Prevent user deletion if assigned to an incident
Project report

INTRODUCTION

PROJECT: Prevention user deletion if assigned to an incident

You are not allowed to delete a user from the system if that user is currently assigned to handle any incident.

Importance:

- Incidents have a field like Assigned To pointing to a user.
- If that user is deleted, the field may become empty or broken, leading to orphaned records.
- Preventing deletion ensures incident records stay valid and accurate.
- Each incident needs someone responsible for its resolution.
- If the assigned user is deleted, no one is held accountable, which can delay or stall the resolution process.
- Deleting users while they're linked to records makes reporting and analysis difficult or misleading.
- This rule forces administrators to reassign incidents to other active users before deletion.
- Broken references can cause system errors, failed lookups, or unexpected behavior.

Project overview:

To prevent a user from deleting an incident record in ServiceNow when they are assigned to the incident overview, you should configure Access Control Lists (ACLs) on the Incident table. Specifically, you'll need to modify the "delete" ACL to restrict deletion based on user roles or other conditions.

Purpose:

1. Identify the relevant ACL
2. Modify the "delete" ACL
3.Deactivate the UI Action (Optional)
4.Maintain incident ownership and accountability
5.prevent data inconsistencies
6.preserve audit trails

IDEATION PHASE

Problem statement:

In an IT Service Management environment, users are frequently assigned to incidents for issue resolution and tracking. However, the current system lacks a validation mechanism to prevent the deletion of a user who is still actively assigned to incidents. This can lead to broken data references, loss of accountability, and disruption in workflow continuity.
There is a need to implement a safeguard that prevents such deletions unless all assigned incidents are closed or reassigned.

Objective:

The primary objective of preventing user deletion when they are assigned to an active incident in ServiceNow is to avoid data loss and maintain data integrity. Deleting a user record that is associated with an incident could lead to orphaned records, inconsistencies, and make it difficult to track the history and resolution of the incident. Instead of deletion, users should be deactivated or locked out to prevent them from logging in, but their records should be retained for historical and auditing purposes.

Challenges:

- **Admins must manually identify and reassign incidents before deleting a user.**
- **In large systems, this process can be time-consuming and error-prone.**
- **If an employee leaves the organization, and they are still assigned to incidents, their deletion gets delayed.**
- **Some incidents may be closed, inactive, or forgotten, but still assigned.**
- **Automated scripts or integrations that delete users may fail unexpectedly if the user is assigned to an incident.**
- **Managers may not immediately understand why a user cannot be deleted.**
- **Some organizations want to allow deletion in specific cases (e.g., only for resolved incidents).**
- **In large-scale implementations, checking incident assignments for every user deletion request could slow down performance or impact database load.**

REQUIREMENT ANALYSIS

Solution Requirement :

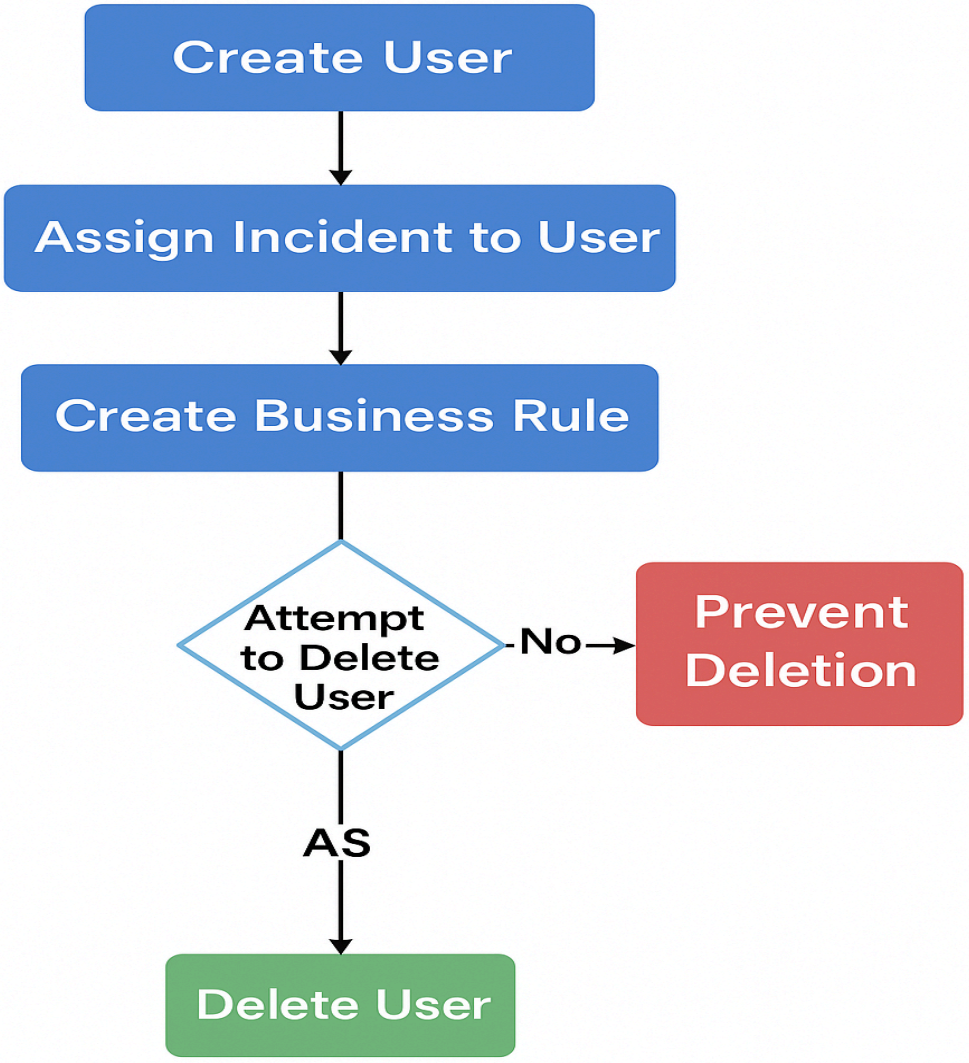
Functional Requirements:

S.No	Functional Requirements	Description
1	User creation ● Create users	User creation involves defining a new user record with details like User ID, name, and email.
2	Assign incident to user ● Assign incidents	Assigning an incident to a user involves updating the "Assigned to" field on the incident record with the name of the individual responsible for resolving the issue.
3	Business Rule creation ● Create Business rule	A business rule is a server-side script that executes when a record is inserted, updated, deleted, or queried, or when a table is queried.
4	Test Deletion ● Attempt to delete assigned user	Deleting a test, such as in the Automated Test Framework (ATF), permanently removes the test and its associated data, including results. However, if the test step is used in other tests, it cannot be deleted until it is removed from those other tests
5	Test with unassigned user ● Attempt to delete unused user	Testing with an unassigned user typically involves verifying how the system behaves when a task or record is not assigned to a specific user. This can include scenarios like unassigned incidents, cases, or other work items, and how the system handles them in workflows, notifications, and reporting.

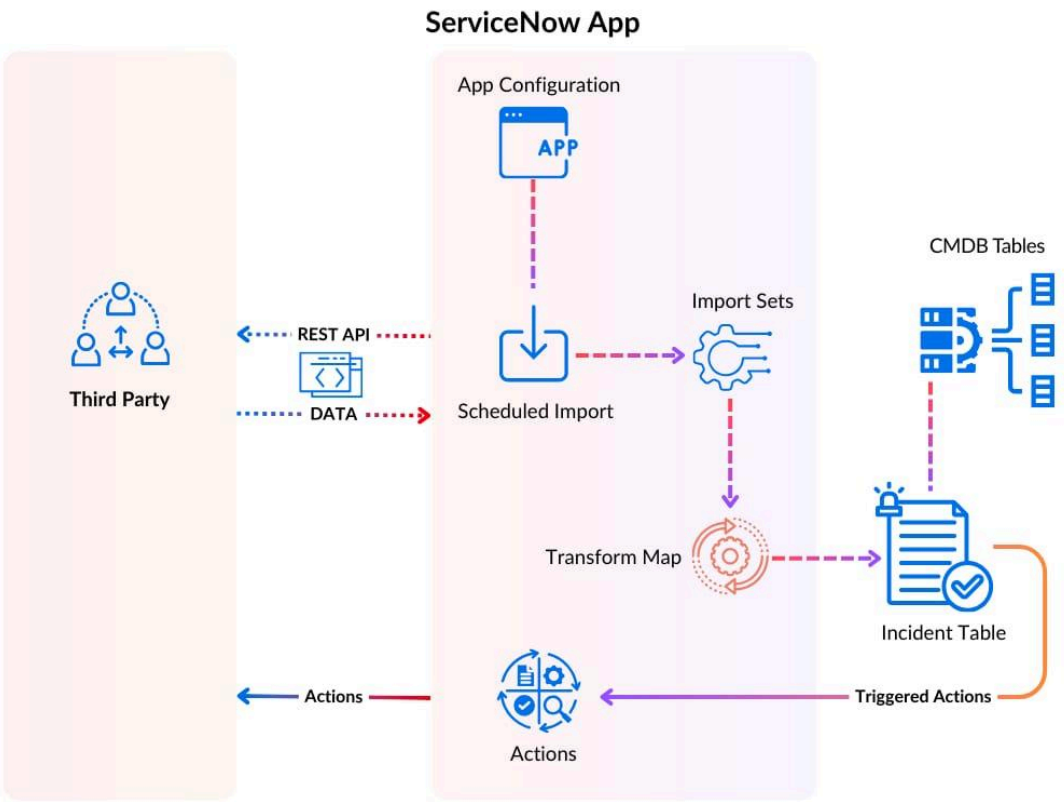
Non-functional Requirements:

S.No	Non-functional Requirements	Description
1.	Usability	Usability refers to how easily and effectively users can accomplish their goals within the platform.
2.	Security	ServiceNow provides a robust security framework designed to protect customer data and ensure the integrity of the Now Platform
3.	Reliability	In ServiceNow, reliability, particularly within the context of Site Reliability Engineering (SRE), focuses on ensuring the consistent and dependable performance of IT services.
4.	Performance	ServiceNow Performance Analytics is a tool that allows organizations to measure, track, and analyze key performance indicators (KPIs) to understand and improve business processes.
5.	Availability	Availability refers to the percentage of time a service or system is accessible and operational for its intended users.
6.	Scalability	Scalability in ServiceNow refers to the platform's ability to handle increasing workloads and user demands without performance degradation as an organization grows.

Data flow diagram



Technology stack:



- Scheduled imports automate the process of importing data into the platform at specified intervals.
- An import set is a staging table that temporarily holds data imported from an external source before it's mapped and inserted into target ServiceNow tables.
- A transform map defines how data from an import set (a staging area for external data) is mapped and transformed into a target ServiceNow table.
- CMDB (Configuration Management Database) tables are used to store information about all configuration items (CIs) within an organization's IT environment.
- The incident table (incident) is the core table used for managing incidents within the Incident Management application.

PROJECT DESIGN

Proposed solution:

Project team shall fill the following information in the proposed solution template

S. No	Parameter	Description
1.	Problem statement (problem to be solved)	In an IT Service Management environment, users are frequently assigned to incidents for issue resolution and tracking. However, the current system lacks a validation mechanism to prevent the deletion of a user who is still actively assigned to incidents. This can lead to broken data references, loss of accountability, and disruption in workflow continuity. There is a need to implement a safeguard that prevents such deletions unless all assigned incidents are closed or reassigned.
2.	Idea / Solution description	To address the risk of data inconsistency and loss of accountability, a validation mechanism should be implemented in ServiceNow to prevent the deletion of users who are still assigned to incidents.
3.	Novelty/Uniqueness	The uniqueness of this solution lies in its proactive control mechanism that directly ties user lifecycle management to IT service operations. Unlike standard deletion checks, this approach introduces a context-aware validation that preserves critical relationships between users and service records.
4.	Social impact/customer satisfaction	While this may seem like a purely technical feature, the social impact of preventing user deletion tied to incident records plays a meaningful role in how organizations foster accountability, transparency, and trust in their digital service environments.
5.	Business model (Revenue Model)	Implementing a control to prevent user deletion when assigned to an incident can be structured as part of a value-driven business model that enhances service quality, operational efficiency, and compliance for organizations using ServiceNow.
6.	Scalability of the Solution	The solution to prevent user deletion when assigned to an incident in ServiceNow is highly scalable and can evolve with organizational growth, complexity, and ITSM maturity.

FUNCTIONAL AND PERFORMANCE TESTING

MILESTONE 1: USER CREATION

Activity:create user

PURPOSE:

creating users is essential for enabling individuals to access and utilize the platform's functionalities. This process allows for the assignment of specific roles and permissions, granting users the necessary access to work on tasks, manage data, or access specific applications within the system.

USES:

creating users is essential for granting individuals access to the platform and its various applications. It allows you to define who can log in, what they can see, and what actions they can perform within the system.

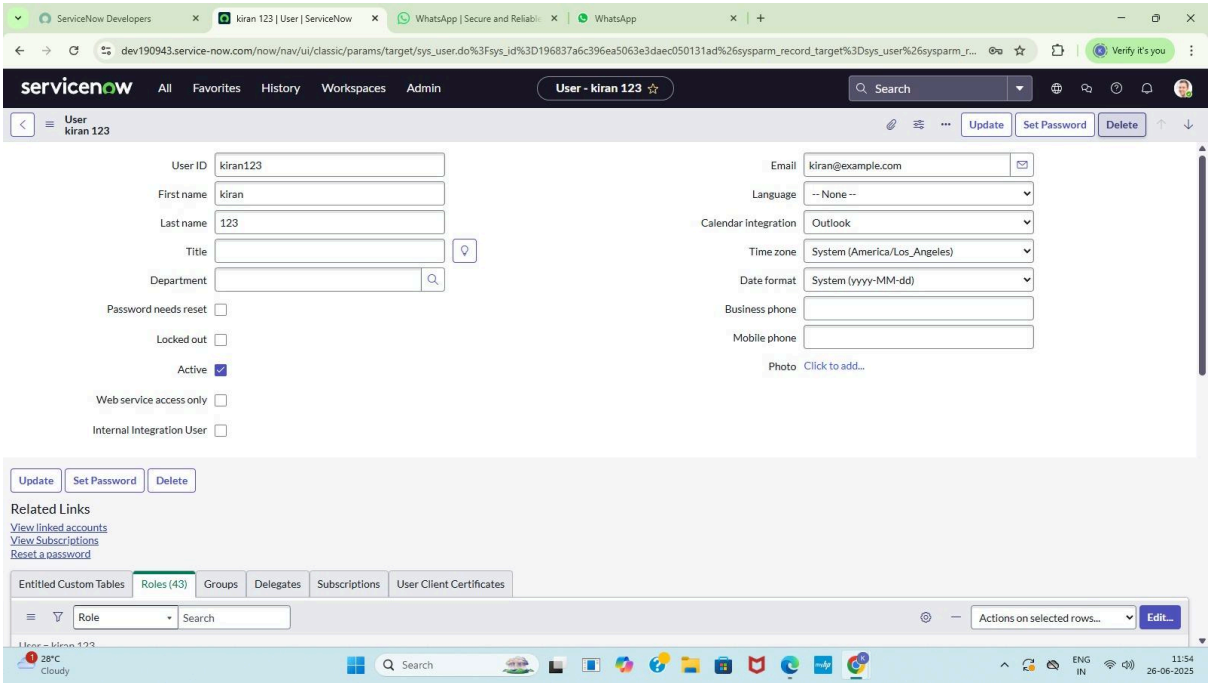
STEPS:

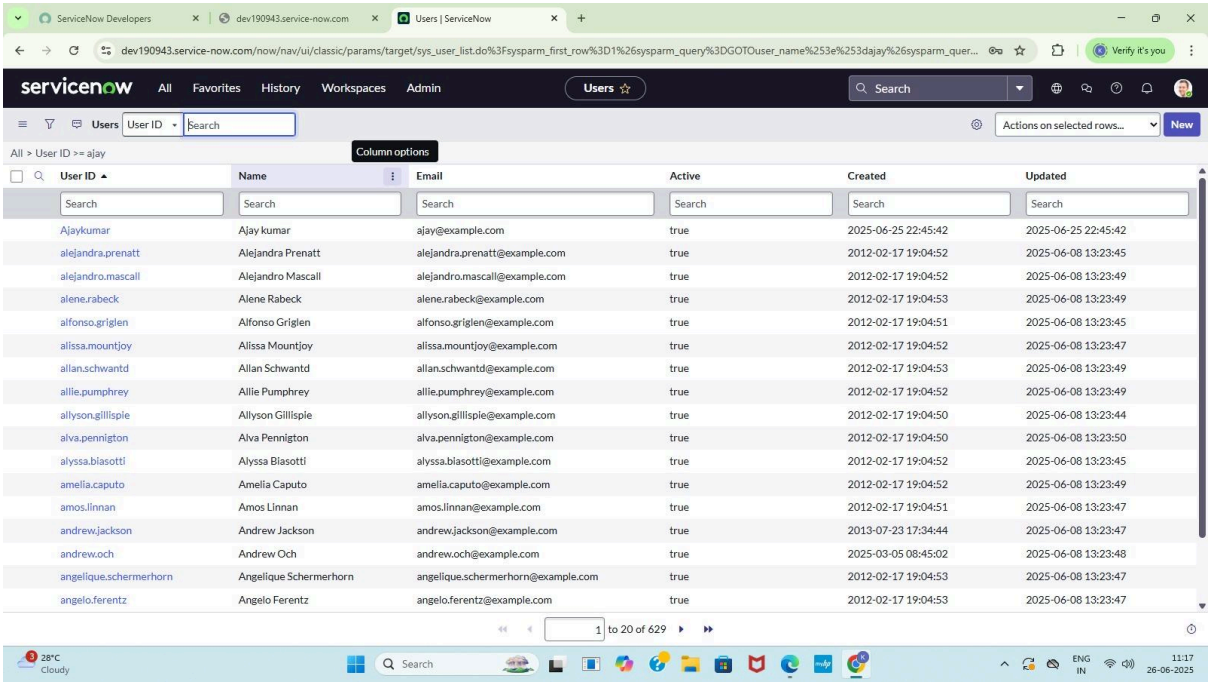
1.Go to ServiceNow ? All ? Users
(under System Security)

2.Click on New

3.Create two users (e.g.,
kiran123,ajaykumar

4. Submit and verify user records.





MILESTONE 2: ASSIGN INCIDENT TO USER

Activity: Assign incidents

PURPOSE:

Assigning an incident to a user means designating a specific individual to be responsible for resolving that particular incident. This ensures that the right person is working on the issue, improving accountability and potentially speeding up resolution times. It's a core part of incident management within ServiceNow, ensuring that incidents are routed to the appropriate support team or individual for resolution.

USE:

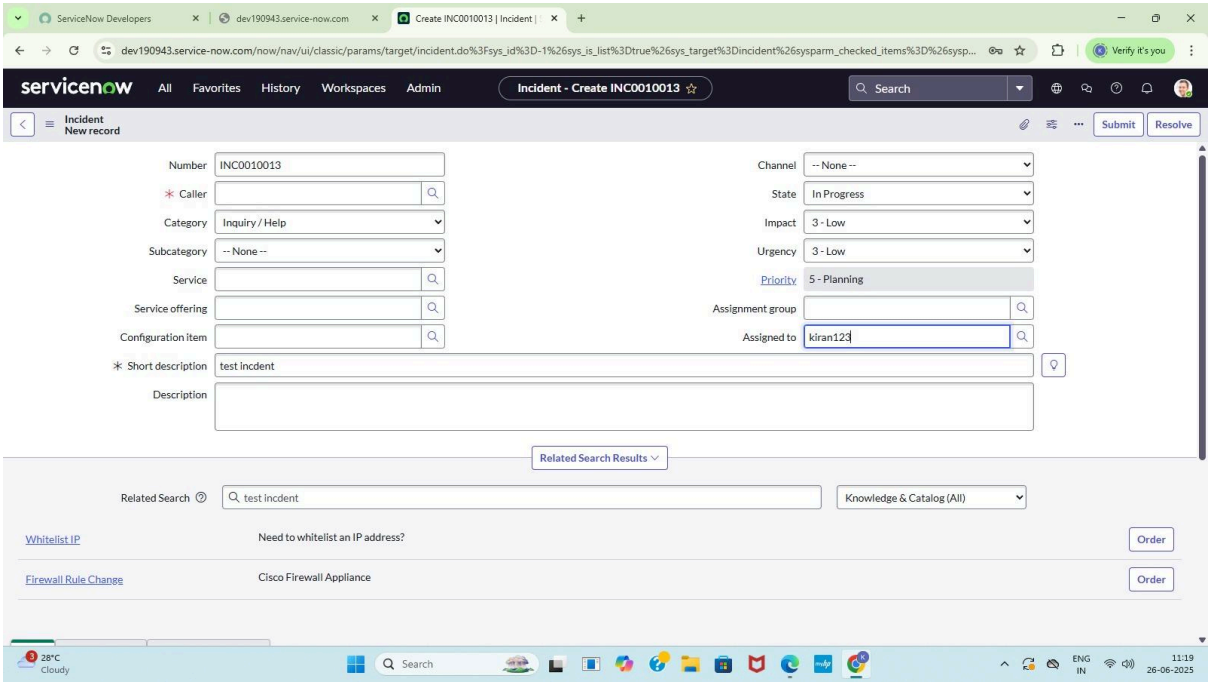
This process ensures accountability and helps streamline the workflow by directing the incident to the person or group best equipped to handle it.

STEPS:

1.Navigate to the Incident table.

2.Create a new incident and assign it to one of the created users (e.g., kiran123)

3.Keep the incident Active = true and State = In Progress



MILESTONE 3: BUSINESS RULE CREATION

Activity: create business Rule

PURPOSE:

Business rules are server-side scripts that execute when a record is displayed, inserted, updated, deleted, or when a table is queried. They are used to automate tasks, enforce business logic, and ensure data integrity. By creating business rules, organizations can personalize procedures, improve user experience, maximize productivity, and maintain data accuracy within their ServiceNow environment.

USE:

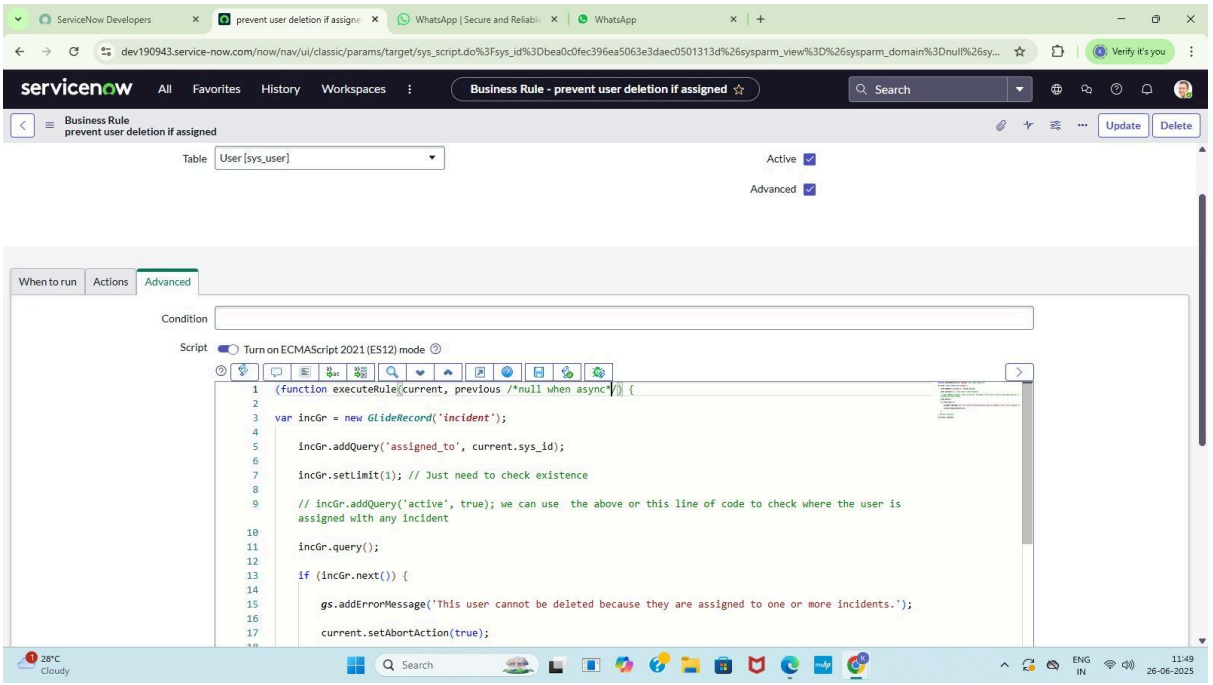
Business rules are server-side scripts that execute when a record is displayed, inserted, updated, deleted, or queried. They are used to automate tasks, enforce data consistency, and enhance the user experience. Business rules allow you to define specific actions based on certain conditions, ensuring data integrity and streamlining workfow.

STEPS:

1. Go to System Definition ? Business Rules
2. Click on New
3. Fill in:
4. Name: Prevent User Deletion if Assigned to an Incident
5. Table: sys_user
6. When: Before
7. Delete: Checked
8. **Script:**

```
(function executeRule(current,
 previous /*null when async*/) {
var incGr = new GlideRecord('incident');
 incGr.addQuery('assigned_to',                current.sys_id);
 incGr.setLimit(1); // Just need to check existence
    // incGr.addQuery('active', true); we can use  the above or this line of code to check where the user is assigned with any incident
 incGr.query();
 if (incGr.next()) {
 gs.addErrorMessage('This user cannot be deleted because they are assigned to one or more incidents.');
 current.setAbortAction(true);
 }
// Add your code here
})(current, previous);
```

9.click submit.



MILESTONE 4:TEST DELETION

Activity: Attempt to Delete assigned user

PURPOSE:

deleting a test typically removes the test case and its associated results from the system, permanently deleting them. This action is often used to clean up test data or remove outdated tests.

USE:

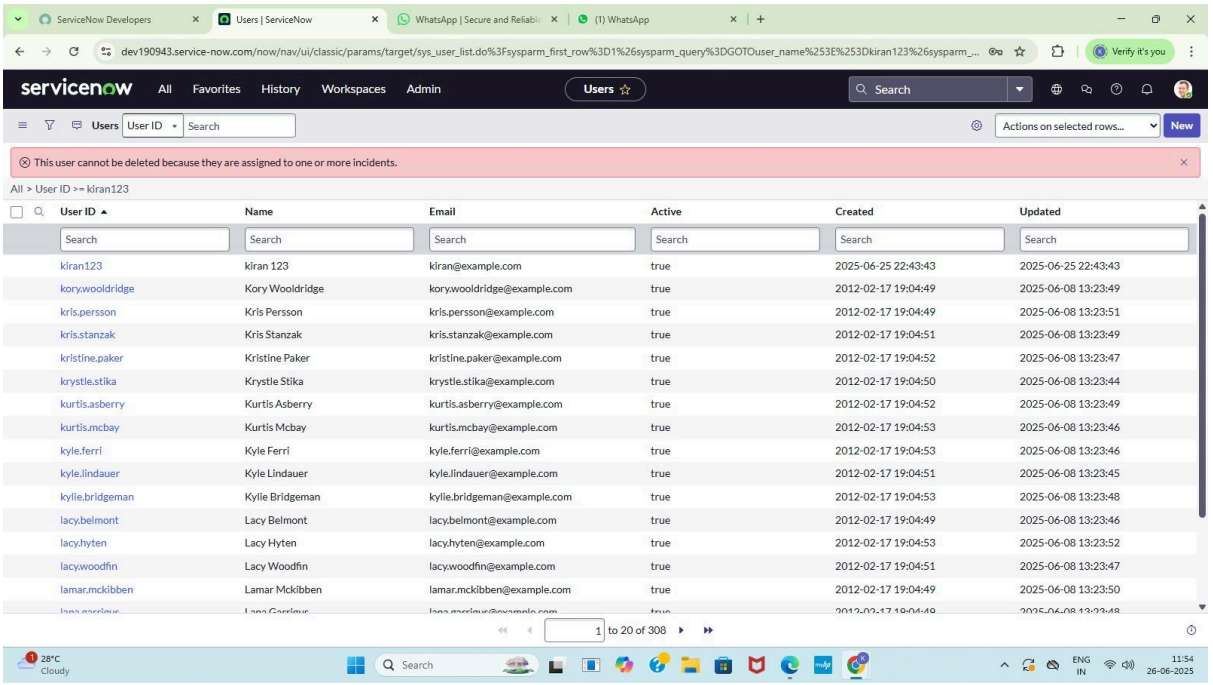
Test deletion typically refers to removing a test, test step, or test suite from the Automated Test Framework (ATF). This action permanently removes the test and its results

from the system. It's crucial to understand that deleting a test or test step in ATF is a permanent action and cannot be undone.

STEPS:

1.Go to the user record (kiran123)
2.Click Delete
3.Verify that deletion is blocked with an

error message.



MILESTONE 5:TEST WITH UNASSIGNED USER

Activity: Attempt to Delete unused user

PURPOSE:

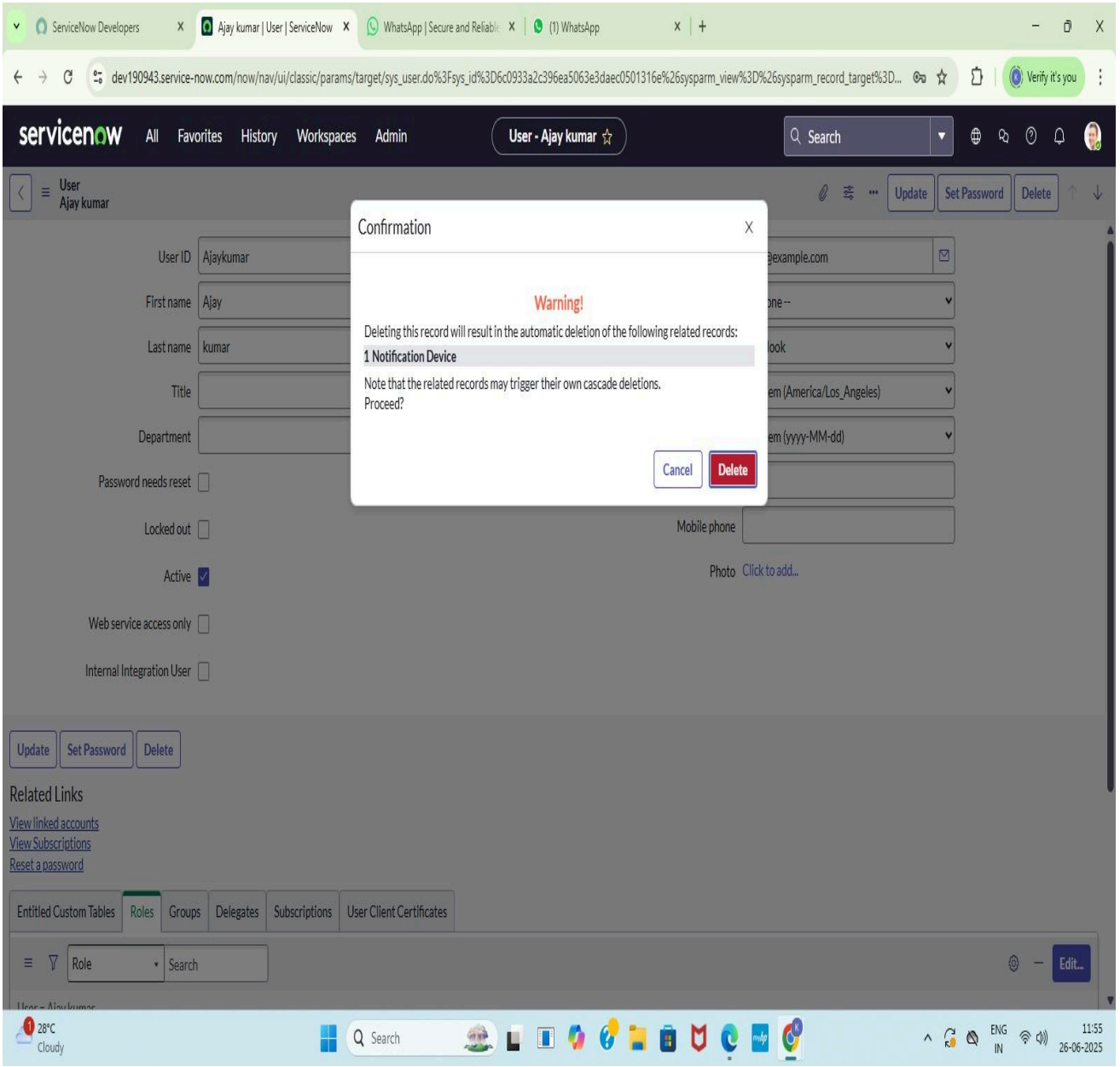
The purpose of testing with an unassigned user is to verify how a system, application, or workflow behaves when a task, record, or incident is not assigned to any specific user. This kind of testing is important for ensuring robustness, correct error handling, and default behaviors in real-world scenarios.

UES:

Ensure assignment rules are triggered correctly when an incident is created without an assigned user.

STEPS:

1.Try deleting the second user (Ajaykumar)
who is not assigned to any active
incidents.
2.Deletion should succeed.


ServiceNow Developers
Ajay kumar | User | ServiceNow
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Verify it's you
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All
Favorites
History
Workspaces
Admin
User - Ajay kumar
Search
User
Ajay kumar
Update
Set Password
Delete
Confirmation
Warning!
Deleting this record will result in the automatic deletion of the following related records:
1 Notification Device
Note that the related records may trigger their own cascade deletions.
Proceed?
Cancel
Delete
User ID
Ajaykumar
First name
Ajay
Last name
kumar
Title
Department
Password needs reset
Locked out
Active
Web service access only
Internal Integration User
Mobile phone
Photo
Click to add...
Related Links
View linked accounts
View Subscriptions
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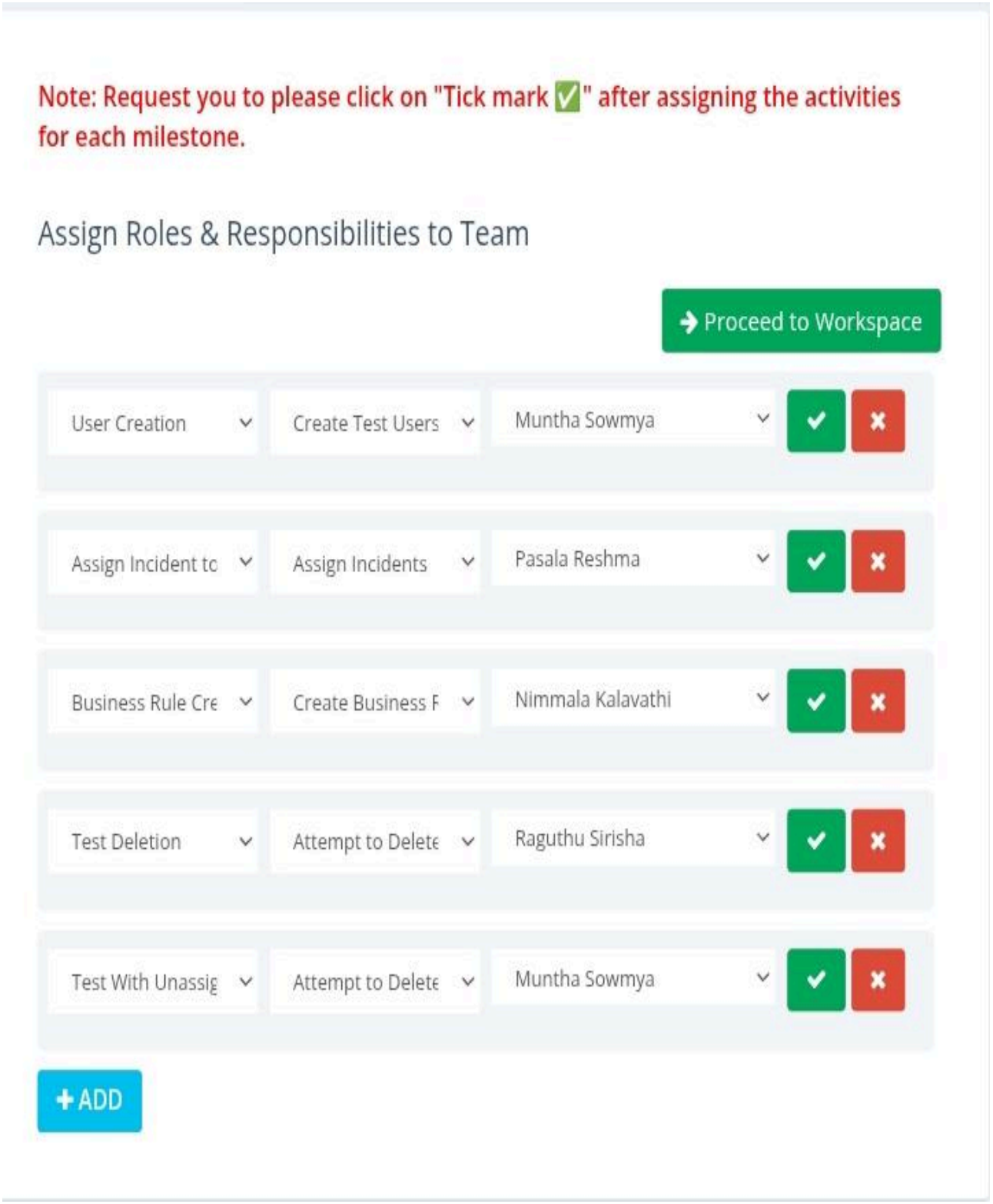
PROJECT PLANNING & SCHEDULING

Assigned Task to the Group members as shown in below.



Functional Requirement	Use story	No of activity	Team members
User creation	The usability of user creation refers to how efficient, user-friendly, and secure the process is when adding new users into the ServiceNow platform.	1	M.Sowmya
Assign incident to user	The usability of assigning incidents to users in ServiceNow refers to how easy, efficient, and intuitive it is for support agents, managers, or automated processes to assign incidents to the right individuals.	1	P.Reshma
Business Rule creation	The usability of business rule creation in ServiceNow refers to how easily and effectively developers or administrators can define, manage, and automate server-side logic that responds to database operations	1	N.Kalavathi
Test Deletion	The usability of test deletion in ServiceNow refers to how easy, safe, and controlled it is to delete test records (e.g., test incidents, users, requests) without disrupting live data or production workflows.	1	R.Sireesha
Test with unassigned user	Testing with an unassigned user in ServiceNow is an important usability and functionality check to ensure the platform handles scenarios where a user has limited or no role/group assignment.	1	M.Sowmya

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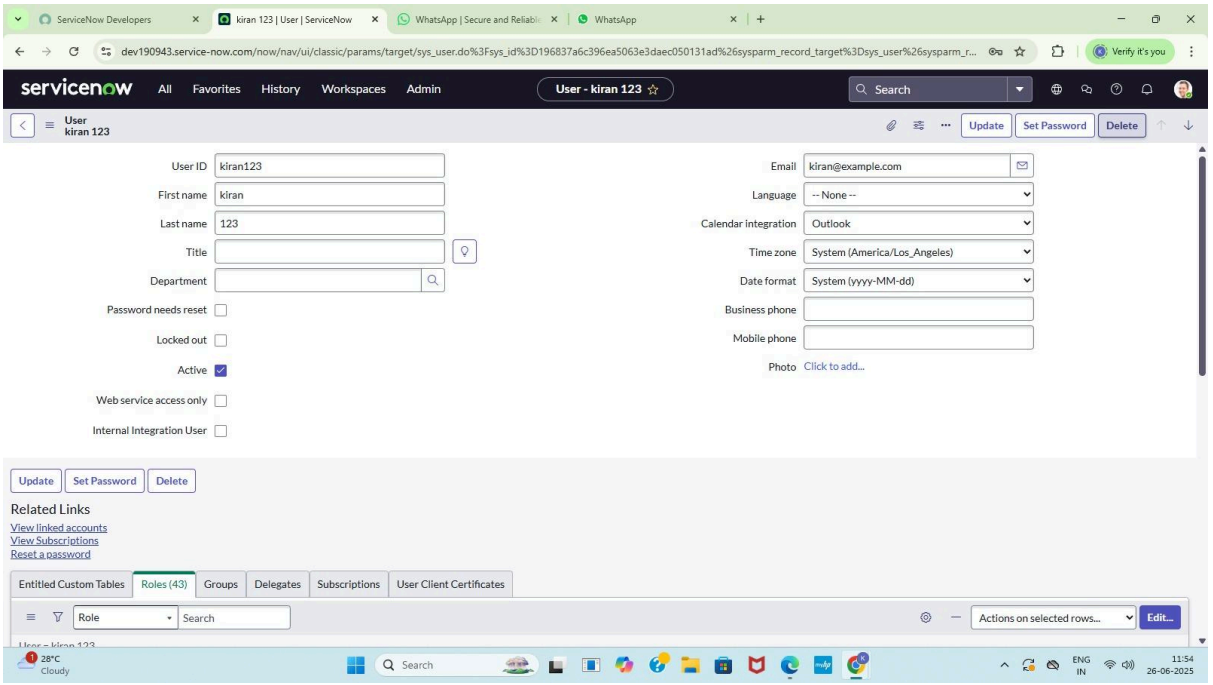
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Last name
123
Title
Department
Password needs reset
Locked out
Active
Web service access only
Internal Integration User
Email
kiran@example.com
Language
-- None --
Calendar integration
Outlook
Time zone
System (America/Los_Angeles)
Date format
System (yyyy-MM-dd)
Business phone
Mobile phone
Photo
Click to add...
Related Links
View linked accounts
View Subscriptions
Reset a password
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Groups
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Subscriptions
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Role
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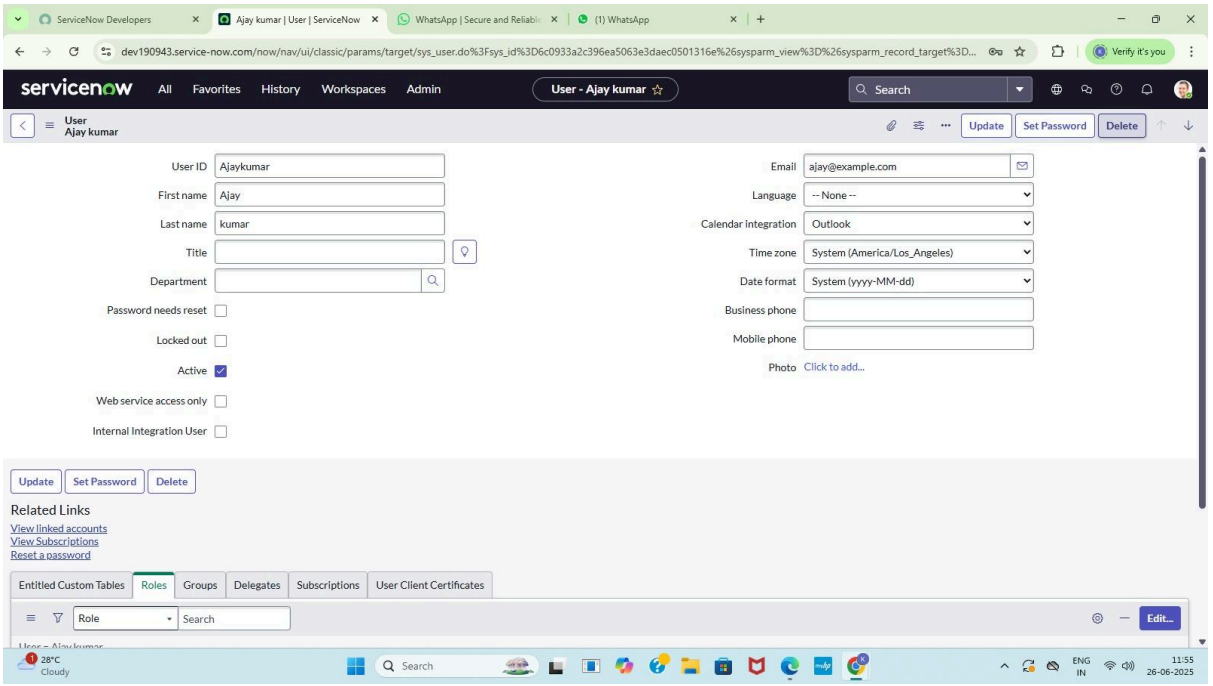
Edit...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Department
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Internal Integration User
Email
ajay@example.com
Language
-- None --
Calendar integration
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Time zone
System (America/Los_Angeles)
Date format
System (yyyy-MM-dd)
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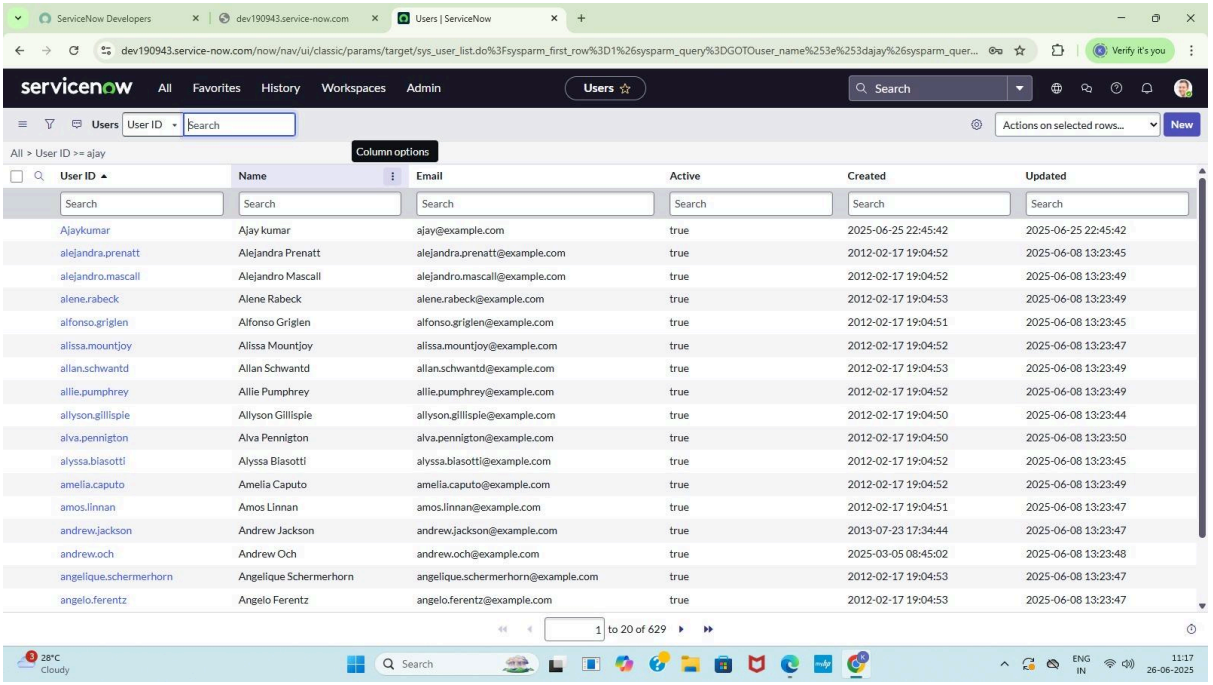
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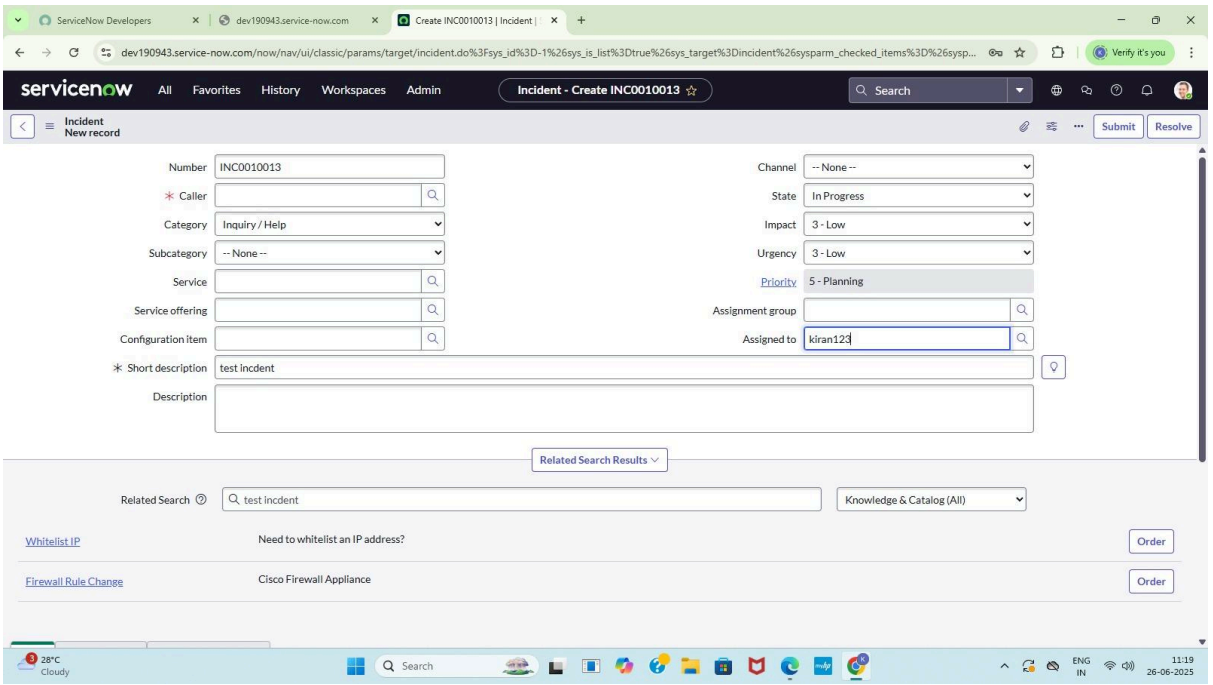
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Incident
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Submit
Resolve
Number INC0010013
Caller
Category Inquiry / Help
Subcategory -- None --
Service
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Configuration item
Short description test incdent
Description
Channel -- None --
State In Progress
Impact 3 - Low
Urgency 3 - Low
Priority 5 - Planning
Assignment group
Assigned to kiran123
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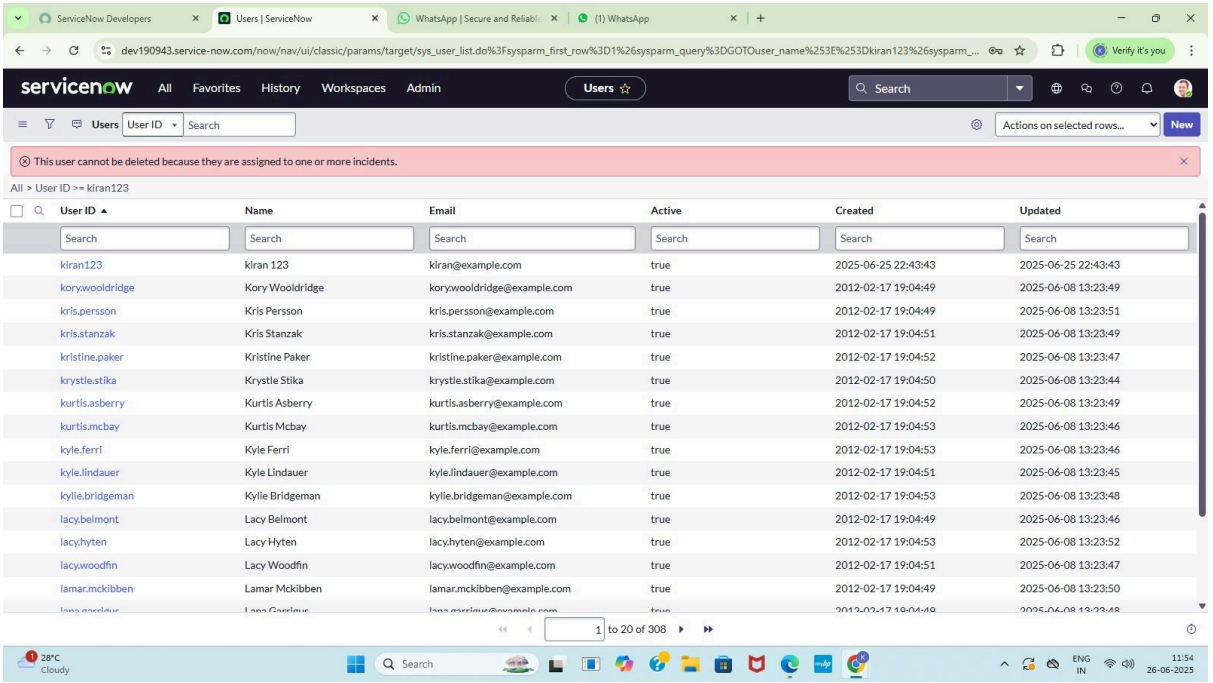
servicenow
All
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Users
Search
This user cannot be deleted because they are assigned to one or more incidents.
All > User ID >= kiran123
User ID
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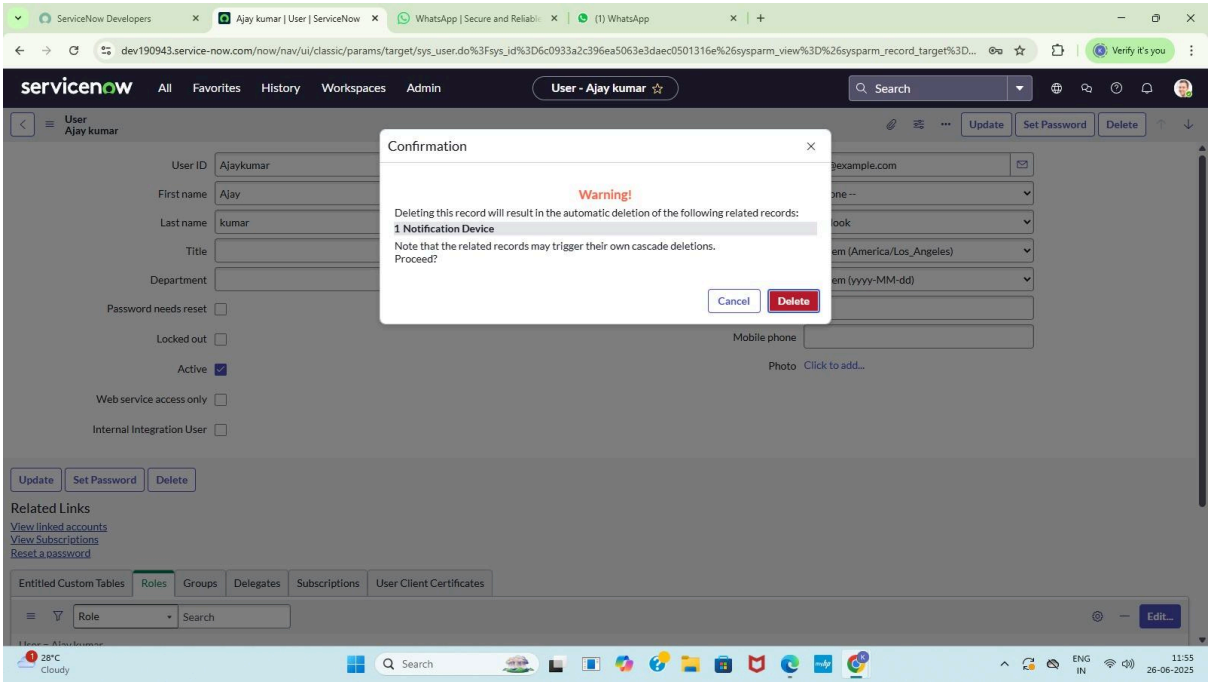
lamar.mckibben Lamar Mckibben lamar.mckibben@example.com true 2012-02-17 19:04:49 2025-06-08 13:23:50
1 to 20 of 308


servicenow
All
Favorites
History
Workspaces
Admin
User - Ajay kumar
Search
Update
Set Password
Delete
Confirmation
Warning!
Deleting this record will result in the automatic deletion of the following related records:
1 Notification Device
Note that the related records may trigger their own cascade deletions.
Proceed?
Cancel
Delete
User ID Ajaykumar
First name Ajay
Last name kumar
Title
Department
Password needs reset
Locked out
Active
Web service access only
Internal Integration User
Mobile phone
Photo Click to add...
Related Links
View linked accounts
View Subscriptions
Reset a password
Entitled Custom Tables
Roles
Groups
Delegates
Subscriptions
User Client Certificates

Advantages and Disadvantages :

ADVANTAGES:

- **Prevents orphaned records:** If a user is deleted while still assigned to an active or historical incident, the system may end up with incidents that have no valid assignee.
- Maintains clear accountability for who handled or was responsible for the incident.
- Avoids workflow errors or escalations due to missing assignees.
- Encourages proper reassignment of work before deactivating or deleting users.
- Reduces the chances of system issues or automation failures caused by missing user references.
- Historical incidents retain full context, including who was responsible or involved.

DISADVANTAGES:

- Admins must manually review and reassign all incidents before deleting a user, which can be time-consuming, especially for users with many assignments.
- Offboarding a user (e.g., an employee leaving the company) may be delayed due to the dependency on cleaning up or reassigning tasks/incidents.
- If deletion is blocked, organizations may choose to just deactivate users instead, leading to buildup of inactive user records in the system over time.
- Automated user management scripts or integrations (e.g., from HR systems) may fail or require complex exception handling if deletion is blocked by assigned incidents.
- Manual reassignment introduces risk of errors, such as assigning incidents to the wrong user or missing critical tasks.
- Users or admins may not understand why deletion is blocked, leading to confusion or frustration unless clear messaging or documentation is provided.
- It may prevent timely cleanup of old or inactive user records, which could affect reporting or license usage over time.

CONCLUSION:

This project provides a safeguard mechanism against accidental or improper deletion of users who are still involved in active incidents. By using a Business Rule on the sys_user table, ServiceNow administrators can ensure that incident ownership and workflow integrity remain intact. This solution upholds data consistency and promotes operational continuity within IT services process.Preventing user deletion when they are still assigned to active or historical incidents is a critical control measure in ServiceNow. It ensures data integrity, accountability, and system reliability, while supporting audit compliance and seamless service management.

However, this approach can also introduce administrative overhead, potential delays in offboarding, and increased system complexity. These drawbacks can be mitigated with proper user lifecycle management, such as implementing workflows to reassign tasks and deactivate users instead of deleting them immediately.