

# **Calculating Family Expenses using Service Now**

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## 1. Abstract

The project aims to develop a comprehensive expense calculation system using ServiceNow. This system will enable users to track and manage family expenses efficiently. It will include features such as expense categorization, budget setting, real-time tracking, and reporting capabilities. Utilizing ServiceNow's robust platform, the project will ensure seamless integration, user-friendly interface, and scalability to accommodate varying family sizes and financial complexities. The end goal is to empower users with the tools they need to make informed financial decisions and promote financial well-being within the family unit.

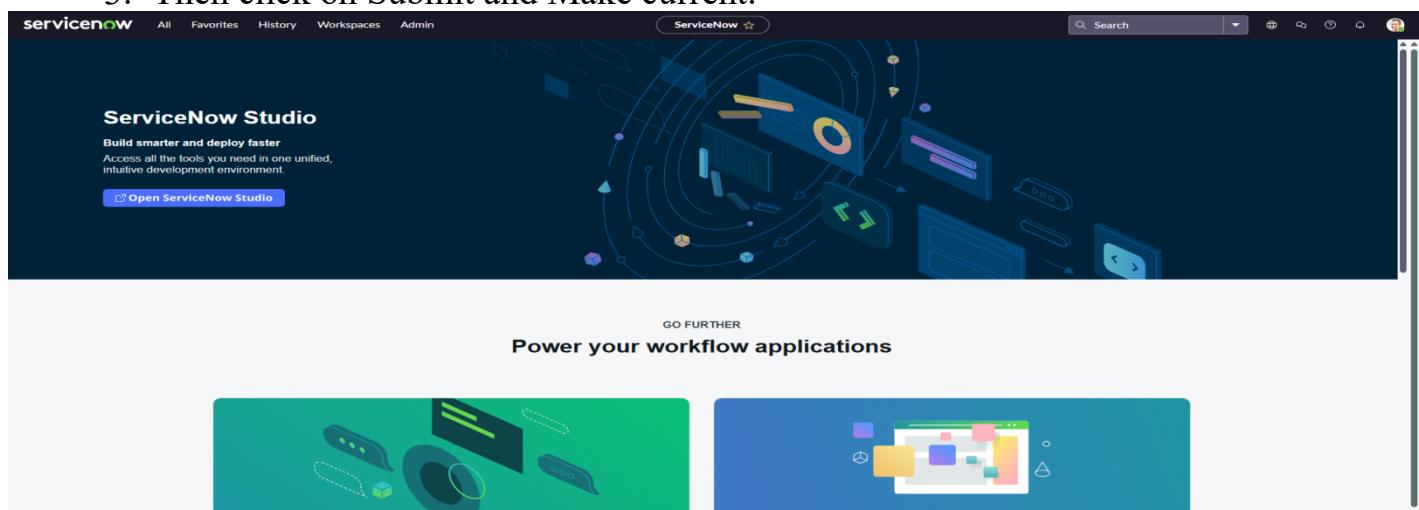
## 2. Tasks Dones With Explanation

### Step 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.

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 ServiceNow interface for creating a new update set. The 'Name' field is populated with 'Family Expenses'. The 'Submit and Make Current' button is highlighted. Red arrows point to the 'All' button in the top left and the 'Local Update Sets' menu item in the sidebar.

### Step 3: Creation of Table

1. Navigate 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.

3. click on Save..

The screenshot shows the 'Table New record' screen. The 'Label' field is set to 'Family Expenses' and the 'Name' field is set to 'u\_family\_expenses'. Under 'Application' settings, 'Create module' and 'Create mobile module' are checked, and 'Add module to menu' is set to 'Create new'. The 'New menu name' is 'Family Expenditure'. Below this, the 'Table Columns' section shows a table with columns for Column label, Type, Reference, Max length, Default value, and Display. A new row is being inserted with the label 'Insert a new row...'.

### Step 4: Creations of columns

1) Near Columns Double click near insert a new row.

Give the details as:

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

2) click on Save.

The screenshot shows the 'Table' configuration page. At the top, there are fields for 'Label' (Family Expenses), 'Name' (u\_family\_expenses), and 'Extends table'. On the right, there are options for 'Application' (Global), 'Create module' (checked), 'Create mobile module' (checked), 'Add module to menu' (dropdown set to 'Create new'), and 'New menu name' (Family Expenditure). Below this, the 'Dictionary Entries' section lists columns: Number (Type: String, Max length: 40), Date (Type: Date), Amount (Type: Integer, Max length: 800), and Expense Details (Type: String).

## Step 5: 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:
  - o Use dynamic default : check the box
  - o Dynamic default value : Get Next Padded Number
4. Click on Update.

The screenshot shows the 'Dictionary Entry - Number' configuration page. It displays fields for 'Table' (Family Expenses), 'Type' (String), 'Column label' (Number), 'Column name' (u\_number), and 'Max length' (40). On the right, there are options for 'Application' (Global), 'Active' (checked), 'Function field' (checkboxes for 'Read only', 'Mandatory', and 'Display'), and 'Attributes' (empty input field). Below this, the 'Default Value' tab is selected, showing 'Use dynamic default' (checked) and 'Dynamic default value' (Get Next Padded Number). Navigation buttons at the bottom include 'Create Choice List', 'Delete Column', and 'Update'.

1. Go to All >> select Number Maintenance

2. Click on New.

Enter the below Details:

- o Table : Family Expenses
- o Prefix : MFE.

The screenshot shows the ServiceNow Number Maintenance interface. At the top, there's a navigation bar with 'servicenow' and links for 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. The title bar says 'Number - MFE'. Below the title, there are several input fields:

- \* Table: Family Expenses
- Prefix: MFE
- \* Number: (empty)
- Application: Global
- Number of digits: 7

At the bottom of the form are 'Update' and 'Delete' buttons, along with a 'Related Links' section containing 'Show Counter'.

3. Click Submit.

The screenshot shows the ServiceNow Numbers list view. The title bar says 'Numbers'. The list displays one record:

Prefix	Number	Number of digits	Table	Updated
MFE		1,000	Family Expenses	2025-10-24 23:36:50

## Step 5: 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 ServiceNow Form Design interface for the 'Family Expenses [u\_family]' record. On the left, there's a sidebar with 'Fields' and 'Formatters' sections. The main area is titled 'Form Design' and contains a visual representation of the form layout:

Family Expenses [u_family_expenses]	
Number	Date
Expense	Amount

Each field has a gear icon to its right, indicating configuration options.

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 6: Creation of Daily Expenses Table

1. Go to All → Search Tables → click on New .
2. Enter the Details:
  - Label : Daily Expenses
  - Name : Auto-Populated
  - Add Module to menu : Family Expenditure
3. click on Save..

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

## Step 7: Creation of Columns

Near Columns Double click near insert a new row.

Give the details as:

- 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

Max length : 800

#### 5) Column label : Comments

Type : String

Max length : 800

#### 6) click on Save.

The screenshot shows the 'Table New record' screen for creating a new dictionary entry. At the top, there are fields for 'Name' (set to 'u\_daily\_expenses') and 'Extends table' (left empty). On the right, there are checkboxes for 'Create module' (checked), 'Create mobile module' (checked), and 'Add module to menu' (set to 'Family Expenditure'). Below this is the 'Dictionary Entries' table:

Column label	Type	Reference	Max length	Default value	Display
Number	String				false
Family Member Name	Reference	User			false
Date	Date				false
Expense	Integer				false
Comments	String		800		false

At the bottom left are 'Submit' and 'Cancel' buttons.

### Step 8: 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:
  - o Use dynamic default : check the box
  - o Dynamic default value : Get Next Padded Number
4. Click on Update.

The screenshot shows the 'Dictionary Entry - Number' advanced view. The main form fields are:

- \* Table: Daily Expenses (u\_daily\_expenses)
- \* Type: String
- \* Column label: Number
- \* Column name: u\_number
- \* Max length: 40

On the right, under 'Attributes', there are checkboxes for 'Active' (checked), 'Function field' (unchecked), 'Read only' (checked), 'Mandatory' (unchecked), and 'Display' (unchecked). A note below says: 'Alters the behavior of a field or functionality that depends on the field.' At the bottom, there are tabs for 'Choice List Specification', 'Calculated Value', and 'Default Value'. The 'Default Value' tab is selected, showing:

- The note: 'The Default value specifies what value the field has when first displayed.'
- 'Use dynamic default' checkbox (checked)
- 'Dynamic default value' dropdown set to 'Get Next Padded Number'

At the very bottom are 'Delete Column' and 'Update' buttons.

1. Go to All >> Search Number Maintenance >> select Number Maintenance.
2. Click on New.
3. Enter the below Details:

Table : Daily Expenses

Prefix : MFE

The screenshot shows the ServiceNow interface for configuring a number sequence. The top navigation bar includes 'servicenow', 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. The current view is 'Number - MFE'. The main form has the following fields:

- \* Table: Daily Expenses
- Prefix: MFE
- \* Number: 1,000
- Application: Global
- Number of digits: 7

At the bottom of the form are 'Update' and 'Delete' buttons, along with links for 'Related Links' and 'Show Counter'.

4. Click on Submit.

## Step 9: 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.
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.

The screenshot shows the ServiceNow Form Design tool. It displays a two-column layout. The first column contains fields for 'Number', 'Date', and 'Comments'. The second column contains fields for 'Family Member Name' and 'Expense'. Each field has a gear icon for configuration and an 'X' icon to delete the field.

## Step 10: Creation of Relationship between Family Expenses and Daily Expenses tables.

1. Go to All >> In the filter search for Relationships >> Open Relationships
2. Click on New.
3. Enter the details:
  - o Name : Daily Expenses
  - o Applies to table : Select Family Expenses
  - o Daily Expenses : Select Daily Expenses
4. Click Save.

The screenshot shows the ServiceNow interface for creating a relationship. At the top, the navigation bar includes 'servicenow' and links for 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. The title bar says 'Relationship - Daily Expenses'. Below the title, there are fields for 'Name' (set to 'Daily Expenses'), 'Application' (set to 'Global'), 'Advanced' (unchecked), 'Applies to table' (set to 'Family Expenses [u\_family\_expenses]'), and 'Queries from table' (set to 'Daily Expenses [u\_daily\_expenses]'). A note below these fields 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](#)'. A code editor window contains the following ECMAScript 2021 (ES12) code:

```
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);
```

At the bottom of the screen are 'Update' and 'Delete' buttons.

## Step 11: 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.

The screenshot shows the 'Configuring related lists on Family Expenses form' dialog. It features two vertical lists: 'Available' on the left containing 'Attachments' and 'Selected' on the right containing 'Daily Expenses'. Between them are four buttons: '>', '<', '^', and 'v'. At the bottom of the dialog are 'Cancel' and 'Save' buttons, and a dropdown menu for 'View name' set to 'Default view'. Below the dialog, under 'Related Links', are 'Related Links' and 'Show versions'.

## Step 11: 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:
  - o Name : Family Expenses BR
  - o Table : Select Daily Expenses
4. Check Advanced
5. In when to run Check Insert and Update.
6. Go to the Header and right click there >> click on Save.

The screenshot shows the ServiceNow interface for creating a business rule. The top navigation bar includes 'servicenow', 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. The title bar says 'Business Rule - Family Expenses BR'. The main content area has a header '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.' Below this are fields for 'Name' (Family Expenses BR), 'Table' (Daily Expenses [u\_daily\_expenses]), 'Application' (Global), 'Active' (checked), and 'Advanced' (checked). The 'Advanced' tab is selected, showing a script editor with the following code:

```
Script (Turn on ECMAScript 2021 (ES12) mode)
(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);
```

## Step 11: 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 Query.

The screenshot shows the ServiceNow interface for configuring a relationship. The top navigation bar includes 'servicenow', 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. The title bar says 'Relationship - Daily Expenses'. The main content area has fields for 'Name' (Daily Expenses), 'Application' (Global), 'Applies to table' (Family Expenses [u\_family\_expenses]), and 'Queries from table' (Daily Expenses [u\_daily\_expenses]). The 'Advanced' tab is selected, showing a script editor with the following code:

```
Query with (Turn on ECMAScript 2021 (ES12) mode)
(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.

## Result / Output

1. Enter the details and then submit it.

The screenshot shows the ServiceNow interface for creating a new daily expense. The top navigation bar includes links for All, Favorites, History, Workspaces, and Admin. The title bar says "Daily Expenses - Create MFE0001025". The main form has fields for Number (MFE0001025), Family Member Name (Waldo Sisk), Date (2025-10-01), Expense (15,000), and Comments (Courses fee). A "Submit" button is at the bottom left.

2. Detail will be updated on Daily Expenses .

The screenshot shows the ServiceNow list view for Daily Expenses. The top navigation bar and title bar are identical to the create screen. The list table includes columns for Number, Comments, Date, Expense, and Created by. A red box highlights the row for MFE0001025, which corresponds to the entry in the previous screenshot.

Number	Comments	Date	Expense	Created by
MFE0001018	party	2025-10-15	13,333	admin
MFE0001015	EMI	2025-10-23	5,000	admin
MFE0001017	college fees	2025-10-22	20,000	admin
MFE0001013	traveling	2025-10-30	500	admin
MFE0001020	petrol	2025-11-05	500	admin
MFE0001016	mobile	2025-10-23	10,000	admin
MFE0001025	Courses fee	2025-10-01	15,000	admin
MFE0001014	Netflix	2025-10-21	2,500	admin

3. Daily Expenses Details will be automatically updated on Family Expenses .

The screenshot shows the ServiceNow list view for Family Expenses. The top navigation bar and title bar are identical to the previous screens. The list table includes columns for Number, Amount, Date, and Expense. A red box highlights the row for MFE0001018, which corresponds to the entry in the previous screenshot.

Number	Amount	Date	Expense
MFE0001018	15,000	2025-10-01	
MFE0001010	2,500	2025-10-21	
MFE0001011	15,000	2025-10-23	
MFE0001009	1,000	2025-11-20	subscription
MFE0001012	20,000	2025-10-22	
MFE0001013	13,333	2025-10-15	
MFE0001008	500	2025-10-30	travelling
MFE0001014	500	2025-11-05	

#### 4. Output will be successfully updated.

The screenshot shows the ServiceNow interface for managing family expenses. At the top, the title bar reads "Family Expenses - MFE0001018". Below it, a form is displayed with fields for "Number" (MFE0001018), "Date" (2025-10-01), and "Amount" (15,000). A large text area labeled "Expense" is empty. At the bottom of the form are "Update" and "Delete" buttons. Below the form is a list view titled "Daily Expenses" with one item: "MFE0001025" (Comments: Courses fee, Date: 2025-10-01, Expense: 15,000). The list view includes standard navigation buttons like "Actions on selected rows..." and "New".

## Conclusion

In conclusion, the “Calculating Family Expenses using ServiceNow” project effectively demonstrates how ServiceNow can be used to manage and track family expenses in an organized way. By creating custom tables, relationships, and business rules, the system allows users to record daily expenses and automatically update total family expenses. Features like auto-numbering, mandatory fields, and form customization make the application accurate and user-friendly. Overall, the project provides a simple and efficient solution for monitoring family budgets and supports better financial planning through automation on the ServiceNow platform.