Calculating Family Expenses using ServiceNow

Objective / Abstract:

The **Calculating Family Expenses using ServiceNow** project is designed to provide a **comprehensive and automated expense management system** for families. The system allows users to record, categorize, and monitor expenses on a daily and overall basis.By leveraging the **ServiceNow platform**, this project automates data collection, ensures real-time synchronization between daily and family expense records, and provides a centralized dashboard for financial insights.

Key goals:

- Simplify expense tracking for each family member.
- Automatically calculate total family expenditure per day.
- Provide a transparent and accessible view of all spending.
- Promote financial awareness and control within the household.

Technologies Used:

Technology / Tool	Purpose
ServiceNow	Platform for database, UI forms, and automation

JavaScript (Business Rules)	Script logic for automatic calculations
GlideRecord API	Server-side data manipulation
Number Maintenance	Auto-number generation for records
Form Design & Related Lists	Custom form layouts and linked records

Modules / Features:

Module 1 – Family Expenses Table

- Stores **total family expenses** per day.
- Fields: Number, Date, Amount, Expense Details.
- Automatically updated when daily expenses are entered.
- Auto-numbered using ServiceNow **Number Maintenance**.

Module 2 – Daily Expenses Table

- Tracks **individual expenses** made by family members.
- Fields: Number, Date, Expense, Family Member Name, Comments.
- Linked to Family Expenses via **Relationships**.
- Auto-calculation of total daily amount using **Business Rules**.

Module 3 – Business Rule (Automation)

- When a new daily expense is added or updated

- Checks if a **Family Expense** entry exists for that date.
- If yes → Updates the total amount and adds new details.
- If not → Creates a new Family Expense record.

Module 4 – Relationships

- Created a **one-to-many relationship** between Family Expenses and Daily Expenses.
- Ensures real-time synchronization of data between tables.

Module 5 – Form Customization

- Made important fields (Date, Amount) **mandatory**.
- Made auto-number field **read-only**.
- Added **related lists** to display daily expenses under family expense records.

System Architecture / Workflow

Workflow Diagram:

System Architecture – Step by Step Explanation

Step 1: User Login to ServiceNow Instance

- The user accesses the **ServiceNow Personal Developer Instance** using their credentials.
- The system provides access to custom applications like Family Expenditure.

Step 2: Open Daily Expenses Form

- The user navigates to the **Daily Expenses** table/module.
- Enters details such as **Date**, **Expense Amount**, **Family Member Name**, and **Comments**.
- Clicks **Submit** to save the record.

Step 3: Business Rule Trigger

- When a **Daily Expense** record is inserted or updated, a **Business Rule** automatically runs.
- This script checks whether an entry for the same **Date** already exists in the **Family Expenses** table.

Step 4: Record Verification in Family Expenses Table

- If a record **exists** for that date → → The system **updates** the total **Amount** and appends new expense details.
- If a record **does not exist** → → A **new Family Expense** record is created for that date.

Step 5: Automatic Update and Synchronization

- The Family Expenses table automatically reflects the **total daily amount** and **expense summary**.
- This ensures real-time synchronization between **Daily Expenses** and **Family Expenses** tables.

Step 6: Relationship Mapping

- A **relationship** is configured between both tables.
- This allows the **Daily Expenses** related to a specific **Family Expense** date to be displayed as a **related list** in the form.

Step 7: View Family Expenses Dashboard

- Users can open the **Family Expenses** module to view:
- Total amount spent per day
- Detailed expense breakdown
- Linked daily entries

Step 8: Reporting and Analysis

- The system provides a summarized view of expenses.
- Users can analyze total spending, view trends, and manage future budgets effectively.

Conclusion

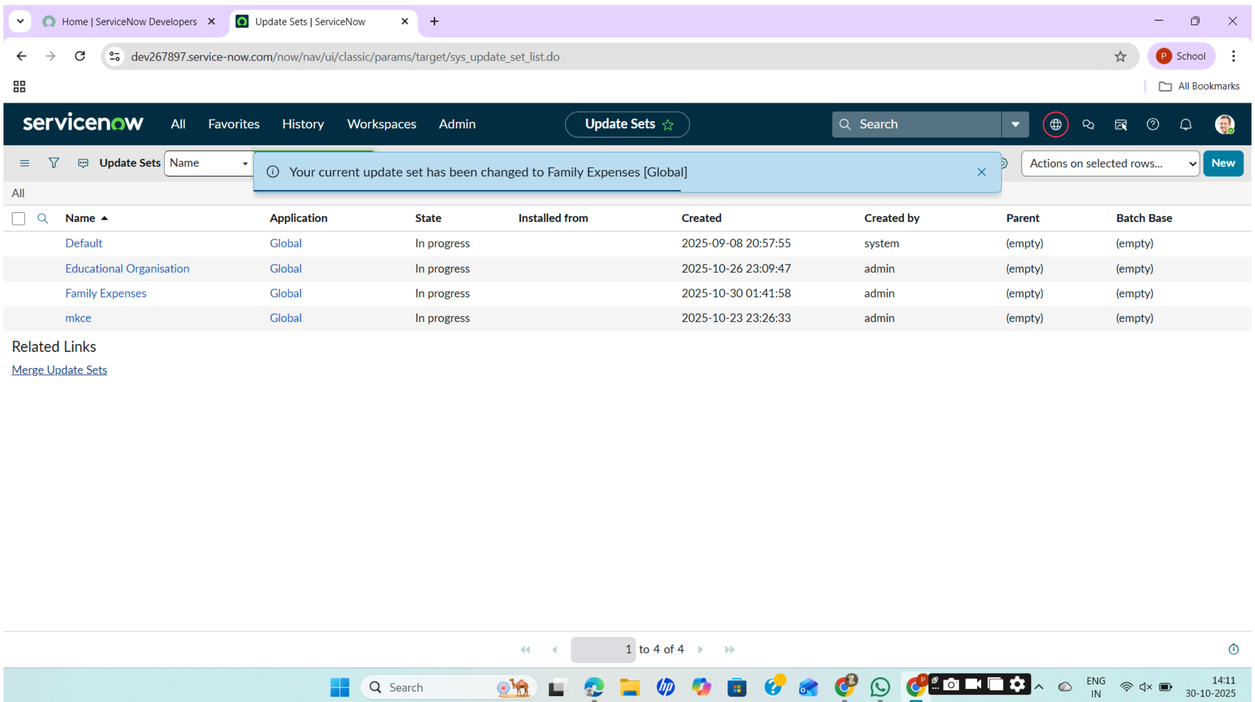
The **"Calculation of Family Expenses Using ServiceNow"** project showcases how the ServiceNow platform can be customized for personal and non-corporate use cases like family financial management.

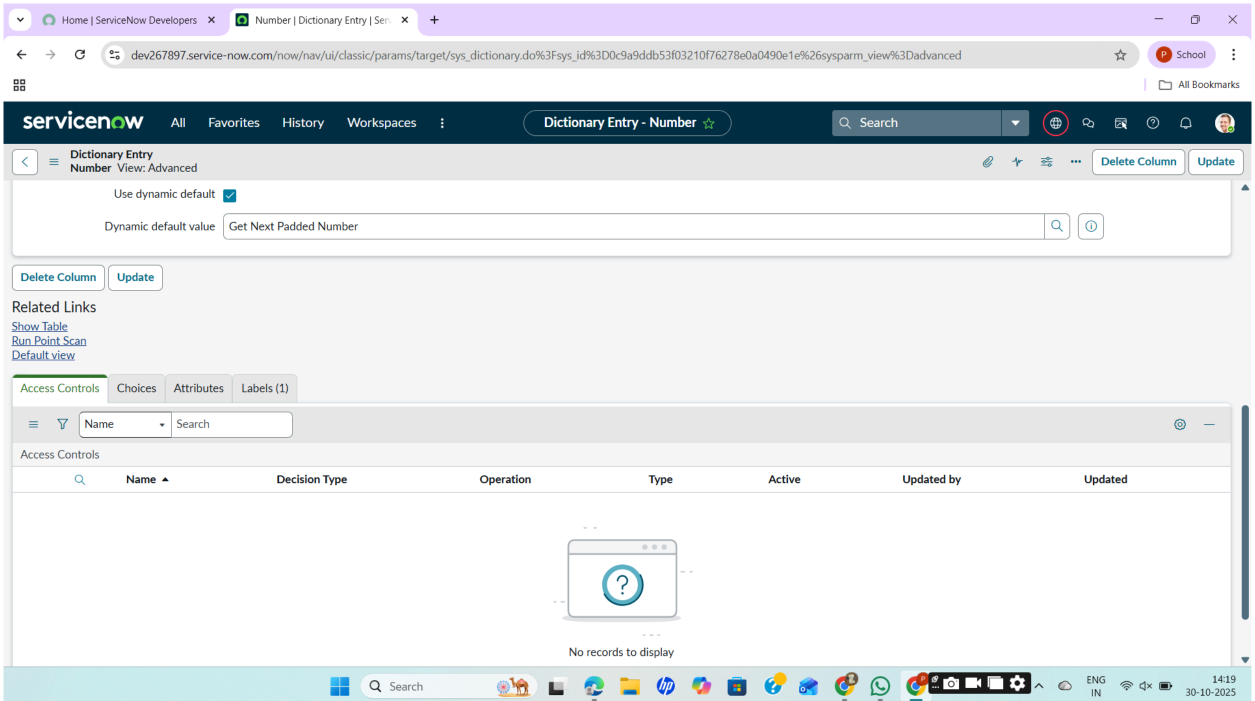
By integrating tables, business rules, and relationships, the system:

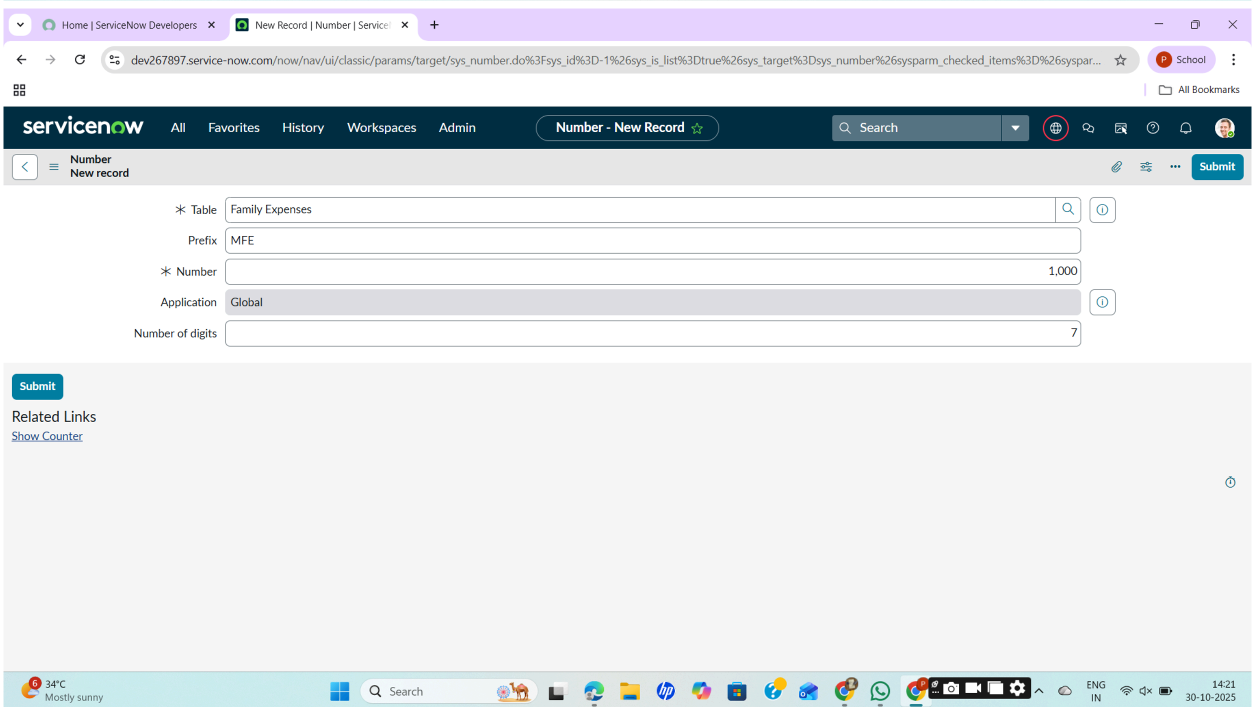
- Automates expense calculations,
- Reduces manual work, and
- Provides a centralized, easy-to-use solution for expense monitoring.

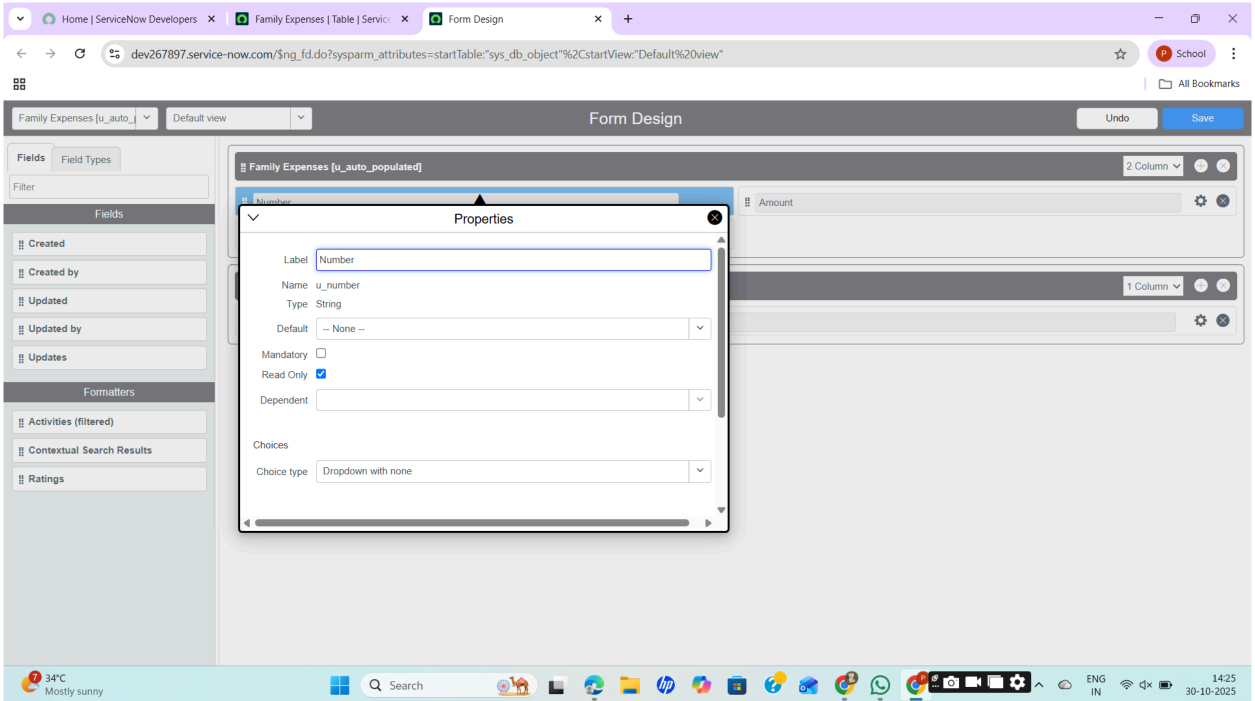
This project can be extended in the future by integrating charts, budget alerts, or mobile app interfaces for faster data entry and real-time tracking.

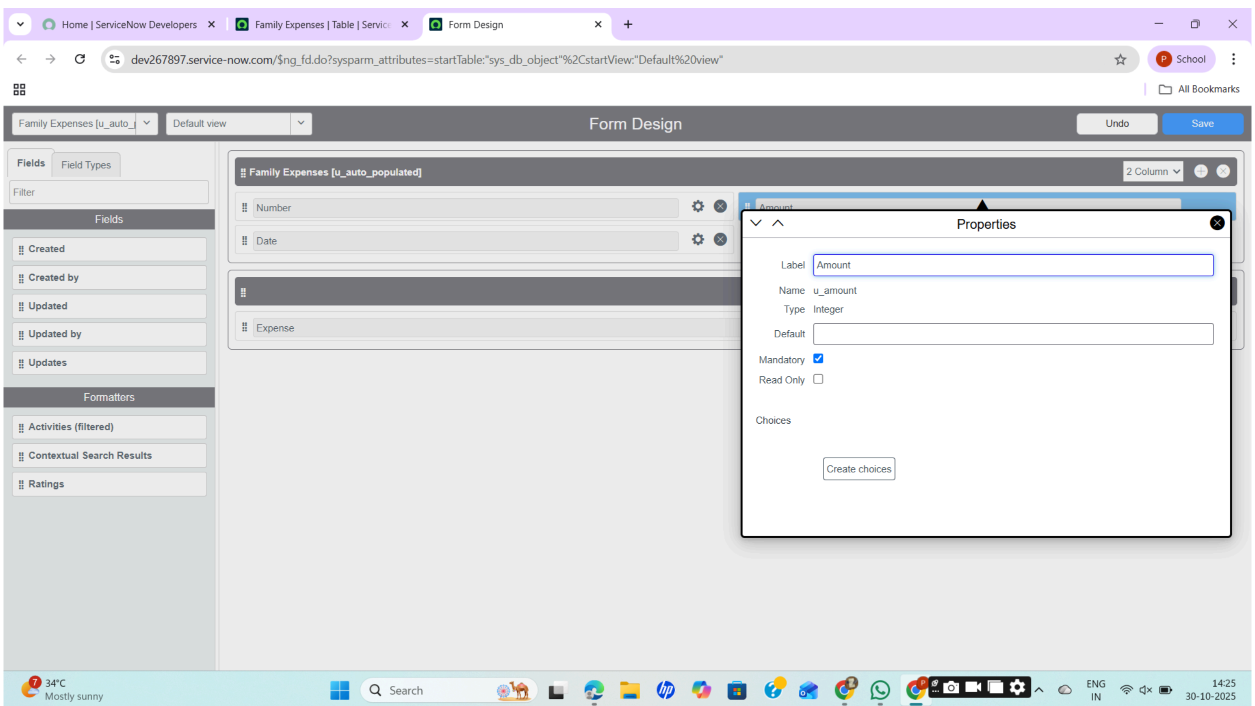
Screenshots:

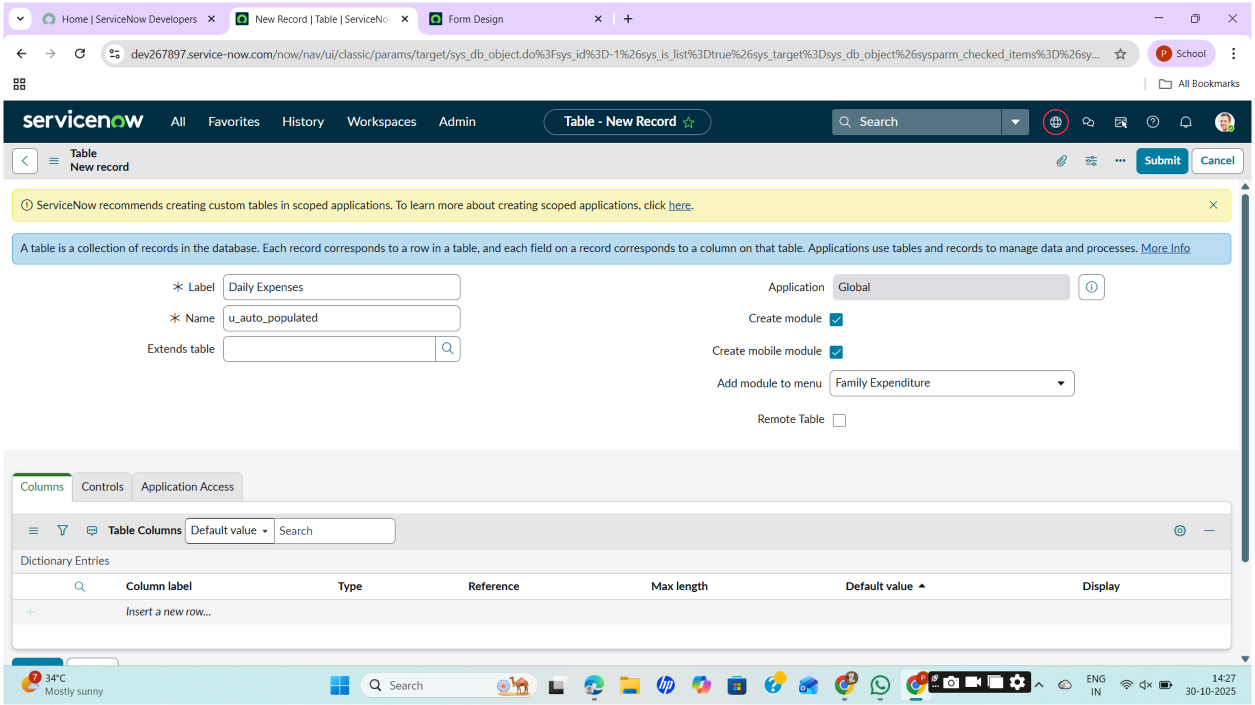


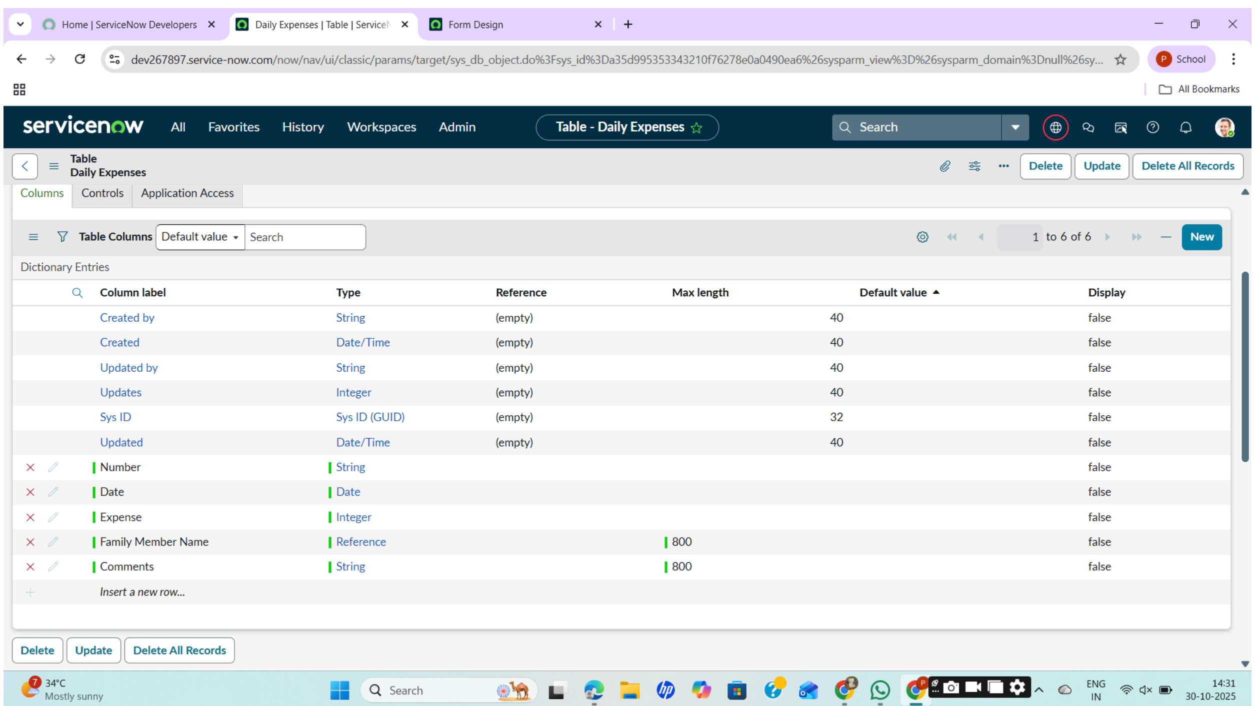

Home | ServiceNow Developers
Number | Dictionary Entry | Ser
dev267897.service-now.com/now/nav/ui/classic/params/target/sys_dictionary.do%3Fsys_id%3D0c9a9ddb53f03210f76278e0a0490e1e%26sysparm_view%3Dadvanced
School
All Bookmarks
servicenow
All
Favorites
History
Workspaces
Dictionary Entry - Number
Search
Dictionary Entry
Number View: Advanced
Delete Column
Update
Use dynamic default
Dynamic default value
Get Next Padded Number
Delete Column
Update
Related Links
Show Table
Run Point Scan
Default view
Access Controls
Choices
Attributes
Labels (1)
Name
Search
Access Controls
Name
Decision Type
Operation
Type
Active
Updated by
Updated
No records to display
Search
ENG
IN
14:19
30-10-2025

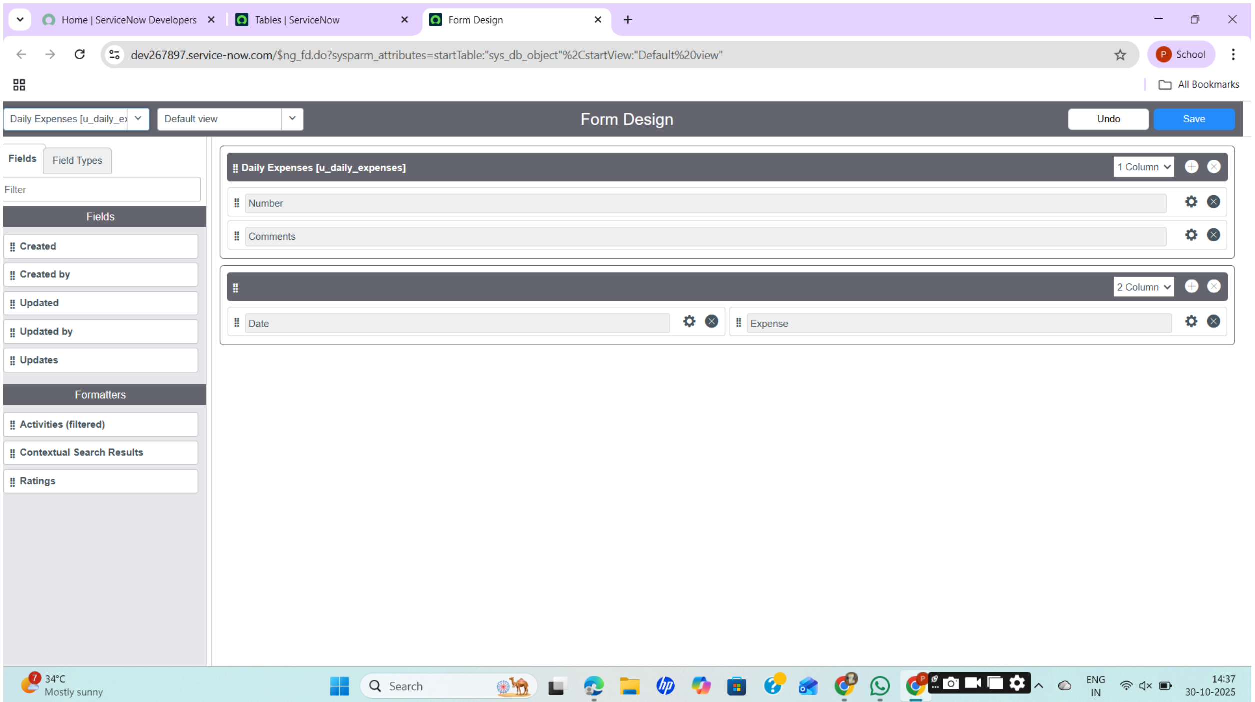

Home | ServiceNow Developers
New Record | Number | Service
dev267897.service-now.com/now/nav/ui/classic/params/target/sys_number.do%3Fsys_id%3D-1%26sys_is_list%3Dtrue%26sys_target%3Dsys_number%26sysparm_checked_items%3D%26syspar...
School
All Bookmarks
servicenow
All
Favorites
History
Workspaces
Admin
Number - New Record
Search
Number
New record
Submit
Table
Family Expenses
Prefix
MFE
Number
1,000
Application
Global
Number of digits
7
Submit
Related Links
Show Counter
34°C
Mostly sunny
Search
ENG
IN
14:21
30-10-2025

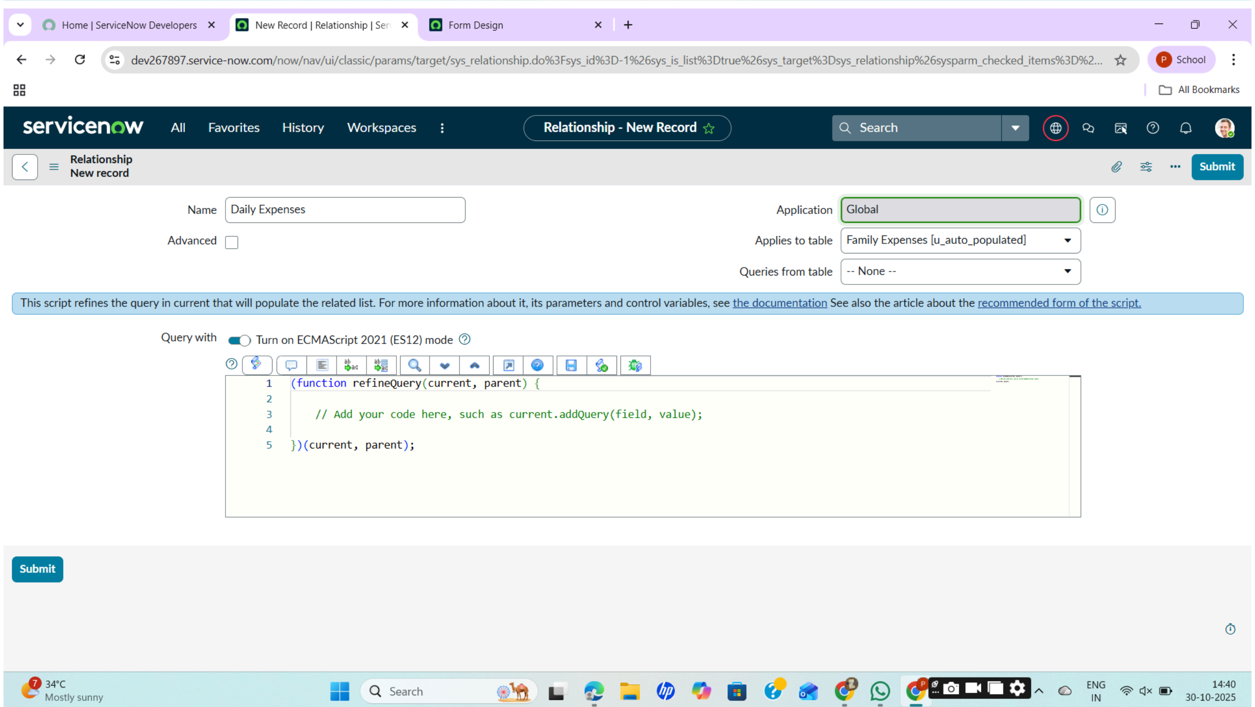

Home | ServiceNow Developers
Family Expenses | Table | Servic
Form Design
dev267897.service-now.com/$ng_fd.do?sysparm_attributes=startTable:"sys_db_object"%2CstartView:"Default%20view"
School
All Bookmarks
Family Expenses [u_auto_
Default view
Form Design
Undo
Save
Fields
Field Types
Filter
Fields
Created
Created by
Updated
Updated by
Updates
Formatters
Activities (filtered)
Contextual Search Results
Ratings
Family Expenses [u_auto_populated]
2 Column
Amount
1 Column
Properties
Label
Number
Name
u_number
Type
String
Default
-- None --
Mandatory
Read Only
Dependent
Choices
Choice type
Dropdown with none
34°C
Mostly sunny
Search
ENG
IN
14:25
30-10-2025

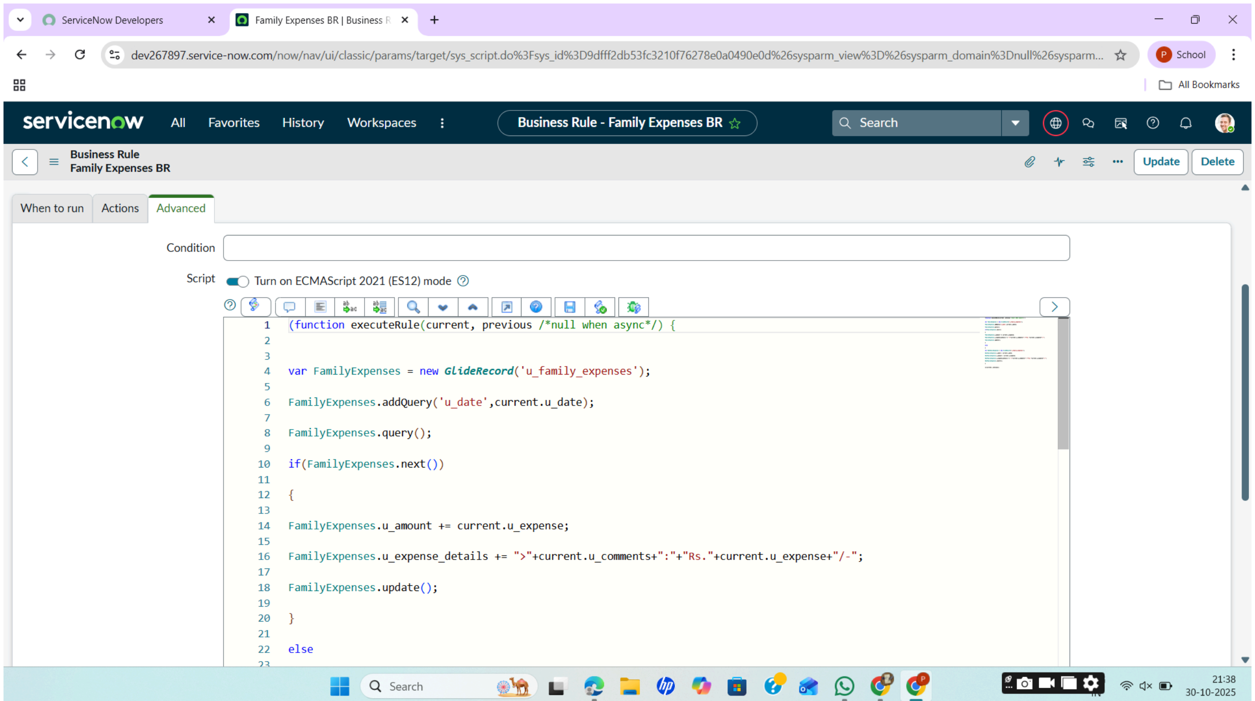

Home | ServiceNow Developers
Family Expenses | Table | Servic
Form Design
dev267897.service-now.com/$ng_fd.do?sysparm_attributes=startTable:"sys_db_object"%2CstartView:"Default%20view"
School
All Bookmarks
Family Expenses [u_auto_
Default view
Form Design
Undo
Save
Fields
Field Types
Filter
Fields
Created
Created by
Updated
Updated by
Updates
Formatters
Activities (filtered)
Contextual Search Results
Ratings
Family Expenses [u_auto_populated]
2 Column
Number
Date
Expense
Properties
Label
Amount
Name
u_amount
Type
Integer
Default
Mandatory
Read Only
Choices
Create choices
34°C
Mostly sunny
Search
ENG
IN
14:25
30-10-2025


Home | ServiceNow Developers
New Record | Table | ServiceNow
Form Design
dev267897.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%26sysparm_checked_items%3D%26sy...
School
All Bookmarks
servicenow
All
Favorites
History
Workspaces
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_auto_populated
Extends table
Application
Global
Create module
Create mobile module
Add module to menu
Family Expenditure
Remote Table
Columns
Controls
Application Access
Table Columns
Default value
Search
Dictionary Entries
Column label
Type
Reference
Max length
Default value
Display
Insert a new row...
34°C
Mostly sunny
Search
ENG
IN
14:27
30-10-2025

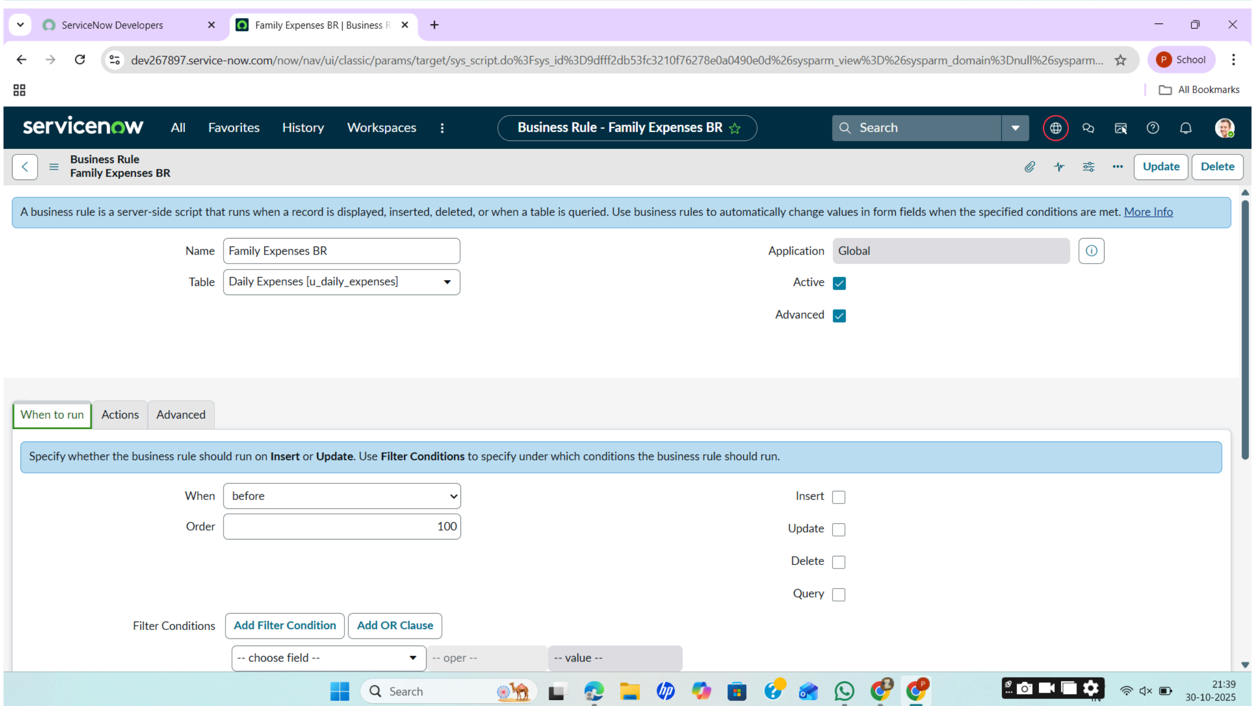

Home | ServiceNow Developers
Daily Expenses | Table | ServiceNow
Form Design
dev267897.service-now.com/now/nav/ui/classic/params/target/sys_db_object.do%3Fsys_id%3Da35d995353343210f76278e0a0490ea6%26sysparm_view%3D%26sysparm_domain%3Dnull%26sy...
School
All Bookmarks
servicenow
All
Favorites
History
Workspaces
Admin
Table - Daily Expenses
Search
Table
Daily Expenses
Delete
Update
Delete All Records
Columns
Controls
Application Access
Table Columns
Default value
Search
1 to 6 of 6
New
Dictionary Entries
Column label | Type | Reference | Max length | Default value | Display
Created by | String | (empty) | 40 | | false
Created | Date/Time | (empty) | 40 | | false
Updated by | String | (empty) | 40 | | false
Updates | Integer | (empty) | 40 | | false
Sys ID | Sys ID (GUID) | (empty) | 32 | | false
Updated | Date/Time | (empty) | 40 | | false
Number | String | | | | false
Date | Date | | | | false
Expense | Integer | | | | false
Family Member Name | Reference | | 800 | | false
Comments | String | | 800 | | false
Insert a new row...
Delete
Update
Delete All Records
34°C
Mostly sunny
Search
ENG
IN
14:31
30-10-2025


Home | ServiceNow Developers
Tables | ServiceNow
Form Design
dev267897.service-now.com/$ng_fd.do?sysparm_attributes=startTable:"sys_db_object"%2CstartView:"Default%20view"
School
All Bookmarks
Daily Expenses [u_daily_e
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]
1 Column
Number
Comments
2 Column
Date
Expense
34°C
Mostly sunny
Search
ENG
IN
14:37
30-10-2025

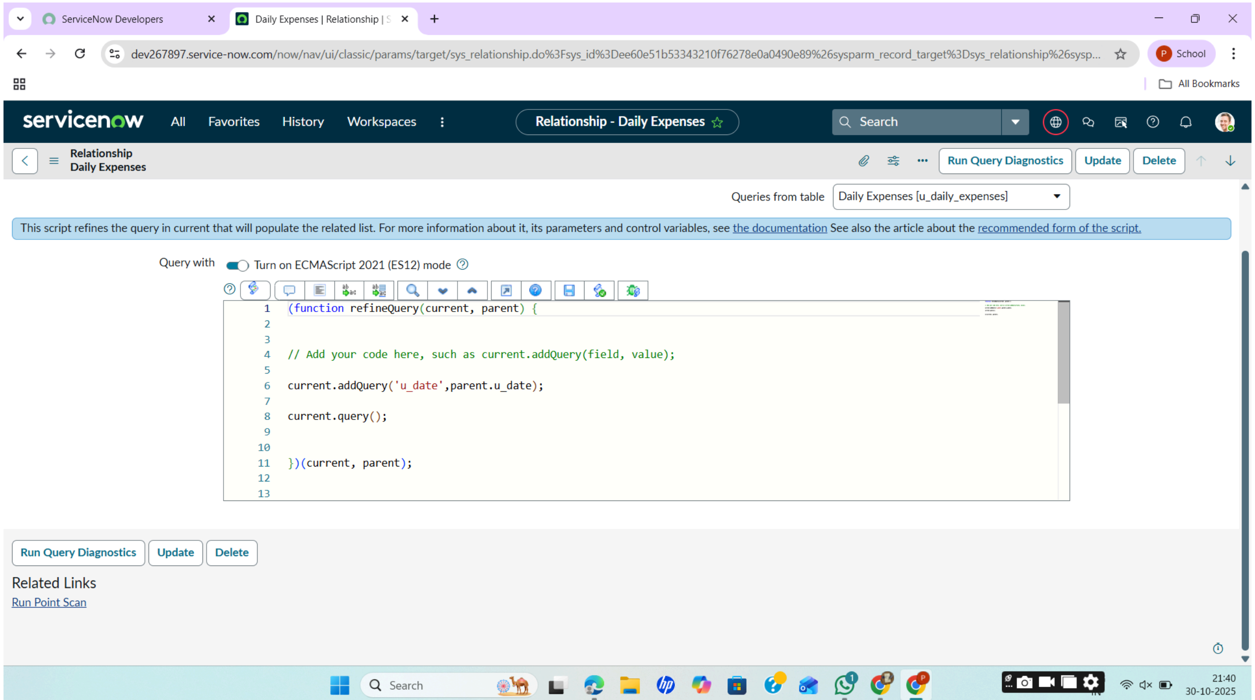
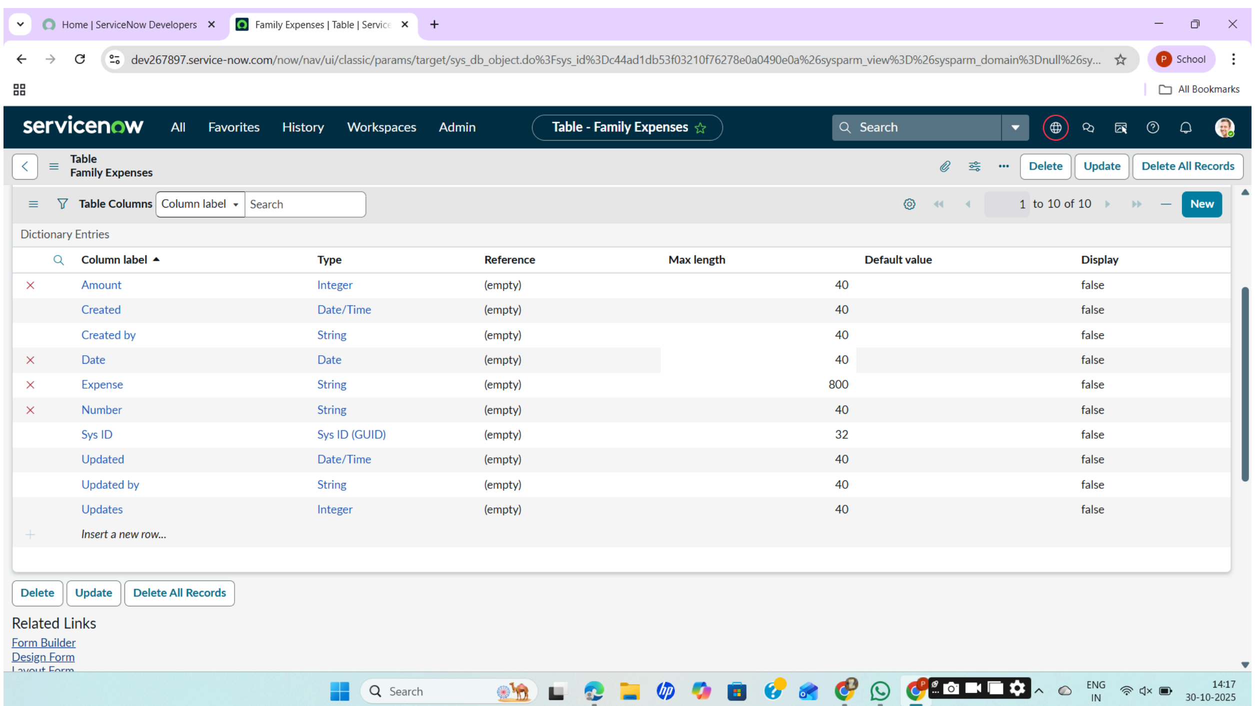

Home | ServiceNow Developers
New Record | Relationship | Ser
Form Design
dev267897.service-now.com/now/nav/ui/classic/params/target/sys_relationship.do%3Fsys_id%3D-1%26sys_is_list%3Dtrue%26sys_target%3Dsys_relationship%26sysparm_checked_items%3D%2...
School
All Bookmarks
servicenow
All
Favorites
History
Workspaces
Relationship - New Record
Search
Relationship
New record
Submit
Name
Daily Expenses
Advanced
Application
Global
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);
Submit
34°C
Mostly sunny
Search
ENG
IN
14:40
30-10-2025



ServiceNow Developers
Family Expenses BR | Business R
dev267897.service-now.com/now/nav/ui/classic/params/target/sys_script.do%3Fsys_id%3D9dfff2db53fc3210f76278e0a0490e0d%26sysparm_view%3D%26sysparm_domain%3Dnull%26sysparm...
School
All Bookmarks
servicenow
All
Favorites
History
Workspaces
Business Rule - Family Expenses BR
Search
Business Rule
Family Expenses BR
Update
Delete
When to run
Actions
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
Search
21:38
30-10-2025



ServiceNow Developers
Family Expenses BR | Business R
dev267897.service-now.com/now/nav/ui/classic/params/target/sys_script.do%3Fsys_id%3D9dfff2db53fc3210f76278e0a0490e0d%26sysparm_view%3D%26sysparm_domain%3Dnull%26sysparm...
School
All Bookmarks
servicenow
All
Favorites
History
Workspaces
Business Rule - Family Expenses BR
Search
Business Rule
Family Expenses BR
Update
Delete
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_expenses]
Application
Global
Active
Advanced
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.
When
before
Order
100
Insert
Update
Delete
Query
Filter Conditions
Add Filter Condition
Add OR Clause
-- choose field --
-- oper --
-- value --
Search
21:39
30-10-2025


ServiceNow Developers
Daily Expenses | Relationship |
dev267897.service-now.com/now/nav/ui/classic/params/target/sys_relationship.do%3Fsys_id%3Dee60e51b53343210f76278e0a0490e89%26sysparm_record_target%3Dsys_relationship%26sysp...
School
All Bookmarks
servicenow All Favorites History Workspaces
Relationship - Daily Expenses
Search
Relationship
Daily Expenses
Run Query Diagnostics Update Delete
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
Turn on ECMAScript 2021 (ES12) mode
(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);
Run Query Diagnostics Update Delete
Related Links
Run Point Scan
Search
21:40
30-10-2025

Home | ServiceNow Developers
Family Expenses | Table | Service
dev267897.service-now.com/now/nav/ui/classic/params/target/sys_db_object.do%3Fsys_id%3Dc44ad1db53f03210f76278e0a0490e0a%26sysparm_view%3D%26sysparm_domain%3Dnull%26sy...
School
All Bookmarks
servicenow All Favorites History Workspaces Admin
Table - Family Expenses
Search
Table
Family Expenses
Delete Update Delete All Records
Table Columns Column label Search
1 to 10 of 10
New
Dictionary Entries
Column label Type Reference Max length Default value Display
Amount Integer (empty) 40 false
Created Date/Time (empty) 40 false
Created by String (empty) 40 false
Date Date (empty) 40 false
Expense String (empty) 800 false
Number String (empty) 40 false
Sys ID Sys ID (GUID) (empty) 32 false
Updated Date/Time (empty) 40 false
Updated by String (empty) 40 false
Updates Integer (empty) 40 false
Insert a new row...
Delete Update Delete All Records
Related Links
Form Builder
Design Form
Search
ENG IN
14:17
30-10-2025