K.S.K COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CALCULATING FAMILY EXPENSES USING SERVICE NOW

Team ID : NM2025TMID07860

Team Size : 4

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Problem statement:

Managing family expenses manually is time-consuming and often leads to errors and poor budgeting decisions. There is a need for a systematic way to record, track, and analyze daily or monthly expenses. Existing methods like spreadsheets lack automation and real-time insights. This project aims to develop a ServiceNow-based application to efficiently calculate and manage family expenses. The system will help users categorize spending, generate reports, and monitor financial patterns for better money management.

Objective:

The main objective of this project is to develop an automated system on the ServiceNow platform to calculate and manage family expenses efficiently. It aims to record daily and monthly expenditures, categorize them, and generate real-time reports. The system will help users analyze spending patterns and maintain better financial control. It also focuses on improving accuracy, transparency, and ease of expense tracking. Ultimately, the goal is to support smarter budgeting and financial planning for families.

Skills:

ServiceNow Development Skills

JavaScript & Glide Scripting

Data Management.

UI Design

Analytical & Reporting Skills

Problem-Solving & Debugging

Project Management

Task Initiation:

The project begins with identifying the need for an automated system to manage and calculate family expenses effectively. Initial tasks include gathering requirements, defining key expense categories, and planning the workflow for data entry and reporting. The next step is to set up the ServiceNow development environment and design the application structure. Tasks also involve creating tables, forms, and dashboards for expense tracking. Finally, a plan is made for testing, validating data accuracy, and ensuring smooth user interaction within the ServiceNow platform.

Features:

- **User-Friendly Interface:** Simple and interactive forms for adding and managing daily or monthly expenses.
- **Expense Categorization:** Allows users to classify expenses under categories such as food, transport, bills, and entertainment.
- **Automated Calculations:** Automatically calculates total and category-wise expenses.
- **Data Storage and Retrieval:** Securely stores all expense records in ServiceNow tables for easy access.
- **Report Generation:** Generates monthly and yearly expense summaries for better financial analysis.
- **Dashboard Visualization:** Displays graphical insights into spending trends through charts and dashboards.
- **Notifications and Alerts:** Sends reminders or alerts for high spending or budget limits.

Modules Implemented:

1. Setting up ServiceNow Instance:

A personal developer instance of ServiceNow was set up to build and test the Family Expense Management application. Basic configurations and administrative settings were completed to begin development.

2. Creation of New Update Set:

A new update set was created to capture all configurations and customizations related to the Family Expense project, ensuring that changes can be easily tracked and migrated if needed.

3. Creation of Table (Family Expenses):

A custom table named Family Expenses was created to store summary data of total expenses by category, date, and family member.

Fields included: Expense ID, Date, Category, Total Amount, and Member Name**.**

4. Creation of Table (Daily Expenses):

Another custom table named Daily Expenses was created to store individual daily transactions.

Fields included: Expense ID, Date, Expense Type, Amount, Description, and Linked Family Expense Record.

5. Creation of Relationships:

A one-to-many relationship was established between Family Expenses (parent) and Daily Expenses (child).

This allows multiple daily expense records to be associated with a single family expense summary.

6. Configuring Related Lists on Family Expenses:

The related list of Daily Expenses was configured on the Family Expenses form layout to allow users to view all associated daily transactions directly from the parent record.

7. Creation of Business Rules:

Business Rules were created to automatically update the Total Expense Amount in the Family Expenses table whenever a new Daily Expense is added, updated, or deleted.

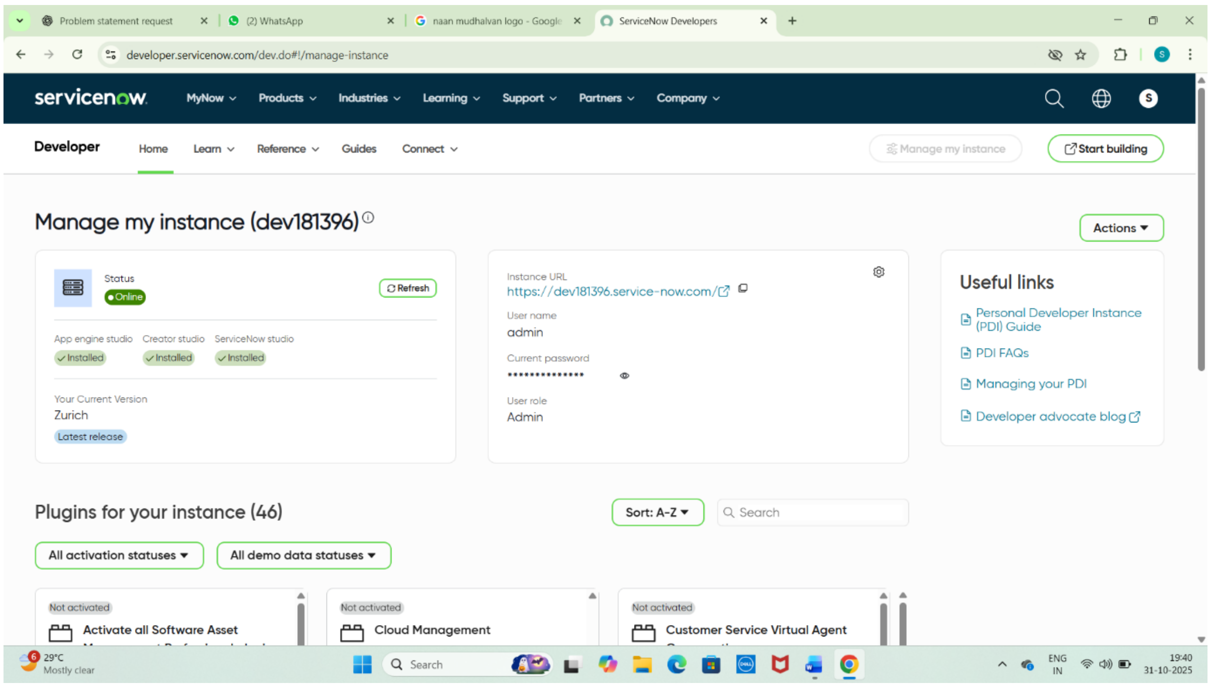
This ensures that totals remain accurate in real time without manual updates.

8. Configure the Relationship:

Form design and list layouts were modified to display linked information. The relationships were tested to ensure that adding daily expenses automatically reflects in the family summary table.

Implementation Steps:

STEP1: Setting up ServiceNow Instance



Manage my instance (dev181396)

Status: Online

App engine studio: Installed
Creator studio: Installed
ServiceNow studio: Installed

Your Current Version: Zurich
Latest release

Instance URL: https://dev181396.service-now.com/
User name: admin
Current password: **************
User role: Admin

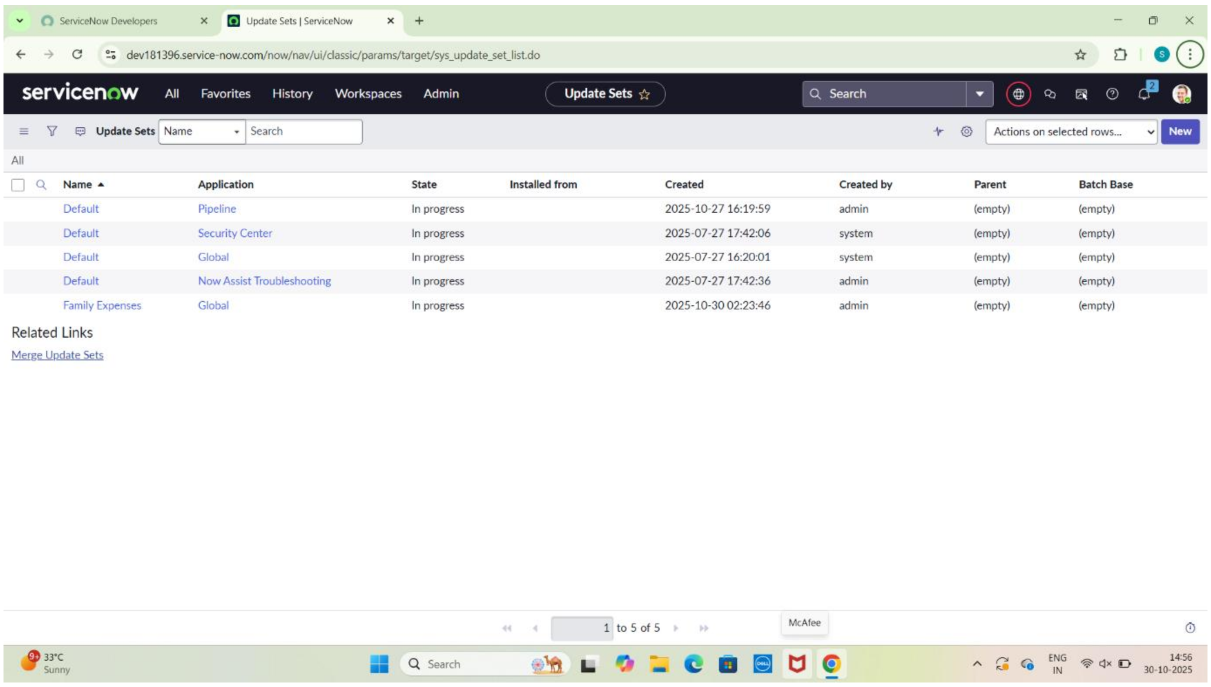
Useful links
- Personal Developer Instance (PDI) Guide
- PDI FAQs
- Managing your PDI
- Developer advocate blog

Plugins for your instance (46)

Not activated — Activate all Software Asset
Not activated — Cloud Management
Not activated — Customer Service Virtual Agent

29°C Mostly clear ENG IN 19:40 31-10-2025

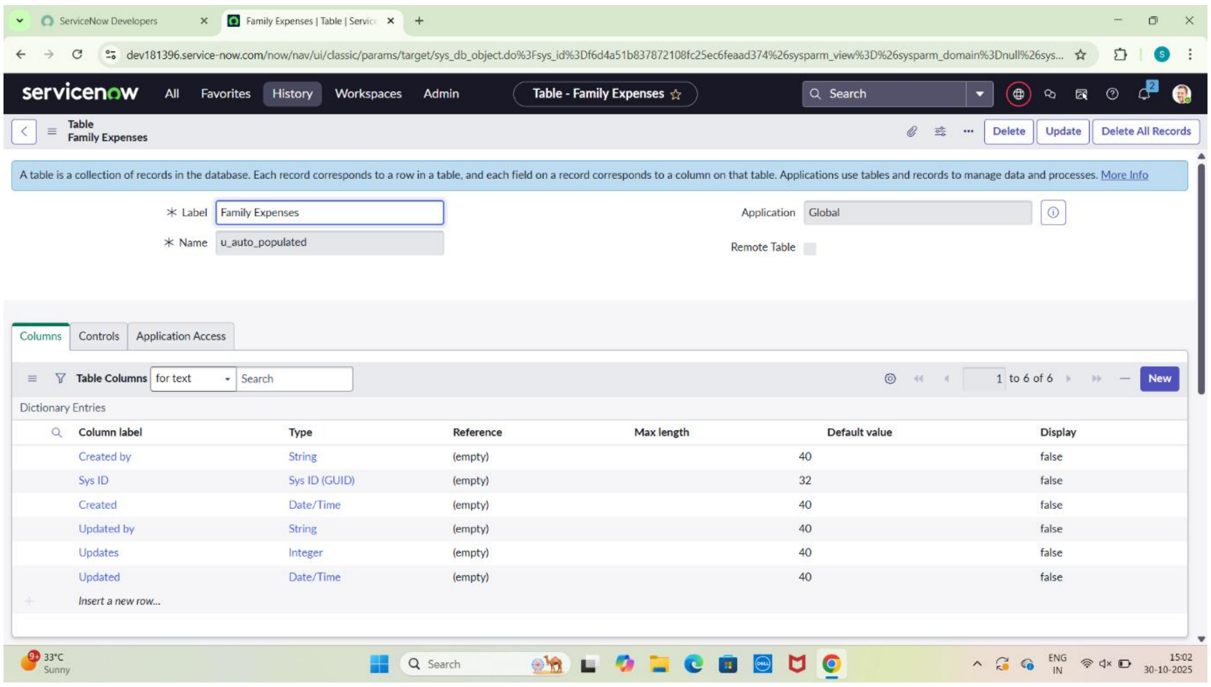
STEP2: Creation of New Update Set


ServiceNow Developers
Update Sets | ServiceNow
dev181396.service-now.com/now/nav/ui/classic/params/target/sys_update_set_list.do
servicenow All Favorites History Workspaces Admin
Update Sets
Search
Update Sets Name Search
Actions on selected rows... New
All

Name ▲	Application	State	Installed from	Created	Created by	Parent	Batch Base
Default	Pipeline	In progress		2025-10-27 16:19:59	admin	(empty)	(empty)
Default	Security Center	In progress		2025-07-27 17:42:06	system	(empty)	(empty)
Default	Global	In progress		2025-07-27 16:20:01	system	(empty)	(empty)
Default	Now Assist Troubleshooting	In progress		2025-07-27 17:42:36	admin	(empty)	(empty)
Family Expenses	Global	In progress		2025-10-30 02:23:46	admin	(empty)	(empty)

Related Links
Merge Update Sets

STEP3: Creation of Table (Family Expenses)


ServiceNow Developers
Family Expenses | Table | Servic
dev181396.service-now.com/now/nav/ui/classic/params/target/sys_db_object.do%3Fsys_id%3Df6d4a51b837872108fc25ec6feaad374%26sysparm_view%3D%26sysparm_domain%3Dnull%26sys...
servicenow All Favorites History Workspaces Admin
Table - Family Expenses
Search
Table
Family Expenses
Delete Update Delete All Records

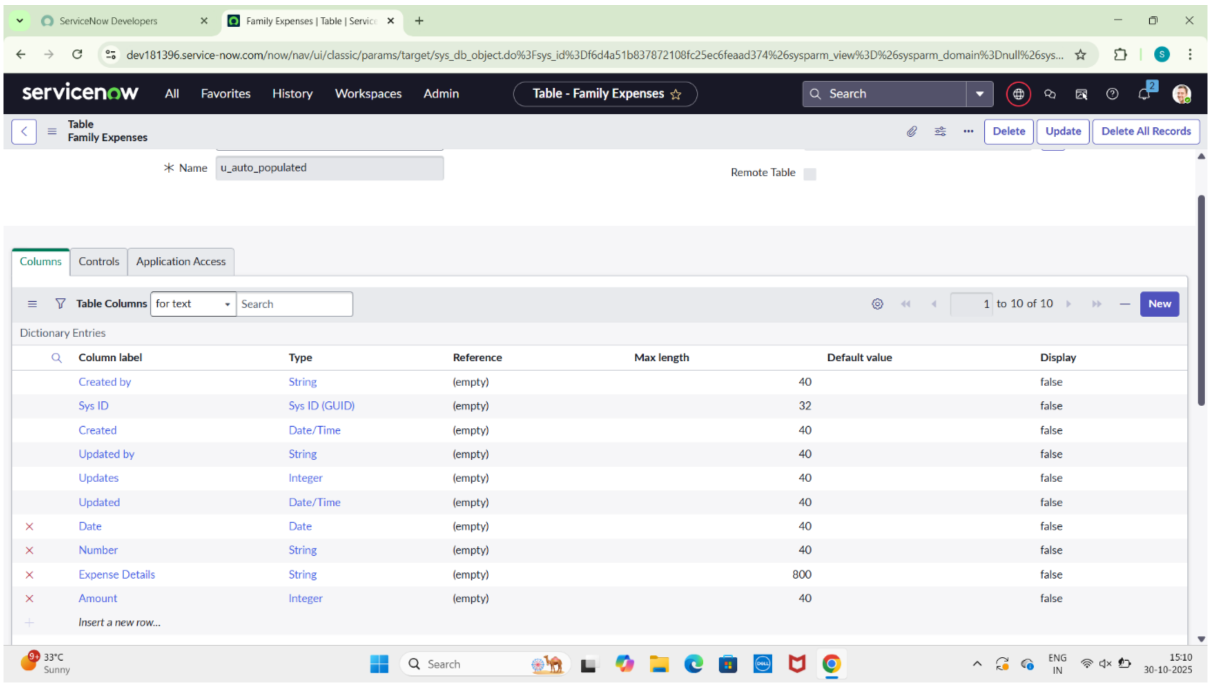
A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. More Info

* Label	Family Expenses
* Name	u_auto_populated
Application	Global
Remote Table	

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
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
Updated	Date/Time	(empty)	40		false

Insert a new row...


ServiceNow Developers
Family Expenses | Table | Service
dev181396.service-now.com/now/nav/ui/classic/params/target/sys_db_object.do%3Fsys_id%3Df6d4a51b837872108fc25ec6feaad374%26sysparm_view%3D%26sysparm_domain%3Dnull%26sys...
servicenow All Favorites History Workspaces Admin
Table - Family Expenses
Search
Table
Family Expenses
Delete
Update
Delete All Records
Columns
Controls
Application Access
Table Columns
for text
Search
New
33°C
Sunny
15:10
30-10-2025

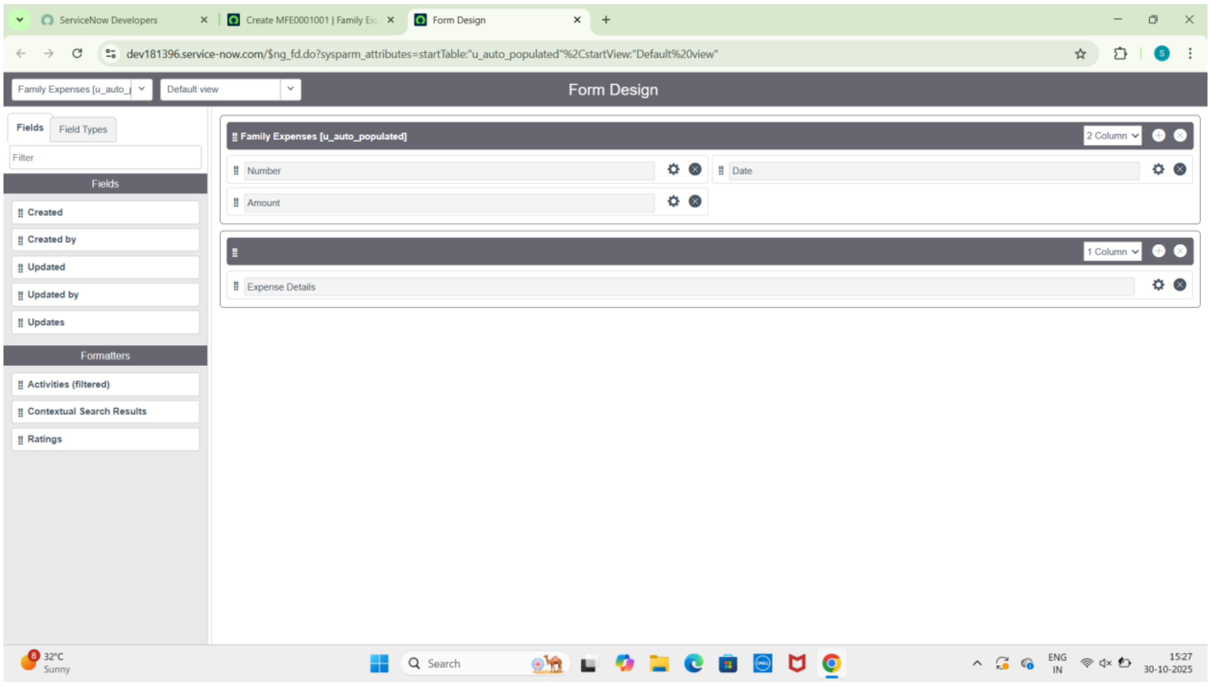
Name: u_auto_populated

Remote Table

1 to 10 of 10

Dictionary Entries

	Column label	Type	Reference	Max length	Default value	Display
	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
	Updated	Date/Time	(empty)	40		false
×	Date	Date	(empty)	40		false
×	Number	String	(empty)	40		false
×	Expense Details	String	(empty)	800		false
×	Amount	Integer	(empty)	40		false
	Insert a new row...					



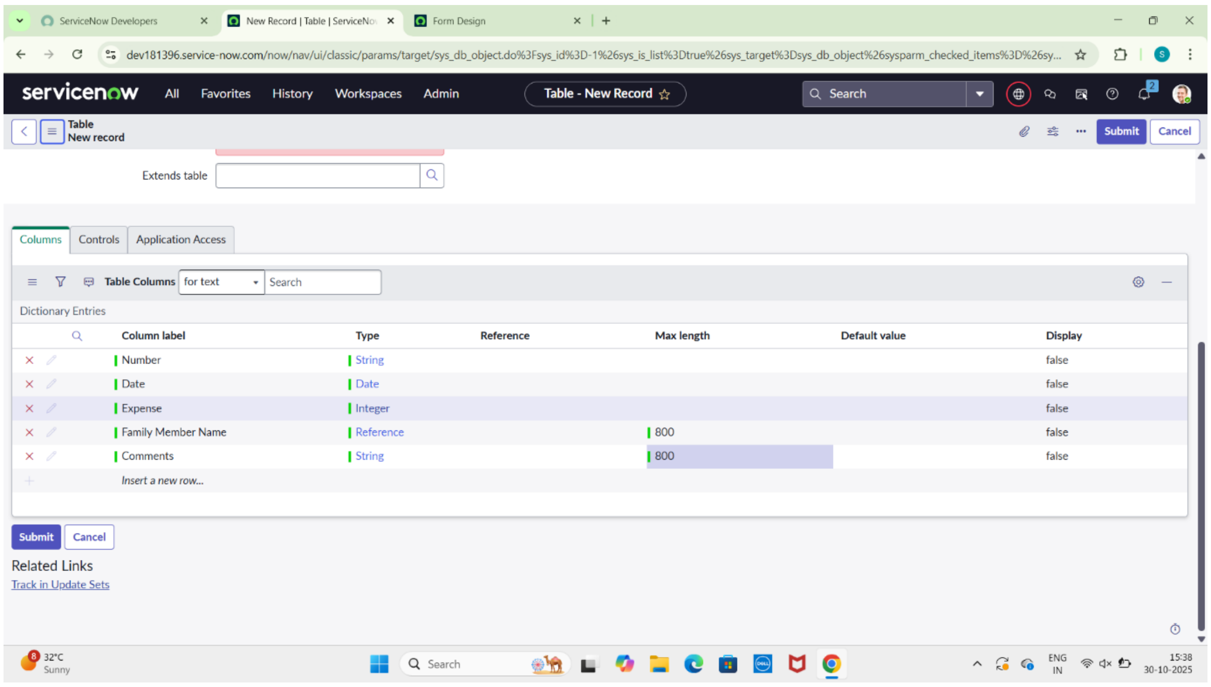


Table
New record

Extends table

Columns | Controls | Application Access

Table Columns for text Search

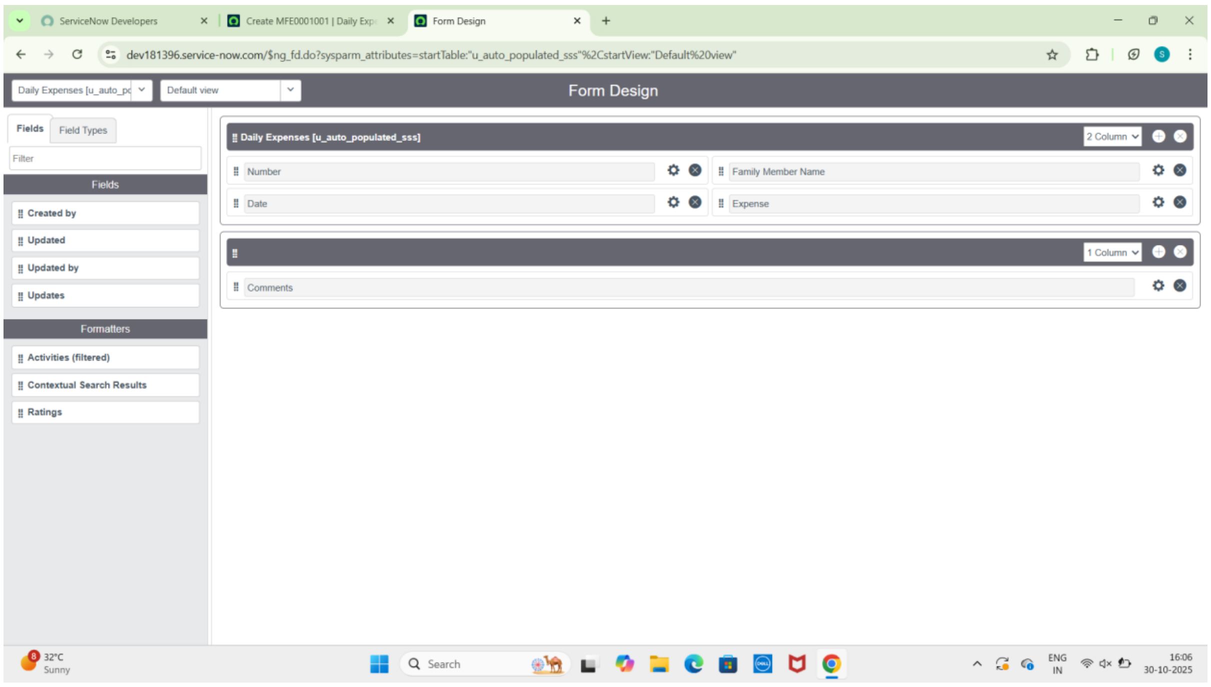
Dictionary Entries

Column label	Type	Reference	Max length	Default value	Display
Number	String				false
Date	Date				false
Expense	Integer				false
Family Member Name	Reference		800		false
Comments	String		800		false
Insert a new row...					

Submit Cancel

Related Links
Track in Update Sets

STEP4: Creation of Table (Daily Expenses)



dev181396.service-now.com/$ng_fd.do?sysparm_attributes=startTable:"u_auto_populated_sss"%2CstartView:"Default%20view"

Daily Expenses [u_auto_po | Default view | Form Design

Fields | Field Types

Fields: Created by, Updated, Updated by, Updates

Formatters: Activities (filtered), Contextual Search Results, Ratings

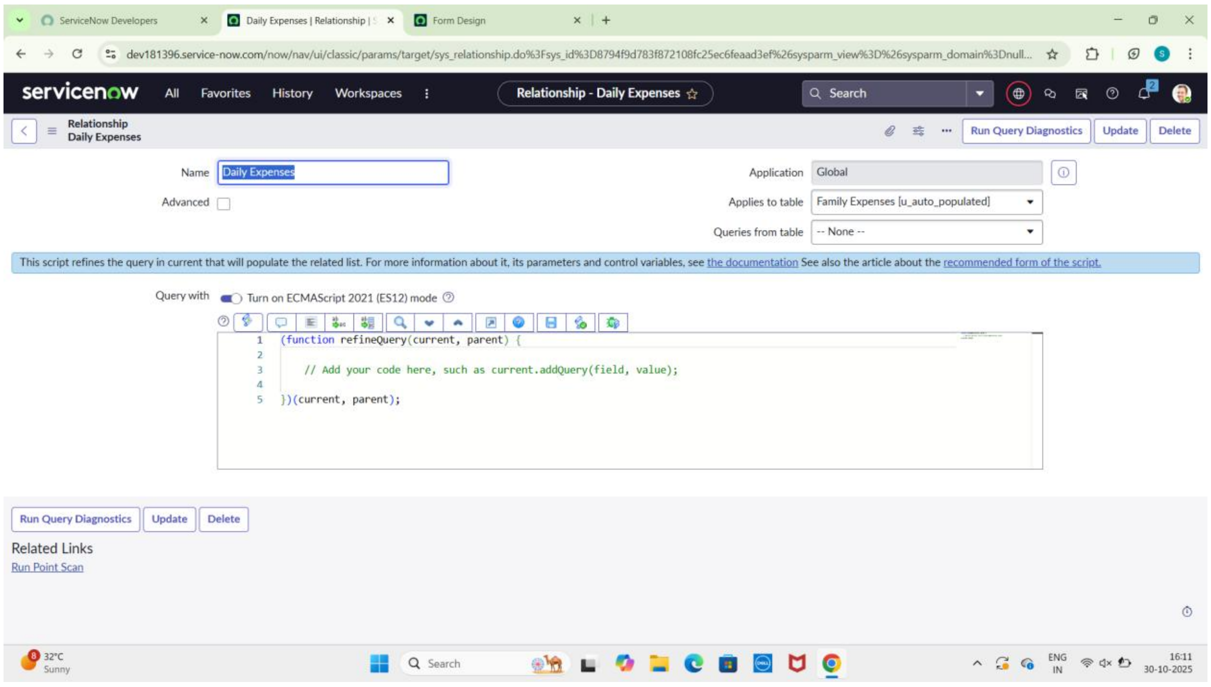
Daily Expenses [u_auto_populated_sss] — 2 Column

Number	Family Member Name
Date	Expense

1 Column

Comments

STEP5: Creation of Relationships



Relationship
Daily Expenses

Name	Daily Expenses	Application	Global
Advanced	☐	Applies to table	Family Expenses [u_auto_populated]
		Queries from table	-- None --

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

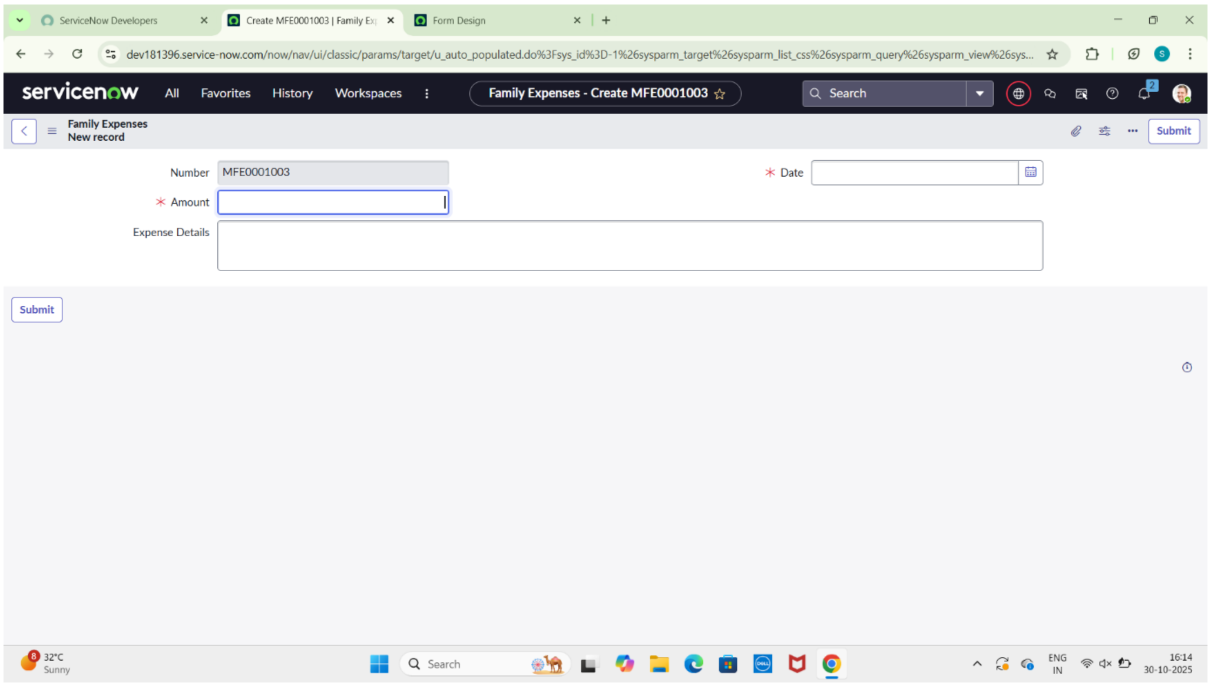
```
(function refineQuery(current, parent) {

    // Add your code here, such as current.addQuery(field, value);

})(current, parent);
```

Related Links
Run Point Scan

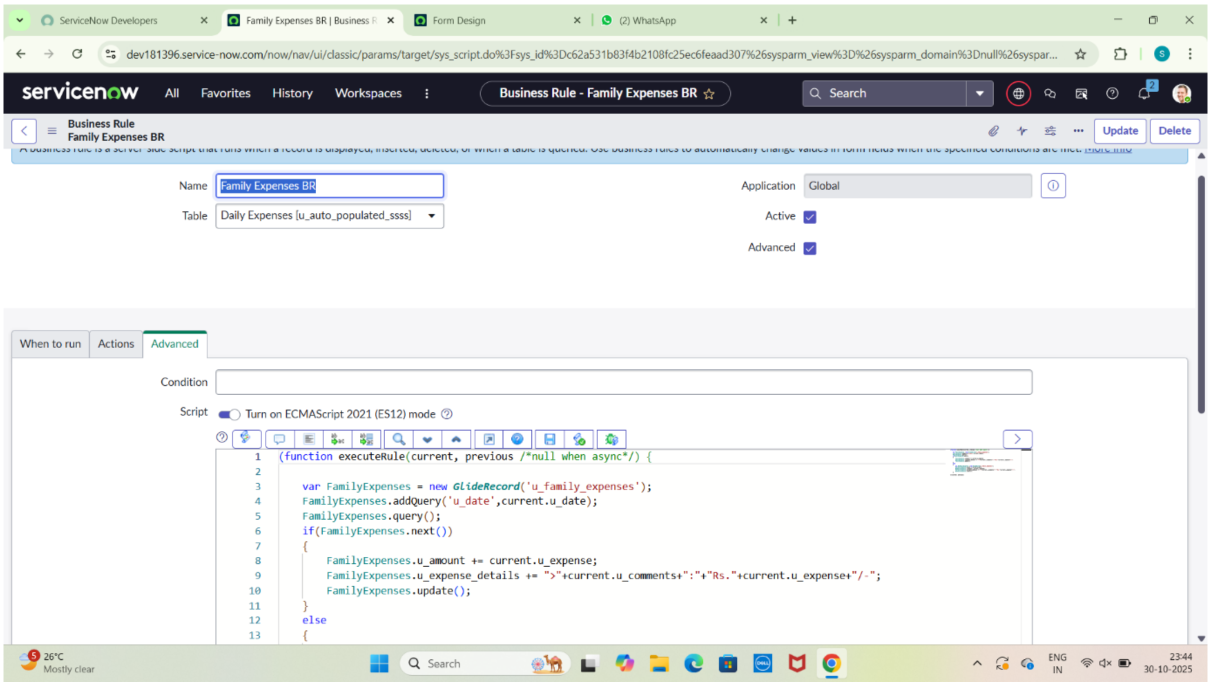
STEP6: Configuring Related Lists on Family Expenses



Family Expenses
New record

Number	MFE0001003	* Date	
* Amount			
Expense Details			

STEP7: Creation of Business Rules

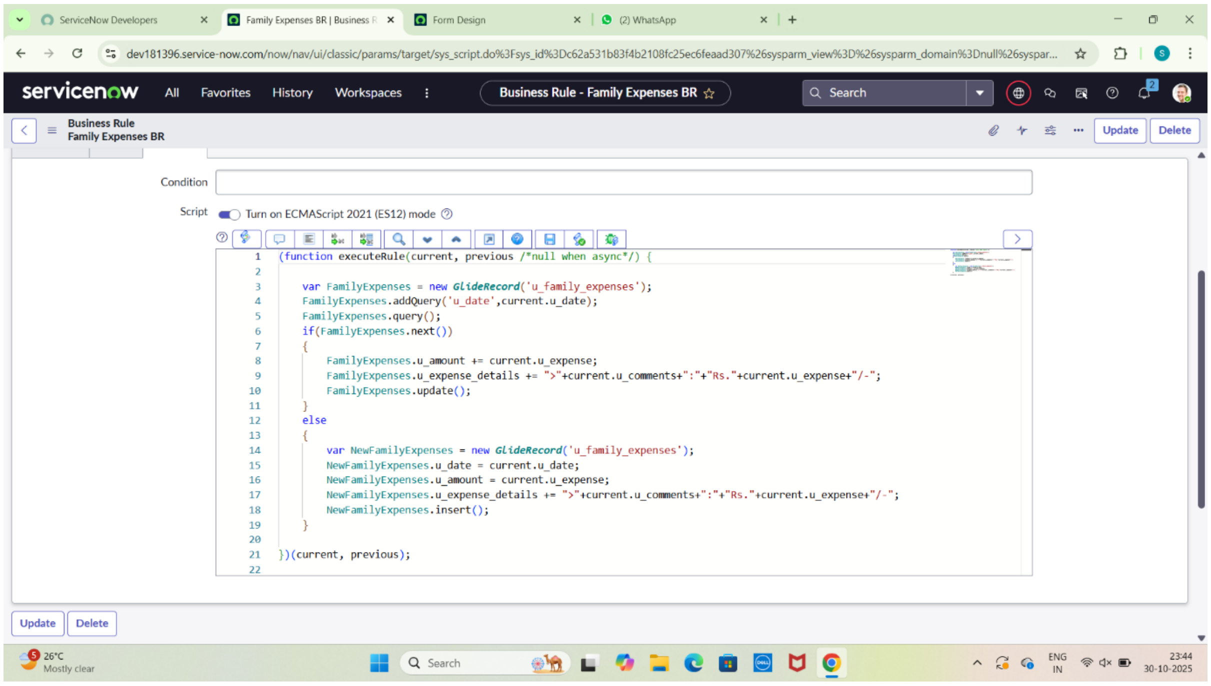

Business Rule
Family Expenses BR

Name: Family Expenses BR
Table: Daily Expenses [u_auto_populated_ssss]
Application: Global
Active: ✓
Advanced: ✓

Condition:
Script: Turn on ECMAScript 2021 (ES12) mode

```
(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
    {
```


Business Rule
Family Expenses BR

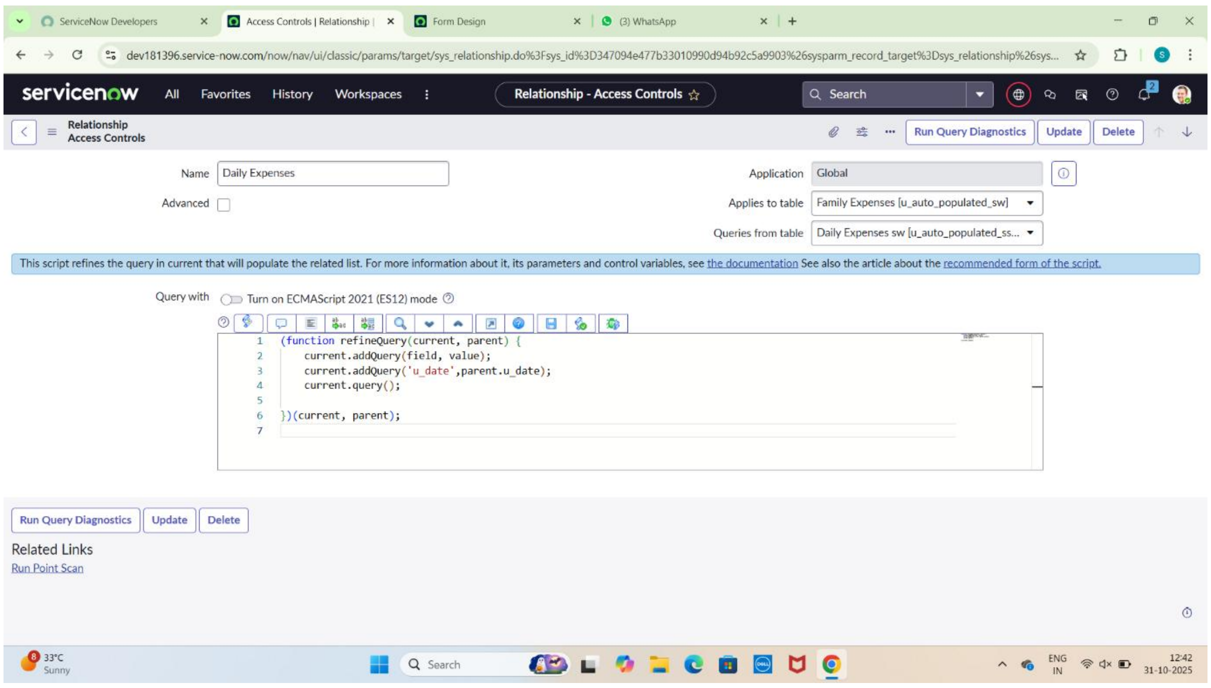
Condition:
Script: Turn on ECMAScript 2021 (ES12) mode

```
(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);
```

STEP8: Configure the Relationship



dev181396.service-now.com/now/nav/ui/classic/params/target/sys_relationship.do%3Fsys_id%3D347094e477b33010990d94b92c5a9903%26sysparm_record_target%3Dsys_relationship%26sys...

Relationship - Access Controls

Name	Daily Expenses	Application	Global
Advanced	☐	Applies to table	Family Expenses [u_auto_populated_sw]
		Queries from table	Daily Expenses sw [u_auto_populated_ss...

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

```
(function refineQuery(current, parent) {
    current.addQuery(field, value);
    current.addQuery('u_date',parent.u_date);
    current.query();

})(current, parent);
```

Related Links
Run Point Scan

Outcome:

The project “Calculating Family Expenses using ServiceNow” successfully provided a digital solution for managing and monitoring family spending activities.

Users can now easily record, track, and analyze daily and overall expenses through custom-built tables and automated workflows.

Conclusion:

This project successfully demonstrates how ServiceNow can be used to build a functional Family Expense Management System.

By using custom tables, relationships, and business rules, the application efficiently tracks daily expenses and provides an organized overview of family spending.

It showcases ServiceNow’s capability beyond ITSM, serving as a platform for real-world data management and process automation.