

Calculating Family Expenses using ServiceNow

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Team Size: 4

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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)**

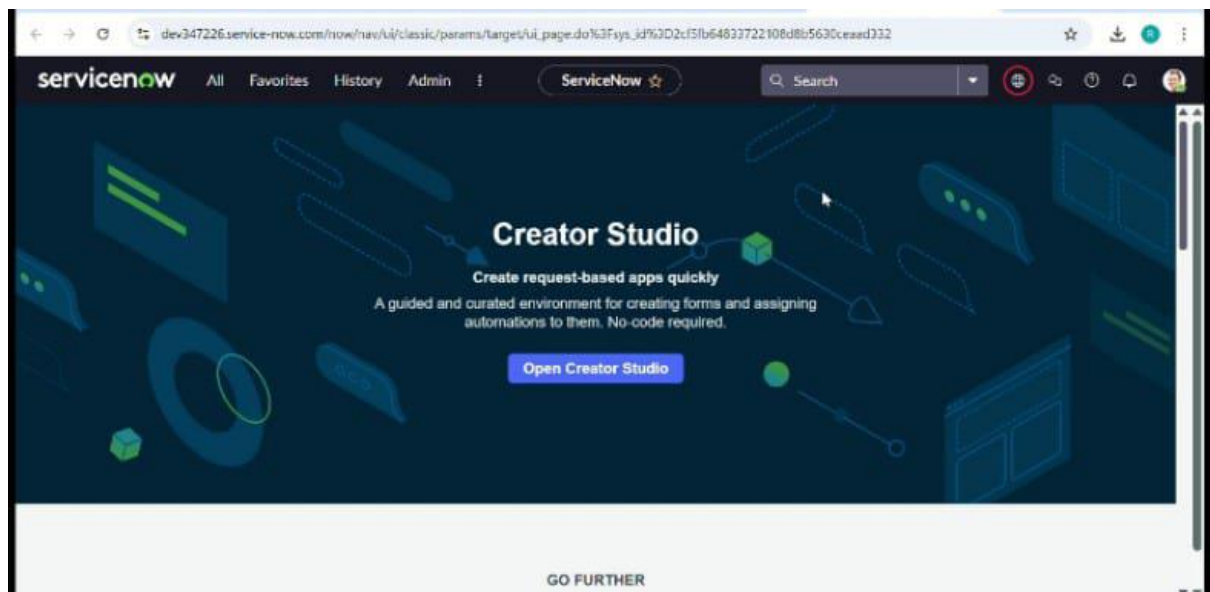
TASK INITIATION

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.

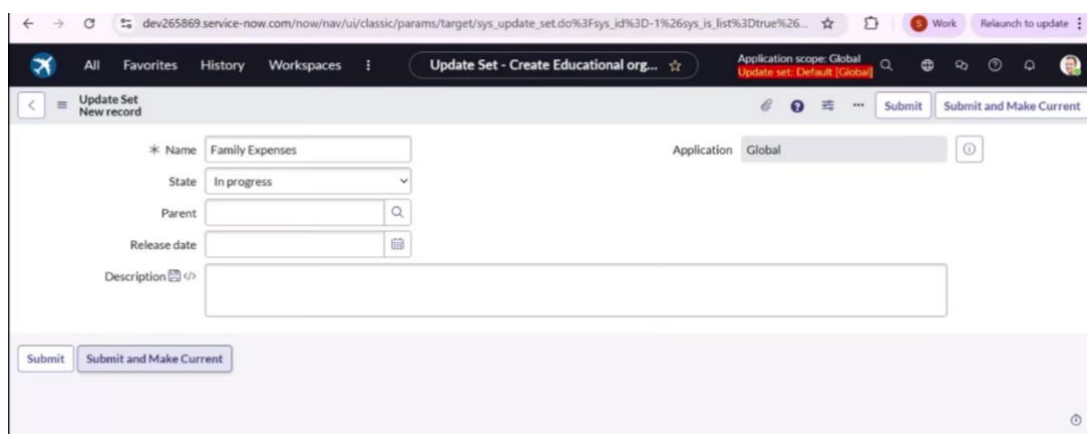
5. You'll receive an email with the instance details once it's ready.
6. Log in to your ServiceNow instance using the provided credentials.
7. Now you will navigate to the ServiceNow.



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.



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.

dev347226.service-now.com/now/nav/ui/classic/params/target/sys_db_object.do%3Fsys_id%3D-1%26sys_is_list%3Dtrue%26sys_target%3Dsys_db_object%26sys...

serviceNow All Favorites History Admin Table - New Record Search

Table New record Submit Cancel

ServiceNow recommends creating custom tables in scoped applications. To learn more about creating scoped applications, click [here](#).

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](#)

* Label Family Expenses

* Name u_family_expenses

Extends table

Application Global

Create module ☒

Create mobile module ☒

Add module to menu -- Create new --

New menu name Family Expenditure

Remote Table ☐

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

Dictionary Entry
Number View: Advanced

Display ☐

Alters the behavior of a field or functionality that depends on the field. [More Info](#)

Attributes

Choice List Specification | Calculated Value | **Default Value**

The **Default value** specifies what value the field has when first displayed.

Use dynamic default ☒

Dynamic default value: Get Next Padded Number

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.

SERVICENOW All Favorites History Table - Family Expenses Search

Table Columns for text Search

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
<input checked="" type="checkbox"/>	Number	String				false
<input checked="" type="checkbox"/>	Date	Date				false
<input checked="" type="checkbox"/>	Amount	Integer				false
<input checked="" type="checkbox"/>	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

Number
New record

Submit

* Table Family Expenses

Prefix MFE

* Number 1,000

Application Global

Number of digits 7

Submit

Related Links

[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.

Family Expenses [u_family] Default view Form Design Undo Save

Fields Field Types

Filter

Fields

Created

Created by

Updated

Updated by

Updates

Formatters

Activities (filtered)

Contextual Search Results

Family Expenses [u_family_expenses] 2 Column

Number Amount Date

Expense Details 1 Column

Milestone 4: Table(Daily Expenses)

Activity 1: Creation ofTable(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.

dev347226.service-now.com/now/nav/ui/classic/params/target/sys_db_object.do%3Fsys_id%3D-1%26sys_is_list%3Dtrue%26sys_target%3Dsys_db_object%26sys...

servicenow All Favorites History Admin Table - New Record Search

Table New record Submit Cancel

ServiceNow recommends creating custom tables in scoped applications. To learn more about creating scoped applications, click [here](#).

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](#)

* Label Daily Expenses

* Name u_daily_expenses

Extends table

Application Global

Create module ☒

Create mobile module ☒

Add module to menu Family Expenditure

Remote Table ☐

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.

Dictionary Entry
Number View: Advanced

Alters the behavior of a field or functionality that depends on the field. [More Info](#)

Attributes

Choice List Specification | Calculated Value | **Default Value**

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

Use dynamic default ☒

Dynamic default value: Get Next Padded Number

Lookup using list

Delete Column | 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 : Daily Expenses

Prefix : DFE

8. Click on Submit.

The screenshot shows the ServiceNow 'Number - New Record' form for the 'Daily Expenses' table. The form includes the following fields:

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

Below the form fields, there is a 'Submit' button and a 'Related Links' section with a link to 'Show Counter'.

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' table. The interface includes a left sidebar with 'Fields' and 'Field Types' tabs, and a main area for configuring the form layout.

Fields:

- Created
- Created by
- Updated
- Updated by
- Updates

Formatters:

- Activities (filtered)
- Contextual Search Results
- Ratings

Form Design:

- Table:** Daily Expenses [u_daily_expenses]
- Layout:** 2 Column
- Fields:** Number, Family Member Name, Date, Expense
- Comments:** 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.

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

The screenshot shows the 'Business Rule - New Record' form in ServiceNow. The form includes a header with the ServiceNow logo and navigation tabs. The main content area has a text box explaining business rules. Below this, there are input fields for 'Name' (Family Expenses BR) and 'Table' (Daily Expenses [u_daily_expens...]). To the right, there are checkboxes for 'Active' and 'Advanced', both of which are checked. The 'Application' dropdown is set to 'Global'. At the bottom, there are tabs for 'When to run', 'Actions', and 'Advanced'. A blue box at the bottom of the 'When to run' tab contains the instruction: '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

The screenshot shows the 'When to run' tab in the 'Business Rule - New Record' form. It includes a blue instruction box at the top. Below this, there are input fields for 'When' (set to 'before') and 'Order' (set to '100'). To the right, there are checkboxes for 'Insert' (checked), 'Update' (checked), 'Delete' (unchecked), and 'Query' (unchecked). Below these, there are buttons for 'Add Filter Condition' and 'Add OR Clause'. A row of dropdowns for filter conditions is visible, with labels '-- choose field --', '-- oper --', and '-- value --'. At the bottom left, there is a 'Role conditions' section with an edit icon. A 'Submit' button is located at the bottom left of the form.

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

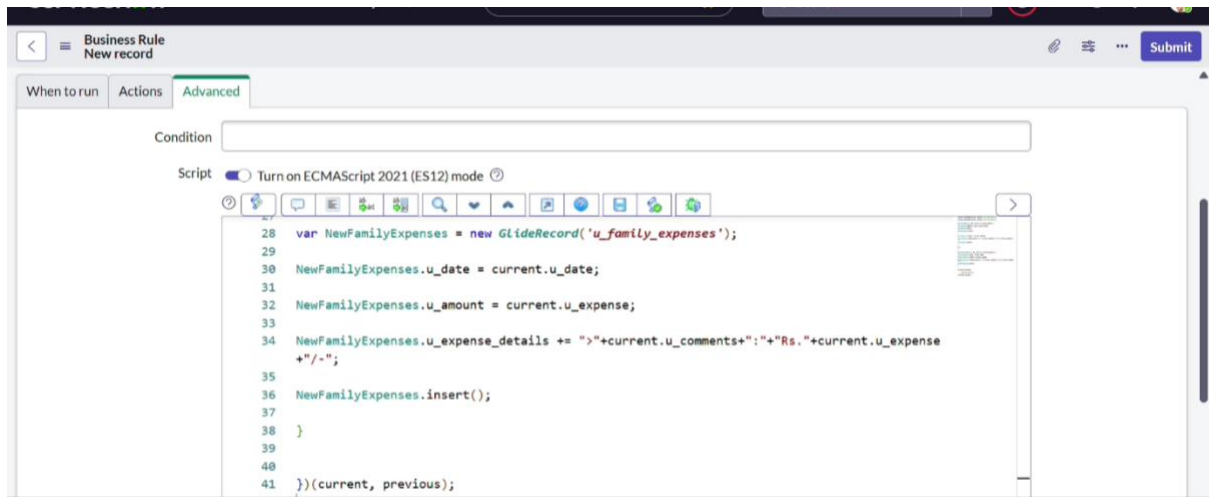
```
(functionexecuteRule(current, previous /*null when async*/) {  
varFamilyExpenses = new GlideRecord('u_family_expenses');
```

```

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.

The screenshot shows the ServiceNow 'Refine Query' interface for the 'Daily Expenses' relationship. The top navigation bar includes 'Relationship', 'Daily Expenses', and a search bar. The main form has the following fields:

- Name:** Daily Expenses
- Application:** Global
- Advanced:** ☐
- Applies to table:** Family Expenses [u_family_expe...]
- Queries from table:** Daily Expenses [u_daily_expens...]

A blue informational banner 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 banner, there is a section for the script with a toggle for "Turn on ECMAScript 2021 (ES12) mode". The script editor contains the following code:

```
4 // Add your code here, such as current.addQuery(field, value);  
5  
6 current.addQuery('u_date',parent.u_date);  
7  
8 current.query();  
9  
10  
11 })(current, parent);
```

