

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

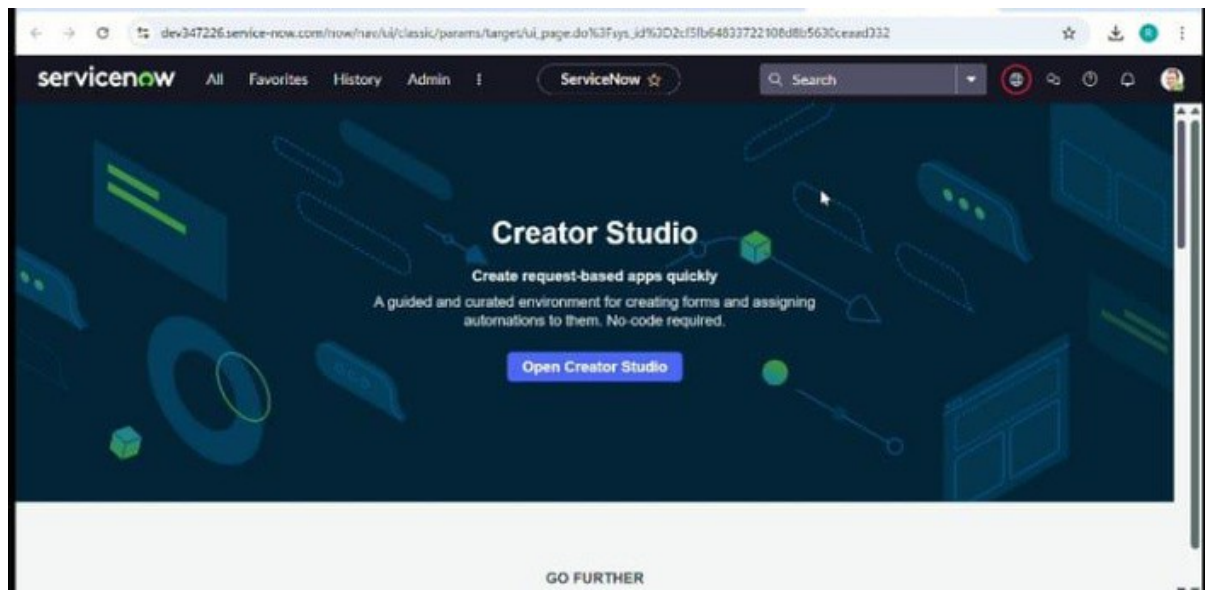
TASK INITIATION

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.

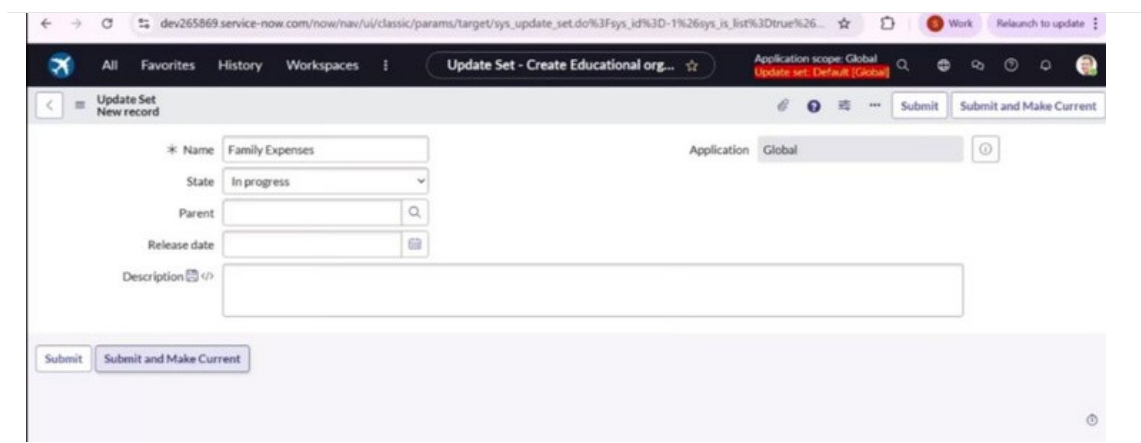
5. You'll receive an email with the instance details once it's ready.
6. Log in to your ServiceNow instance using the provided credentials.
7. Now you will navigate to the ServiceNow.



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



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.

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 Application Global

* Name u_family_expenses Create module ☒

Extends table 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

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

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 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
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:FamilyExpenses

Prefix : MFE

8. Click on Submit

The screenshot shows a ServiceNow form for 'Family Expenses'. At the top, there's a header bar with a back arrow, a menu icon, and the text 'Number New record'. On the right of the header are icons for help, settings, and a 'Submit' button. Below the header, the form fields are: 'Table' (set to 'Family Expenses'), 'Prefix' (set to 'MFE'), 'Number' (set to '1,000'), 'Application' (set to 'Global'), and 'Number of digits' (set to '7'). Each field has a search icon and an information icon. At the bottom left, there's 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

The screenshot shows the 'Form Design' interface in ServiceNow. The top bar includes a breadcrumb 'Family Expenses [u_family_expenses]', a 'Default view' dropdown, and buttons for 'Undo' and 'Save'. On the left, there's a sidebar with 'Fields' and 'Field Types' tabs. Under 'Fields', there's a 'Filter' section and a list of fields: 'Created', 'Created by', 'Updated', 'Updated by', and 'Updates'. Below that, there's a 'Formatters' section with 'Activities (filtered)' and 'Contextual Search Results'. The main area shows the form layout. It has a header section 'Family Expenses [u_family_expenses]' with a '2 Column' dropdown. Below this, there are three fields: 'Number', 'Amount', and 'Date'. Each field has a gear icon for configuration. Below these, there's a section 'Expense Details' with a '1 Column' dropdown and a gear icon.

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.

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:

* Name:

Extends table:

Application:

Create module: ☒

Create mobile module: ☒

Add module to menu:

Remote Table: ☐

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

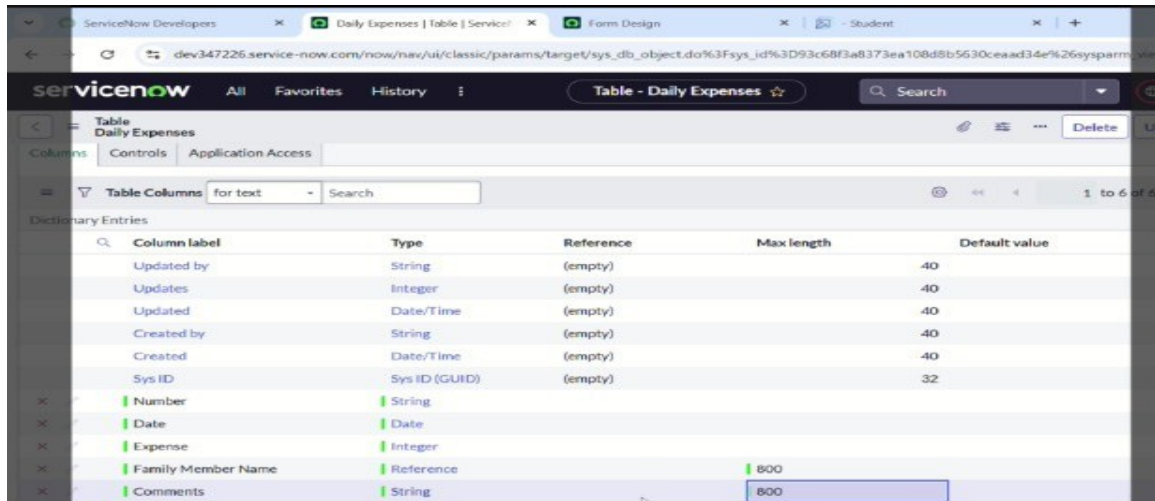
10. Give the details as:

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

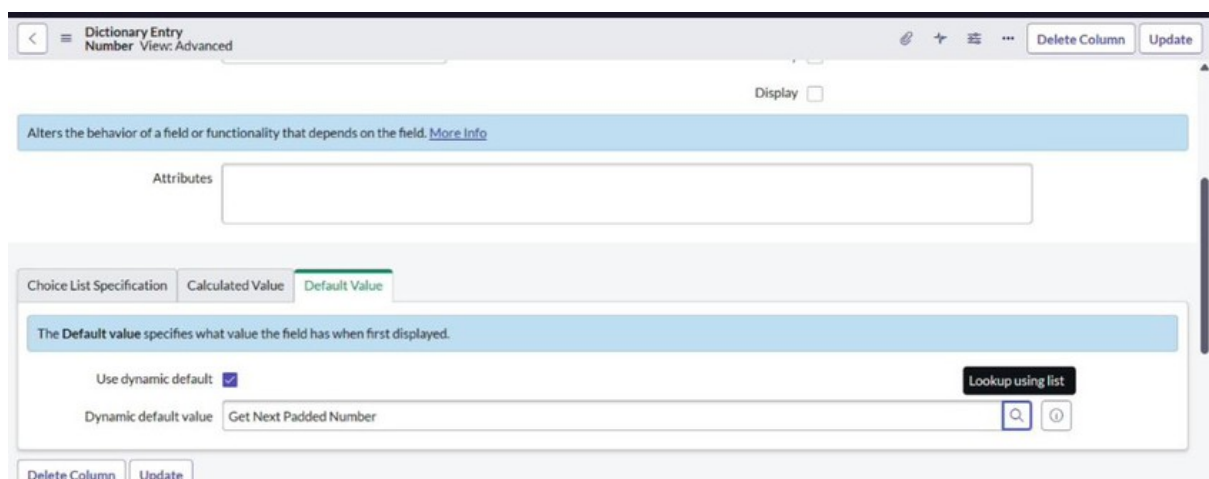
1. Double click on the Number Field/Column.

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



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

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

6. Click on New.

Table:DailyExpenses

Prefix : DFE

8. Click on Submit.

The screenshot shows the 'Number - New Record' form in ServiceNow. The form fields are: Table (Daily Expenses), Prefix (DFE), Number (1,000), Application (Global), and Number of digits (7). A 'Submit' button is visible at the bottom left. Below the form, there 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 'Form Design' interface for the 'Daily Expenses' table. The form is titled 'Daily Expenses [u_daily_expenses]'. It contains two sections: a '2 Column' section with fields 'Number', 'Date', 'Family Member Name', and 'Expense', and a '1 Column' section with a 'Comments' field. The 'Number' field is marked as 'Read-Only' and the 'Date' and 'Family Member Name' fields are marked as 'Mandatory'. The 'Comments' field is marked as 'Optional'. The interface includes a 'Fields' list on the left and 'Undo' and 'Save' buttons at the top right.

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

Appliestotable:SelectFamilyExpenses

Daily Expenses : Select Daily Expenses

4. Click Save.

The screenshot shows the 'Relationship - New Record' form in ServiceNow. The 'Name' field is set to 'Daily Expenses'. The 'Application' is set to 'Global'. The 'Applies to table' is set to 'Family Expenses [u_family_expe...]' and the 'Queries from table' is set to '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
3     // Add your code here, such as current.addQuery(field, value);
4
5 })(current, parent);
```

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 the 'Configuring related lists on Family Expenses form' dialog. The 'Available' list contains 'Attachments'. The 'Selected' list contains 'Daily Expenses'. The 'Cancel' and 'Save' buttons are at the bottom.

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

The screenshot shows the 'Business Rule - New Record' form in ServiceNow. The form includes a header with the ServiceNow logo and navigation tabs (All, Favorites, History). A search bar and a 'Business Rule - New Record' button are also present. Below the header, there is a description of a business rule. The main form area contains fields for 'Name' (Family Expenses BR), 'Table' (Daily Expenses [u_daily_expens...]), 'Application' (Global), 'Active' (checked), and 'Advanced' (checked). 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 text: '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 contains a blue box with the text: 'Specify whether the business rule should run on Insert or Update. Use Filter Conditions to specify under which conditions the business rule should run.' Below this, there are fields for 'When' (before), 'Order' (100), and checkboxes for 'Insert' (checked), 'Update' (checked), 'Delete' (unchecked), and 'Query' (unchecked). There are also buttons for 'Add Filter Condition' and 'Add OR Clause'. Below these buttons, there is a row of three dropdown menus: '-- choose field --', '-- oper --', and '-- value --'. At the bottom left, there is a 'Role conditions' field with a pencil icon. A 'Submit' button is located at the bottom left of the form.

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');
```

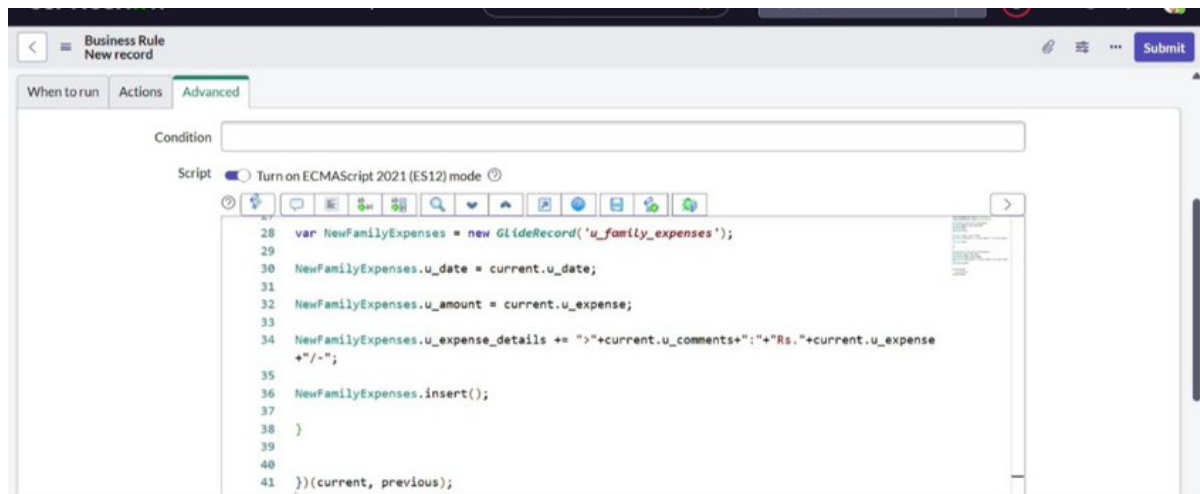
```

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=newGlideRecord('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) {

//Addyourcodehere,suchascurrent.addQuery(field,value
    ); current.addQuery('u_date',parent.u_date);
    current.query();

})(current, parent);
```

5. Click on Update.

