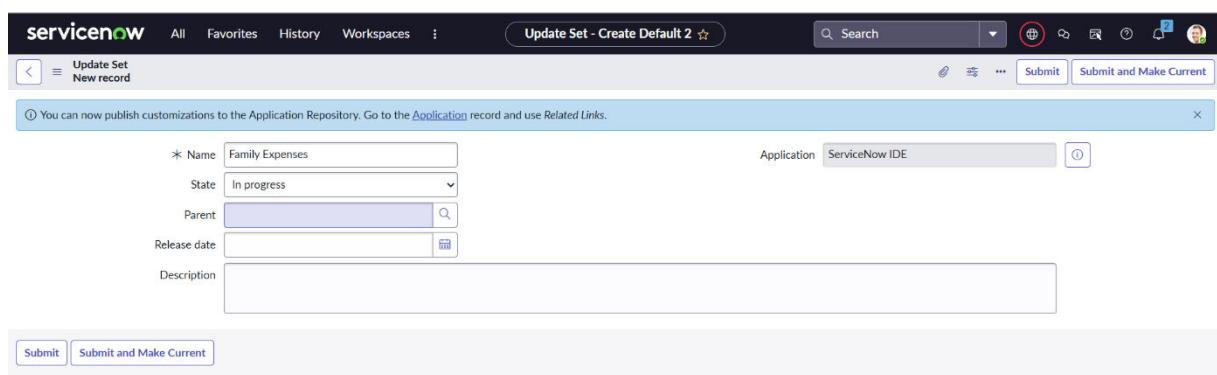
1. Go to All >> In the filter search for Local Update set
> click on New.



2. Enter the Details as: Name:

Family Expenses

3. Then click on Submit and Make current.

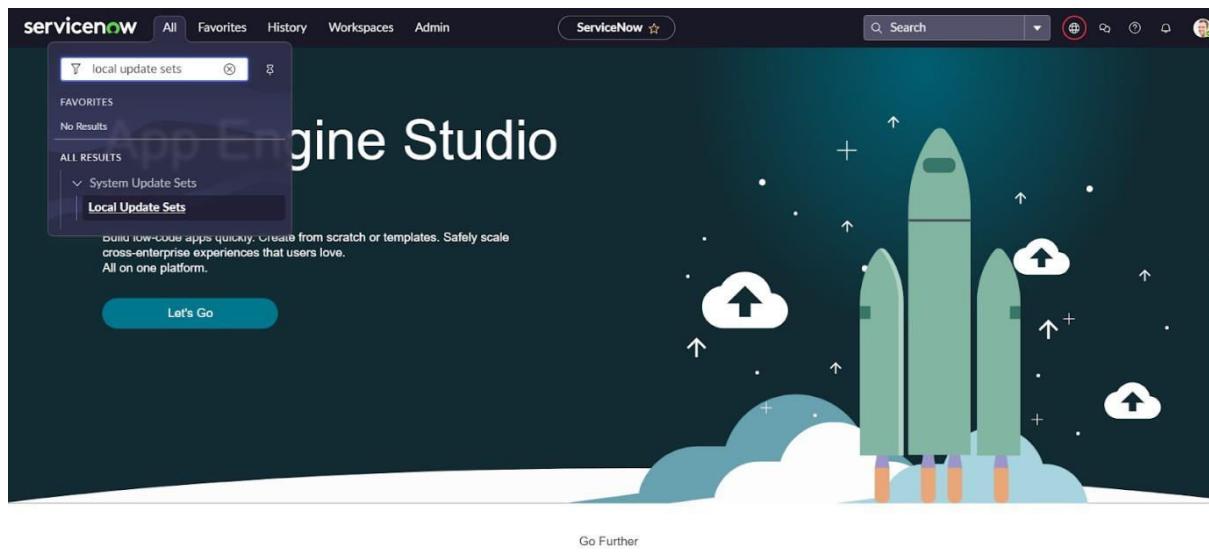


The screenshot shows the 'Update Set - Create Default 2' page. At the top, there are buttons for 'Submit' and 'Submit and Make Current'. Below that, a message says: 'You can now publish customizations to the Application Repository. Go to the [Application](#) record and use Related Links.' The main form has the following fields:

- * Name: Family Expenses
- State: In progress
- Parent: (empty)
- Release date: (empty)
- Description: (empty)

STEP 3: Creation of Table ACTIVITY 1: Creation of New Update Set

1. Go to All >> In the filter search for Local Update set > click on New.



1. Enter the Details as: Name: Family Expenses

2. Then click on Submit and Make current

A screenshot of the 'Update Set - Create Default 2' form in ServiceNow. The top navigation bar shows 'servicenow', 'All', 'Favorites', 'History', 'Workspaces', and the specific form title 'Update Set - Create Default 2'. The top right has a search bar and various icons. The main form area has fields for 'Name' (set to 'Family Expenses'), 'State' (set to 'In progress'), 'Parent' (a dropdown menu), 'Release date' (a date picker), and a large 'Description' text area. At the bottom are two buttons: 'Submit' and 'Submit and Make Current'. A status message at the top says: 'You can now publish customizations to the Application Repository. Go to the Application record and use Related Links.'

STEP 4: Creation of Table

ACTIVITY 1: Creation of Family Expenses Table

1. Go to All > In the filter search for Tables > click on New.
2. Enter the Details:

Label: Family Expenses Name: Auto-
Populated

New menu name: Family Expenditure

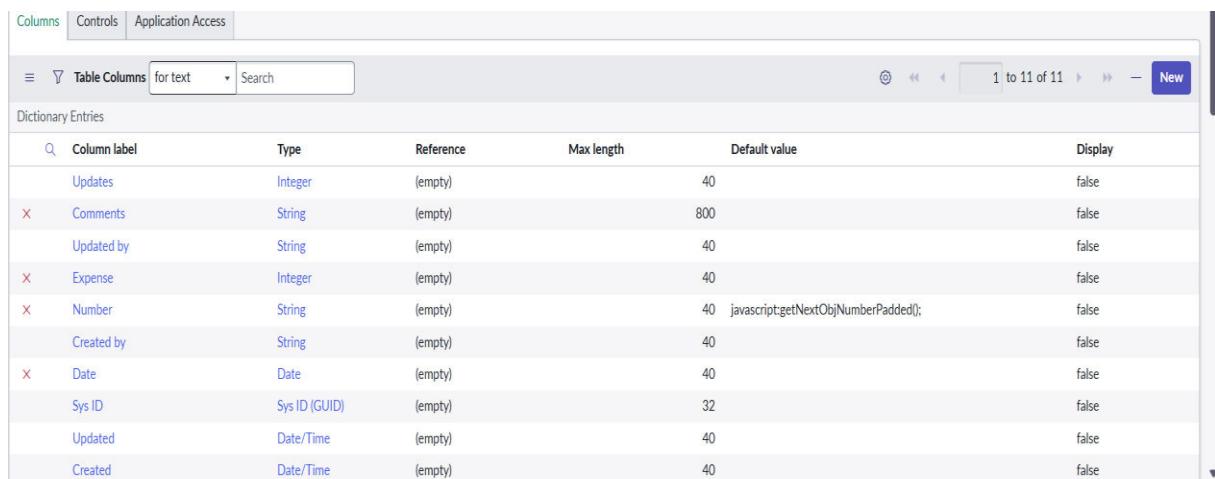
The screenshot shows the ServiceNow interface for creating a new table. The top navigation bar includes 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. The title bar says 'Table - New Record'. The main form has the following fields:

- * Label: Family Expenses
- * Name: sn_glider_family_expenses
- Extends table: (empty)
- Application: ServiceNow IDE (with a count of 0)
- Create module: checked
- Create mobile module: checked
- Add module to menu: ...Create now...

1. Go to the Header and right click there>> click on Save.

2. ACTIVITY 2: Creation of Columns (Fields)

1. Near Columns Double click near insert a new row.
2. Give the details as: Column
label: Number Type: String
3. Double clicks on insert a new row again
4. Give the details as:
Column label: Date
Type: Date
5. Double clicks on insert a new row again
6. Give the details as: Column
label: Amount Type: Integer
7. Double clicks on insert a new row again
8. Give the details as:
Column label: Expense Details Type: String
Max length: 800



The screenshot shows a software interface for managing table columns. The top navigation bar includes 'Columns', 'Controls', and 'Application Access'. Below the navigation is a search bar with 'Table Columns' and a dropdown for 'for text'. The main area displays a table titled 'Dictionary Entries' with the following columns: 'Column label', 'Type', 'Reference', 'Max length', 'Default value', and 'Display'. The table contains the following data:

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

1. Go to the Header and right click there>> click on Save.

ACTIVITY 3: Making Number Field an Auto- Number

1. Double click on the Number Field/Column

2. Go down and double click on Advanced view

3. In Default Value:

Use dynamic default: check the box Dynamic default

value: Get Next Padded

Number

1. Click on Update.

The screenshot shows a software interface for managing database columns. At the top, there are several input fields: 'Type' set to 'String', 'Column label' set to 'Number', 'Column name' set to 'u_number', and 'Max length' set to '40'. To the right of these are checkboxes for 'Active' (checked), 'Function field' (unchecked), 'Read only' (checked), 'Mandatory' (unchecked), and 'Display' (unchecked). Below these settings is a blue bar with the text 'Alters the behavior of a field or functionality that depends on the field. [More Info](#)'. Underneath is a large text input field labeled 'Attributes'. A tabbed section at the bottom is titled 'Default Value', with the sub-tab 'Default Value' selected. It contains the instruction 'The Default value specifies what value the field has when first displayed.' and two checkboxes: 'Use dynamic default' (checked) and 'Dynamic default value' (set to 'Get Next Padded Number'). At the very bottom are buttons for 'Delete Column' and 'Update', along with a 'Related Links' section.

1. Go to All >> In the filter search for Number Maintenance>>select Number Maintenance

2.Click on New

3.Enter the below Details: Table:

Family Expenses Prefix: MFE

The screenshot shows the ServiceNow interface for 'Number Maintenance'. The top navigation bar includes 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. The title bar says 'Number - MFE'. The main area has fields for 'Table' (Family Expenses), 'Prefix' (MFE), 'Number' (1,000), 'Application' (ServiceNow IDE), and 'Number of digits' (7). Buttons for 'Update' and 'Delete' are visible at the bottom left.

9.Click on Submit.

ACTIVITY 4: Configure the Form

1. Go to All >> In the filter search for Family Expenses >> Open Family Expenses

2. Click on New

3. Go to the Header and right click there>> click on Configure >> Select Form Design

4. Customize or Drag Drop the form as per your requirement.

5. Make Number Read-Only Field by clicking on the gear icon and checking Read-Only
6. Make Date, Amount Mandatory Field by clicking on the gear icon and checking Mandatory
7. Click on Save.

STEP 5: Creation of Table (Daily Expenses)

ACTIVITY 1: Creation of Daily Expenses Table

1. Go to All > In the filter search for Tables > click on New.
2. Enter the Details:

Label: Daily Expenses Name: Auto-

Populated

Add Module to menu: Family Expenditure

- 1.** Double clicks on insert a new row again
- 2.** Give the details as: Column
label: Expense Type: Integer
- 3.** Double click on insert a new row again
- 4.** Give the details as:
Column label: Family Member Name Type:
Reference
Max length: 800
- 5.** Double clicks on insert a new row again
- 6.** Give the details as: Column
label: Comments Type: String
Max length: 800
- 7.** Go to the Header and right click there>> click on Save.

ACTIVITY 3: Making Number Field an Auto- Number

1. Double click on the Number Field/Column.
2. Go down and double click on Advanced view
3. In Default Value:
 - Use dynamic default: check the box
 - Dynamic default value: Get Next Padded Number
4. Click on Update.

The screenshot shows the 'Advanced' view for a field named 'u_number'. The top section contains basic field properties: Type (String), Column label (Number), Column name (u_number), and Max length (40). To the right are checkboxes for Active (checked), Function field (unchecked), Read only (checked), Mandatory (unchecked), and Display (unchecked). A note below the properties states: 'Alters the behavior of a field or functionality that depends on the field. [More Info](#)'.

The bottom section is titled 'Default Value' and includes a note: 'The Default value specifies what value the field has when first displayed.' It features a checked checkbox for 'Use dynamic default' and a text input field containing 'Get Next Padded Number'. Buttons for 'Delete Column' and 'Update' are at the bottom, along with a 'Related Links' section.

5. Go to All >> In the filter search for Number Maintenance >> select Number Maintenance
6. Click on New.
7. Enter the below Details: Table:

Family Expenses Prefix: MFE

The screenshot shows the 'Number - DFE' table creation screen. The table is named 'Daily Expenses'. The 'Prefix' is set to 'DFE'. The 'Number' field is defined with a value of '1.000' and a 'Number of digits' of '7'. The 'Application' is listed as 'ServiceNow IDE'. Buttons for 'Update' and 'Delete' are visible at the bottom.

9. Click on Submit.

ACTIVITY 4: Configure the Form

- 1. Go to All >> In the filter search for Daily Expenses
>> Open Daily Expenses**
- 2. Click on New**
- 3. Go to the Header and right click there>> click on
Configure >> Select Form Design**
- 4. Customize or Drag Drop the form as per your
requirement.**

The screenshot shows the configuration interface for the 'Daily Expenses' form. At the top, there's a header bar with a '2 Column' dropdown and other icons. Below it, the first section has four fields: 'Number' and 'Family Member Name' in the top row, and 'Date' and 'Expense' in the bottom row. Each field has a gear icon and an 'X' icon to its right. At the bottom of this section is a horizontal separator bar with a '1 Column' dropdown and other icons. The second section contains a single 'Comments' field, also with a gear icon and an 'X' icon. The entire interface is contained within a light gray border.

- 5. Make Number Read-Only Field by clicking on the gear icon and checking Read-Only**
- 5. Make Date, Family Member Name Mandatory Field by
clicking on the gear icon and checking Mandatory**
- 6. Click on Save.**

STEP 6: Creation of Relationship

ACTIVITY 1: Creation of Relationship between Family Expenses and Daily Expenses table

1. Go to All >> In the filter search for Relationships >> Open Relationships

2. Click on New.

3. Enter the details:

Name : Daily Expenses

Applies to table : Select Family Expenses

Daily Expenses : Select Daily Expenses

4. Click Save.

STEP 7: Configuring Related List on Family Expenses

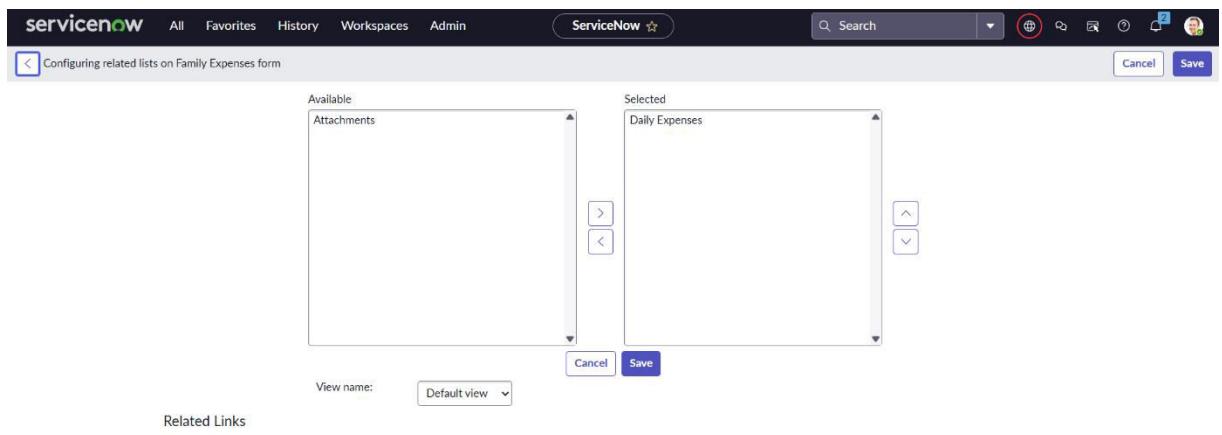
1. Go to All >> In the filter search for Family Expenses >> Open Family Expenses

2. Click on New

3. Go to the Header and right click there>> click on Configure >> Select Related Lists

4. Add Daily Expenses to the Selected Area.

5. Click on Save

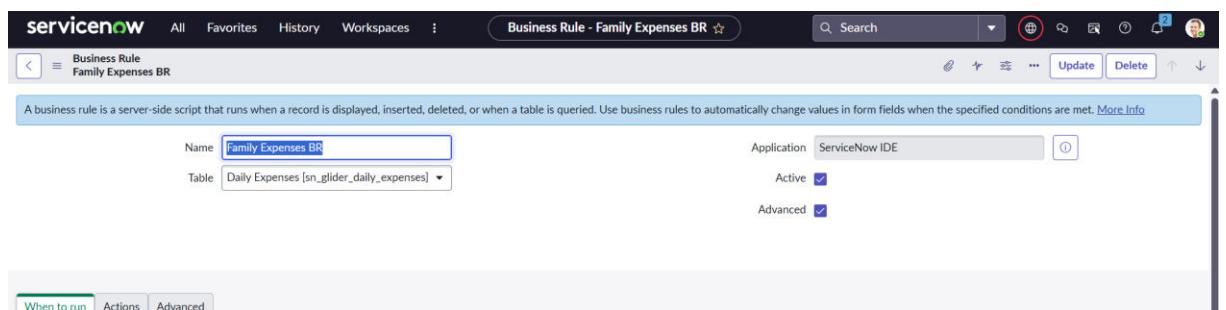


STEP 8: Creation of Business Rules

1. Go to All >> In the filter search for Business Rules.
2. Under System Definition Select Business Rules then click on New.
3. Enter the Details:

Name : Family Expenses BR

Table : Select Daily Expenses Check Advanced



4. In when to run Check Insert and Update

1.In Advance(we write the code): Write the below code

```
(function executeRule(current, previous /*null when async*/ ) {
    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_ex pense + "-";
        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_ex pense + "-";
        NewFamilyExpenses.insert();
    }
})(current, previous);
```

Script

```

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 + ";" + "Rs." + current.u_expense + "-";
10        FamilyExpenses.update();
11    }
12    else
13    {
14        var NewFamilyExpenses = new GlideRecord('u_family_expenses');
15        NewFamilyExpenses.u_date = current.u_date;
16        NewFamilyExpenses.u_amount = current.u_expense;
17        NewFamilyExpenses.u_expense_details += ">" + current.u_comments + ";" + "Rs." + current.u_expense + "-";
18        NewFamilyExpenses.insert();
19    }
20
21 })(current, previous);

```

STEP 9: Configure the Relationship

1. Go to All >> In the filter search for Relationships
>> Open Relationships.
2. In that, open Daily Expenses Relationship.
3. For Applies to table : Select Family Expenses.
4. In Query with : write the below Query. (function

```

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

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

```

The screenshot shows the ServiceNow interface for configuring a relationship. The top navigation bar includes 'All', 'Favorites', 'History', 'Workspaces', and a search bar. The title bar says 'Relationship - Daily Expenses'. The main area has tabs for 'Relationship' and 'Daily Expenses'. Configuration fields include:

- Name: Daily Expenses
- Advanced:
- Simple reference:
- Application: ServiceNow IDE
- Applies to table: Family Expenses [sn_glider_family_expense]
- Queries from table: Daily Expenses [sn_glider_daily_expenses]

A note at the bottom 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 configuration is a code editor window titled "Query with" containing ECMAScript 2021 (ES12) mode code:

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

At the bottom are buttons for "Run Query Diagnostics", "Update", and "Delete".

5.Click on Update.

Example Output:01

A screenshot of a ServiceNow web interface titled "Family Expenses". The URL is dev320914.service-now.com/nav/ui/classic/params/target/sn_glider_family_expenses_list.do. The page shows a single expense record with the following details:

Number	Amount	Date	Expense Details
1	20.000	2025-10-31	

Example Output:02

A screenshot of a ServiceNow web interface. The top navigation bar shows "Family Expenses - 2". The main area displays an expense record with the following details:

Number	Date
2	2025-10-31

The "Expense Details" field contains "Mobile Recharge". Below this, the "Amount" field is set to 350.

At the bottom left are "Update" and "Delete" buttons. At the bottom right are "New" and other navigation icons.

Below the edit view is a "Daily Expenses" list view. The URL is dev320914.service-now.com/nav/ui/classic/params/target/sn_glider_daily_expenses_list.do. The list table has columns: Number, Comments, Date, Expense, and Family Member Name. A message at the bottom of the table says "No records to display".

Conclusion:

The Family Expense Calculation System on ServiceNow offers an easy and efficient way to manage household finances. With features like expense tracking, budget setting, and reporting, it helps users monitor spending and make informed financial decisions. The system's scalability and user-friendly interface ensure it supports families of all sizes, promoting better financial planning and control.