

# ServiceNow Leave Management System

*A custom-built ServiceNow application for managing employee leave requests with automated validation, approval, and leave balance tracking.*

## 1. 🔍 Introduction

Employee leave management is a common HR use case. While ServiceNow provides standard ITSM modules, custom HR workflows often require lightweight, flexible apps.

This project demonstrates how to design and implement a **Leave Management System on ServiceNow** from scratch in just a few days — showcasing skills in:

- Client Scripts (onLoad, onChange)
- Script Includes with GlideAjax
- Business Rules
- Table design and relationships
- Real-time form feedback

## 2. 🎯 Objective

- Provide employees with an easy way to **apply for different leave types** (Casual, Medical, Emergency).
- Automatically **validate leave requests** (date ranges, availability of leaves).
- **Deduct balances** only after manager approval.
- Give users **real-time visibility** into their leave balances at the time of applying.
- Prevent invalid or excessive leave applications.

## 3. 🏠 System Design

### Tables

- **u\_leave\_database** → Stores leave balances per user (Casual, Medical, Emergency).
- **u\_leave\_management** → Stores leave applications (fields: User, Leave Type, Start Date, End Date, Number of Days, Status).

### Core Components

1. **Client Script (onLoad)**

- Fetches leave balances from u\_leave\_database using GlideAjax.
- Displays an **info message**:

*Your Leave Balance: Casual – 7 | Medical – 5 | Emergency – 2*

## 2. Client Script (onChange – Dates)

- Validates that End Date  $\geq$  Start Date.
- Calculates and auto-populates the number of days.
- Prevents invalid entries by clearing the field and showing an alert.

## 3. Script Include (LeaveBalanceUtils)

- Contains getLeaveBalance() method.
- Used by the onLoad script to return user's leave balance.

## 4. Business Rule (Before Update → State: Approved)

- Checks if requested days  $\leq$  available balance.
- Deducts the number of days from the correct leave type.
- Prevents approval if balance is insufficient, with an error message:

*Insufficient leave balance for Medical Leave.*

## 4. Workflow

### 1. New Request → User opens “Apply for Leave” form.

- System shows real-time leave balance.
- User selects type, start date, end date.
- Days auto-calculated.

### 2. Submit → Request enters *New* state.

### 3. Approval → Manager reviews request.

- If valid and balance available → State changes to *Approved*, balance deducted.
- If balance insufficient → System blocks approval and notifies manager.

## 5. Features

- **Real-Time Balance Display** → User always knows how many leaves are available.
- **Automatic Validation** → No invalid date ranges.

- **Auto Days Calculation** → Reduces manual input.
- **Balance Deduction on Approval** → Ensures integrity of data.
- **Error Handling** → Clear messages for insufficient balance.
- **Extensible Design** → Can easily add new leave types or roles (e.g., HR view).

## 6. 🧑‍🎤 Demonstration

- **Info Message** showing live balance.
- **Date validation** with alerts.
- **Days auto-calculation.**
- **Balance deduction** after approval.
- **Error prevention** for insufficient balance.

*(Attach screenshots + video demo here in GitHub/docs)*

## 7. 🚀 Why This Project Matters

- Shows ability to **design a complete custom application in ServiceNow.**
- Demonstrates understanding of **platform scripting (GlideAjax, Business Rules, Client Scripts).**
- Solves a **real HR problem** with automation.
- Built in **2–3 days**, showing speed of learning and execution.

## 8. 🚀 Possible Enhancements

- Add **multi-level approval workflow.**
- Add **reports & dashboards** for HR/Managers.
- Integrate with **ServiceNow HRSD module.**
- Add **email notifications** on state changes.

## 9. Screenshots

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All
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Leave Management Systems

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Application scope: Global

Modern set: Default Console

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Leave Management Systems

Number

Search

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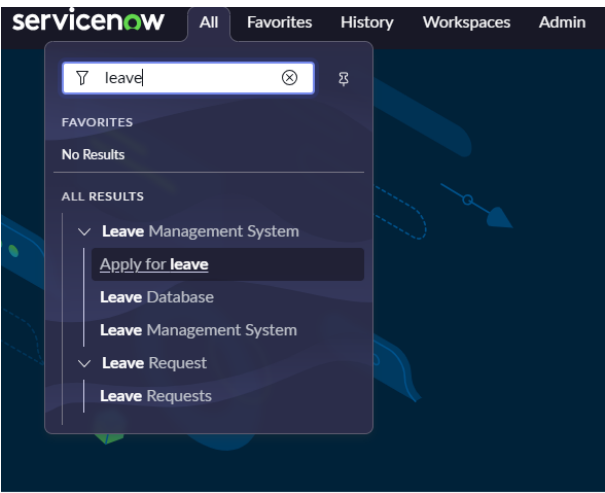
Actions on selected rows...

New

All

<input type="checkbox"/>	🔍	Number	Employee ID	Name	Emergency Contact Number	Leave type	Start Date	End Date	Number of days	Reason	State	Manager
<input type="checkbox"/>		LVMS0001136	1201	System Administrator		Medical	2025-08-30	2025-09-04	6	Fewer	Approved	Abraham Lincoln
<input type="checkbox"/>		LVMS0001128	1201	System Administrator		Emergency	2025-08-30	2025-08-31	2	Sick	Approved	Abraham Lincoln
<input type="checkbox"/>		LVMS0001134	1201	System Administrator		Casual	2025-08-30	2025-09-01	3	Going home	Approved	Abraham Lincoln
<input type="checkbox"/>		LVMS0001133	1201	System Administrator		Casual	2025-08-30	2025-09-02	4	Sick	Approved	Abraham Lincoln
<input type="checkbox"/>		LVMS0001131	1201	System Administrator		Casual	2025-08-30	2025-09-02	4	Going home	Approved	Abraham Lincoln

All > User Name >= syste				
User ▲	Casual	Medical	Emergency	Created
Search	Search	Search	Search	Search
System Administrator	7.0	4.0	5	2025-08-29 02:36:01
Tamara Declue	10.0	10	5	2025-08-29 02:36:01
Tami Trybus	10.0	10	5	2025-08-29 02:36:01
Tammie Schwartzwalde	10.0	10	5	2025-08-29 02:36:01
Tash Dubrovska	10.0	10	5	2025-08-29 02:36:02
Taylor Fogerty	10.0	10	5	2025-08-29 02:36:01
Taylor Vreeland	10.0	10	5	2025-08-29 02:36:01
Ted Bozelle	10.0	10	5	2025-08-29 02:36:01
Ted Keppel	10.0	10	5	2025-08-29 02:36:01
Teodoro Gaboury	10.0	10	5	2025-08-29 02:36:01
Teri Erlewine	10.0	10	5	2025-08-29 02:36:01
Terra Plagee	10.0	10	5	2025-08-29 02:36:01
Terrance Nimmer	10.0	10	5	2025-08-29 02:36:01
Terrell Rodda	10.0	10	5	2025-08-29 02:36:01
Theron Hambright	10.0	10	5	2025-08-29 02:36:01
Thomas Jefferson	10.0	10	5	2025-08-29 02:36:01
Tia Lino	10.0	10	5	2025-08-29 02:36:02
Tia Neumaier	10.0	10	5	2025-08-29 02:36:02
Tiffany Knust	10.0	10	5	2025-08-29 02:36:01
Timothy Janski	10.0	10	5	2025-08-29 02:36:01



Client Script  
display number of leaves

New client-scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "isolate script" field. To disable this feature for all new globally-scoped client-side scripts set the system property "glide.script.block.client.globals" to false.

Name: display number of leaves

Table: Leave Management System [u\_leave\_manag...

UI Type: All

Type: onLoad

Application: Global

Active: ☒

Inherited: ☐

Global: ☒

Description: </>

Messages: </>

Script: </>

```
1 function onLoad() {  
2   var ga = new GlideAjax("LeaveBalanceUtils");  
3   ga.addParam("sysparm_name", "getLeaveBalance");  
4   ga.getXMLAnswer(function(response) {  
5     if (response) {  
6       g_form.addInfoMessage("Your Leave Balance : " + response);  
7     }  
8   });  
9 }  
10  
11
```

Isolate script: ☒

Script Include  
LeaveBalanceUtils

Name: LeaveBalanceUtils

API Name: global.LeaveBalanceUtils

Application: Global

Accessible from: This application scope only

Client callable: ☒

Active: ☒

Description: </>

Script: </>

```
1 var LeaveBalanceUtilsBalanceUtils = Class.create();  
2 LeaveBalanceUtils.prototype = Object.extend(Object.prototype, {  
3   getLeaveBalance: function() {  
4     var gr = new GlideRecord("u_leave_database");  
5     gr.addQuery("u_user", gs.getUserID());  
6     gr.query();  
7     if (gr.next()) {  
8       return "Casual: " + gr.u_casual +  
9         " | Medical: " + gr.u_medical +  
10        " | Emergency: " + gr.u_emergency;  
11     }  
12     return "No leave record found!";  
13   }  
14 });  
15
```

Protection policy: -- None --

Leave Management System

NumberLVMS0001047

\* NameSystem Administrator

Emergency Contact Number

\* StateNew

\* Leave typeCasual

\* Reason

\* Employee ID1201

\* ManagerAbraham Lincoln

\* Start Date2025-08-30

\* End Date2025-09-01

\* Number of days

Submit

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AllFavoritesHistoryWorkspacesAdmin

Leave Management System - Create System Administrator

Application scope: Global  
Update set: Default [Global]

<≡Leave Management System  
New record

Your Leave Balance : Casual: 7.0 | Medical: 4.0 | Emergency: 5

Leave Management System

NumberLVMS0001137

\* NameSystem Administrator

Emergency Contact Number

\* StateNew

\* Leave typeCasual

\* Reason

\* Employee ID1201

\* ManagerAbraham Lincoln

\* Start Date

\* End Date

\* Number of days

Submit