

# Calculating Family Expenses

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## 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:**

**MILESTONE 1:** Setting up ServiceNow Instance

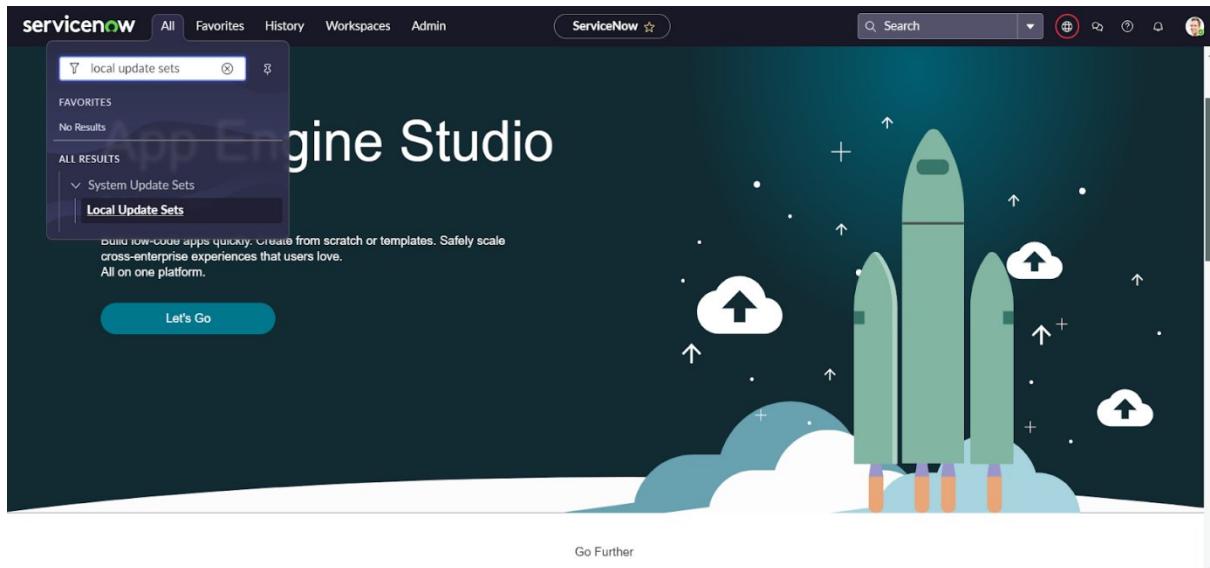
**ACTIVITY 1:** Setting up ServiceNow Instance

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.

## **MILESTONE 2: Creation of New Update Set**

### **ACTIVITY 1: Creation of New Update Set**

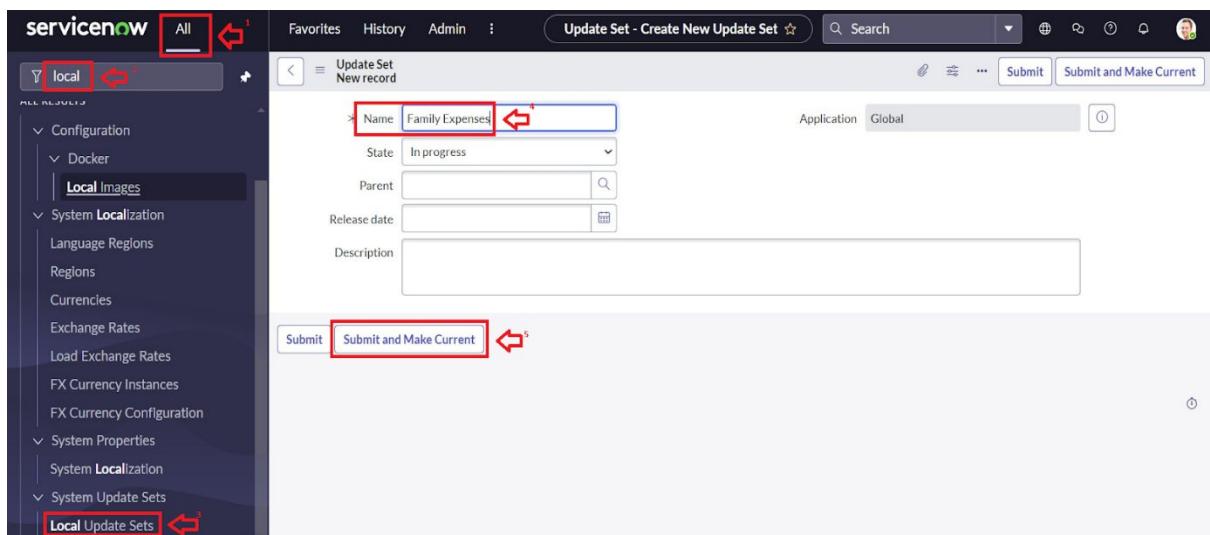
1. Go to All >> In the filter search for Local Update set > click on New.



2. Enter the Details as:

Name: Family Expenses

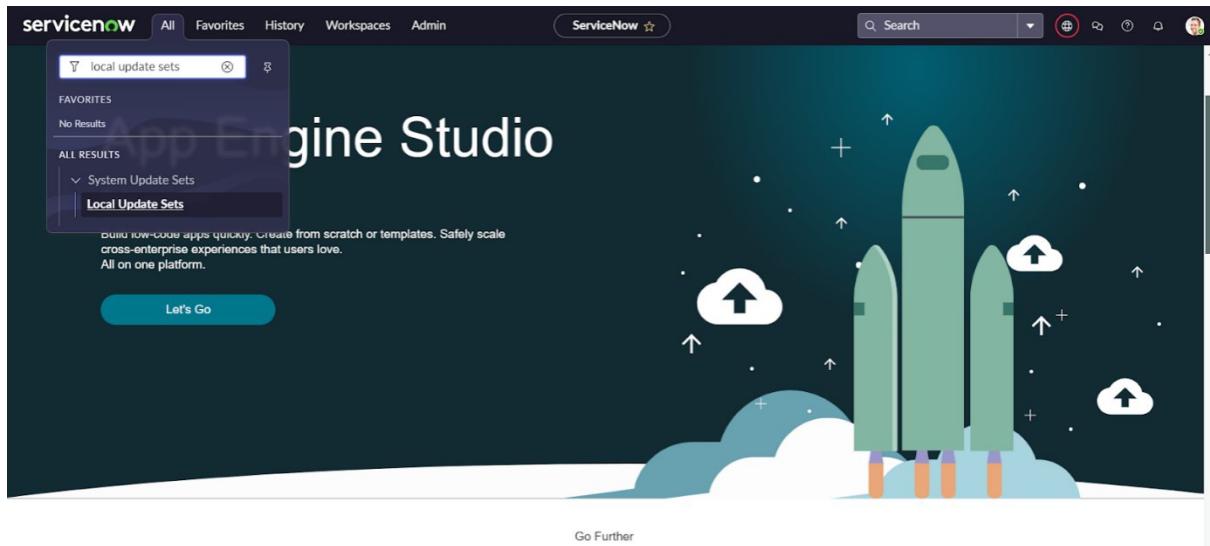
3. Then click on Submit and Make current.



## MILESTONE 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.



**2.** Enter the Details as:

Name: Family Expenses

**3.** Then click on Submit and Make current.

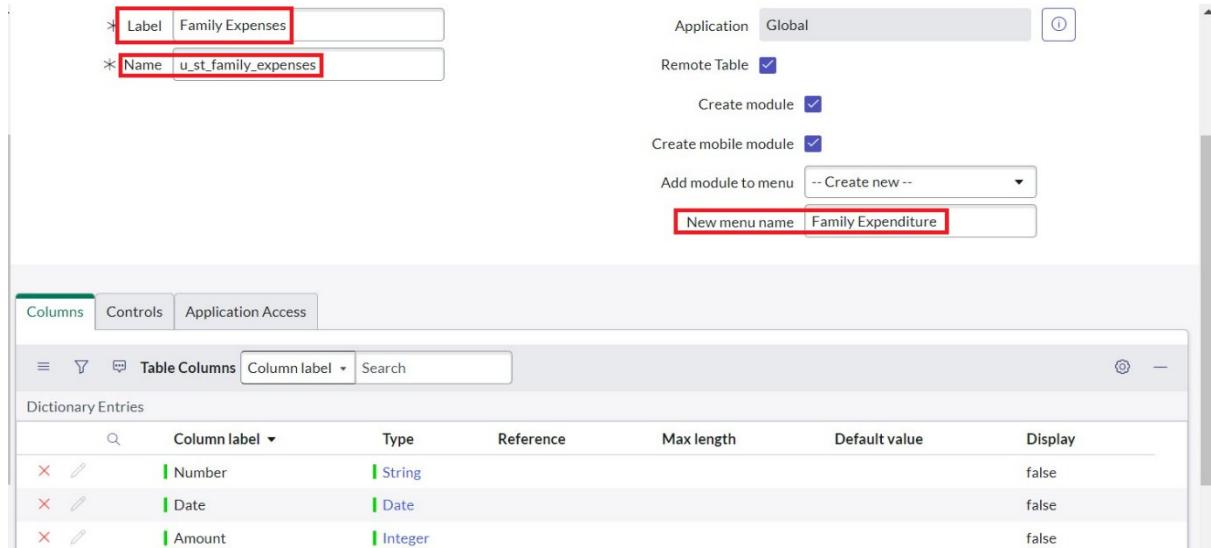
Update Set - Create New Update Set	
Name	Family Expenses
State	In progress
Parent	
Release date	
Description	
<input type="button" value="Submit"/> <input type="button" value="Submit and Make Current"/>	

## MILESTONE 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 SAP Fiori Launchpad configuration interface. At the top, there are fields for 'Label' (Family Expenses) and 'Name' (u\_st\_family\_expenses), both highlighted with red boxes. On the right, under 'New menu name', the text 'Family Expenditure' is also highlighted with a red box. Below these, there are several configuration options: 'Application' set to 'Global', 'Remote Table' checked, 'Create module' checked, 'Create mobile module' checked, and a dropdown for 'Add module to menu' set to '-- Create new --'. The main area below shows a table titled 'Dictionary Entries' with columns for 'Column label', 'Type', 'Reference', 'Max length', 'Default value', and 'Display'. Three rows are listed: 'Number' (String, false), 'Date' (Date, false), and 'Amount' (Integer, false). The 'Column label' column uses green icons for edit and delete.

Column label	Type	Reference	Max length	Default value	Display
Number	String			false	false
Date	Date			false	false
Amount	Integer			false	false

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

## 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

Column label	Type	Reference	Max length	Default value	Display
Number	String				false
Date	Date				false
Amount	Integer				false
Expense Details	String		800		false

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

Use dynamic default  2

Dynamic default value: Get Next Padded Number 3

Delete Column Update 4

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

Number MFE

\* Table: Family Expenses

Prefix: MFE

\* Number: 1.000

Application: Global

Number of digits: 7

Update Delete

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.

The screenshot shows the 'Family Expenses [u\_family\_expenses]' form design. The top part is a '2 Column' layout with three fields: 'Number', 'Date', and 'Amount'. The bottom part is a '1 Column' layout with one field labeled 'Expense Details'. Each field has a gear icon for configuration and an X icon to remove it.

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.

## MILESTONE 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



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

## ACTIVIT 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: Expense

Type: Integer

7. Double click on insert a new row again

8.Give the details as:

Column label: Family Member Name

Type: Reference

Max length: 800

9.Double clicks on insert a new row again

10.Give the details as:

Column label: Comments

Type: String

Max length: 800

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

### ACTIVITY 3: Making Number Field an Auto-Number

1. Double clicks 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 Default value specifies what value the field has when first displayed.

Use dynamic default  2

Dynamic default value: Get Next Padded Number 3

Delete Column Update 4

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

\* Table: Daily Expenses 1

Prefix: DFE 2

\* Number: 1,000

Application: Global

Number of digits: 7

Submit 3

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 'Daily Expenses [u\_daily\_expenses]' form configuration. The top part is set to '2 Column' and contains four fields: 'Number', 'Date', 'Family Member Name', and 'Expense'. The bottom part is set to '1 Column' and contains a single field 'Comments'. Each field has a gear icon for configuration and a delete icon.

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

## MILESTONE 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

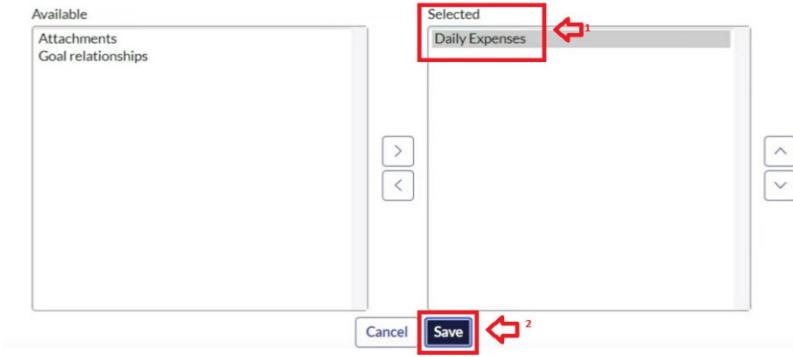
Applies to table : Select Family Expenses

Daily Expenses : Select Daily Expenses

4. Click Save.

## **MILESTONE 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



## MILESTONE 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

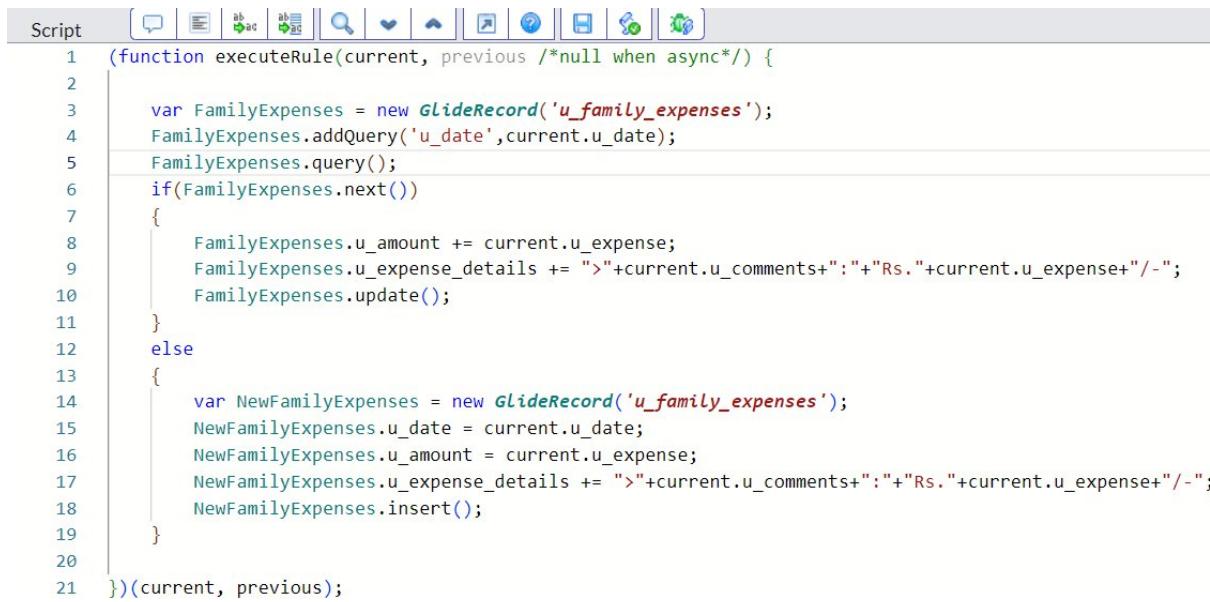
Table : Select Daily Expenses Check Advanced

4. In when to run Check Insert and Update



## 5. 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_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();
    }
})(current, previous);
```



```

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);

```

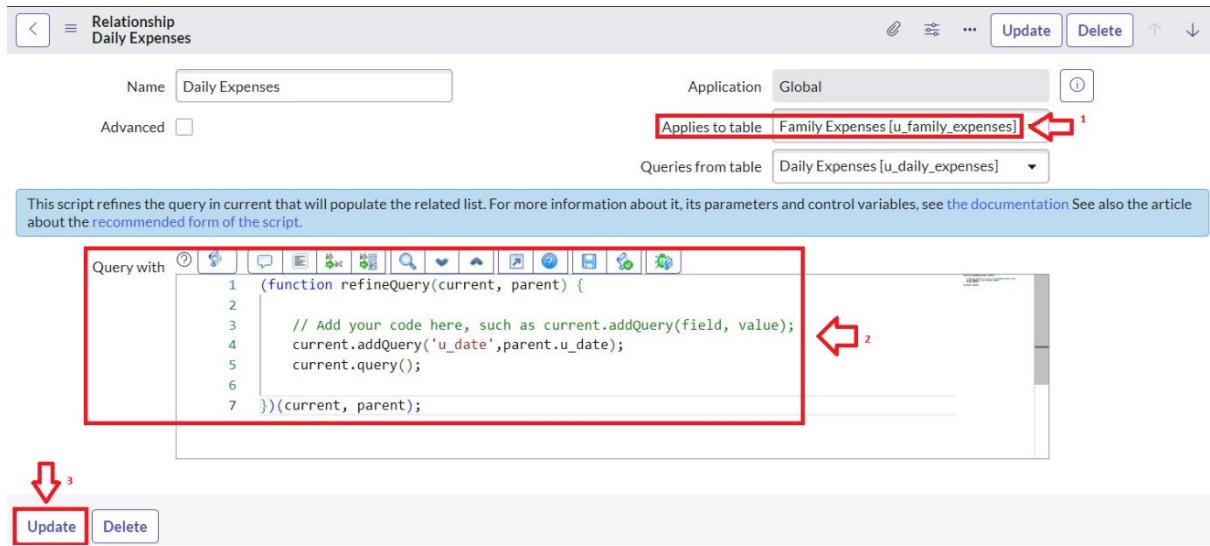
## MILESTONE 9: Configure the Relationship

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);
```

5. Click on Update.



## 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.

