

Calculating Family Expenses using ServiceNow

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

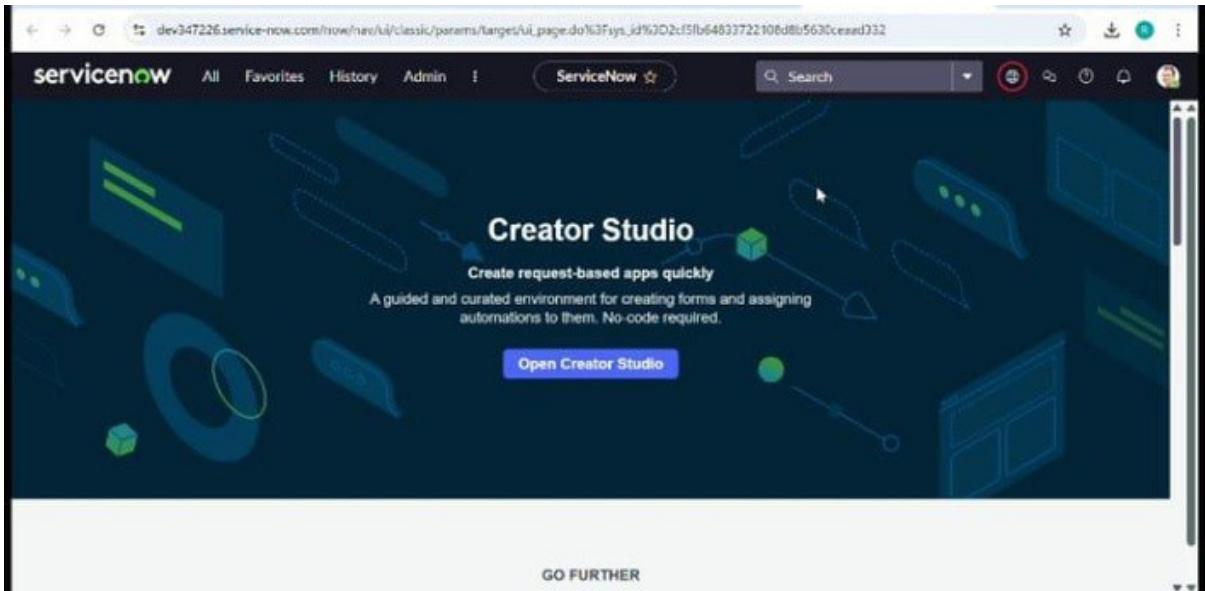
TASK INITIATION

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

The screenshot shows the 'Update Set - Create Educational org...' page. The title bar includes 'Application scope: Global' and 'Update set: Default [Global]'. The main form has fields for 'Name' (Family Expenses), 'State' (In progress), 'Parent' (empty), 'Release date' (empty), and a 'Description' text area. Buttons at the bottom include 'Submit' and 'Submit and Make Current'.

Milestone 3: Table(Family Expenses)

Activity 1: Creation of Family Expenses

1. Go to All > In the filter search for Tables > click on New.
2. Enter the Details:
 Label: FamilyExpenses
 Name : Auto-Populated
 New menu name : Family Expenditure
3. Go to the Header and right click there >> click on Save.

The screenshot shows the ServiceNow 'Table - New Record' page. At the top, it says 'Table - New Record'. Below that, there's a message: 'ServiceNow recommends creating custom tables in scoped applications. To learn more about creating scoped applications, click [here](#).'. A blue banner below it 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](#)'.

The form fields are as follows:

- * Label: Family Expenses
- * Name: u_family_expenses
- Extends table: (empty)
- 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:

Columnlabel: Number
 Type : String

3. Double click on insert a new row again.

4. Give the details as:

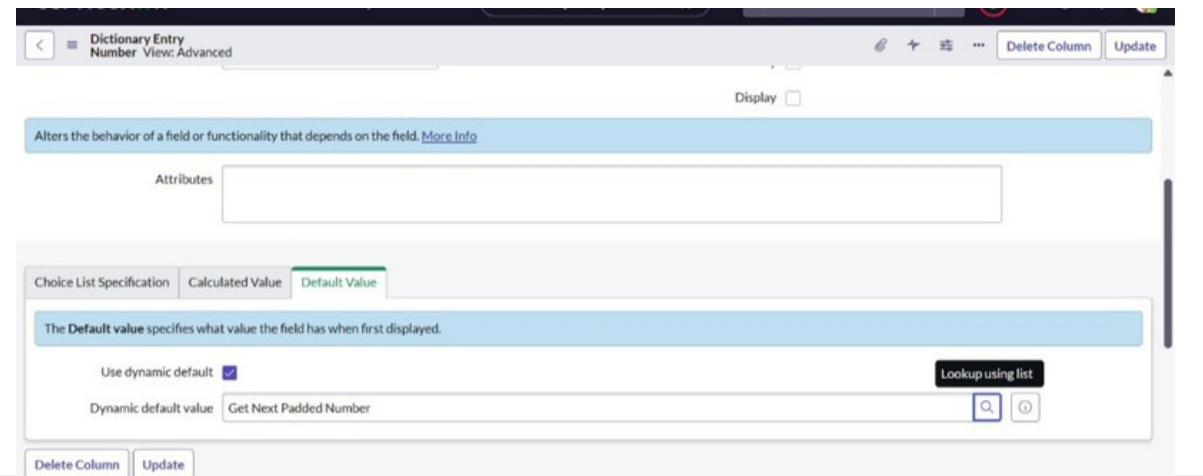
Columnlabel: Date
 Type : Date

5. Double click on insert a new row again

6. Give the details as:

Columnlabel: Amount
 Type : Integer

7. Double click on insert a new row again



8. Give the details as:

Columnlabel:ExpenseDetails

Type : String

Max length : 800

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

Table - Family Expenses						
Dictionary Entries		Type	Reference	Max length	Default value	Display
Updated	Column label	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
x / Number	Column label	String				false
x / Date		Date				false
x / Amount		Integer				false
x / Expense Details	Column label	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:FamilyExpenses

Prefix : MFE

8. Click on Submit

The screenshot shows the configuration interface for a 'Number' type field. The 'Table' dropdown is set to 'Family Expenses'. The 'Prefix' field contains 'MFE'. The 'Number' field has a value of '1,000'. The 'Application' dropdown is set to 'Global'. The 'Number of digits' field is set to '7'. A 'Submit' button is visible at the top right.

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

The screenshot shows the 'Form Design' interface for the 'Family Expenses [u_family]' table. The left sidebar lists fields like 'Created', 'Updated', and 'Expense Details'. The main area displays a 2-column grid with three rows. The first row contains 'Number' and 'Amount' fields. The second row contains a 'Date' field. The third row contains a 'Expense Details' section. The 'Expense Details' section is currently collapsed. The top right of the interface shows 'Undo', 'Save', and other buttons.

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.

The screenshot shows the ServiceNow 'Table - New Record' page. At the top, there are tabs for 'All', 'Favorites', 'History', and 'Admin'. The main title is 'Table - New Record'. Below the title, there's a search bar and a toolbar with various icons. The left sidebar shows a breadcrumb path: 'Table' > 'New record'. A yellow banner at the top says: 'ServiceNow recommends creating custom tables in scoped applications. To learn more about creating scoped applications, click [here](#).'. A blue info box below it states: '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.' with a 'More Info' link. The main form area contains several input fields and checkboxes:

- * Label: Daily Expenses
- * Name: u_daily_expenses
- Extends table: (dropdown menu)
- Application: Global (checkbox)
- Create module: (checkbox) checked
- Create mobile module: (checkbox) checked
- Add module to menu: Family Expenditure (dropdown menu)
- Remote Table: (checkbox)

Activity 2: Creation of Columns(Fields)

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

2. Give the details as:

Columnlabel: Number

Type : String

3. Double click on insert a new row again

4. Give the details as:

Columnlabel: Date

Type : Date

5. Double click on insert a new row again

6. Give the details as:

Columnlabel: Expense

Type : Integer

7. Double click on insert a new row again

8. Give the details as:

Columnlabel: FamilyMemberName

Type : Reference

Max length : 800

9. Double click on insert a new row again

10. Give the details as:

Columnlabel: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

Choice List Specification	Calculated Value	Default Value
The Default value specifies what value the field has when first displayed.		
Use dynamic default <input checked="" type="checkbox"/>	Lookup using list	
Dynamic default value	Get Next Padded Number	

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

Maintenance

6. Click on New.

Table:DailyExpenses

Prefix : DFE

8. Click on Submit.

The screenshot shows the ServiceNow interface for creating a new record. The top navigation bar includes links for All, Favorites, History, and a search bar. The main form 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). A large blue 'Submit' button is visible at the bottom right of the form area. Below the form, there are related links for 'Related Links' and '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 tool. The left sidebar lists fields like Created, Updated, and Comments. The main area displays the 'Daily Expenses [u_daily_expenses]' form with four fields: Number, Date, Family Member Name, and Expense. The 'Number' field is set to '2 Column'. The 'Comments' field is set to '1 Column'. Each field has a gear icon for configuration.

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: SelectFamilyExpenses

Daily Expenses : Select Daily Expenses

4. Click Save.

Relationship - New Record

Name: Daily Expenses Application: Global

Advanced: Applies to table: Family Expenses [u_family_expe...]

Queries from table: Daily 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

```
1 (function refineQuery(current, parent) {  
2 // Add your code here, such as current.addQuery(field, value);  
3  
4 }) (current, parent);  
5
```

Milestone 6: 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

The screenshot shows a configuration dialog for related lists. On the left, under 'Available', there is a list titled 'Attachments' which is currently empty. On the right, under 'Selected', there is a list titled 'Daily Expenses' which contains one item. At the bottom of the dialog, there are 'Cancel' and 'Save' buttons.

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:SelectDailyExpenses
Check Advanced

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 Application: Global

Table: Daily Expenses [u_daily_expens...] Active:

Advanced:

When to run: When: before, Order: 100

Actions: 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. Inwhen 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

Actions: 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

>>

```
(function executeRule(current, previous/*nullwhenasync*/)

{ varFamilyExpenses = new
GlideRecord('u_family_expenses');
```

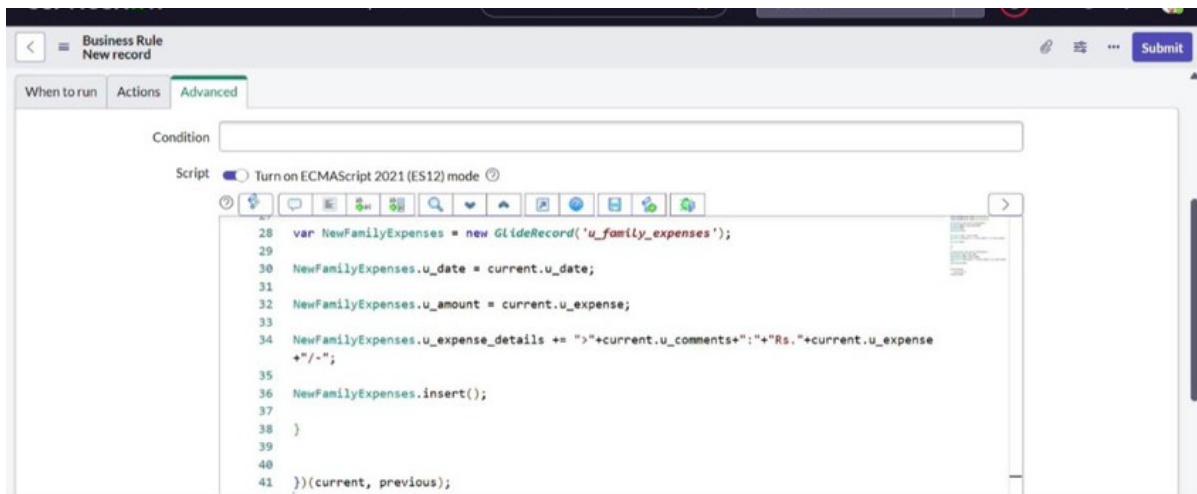
```

FamilyExpenses.addQuery('u_date',current.u_d
ate);
FamilyExpenses.query();if(FamilyExpenses.nex
t())
{
    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_expense
s'); 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.

```
(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.

