

# 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

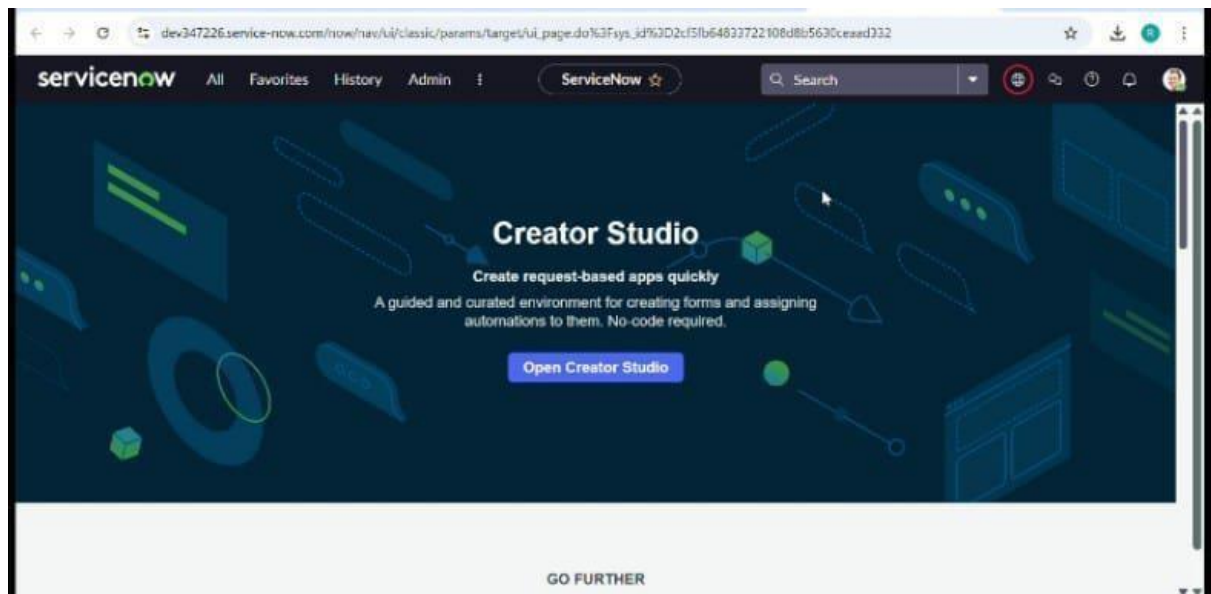
### Milestone 1 : Instance

#### 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.

A screenshot of the ServiceNow 'Update Set - Create Educational org...' form. The form is titled 'Update Set - Create Educational org...' and has a 'New record' button. It includes fields for 'Name' (set to 'Family Expenses'), 'State' (set to 'In progress'), 'Parent' (with a search icon), and 'Release date' (with a calendar icon). There is a 'Description' field with a rich text editor icon. The 'Application' field is set to 'Global'. At the bottom, there are 'Submit' and 'Submit and Make Current' buttons. The top navigation bar shows 'All', 'Favorites', 'History', 'Workspaces', and a 'Update Set - Create Educational org...' button. The right side of the navigation bar shows 'Application scope: Global' and 'Update set: Default (Global)'. There are also 'Work' and 'Relaunch to update' 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.

dev347226.service-now.com/now/nav/ui/classic/params/target/sys\_db\_object.do%3Fsys\_id%3D-1%26sys\_is\_list%3Dtrue%26sys\_target%3Days\_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 ☐

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

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

Columns | Controls | Application Access

Table Columns for text Search 1 to 6 of 6 New

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

The screenshot shows the 'New record' form for the 'Family Expenses' table. The form includes the following fields:

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

At the bottom, 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 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.

The screenshot shows the 'Form Design' interface for the 'Family Expenses' table. The interface includes a left sidebar with 'Fields' and 'Formatters' sections. The main area displays the form layout with the following fields:

- Family Expenses [u\_family\_expenses]** (2 Column)
- Number** (Read-Only)
- Amount** (Mandatory)
- Date** (Mandatory)
- Expense Details** (1 Column)

#### 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.

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

Display ☐

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.

dev347226.service-now.com/now/nav/ui/classic/params/target/sys\_number.do%3Fsys\_id%3D-1%26sys\_is\_list%3Dtrue%26sys\_target%3Dsys\_number%26syspar...

servicenow All Favorites History Number - New Record Search

Number New record Submit

\* Table Daily Expenses

Prefix DFE

\* 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 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.

dev347226.service-now.com/\$nng\_fd.do?sysparm\_attributes=startTable:"u\_daily\_expenses"%2CstartView:"Default"%20view"

Daily Expenses [u\_daily\_ex] Default view Form Design Undo Save

Fields Field Types

Filter

Fields

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

Formatters

- Activities (filtered)
- Contextual Search Results
- Ratings

Daily Expenses [u\_daily\_expenses] 2 Column

- Number
- Date
- Family Member Name
- Expense
- 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

dev347226.service-now.com/now/nav/ui/classic/params/target/sys\_script.do%3Fsys\_id%3D-1%26sys\_is\_list%3Dtrue%26sys\_target%3Dsys\_script%26sysparm\_c...

Business Rule - New Record

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\_expens...

Application: Global

Active: ☒

Advanced: ☒

Submit

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.

#### 4. In when to run Check Insert and Update

Business Rule - New Record

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:

Submit

#### 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 + "/-";
```

+=

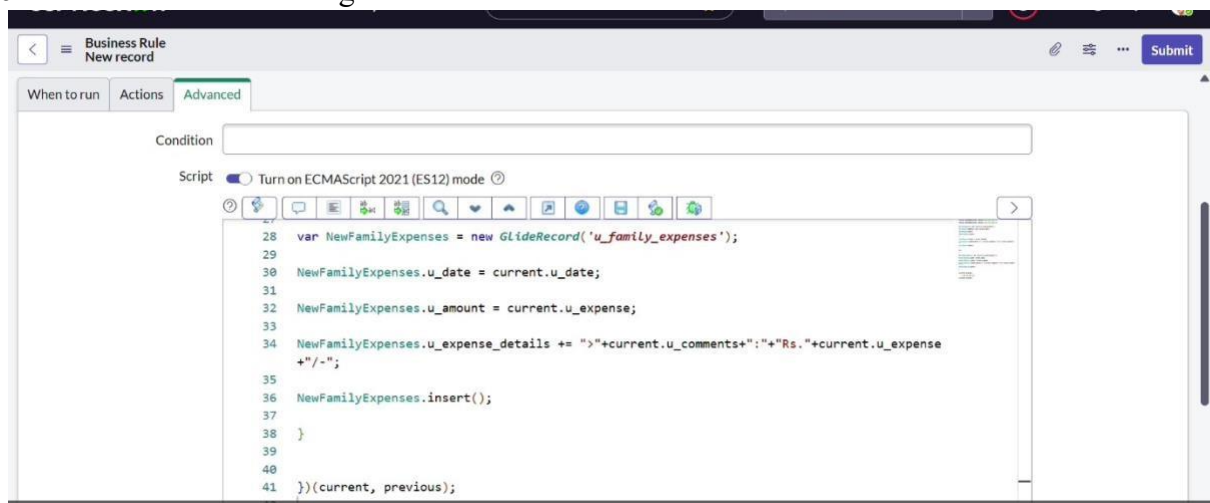
```

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.

Relationship  
Daily Expenses

UpdateDelete

NameDaily Expenses

ApplicationGlobal

Advanced☐

Applies to tableFamily Expenses [u\_family\_expe...

Queries from tableDaily Expenses [u\_daily\_expens...

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](#).

Query with☒ Turn on ECMAScript 2021 (ES12) mode

```
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);
```