



# **MANGAYARKARASI COLLEGE OF ENGINEERING**

**Department Of Computer Science Engineering**

**Completed a project on**

**Calculating Family Expenses Using Service Now**

**Submitted By**

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# Calculating Family Expenses using Service Now

## Project Statement

The project focuses on developing a Family Expense Management System using ServiceNow to help families efficiently record, track, and manage their daily and overall expenses. It includes key features such as expense categorization, budget management, real-time tracking, and detailed reporting. This system empowers users to make informed financial decisions, monitor spending patterns, and promote better financial planning. Additionally, it enhances transparency within families, supports goal-based savings, and simplifies monthly expense reviews for improved financial discipline.

## Objectives

- To create a centralized platform for recording family expenses.
- To automate calculation and tracking of daily and monthly expenses.
- To establish relationships between daily expense entries and total family expenses.
- To generate reports that help analyze spending patterns.
- To make the system user-friendly, scalable, and reliable using ServiceNow's platform

## Skills Required

- ServiceNow Platform (Instance setup, Update Sets, Tables, Business Rules).
- Form Design & Customization (creating fields, configuring mandatory/read-only attributes).
- Scripting (GlideRecord, Business Rules in JavaScript) for automation.
- Database Concepts (tables, relationships, and data integrity).
- Problem-Solving & Analytical Thinking for mapping real-life financial scenarios into a digital system

## Tasks & Initiation

- Define the project scope – family expense tracking and reporting system.
- Set up a ServiceNow Personal Developer Instance.
- Create a new Update Set for customization.
- Design and create necessary tables (Family Expenses, Daily Expenses).
- Define fields/columns (Number, Date, Amount, Expense Details, Member Name, Comments).
- Implement auto-numbering for expense records.
- Configure forms with mandatory/read-only rules.
- Establish relationships between Family Expenses and Daily Expenses tables.
- Write Business Rules to automate calculations.
- Configure reports/related lists for data visualization.

## Project statement:

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.

## MILESTONE 1

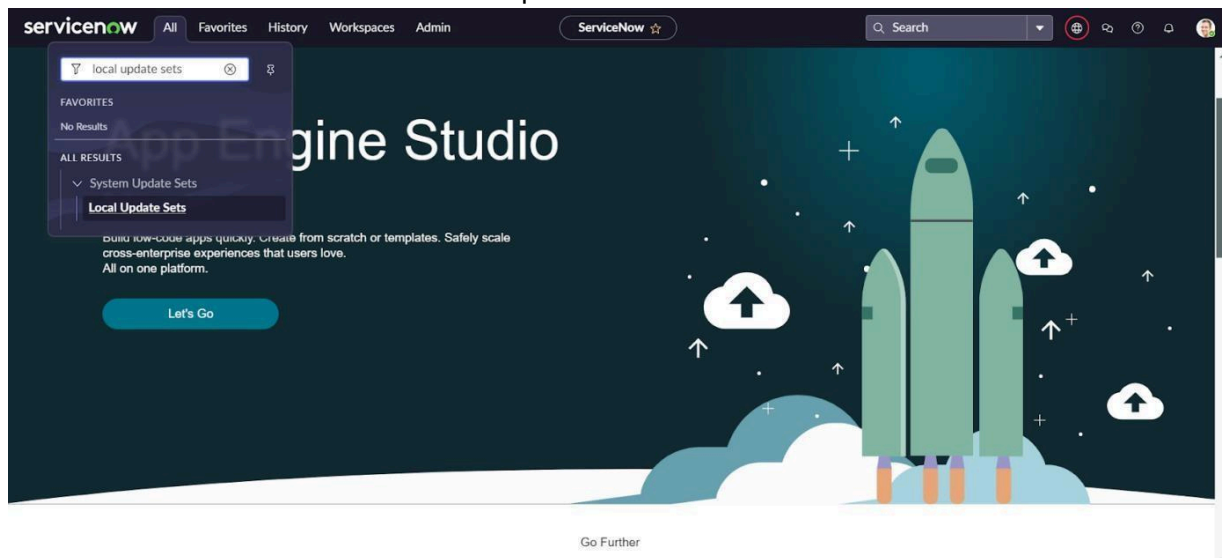
### Setting up ServiceNow Instance

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

### 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.

ServiceNow

Update Set - Create New Update Set

Search

Submit Submit and Make Current

Name: Family Expenses

State: In progress

Parent:

Release date:

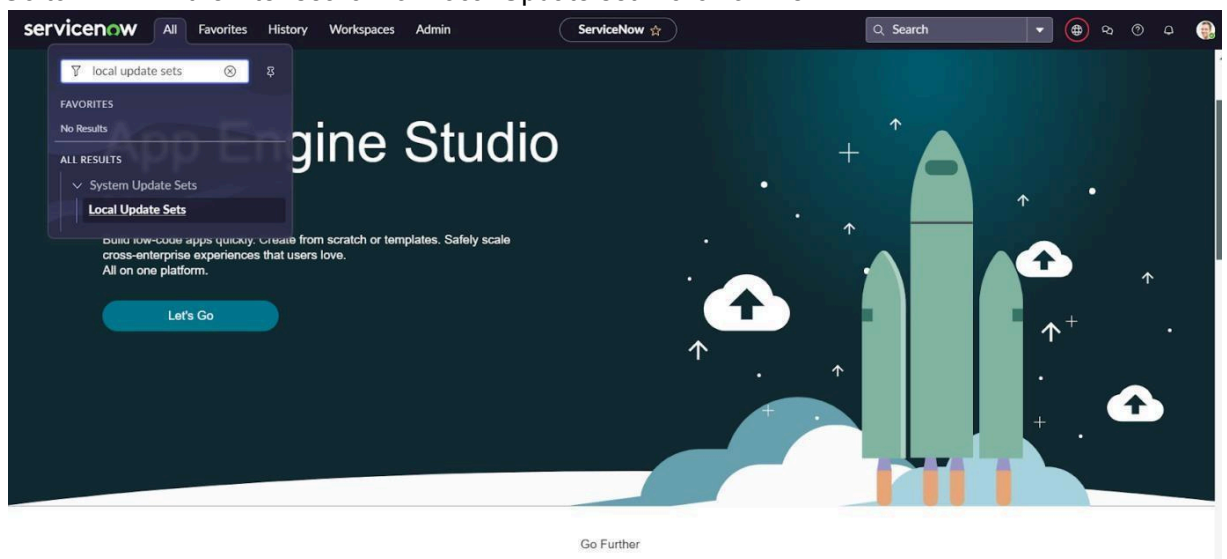
Description:

Submit Submit and Make Current

## MILESTONE 3

### 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.

The screenshot displays the ServiceNow 'Update Set - Create New Update Set' form. The sidebar on the left contains navigation links, with 'All' and 'Local Update Sets' highlighted by red boxes and arrows. The main form area includes fields for 'Name' (containing 'Family Expenses'), 'State' (set to 'In progress'), 'Application' (set to 'Global'), 'Parent', 'Release date', and 'Description'. The 'Submit and Make Current' button is highlighted with a red box and an arrow at the bottom of the form.

## MILESTONE 4

### 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

> Label   
 \* Name

Application   
 Remote Table ☒  
 Create module ☒  
 Create mobile module ☒  
 Add module to menu   
 New menu name

Columns Controls Application Access

Table Columns Column label Search

Dictionary Entries

|   | Column label | Type    | Reference | Max length | Default value | Display |
|---|--------------|---------|-----------|------------|---------------|---------|
| <input type="checkbox"/> <input type="checkbox"/> | Number       | String  |           |            |               | false   |
| <input type="checkbox"/> <input type="checkbox"/> | Date         | Date    |           |            |               | false   |
| <input type="checkbox"/> <input type="checkbox"/> | Amount       | Integer |           |            |               | false   |

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

## MILESTONE 5

### 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

| Columns            |                 |         |           |            |               |         |
|--------------------|-----------------|---------|-----------|------------|---------------|---------|
| Table Columns      |                 |         |           |            |               |         |
| Dictionary Entries |                 |         |           |            |               |         |
|                    | Column label    | Type    | Reference | Max length | Default value | Display |
|                    | Number          | String  |           |            |               | false   |
|                    | Date            | Date    |           |            |               | false   |
|                    | Amount          | Integer |           |            |               | false   |
|                    | Expense Details | String  |           | 800        |               | false   |

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

## MILESTONE 6

### 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.

Choice List Specification   Calculated Value   **Default Value** <sup>1</sup>

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

Use dynamic default ☒ <sup>2</sup>

Dynamic default value   Get Next Padded Number <sup>3</sup>

Delete Column   **Update** <sup>4</sup>

- 
- 
- 
- 
- 
- 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

The screenshot shows a configuration form for a table named 'Family Expenses'. At the top, there is a header bar with a back arrow, a menu icon, the text 'Number MFE', and action buttons 'Update' and 'Delete'. Below this, the form contains several fields: a 'Table' field with the value 'Family Expenses', a 'Prefix' field with the value 'MFE', a 'Number' field with a value of '1,000', an 'Application' dropdown menu set to 'Global', and a 'Number of digits' field with a value of '7'. At the bottom of the form, there are 'Update' and 'Delete' buttons.

9. Click on Submit.

## MILESTONE 7

### 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 displays the form design configuration for the 'Family Expenses' table. It shows two sections. The first section, titled 'Family Expenses [u\_family\_expenses]', is set to a '2 Column' layout and contains three fields: 'Number', 'Date', and 'Amount'. Each field has a gear icon for configuration. The second section, titled 'Expense Details', is set to a '1 Column' layout and contains a single field. Each field has a gear icon for configuration.

## MILESTONE 8

### Creation of Daily Expenses Table

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

The screenshot shows two parts of a configuration interface. On the left, there are two input fields: 'Label' with the value 'Daily Expenses' (marked with a red box and arrow 1) and 'Name' with the value 'u\_daily\_expenses' (marked with a red box and arrow 2). Below these is an 'Extends table' field with a search icon. On the right, there is a section for 'Application' settings. It includes a dropdown for 'Application' set to 'Global' (with a red box and arrow 3), checkboxes for 'Create module' and 'Create mobile module' (both checked), and a button 'Application Menu'. Below this is a dropdown menu 'Add module to menu' with the value 'Family Expenditure' (marked with a red box and arrow 3).

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

## MILESTONE 9

### 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 : Amount  
Type : Integer
7. Double click on insert a new row again
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.

## MILESTONE 10

### 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.

The screenshot shows the 'Default Value' configuration window. At the top, there are tabs: 'Choice List Specification', 'Calculated Value', and 'Default Value' (the active tab, marked with a red box and arrow 1). Below the tabs, a blue bar contains the text: 'The Default value specifies what value the field has when first displayed.' The main area has a checkbox 'Use dynamic default' which is checked (marked with a red box and arrow 2). Below it is a text field 'Dynamic default value' with the value 'Get Next Padded Number' (marked with a red box and arrow 3). At the bottom, there are buttons 'Delete Column' and 'Update' (marked with a red box and arrow 4).

- 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

4. Click on Submit.

## MILESTONE 11

### 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  
Customize or Drag Drop the form as per your requirement.

4. Make Number Read-Only Field by clicking on the gear icon and checking Read-Only
5. Make Date, Family Member Name Mandatory Field by clicking on the gear icon and checking Mandatory
6. Click on Save.

## MILESTONE 12

### 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 13

## 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
4. Lists Add Daily Expenses to the Selected Area.
5. Click on Save

### MILESTONE 14

## 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' configuration form. At the top, it says 'Business Rule' and 'New record'. Below this is a descriptive text: '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'. The form has several fields: 'Name' with the value 'Family Expenses BR' (marked with a red box and arrow 1), 'Table' with the value 'Daily Expenses [u.daily\_expenses]' (marked with a red box and arrow 2), 'Application' with the value 'Global', 'Active' with a checked checkbox, and 'Advanced' with a checked checkbox (marked with a red box and arrow 3).

4. In when to run Check Insert and Update

When to run ← 1 Actions Advanced

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

When: before

Order: 100

2 →

Insert ☒

Update ☒

Delete ☐

Query ☐

Filter Conditions: Add Filter Condition Add "OR" Clause

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

Role conditions

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
{
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);
```

Script

```
1 (function executeRule(current, previous /*null when async*/) {
2 |
```

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

## MILESTONE 15

### 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.

Relationship  
Daily Expenses

Name: Daily Expenses

Application: Global

Advanced: ☐

Applies to table: Family Expenses [u\_family\_expenses] <sup>1</sup>

Queries from table: Daily Expenses [u\_daily\_expenses]

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

```
1 (function refineQuery(current, parent) {  
2  
3   // Add your code here, such as current.addQuery(field, value);  
4   current.addQuery('u_date',parent.u_date);  
5   current.query();  
6  
7 })(current, parent);
```

<sup>2</sup>

<sup>3</sup> Update Delete

Available

Attachments  
Goal relationships

Selected

Daily Expenses <sup>1</sup>

Cancel Save <sup>2</sup>