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 Smart
Internz



K.S.K COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTERSCIENCE AND ENGINEERING

CALCULATING FAMILY EXPENSES USING SERVICENOW

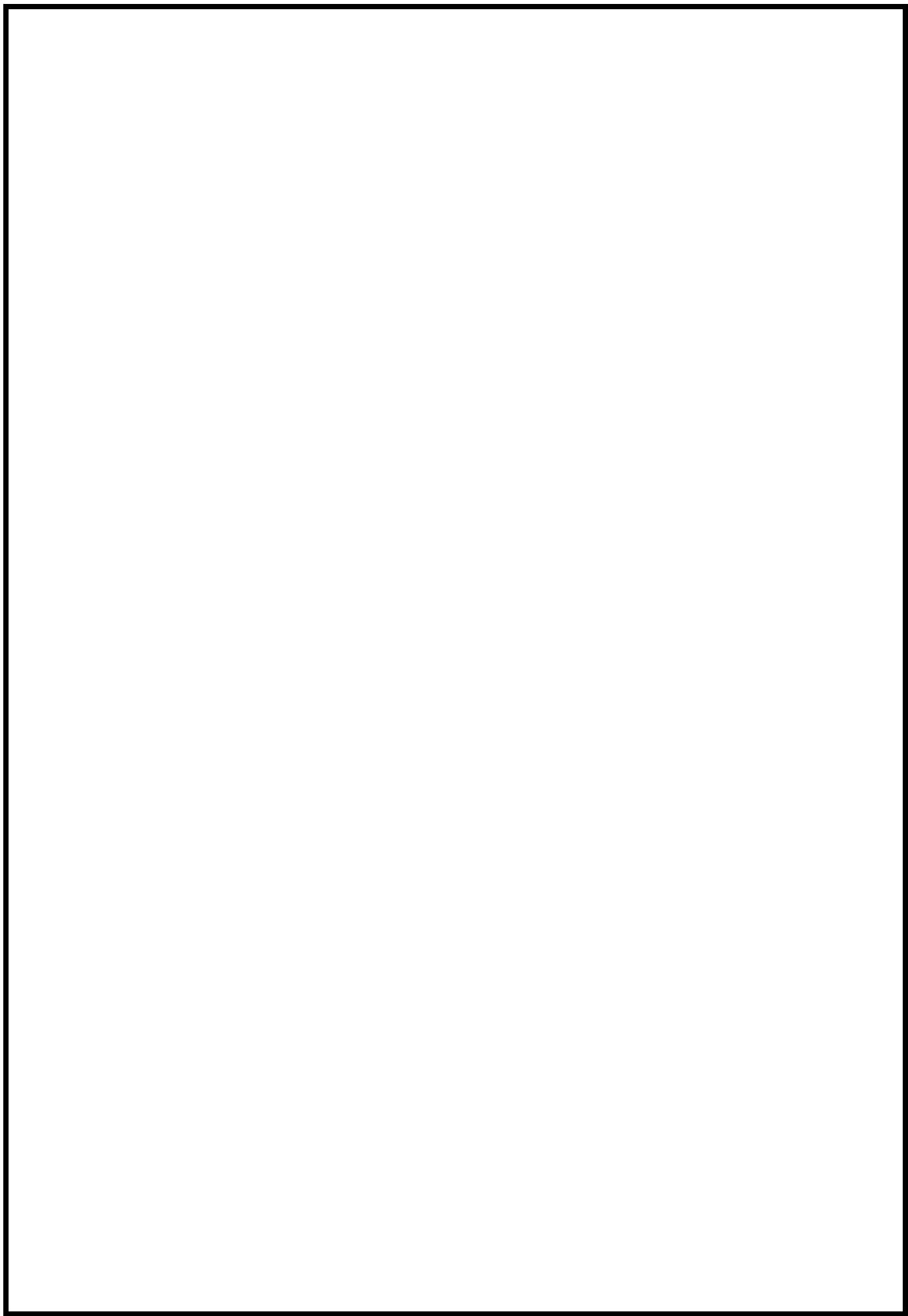
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Team Size: 3

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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:

- 1. User-Friendly Interface:** Simple and interactive forms for adding and managing daily or monthly expenses.
- 2. Expense Categorization:** Allows users to classify expenses under categories such as food, transport, bills, and entertainment.
- 3. Automated Calculations:** Automatically calculates total and category-wise expenses.
- 4. Data Storage and Retrieval:** Securely stores all expense records in ServiceNow tables for easy access.
- 5. Report Generation:** Generates monthly and yearly expense summaries for better financial analysis.
- 6. Dashboard Visualization:** Displays graphical insights into spending trends through charts and dashboards.
- 7. 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

The screenshot shows a web browser with three tabs open:

- Problem statement request
- (2) WhatsApp
- naan mudhalvan logo - Google

The main content area is the ServiceNow developer portal, specifically the "Manage my instance" page for instance dev181396. The URL in the address bar is developer.servicenow.com/dev.do#!/manage-instance.

The page displays the following information:

- Status:** Online (refresh button available)
- Installed Studio Versions:** App engine studio, Creator studio, ServiceNow studio, all marked as "Installed".
- Your Current Version:** Zurich
- Latest release:** (button)
- Instance URL:** https://dev181396.
- User name:** admin
- Current password:** (redacted)
- User role:** Admin

Below this, there is a section titled "Plugins for your instance (46)" with two dropdown filters: "All activation statuses" and "All demo data statuses". The list of plugins includes:

- Activate all Software Asset (Not activated)
- Cloud Management (Not activated)

The bottom navigation bar includes weather information (29°C, Mostly clear), a search bar, and other icons.

STEP 2: 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

Update Sets Name Search

All

<input type="checkbox"/>	Name	Application	State	Installed from
	Default	Pipeline	In progress	
	Default	Security Center	In progress	
	Default	Global	In progress	
	Default	Now Assist Troubleshooting	In progress	
	Family Expenses	Global	In progress	

Related Links

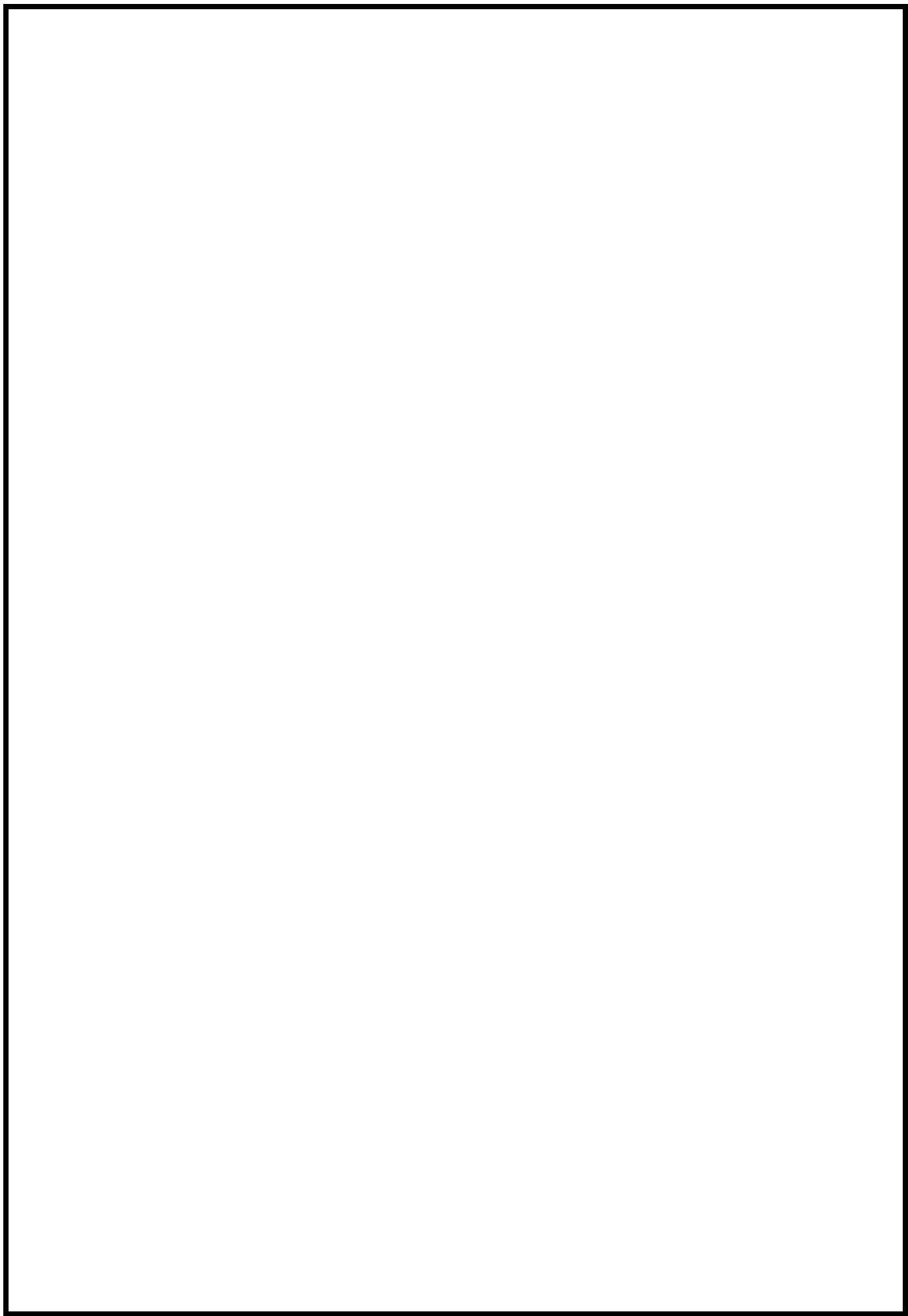
[Merge Update Sets](#)

9 33°C Sunny

Search

1 to 5

STEP3:Creation of Table(Family Expenses)



ServiceNow Developers Family Expenses | Table | Service

dev181396.service-now.com/nav/ui/classic/params/target/sys_db_object.do%3Fsys_id%3Df6d4a51b83787

servicenow All Favorites History Workspaces Admin Table - Family Expenses

Table Family Expenses

Name: u_auto_populated

Columns Controls Application Access

Table Columns for text Search

Dictionary Entries

Column label	Type	Reference	Max length
Created by	String	(empty)	
Sys ID	Sys ID (GUID)	(empty)	
Created	Date/Time	(empty)	
Updated by	String	(empty)	
Updates	Integer	(empty)	
Updated	Date/Time	(empty)	
Date	Date	(empty)	
Number	String	(empty)	
Expense Details	String	(empty)	
Amount	Integer	(empty)	
Insert a new row...			

9: 33°C Sunny

Search

Camel icon

File icon

Cloud icon

ServiceNow Developers Numbers | ServiceNow

dev181396.service-now.com/nav/ui/classic/params/target/sys_number_list.do

servicenow All Favorites History Workspaces Admin **Numbers**

≡ **Numbers**

All

<input type="checkbox"/>	Prefix	Number ▲	Number of digits	Table
	MSG	0	7	Email
	DEPLOY	0	7	MID I
	SR	0	8	Scan I
	PROFILE	0	7	MID S
	TOUR	0	7	Guide
	(empty)	0	9	Indica
	KBS_DEPLOY	0	7	MID I
	SGTCOMMIT	0	7	SGT N
	(empty)	0	0	Text I
	(empty)	0	9	Break
	MID_	0	5	MID S
	(empty)	0	10	Build
	SGTSCAN	0	7	SGT S
	SLAR	0	7	SLA R
	EVALEXEC	1	8	A/B T
	TEMPLATE	1	1	Temp
	IMS	1	7	Intera

1 to 20 of 14

8 32°C Sunny  Search    

The screenshot shows the ServiceNow Form Design interface. The top navigation bar includes tabs for 'ServiceNow Developers', 'Create MFE0001001 | Family E...', and 'Form Design'. The main title is 'Family Expenses [u_auto_populated]'. A dropdown menu indicates 'Default view'. The right side of the screen is labeled 'Form Design'. On the left, there's a sidebar with tabs for 'Fields' (selected) and 'Field Types'. Under 'Fields', sections for 'Created', 'Created by', 'Updated', 'Updated by', and 'Updates' are listed. Below them is a 'Formatters' section with 'Activities (filtered)', 'Contextual Search Results', and 'Ratings'. The main workspace contains two table structures. The first table has a header row '!! Family Expenses [u_auto_populated]' and two data rows: '## Number' and '## Amount'. The second table has a header row '##' and one data row '## Expense Details'. At the bottom of the screen, there's a weather icon showing '32°C Sunny', a search bar, and several small icons.

STEP4: Creation of Table(Daily Expenses)

ServiceNow Developers Numbers | ServiceNow

dev181396.service-now.com/nav/ui/classic/params/target/sys_number_list.do

servicenow

All Favorites History Workspaces Admin Numbers

≡ Numbers Number Search

All

<input type="checkbox"/>	Prefix	Number ▲	Number of digits	Table
	MSG	0	7	Email
	DEPLOY	0	7	MID I
	SR	0	8	Scan I
	PROFILE	0	7	MID S
	TOUR	0	7	Guide
	(empty)	0	9	Indica
	KBS_DEPLOY	0	7	MID I
	SGTCOMMIT	0	7	SGT N
	(empty)	0	0	Text I
	(empty)	0	9	Break
	MID_	0	5	MID S
	(empty)	0	10	Build
	SGTSCAN	0	7	SGT S
	SLAR	0	7	SLA R
	EVALEXEC	1	8	A/B T
	TEMPLATE	1	1	Temp
	IMS	1	7	Intera

1 to 20 of 14

8 32°C Sunny

Search

ServiceNow Developers | Create MFE0001001 | Daily Expenses | Form Design

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

Daily Expenses [u_auto_pc] Default view Form Design

Fields Field Types

Filter

Fields

- Created by
- Updated
- Updated by
- Updates

Formatters

- Activities (filtered)
- Contextual Search Results
- Ratings

!! Daily Expenses [u_auto_populated_sss]

- Number
- Date

!!

- Comments

8 32°C Sunny

Search

The screenshot shows the ServiceNow Form Design interface for a 'Daily Expenses' record. The left sidebar lists various fields and formatters. The main area displays the 'Fields' section with two items: 'Number' and 'Date'. Below this is a section labeled '!!' containing a single item 'Comments'. The bottom of the screen shows a weather widget (8, 32°C, Sunny) and a navigation bar with icons for search, help, and other system functions.

STEP5: Creation of Relationship

ServiceNow Developers | Daily Expenses | Relationship | Form Design

Relationship - Daily Expenses

Relationship Daily Expenses

Name: Daily Expenses

Advanced:

This script refines the query in current that will populate the related list. For more information about it, its parameters and control variab...
Query with: Turn on ECMAScript 2021 (ES12) mode

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

Run Query Diagnostics | Update | Delete

Related Links
Run Point Scan

32°C Sunny

Search

STEP6: Configuring Related Lists on Family Expenses

ServiceNow Developers Create MFE0001003 | Family Expenses Form Design

dev181396.service-now.com/nav/ui/classic/params/target/u_auto_populated.do?sys_id=1%26sysp

servicenow All Favorites History Workspaces : Family Expenses - Create MFE0001003

Family Expenses
New record

Number: MFE0001003

* Amount:

Expense Details

Submit

8 32°C Sunny

Search

STEP7: Creation of Business Rules

ServiceNow Developers New Record | Business Rule | Se Form Design

dev181396.service-now.com/nav/ui/classic/params/target/sys_script.do?sys_id=1%26sys_islist%3D

servicenow All Favorites History Workspaces : Business Rule - New Rec

Business Rule
New record

Name: Family Expenses BR

Table: Daily Expenses [u_auto_populated_sss]

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 runs.

When: before

Order: 100

Filter Conditions: Add Filter Condition, Add OR Clause

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

Role conditions:

Submit, Weather icon (32°C, Sunny), Search, Home, Help, Log Out

ServiceNow Developers Family Expenses BR | Business Form Design What's

dev181396.service-now.com/nav/ui/classic/params/target/sys_script.do%3Fsys_id%3Dc62a531b834b210

servicenow All Favorites History Workspaces : Business Rule - Family Expenses

Business Rule
Family Expenses BR

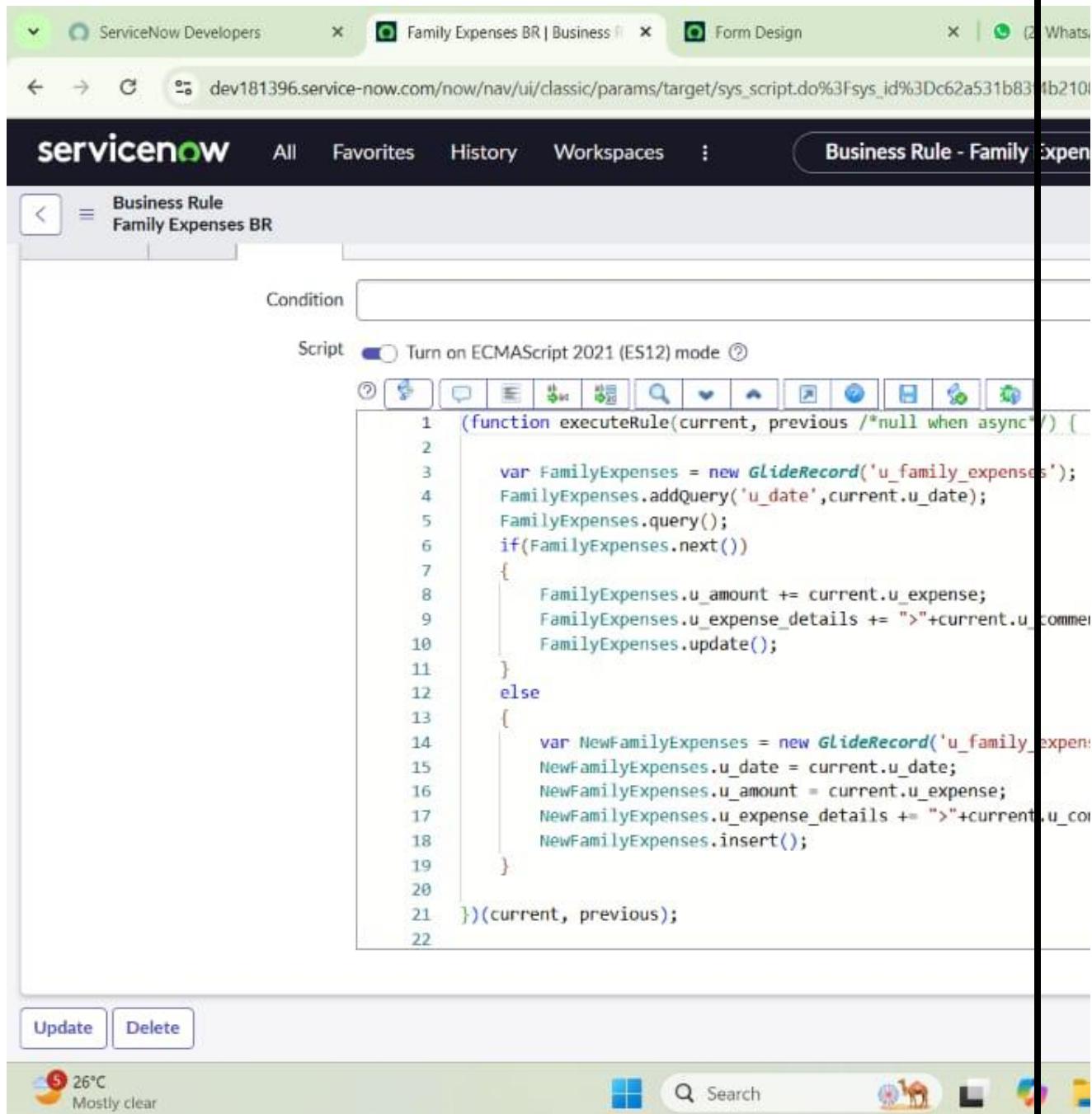
Condition: []

Script: Turn on ECMAScript 2021 (ES12) mode [?](#)

```
① (function executeRule(current, previous /*null when async*/) {  
  2  
  3   var FamilyExpenses = new GlideRecord('u_family_expenses');  
  4   FamilyExpenses.addQuery('u_date',current.u_date);  
  5   FamilyExpenses.query();  
  6   if(FamilyExpenses.next())  
  7   {  
  8     FamilyExpenses.u_amount += current.u_expense;  
  9     FamilyExpenses.u_expense_details += ">" + current.u_commer  
10     FamilyExpenses.update();  
11   }  
12   else  
13   {  
14     var NewFamilyExpenses = new GlideRecord('u_family_expenses');  
15     NewFamilyExpenses.u_date = current.u_date;  
16     NewFamilyExpenses.u_amount = current.u_expense;  
17     NewFamilyExpenses.u_expense_details += ">" + current.u_commer  
18     NewFamilyExpenses.insert();  
19   }  
20 })(current, previous);  
21  
22
```

Update Delete

5 26°C Mostly clear Search 🐫 🎓 🏢 🌈 🌞



The screenshot shows the ServiceNow Business Rule editor for a rule named 'Family Expenses BR'. The rule has no condition defined. The script is written in ECMAScript 2021 (ES12) mode. The code logic is as follows: it first checks if there is an existing record for the current date. If yes, it adds the current expense amount to the total and updates the record. If no, it creates a new record with the current expense amount and inserts it. The script uses GlideRecords to interact with the 'u_family_expenses' table.

STEP8:Configure the Relationship

ServiceNow Developers Daily Expenses | Relationship Form Design

dev181396.service-now.com/nav/ui/classic/params/target/sys_relationship.do?sys_id=3D8794f9d783f872108fc25ec6fea

servicenow

All Favorites History Workspaces : Relationship - Daily Expenses

Relationship Daily Expenses

Name: Daily Expenses

Advanced

The 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.

Query with Turn on ECMAScript 2021 (ES12) mode

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

Run Query Diagnostics Update Delete

Related Links

Run Point Scan

32°C Sunny

Search

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.

