

CALCULATING FAMILY EXPENSES USING SERVICE NOW

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Problem Statement : Managing family expenses can be a complex and time-consuming task, often lacking organization, real-time insights, and structured reporting. Traditional methods such as manual record-keeping or disconnected budgeting apps fail to provide a centralized, scalable, and customizable solution for families with diverse financial needs. There is a need for an integrated system that allows families to efficiently track, categorize, and analyze their spending habits in real time. This project seeks to address this gap by developing an expense calculation system on the ServiceNow platform, leveraging its workflow automation, integration capabilities, and user-friendly interface to provide a smart, scalable, and accessible financial management tool for households.

Objective : 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

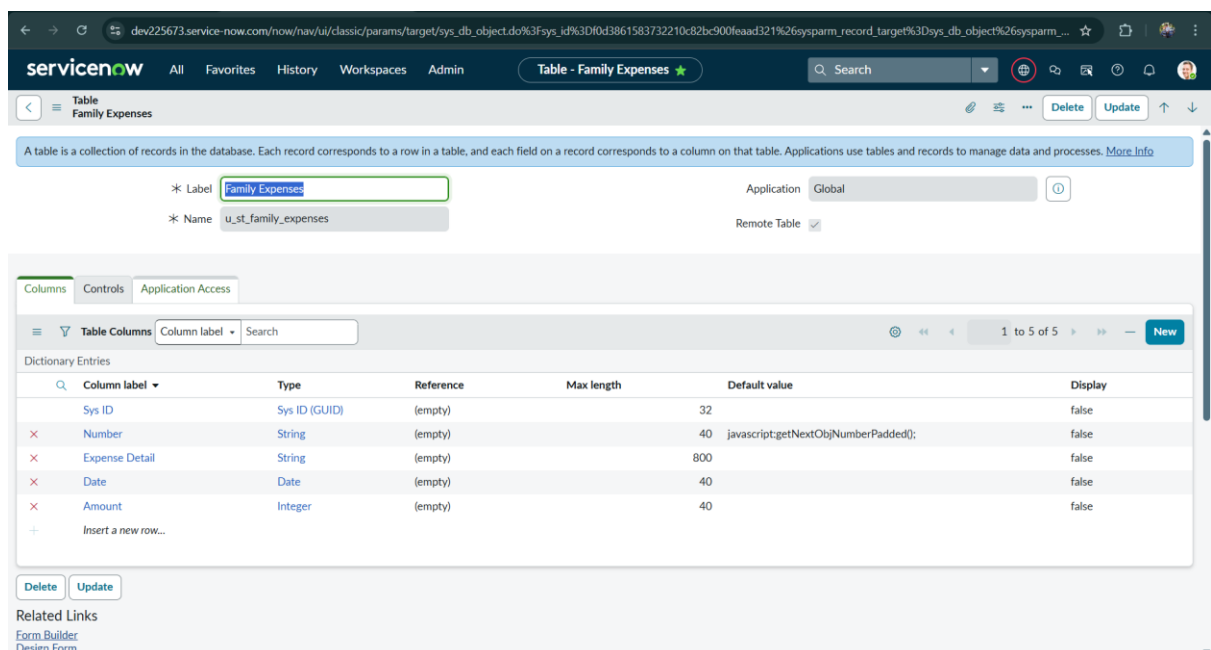
complexities. The end goal is to empower users with the tools they need to make informed financial decisions and promote financial well-being within the family unit.

Skills Required: IOT Open Hardware platforms, Data Structures

TASK INITIATION

Activity 1 : Creation of New Update Set

1. Open Service Now
2. Go to All >> In the filter search for Local Update set > click on New.
3. Enter the Details as: Name : Family Expenses
4. Then click on Submit and Make current.



The screenshot shows the ServiceNow interface for configuring a table named 'Family Expenses'. The 'Columns' tab is active, displaying a table of dictionary entries. The table has columns for Column label, Type, Reference, Max length, Default value, and Display. The entries are as follows:

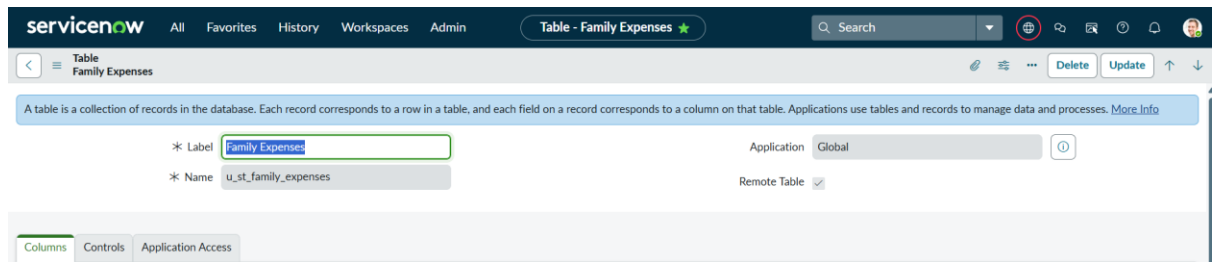
Column label	Type	Reference	Max length	Default value	Display
Sys ID	Sys ID (GUID)	(empty)	32		false
Number	String	(empty)	40	javascript:getNextObjNumberPadded();	false
Expense Detail	String	(empty)	800		false
Date	Date	(empty)	40		false
Amount	Integer	(empty)	40		false

Below the table, there are buttons for 'Delete' and 'Update', and a 'Related Links' section with links to 'Form Builder' and 'Design Form'.

Activity 2 : Creation of Table.

1. Creation of Family Expenses Table

- Go to All > In the filter search for Tables > click on New.
- Enter the Details: Label : Family Expenses Name : Auto-Populated. New menu name : Family Expenditure



2. Creation of Columns(Fields)

- Near Columns Double click near insert a new row.
- Give the details as:
 - Column label : Number
 - Type : String
- Double click on insert a new row again
- Give the details as:
 - Column label : Date
 - Type : Date
- Double click on insert a new row again
- Give the details as:
 - Column label : Amount
 - Type : Integer
- Double click on insert a new row again
- Give the details as:
 - Column label : Expense Details
 - Type : String
 - Max length : 800
- Go to the Header and right click there>> click on Save.

Columns

Controls

Application Access

≡

Table Columns

Column label

Search

🔄

⏪

⏩

1 to 5 of 5

⏴

⏵

New

Dictionary Entries

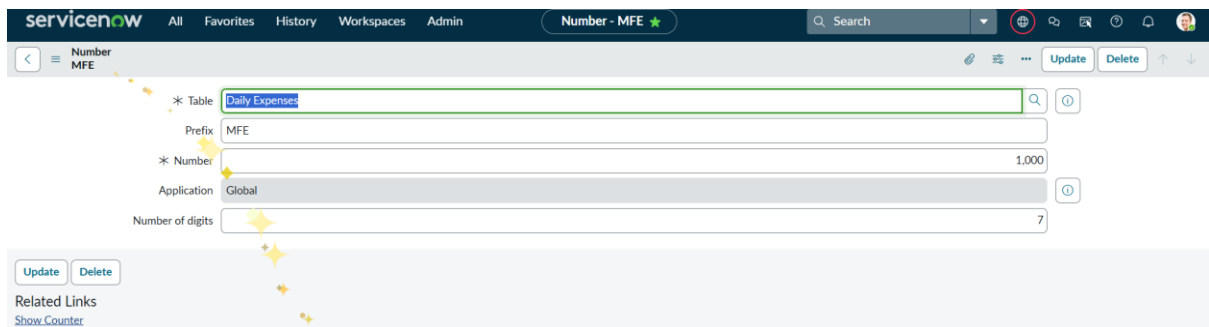
Q	Column label ▾	Type	Reference	Max length	Default value	Display
	Sys ID	Sys ID (GUID)	(empty)	32		false
×	Number	String	(empty)	40	javascript:getNextObjNumberPadded();	false
×	Expense Detail	String	(empty)	800		false
×	Date	Date	(empty)	40		false
×	Amount	Integer	(empty)	40		false
+	Insert a new row...					

Delete

Update

3. Making Number Field an Auto-Number

- Double click on the Number Field/Column.
- Go down and double click on Advanced view
- In Default Value:
 - Use dynamic default : check the box
 - Dynamic default value : Get Next Padded Number
- Click on Update.
- Go to All >> In the filter search for Number Maintenance >> select Number Maintenance
- Click on New.
- Enter the below Details:
 - Table : Family Expenses
 - Prefix : MFE
- Click on Submit



The screenshot shows the ServiceNow Number Maintenance form for a table named 'Daily Expenses'. The form is in the 'Advanced' view. The fields are as follows:

- Table: Daily Expenses (selected)
- Prefix: MFE
- Number: (empty field)
- Application: Global (selected)
- Number of digits: 7

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

4. Configure the Form

- Go to All >> In the filter search for Family Expenses >> Open Family Expenses
- Click on New
- Go to the Header and right click there>> click on Configure >> Select Form Design
- Customize or Drag Drop the form as per your requirement.
- Make Number Read-Only Field by clicking on the gear icon and checking Read-Only
- Make Date, Amount Mandatory Field by clicking on the gear icon and checking Mandatory

- Click on Save.

The screenshot shows the 'Form Design' interface for a table named 'Family Expenses [u_st_family_expenses]'. On the left, there is a sidebar with 'Fields' and 'Field Types' tabs. Under 'Fields', there is a 'Filter' section and a list of fields: 'Activities (filtered)', 'Contextual Search Results', and 'Ratings'. The main area shows the form layout with two columns. The first column contains a 'Number' field. The second column contains 'Date' and 'Amount' fields. Below these, there is an 'Expense Detail' section.

Activity 3 : Creation of Table(Daily Expenses).

1. Creation of Daily Expenses Table.

- Go to All > In the filter search for Tables > click on New.
- Enter the Details:
Label : Daily Expenses
Name : Auto-Populated
Add Module to menu : Family Expenditure
- Go to the Header and right click there>> click on Save.

The screenshot shows the 'Table' configuration interface for 'Daily Expenses'. It includes a header bar with navigation icons and buttons for 'Delete', 'Update', and 'Delete All Records'. Below the header, there is a description of a table. The configuration fields are: '* Label' set to 'Daily Expenses', '* Name' set to 'u_daily_expenses', 'Application' set to 'Global', and 'Remote Table' set to an empty field.

2. Creation of Columns(Fields)

- Near Columns Double click near insert a new row.
- Give the details as:
Column label : Number
Type : String
- Double click on insert a new row again
- Give the details as:
Column label : Date
Type : Date
- Double click on insert a new row again
- Give the details as:
Column label : Expense

Type : Integer

➤ Double click on insert a new row again

➤ Give the details as:

Column label : Family Member Name

Type : Reference

Max length : 800

➤ Double click on insert a new row again

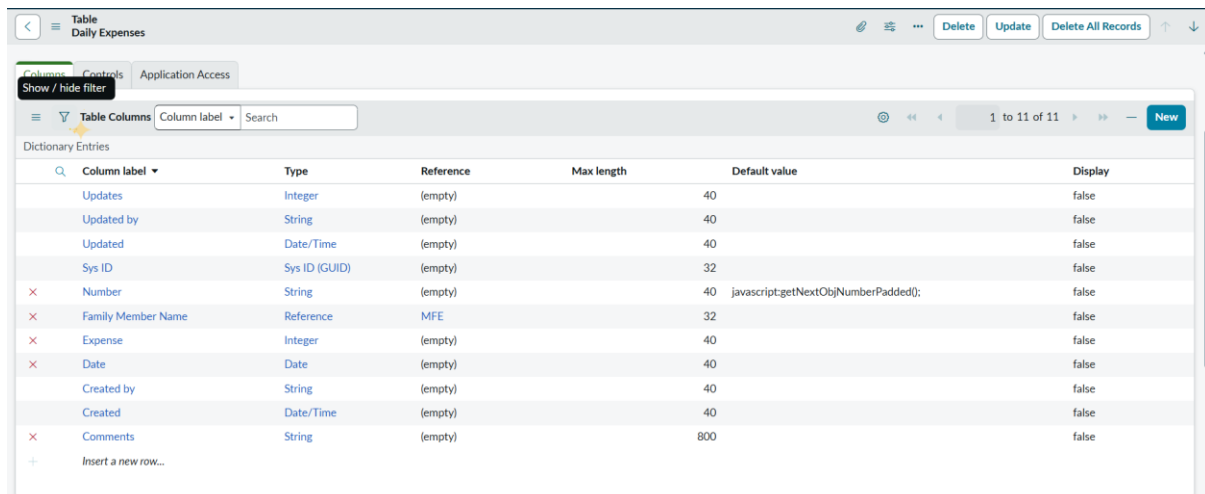
➤ Give the details as:

Column label : Comments

Type : String

Max length : 800

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



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

3. Making Number Field an Auto-Number.

➤ Double click on the Number Field/Column.

➤ Go down and double click on Advanced view

➤ In Default Value:

Use dynamic default : check the box

Dynamic default value : Get Next Padded Number

➤ Click on Update.

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

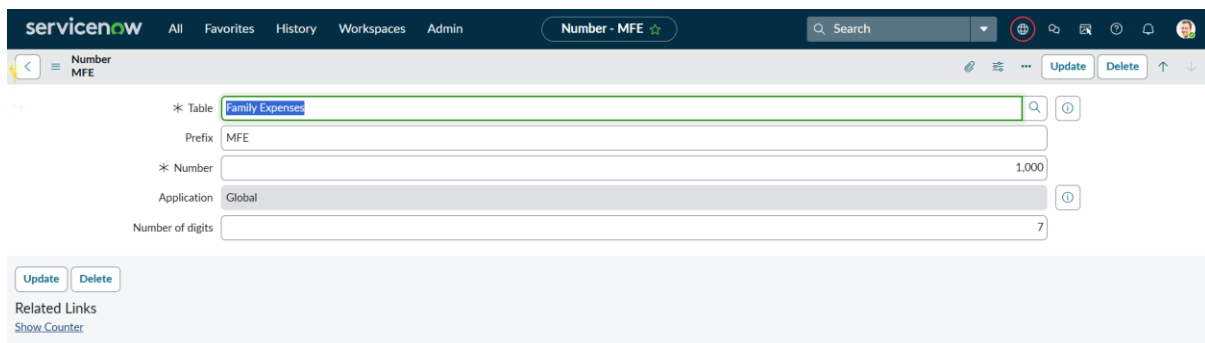
➤ Click on New.

➤ Enter the below Details:

Table : Family Expenses

Prefix : MFE

➤ Click on Submit.



4. Configure the Form

- Go to All >> In the filter search for Daily Expenses >> Open Daily Expenses
- Click on New
- Go to the Header and right click there>> click on Configure >> Select Form Design
- Customize or Drag Drop the form as per your requirement.
- Make Number Read-Only Field by clicking on the gear icon and checking Read-Only
- Make Date, Family Member Name Mandatory Field by clicking on the gear icon and checking Mandatory
- Click on Save.

The screenshot displays the 'Form Design' window for a table named 'Daily Expenses [u_daily_e]'. The table is configured with 2 columns and 1 row. The fields are arranged as follows:

Daily Expenses [u_daily_e]	
Number	Expense
Date	Family Member Name

Below the table, there is a 'Comments' field. The left sidebar contains a 'Fields' section with a 'Filter' dropdown and a list of fields: Created, Created by, Updated, Updated by, and Updates. The 'Formatters' section includes: Activities (filtered), Contextual Search Results, and Ratings.

Activity 4 : Creation of Relationship.

1. Creation of Relationship between Family Expenses and Daily Expenses tables

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

Activity 5 : Configuring Related List on Family Expenses.

1. Configuring Related List on Family Expenses

- Go to All >> In the filter search for Family Expenses >> Open Family Expenses
- Click on New
- Go to the Header and right click there>> click on Configure >> Select Related Lists
- Add Daily Expenses to the Selected Area.
- Click on Save



Activity 6 : Activity 4 : Creation of Relationship.

1. Creation of Business Rules

- Go to All >> In the filter search for Business Rules.
- Under System Definition Select Business Rules then click on New.
- Enter the Details:
 - Name : Family Expenses BR
 - Table : Select Daily Expenses
 - Check Advanced
- In when to run Check Insert and Update
- 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);
  - Go to the Header and right click there>> click on Save.

Business Rule  
Family Expenses BR

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. [More Info](#)

Name: Family Expenses BR

Table: Daily Expenses [u\_daily\_expenses]

Application: Global

Active ☒

Advanced ☒

When to run: Actions Advanced

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

When: before

Order: 100

Insert ☒

Update ☒

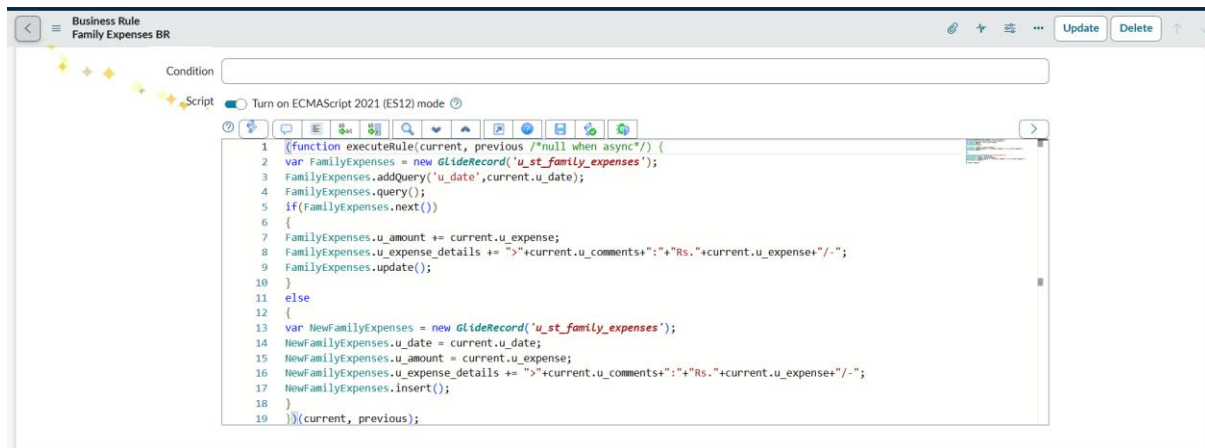
Delete ☐

Query ☐

Filter Conditions: Add Filter Condition Add OR Clause

-- choose field -- -- oper -- -- value --

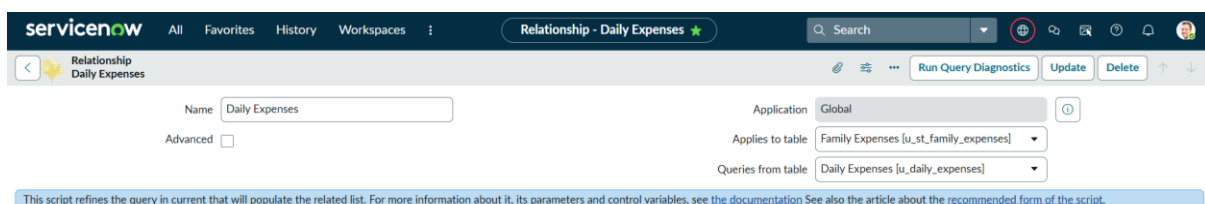
Role conditions: [Edit](#)

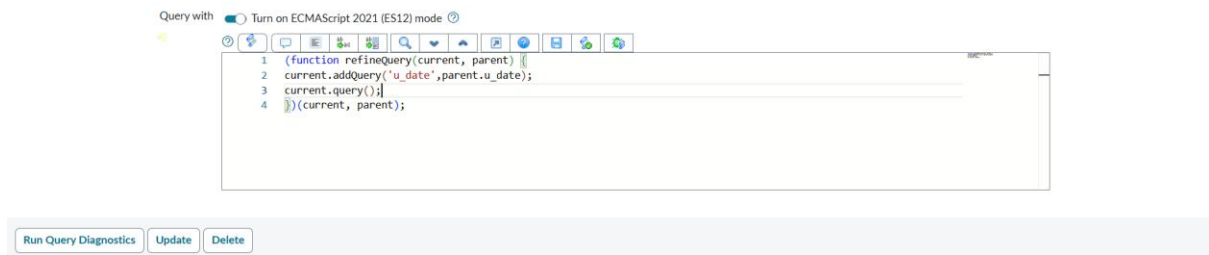


## Activity 7 : Configure the Relationship.

### 1. Configure the Relationship

- Go to All >> In the filter search for Relationships >> Open Relationships.
- In that, open Daily Expenses Relationship.
- For Applies to table : Select Family Expenses.
- 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);
- Click on Update





## Conclusion :

By leveraging the capabilities of the ServiceNow platform, this project will deliver a robust, user-centric solution for managing family expenses. With features like real-time expense tracking, intelligent categorization, budget management, and comprehensive reporting, the system aims to simplify financial oversight for families of all sizes. The integration of IoT open hardware platforms and efficient data structures ensures enhanced functionality, automation, and scalability. Ultimately, this project will not only streamline household financial management but also foster responsible spending habits and improved financial literacy among users, contributing to long-term financial stability and well-being.