

Calculating Family Expenses using ServiceNow

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Team Size: 5

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Problem Statement:

There is currently no efficient system in place to track, categorize, and analyze family expenses in a way that is integrated, automated, and accessible in real-time. This leads to poor budget planning, missed payments, overspending, and a lack of financial visibility.

Objective:

To design and implement a solution using ServiceNow that allows family members to:

1. **Input and categorize expenses** easily via a user-friendly interface or mobile portal.
2. **Automate recurring expenses** (e.g., rent, subscriptions).
3. **Track total and category-wise spending** on a monthly/weekly basis.
4. **Set spending limits and receive alerts** when thresholds are crossed.
5. **Generate reports and dashboards** to visualize trends and support better financial decisions.
6. **Share visibility and responsibilities** across family members via roles or user groups.

Skills:

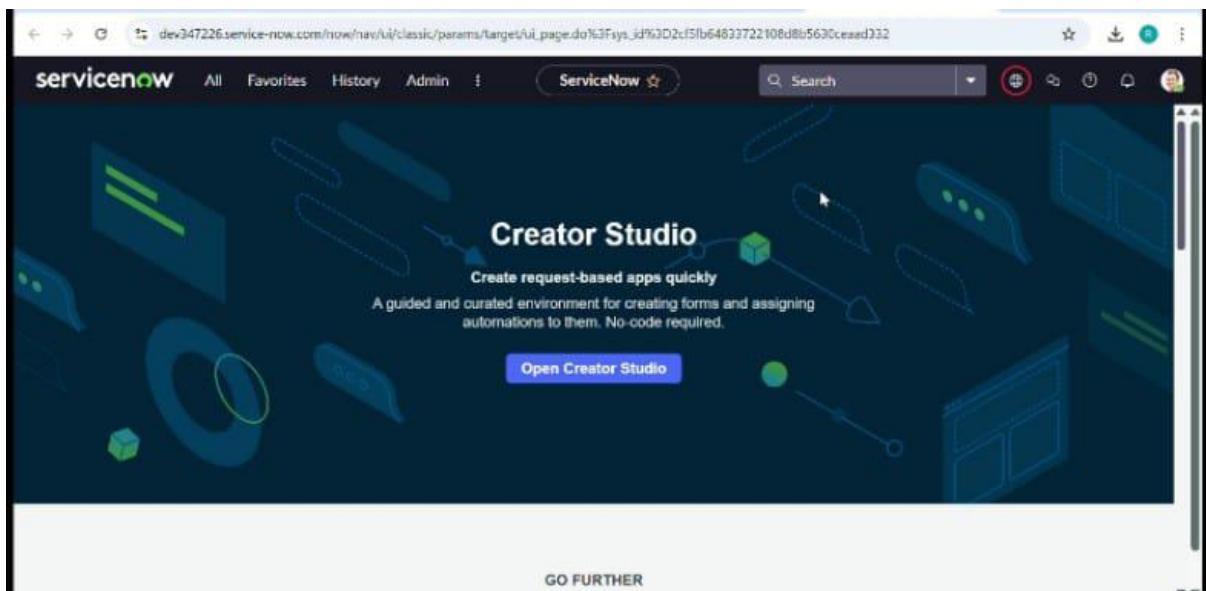
- **ServiceNow App Development** (App Engine Studio)
- **Custom Tables & Data Modeling**
- **Form Design & UI Customization**
- **Flow Designer** (for automation)
- **Business Rules & Scripting**
- **Reporting & Dashboards**
- **User Roles & Access Control (ACLs)**

TASK INITIATION

Milestone 1 : 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: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 Educational org...' page. At the top, it says 'Update scope: Global' and 'Update set: Default [Global]'. The main area has fields for 'Name' (Family Expenses), 'State' (In progress), 'Parent', 'Release date', and 'Description'. Below these are 'Submit' and 'Submit and Make Current' buttons.

Milestone 3: Table(Family Expenses)

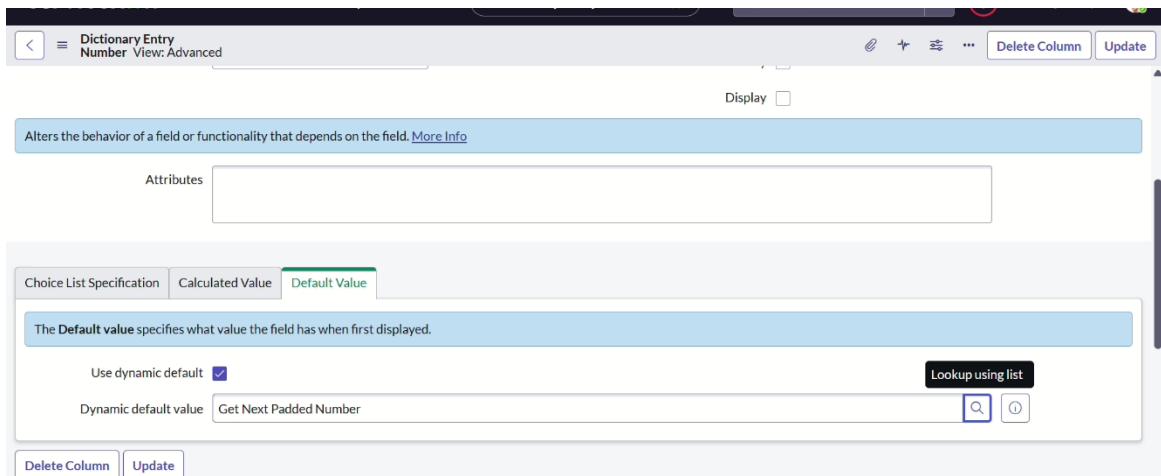
Activity 1: Creation of Family Expenses Table

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

The screenshot shows the 'Table - New Record' page. It has fields for 'Label' (Family Expenses), 'Name' (u_family_expenses), 'Extends table', 'Application' (Global), and several checkboxes: 'Create module' (checked), 'Create mobile module' (checked), 'Add module to menu' (dropdown set to '-- Create new --'), and 'New menu name' (Family Expenditure). A note at the top says 'ServiceNow recommends creating custom tables in scoped applications. To learn more about creating scoped applications, click [here](#).'. A message at the bottom says '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](#)'.

Activity 2: Creation of Family Expenses Table

1. Near Columns Double click near insert a new row.
2. Give the details as:
Column label : Number
Type : String
3. Double click on insert a new row again.
4. Give the details as:
Column label : Date
Type : Date
5. Double click on insert a new row again



6. Give the details as:

Column label : Amount

Type : Integer

7. Double click on insert a new row again

8. Give the details as:

Column label : Expense Details

Type : String

Max length : 800

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

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

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.

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

8. Click on Submit

The screenshot shows the SAP Fiori interface for 'Number Maintenance'. The top bar has a back arrow, a 'New record' button, and a 'Submit' button. The main area contains five input fields: 'Table' (Family Expenses), 'Prefix' (MFE), 'Number' (1,000), 'Application' (Global), and 'Number of digits' (7). Below the form is a 'Submit' button and a 'Related Links' section with 'Show Counter'.

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.

Milestone 4: Table(Daily Expenses)

Activity 1: Creation of Table(Daily Expenses)

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.

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 click on insert a new row again
4. Give the details as:
 - Column label : Date
 - Type : Date
5. Double click 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 click 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.

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

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.

5. Go to All >> In the filter search for Number Maintenance >> select Number Maintenance
6. Click on New.

The screenshot shows the 'Number' configuration page in ServiceNow. The top navigation bar includes 'Dictionary Entry', 'Number View: Advanced', 'Delete Column', and 'Update'. Below the header, there's a 'Display' section with a checkbox. A note says 'Alters the behavior of a field or functionality that depends on the field.' with a 'More Info' link. The main area is titled 'Attributes' with a large empty text input field. Below this, tabs for 'Choice List Specification', 'Calculated Value', and 'Default Value' are visible, with 'Default Value' being the active tab. A note states: 'The Default value specifies what value the field has when first displayed.' Underneath, there's a 'Use dynamic default' checkbox which is checked, and a 'Dynamic default value' field containing 'Get Next Padded Number'. To the right of this field are 'Lookup using list', a magnifying glass icon, and a refresh icon. At the bottom of the configuration screen are 'Delete Column' and 'Update' buttons.

7. Enter the below Details:

Table : Daily Expenses

Prefix : DFE

8. Click on Submit.

The screenshot shows the 'Number - New Record' form in ServiceNow. The top navigation bar includes 'servicenow', 'All', 'Favorites', 'History', and a search bar. The form itself has fields for 'Table' (set to 'Daily Expenses'), 'Prefix' (set to 'DFE'), 'Number' (set to '1,000'), 'Application' (set to 'Global'), and 'Number of digits' (set to '7'). At the bottom left is a 'Submit' button, and at the bottom right is a 'Related Links' section with a 'Show Counter' link.

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.
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 interface for the 'Daily Expenses [u_daily_expenses]' table. The form is displayed in a 2-column layout. The first column contains fields for 'Number' and 'Family Member Name'. The second column contains fields for 'Date' and 'Expense'. Below these sections is a third section labeled 'Comments'.

Milestone 5: Creation of Relationship

Activity 1: 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:
Name : Daily Expenses
Applies to table : Select Family Expenses
Daily Expenses : Select Daily Expenses
4. Click Save.

The screenshot shows the ServiceNow Relationship - New Record page. The 'Name' field is set to 'Daily Expenses'. The 'Application' dropdown is set to 'Global'. The 'Applies to table' dropdown is set to 'Family Expenses [u_family_expe...]'.

Below the main fields, there is a note: "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."

At the bottom, there is a code editor for 'Query with' that contains the following ECMAScript 2021 (ES12) code:

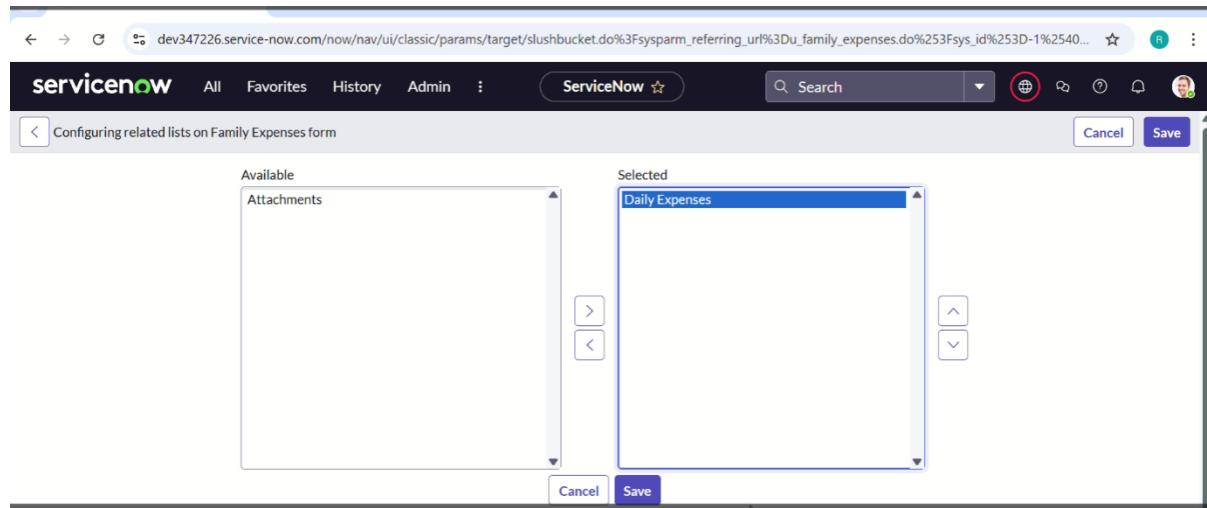
```
1 (function refineQuery(current, parent) {  
2     // Add your code here, such as current.addQuery(field, value);  
3 })(current, parent);
```

Milestone 6: Configuring Related List on Family Expenses

Activity 1: 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 7: Business Rules

Activity 1: 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

Business Rule - New Record

Name: Family Expenses BR

Application: Global

Table: Daily Expenses [u_daily_expenses...]

Active:

Advanced:

When to run: Insert, Update, Delete, Query

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

4. In when to run Check Insert and Update

When: before

Order: 100

Insert:

Update:

Delete:

Query:

Add Filter Condition

Add OR Clause

-- choose field --

-- oper --

-- value --

Role conditions

Submit

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;
    }
})
```

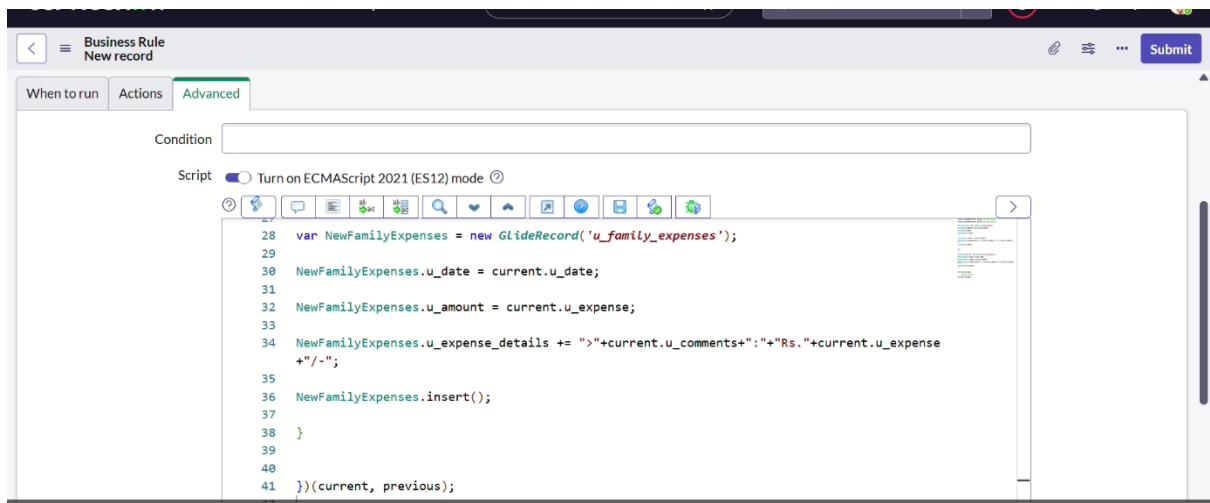
```

FamilyExpenses.u_expense_details
">"+current.u_comments+":"+Rs."+current.u_expense+/-";
FamilyExpenses.update();
}
else
{
varNewFamilyExpenses = 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);

```

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



Milestone 8: Relationship

Activity 1: 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.

```

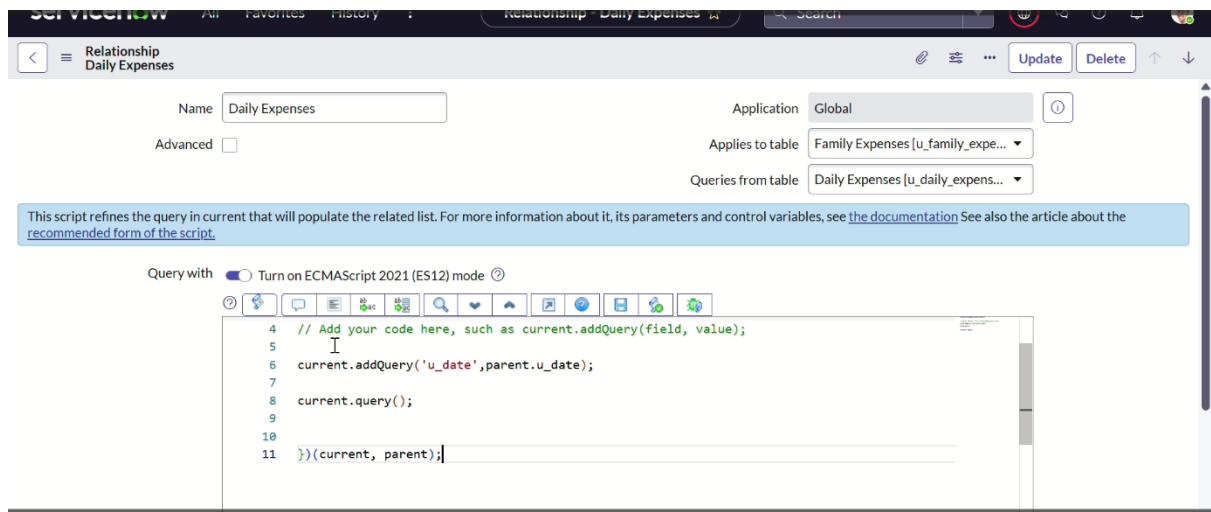
(functionrefineQuery(current, parent) {

// 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.



GitHub & Project Demo Link: <https://github.com/PraveenMummidi29/calculating-family-expenses-using-service-now>

