

## 1. INTRODUCTION

### 1.1 Project Overview

Prevent User Deletion in ServiceNow is a backend-based project developed to restrict unauthorized deletion of user records in the ServiceNow platform. The system uses business rules and role-based access control to ensure that critical user data cannot be deleted without proper authorization, thereby maintaining data integrity and system security.

### 1.2 Purpose

The main purpose of this project is to enhance data security by preventing accidental or unauthorized deletion of user records in ServiceNow and ensuring controlled administrative actions.

## 2. IDEATION PHASE

### 2.1 Problem Statement

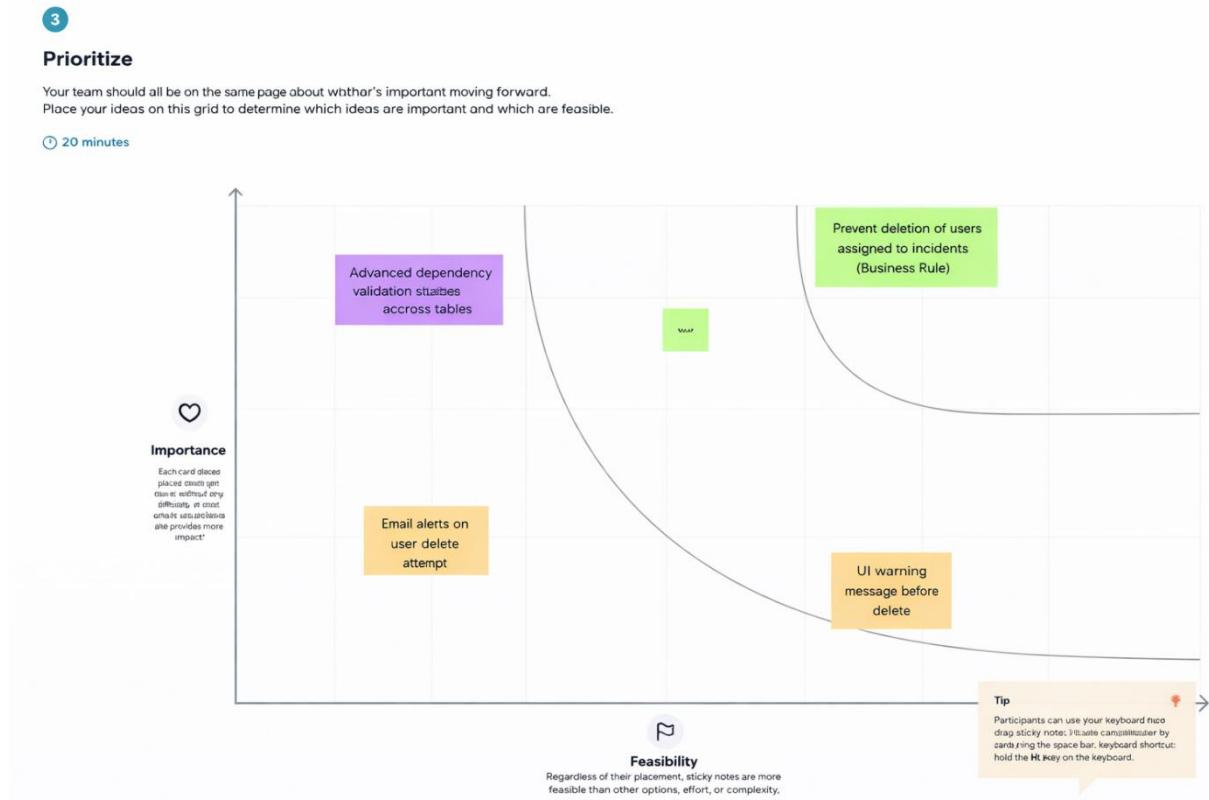
#### Customer Problem Statement Template

Create a problem statement to understand your customer's point of view. The Customer Problem Statement template helps you focus on what matters to create experiences people will love.

	I am	I'm trying to	But	Because	Which makes me feel
PS-1	ServiceNow Administrator managing incidents	delete or manage user records safely in the system	some users are still assigned to active incidents	there is no default restriction to stop deletion of users linked to incidents	worried about data inconsistency and system errors
PS-2	IT support team member	maintain accurate incident-user relationships	users can be deleted even when incidents are assigned to them	the system does not enforce validation before user deletion	frustrated and concerned about data integrity
PS-2	IT support team member handling incident management	Maintain accurate incident-user relationships	users can be deleted even when incidents are assigned to them	the system does not enforce validation before user deletion	frustrated and concerned about data integrity

Organizations face issues where important user records are accidentally or intentionally deleted in ServiceNow, leading to data loss, security risks, and operational disruption.

## 2.2 Empathy Map Canvas



The target users are ServiceNow administrators and system managers who need secure user management. They think about system safety and data protection, feel concerned about accidental deletions, hear complaints about lost records, and seek a reliable control mechanism.

## Empathy Map Canvas

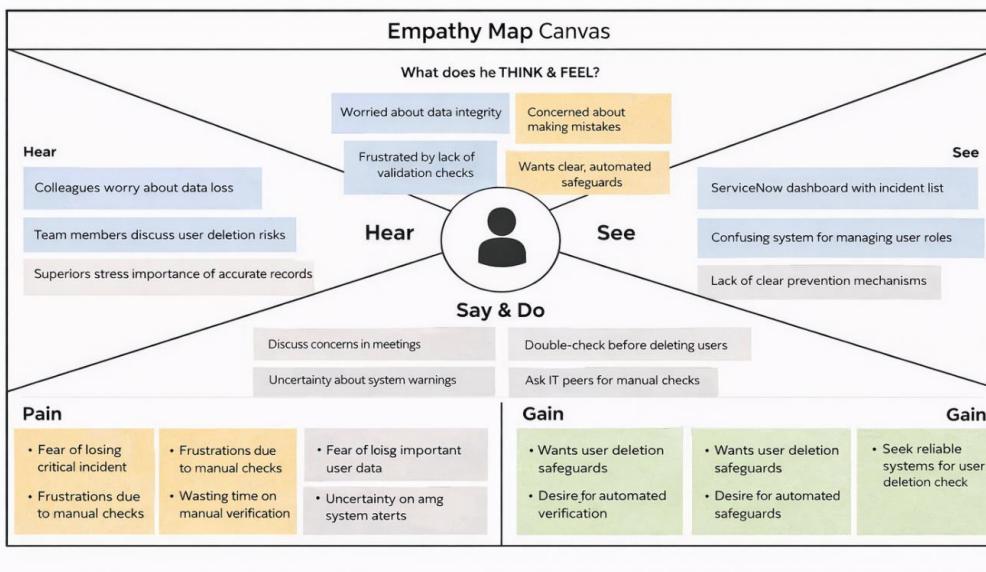
Date: 31 January 2025

Team ID: LTVIP2026TMDIS738881

Project Name:

Maximum Marks: 4 Marks

Prevent User Deletion in ServiceNow



## 2.3 Brainstorming

2

### Brainstorm

Write down any ideas that come to mind that address your problem statement.

⌚ 10 minutes

Nikhil Reddy	Ajay Pydi	Pulikonda Chandu	Karthikeyan Reddy Musali
Prevent user deletion	Before delete validation	User-Incident relation check	sys_user table rule
Check incident assignment	Error message display	Abort delete action	Incident dependency logic
ServiceNow Business Rule			Safe record handling

User	Admin	Developer	Venkata Datta Chandan Sure
			Assigned user cannot delete
			Unassigned user delete allowed
			System data protection

2

### Group Ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

⌚ 20 minutes

TIP

Use Business Rule on sys\_user table to validate assigned\_to field in incident table before deletion.



Multiple ideas were discussed such as role-based deletion control, audit logging, confirmation workflows, and business rule enforcement. The final idea selected was implementing a business rule to block unauthorized user deletion.

### 3. REQUIREMENT ANALYSIS

#### 3.1 Customer Journey Map

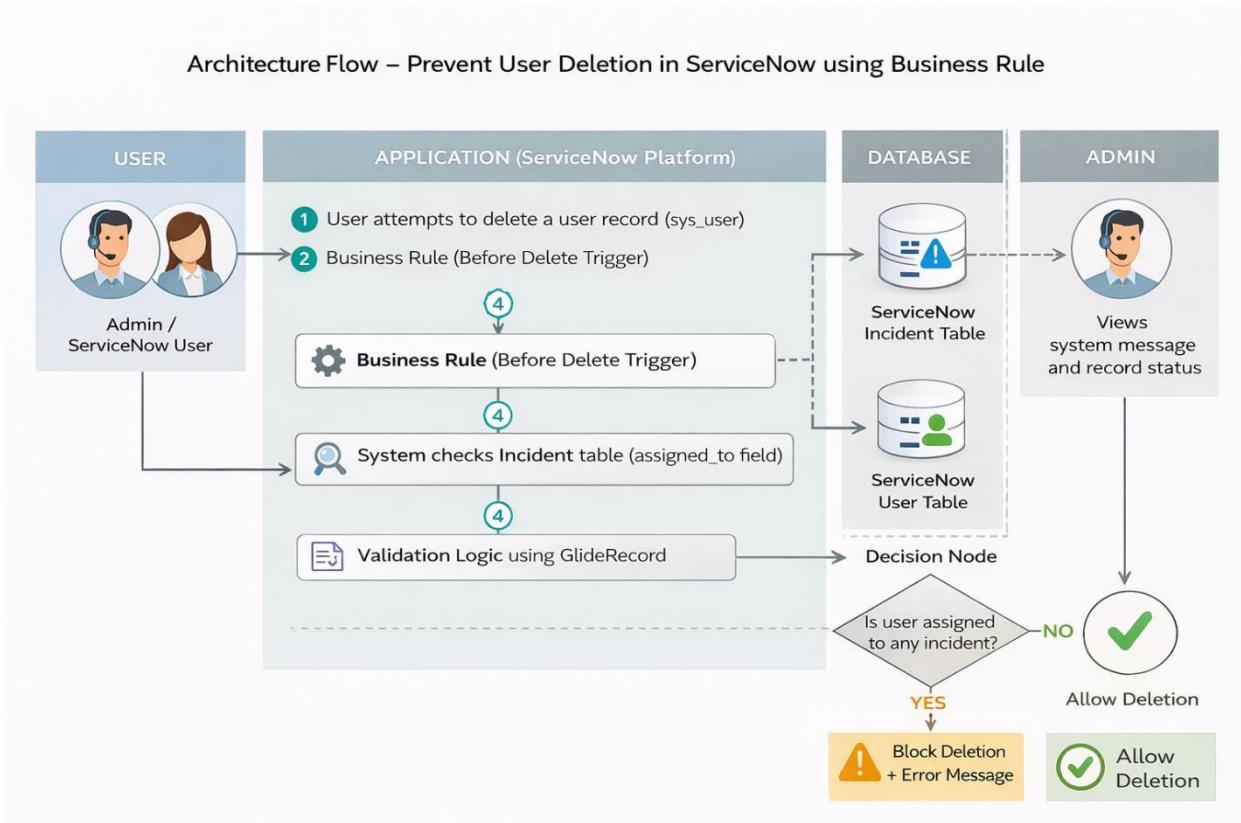
Admin logs into ServiceNow → accesses user records → attempts deletion → system validates role and permissions → unauthorized deletion is blocked → authorized actions are logged for monitoring.



### 3.2 Solution Requirement

Functional requirements include user validation, role checking, deletion restriction, and audit logging. Non-functional requirements include security, reliability, usability, and performance.

### 3.3 Data Flow Diagram



User/Admin sends delete request → ServiceNow backend checks business rule → role validation performed → if unauthorized, deletion blocked → if authorized, action logged and processed.

### 3.4 Technology Stack

Platform: ServiceNow

Backend Logic: Business Rules (Server-side scripting)

Language: JavaScript (ServiceNow scripting)

Tools: ServiceNow Studio, GitHub

Database: ServiceNow internal database

## 4. PROJECT DESIGN

Problem-Solution fit canvas 2.0			Purpose / Vision			
<p><b>Define CS, TR into CC</b></p> <p><b>Review: Define CS, TR &amp; RC</b></p> <p><b>Identify strong TR &amp; EM</b></p>	<b>1. CUSTOMER SEGMENT(S)</b>	<b>CS</b>	<b>6. CUSTOMER CONSTRAINTS</b>	<b>CC</b>	<b>5. AVAILABLE SOLUTIONS</b>	<b>AS</b>
	Who is your customer? • ServiceNow administrator's job is to... • Manage user records and incidents...		What constraints prevent your customer from taking action or limit their choice of solutions? What prevents them from acting? • Authorized roles, ServiceNow platform boundaries, • Limited database access, etc...		Which solutions are available to the customers when they face the problem they're experiencing? The process is informed by the incident to prevent, or removal of user accounts, prove to meet the requirements for formality than solutions of available devices. Issues such as, temporary stalls at digital arrested initial...	
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b>	<b>J&amp;P</b>	<b>9. PROBLEM ROOT CAUSE</b>	<b>RC</b>	<b>7. BEHAVIOUR</b>	<b>RC</b>
	What jobs-to-be-done or problems do you address for your customer? • Delegating service assigned to active users assigned to active incidents • Voluntarily the missing exertions immer system.		What's the root cause of your problem's existence? • Assigned users cannot be deleted to protect the integrity.		What does your customer do to address the problem and get the job done? i.e., conducting organizational processes have callables and easy rules are created to check incidents manually in the system	
	<b>3. TRIGGERS</b>	<b>TR</b>	<b>10. YOUR SOLUTION</b>	<b>SL</b>	<b>8. CHANNELS &amp; BEHAVIOUR</b>	<b>CH</b>
	What triggers customer to act? i.e., stealing recalling information in the log file. • Missing account after reusing the system Does anyone? Failed the unauthorized users.		How does your solution solve customer problems and dissatisfaction? • Prevent deletion of users assigned to active incidents, by adding assigned non-robot users, checking contract to manage records. • Limit deletion of unassigned users.		4.1 ONLINE what services does the user have? Extract online channels from 4.2 OFFLINE • No other reliable offline channels	
	<b>4. EMOTIONS: BEFORE / AFTER</b>	<b>EM</b>	<b>10. YOUR SOLUTION</b>	<b>SL</b>	<b>8. CHANNELS &amp; BEHAVIOUR</b>	<b>CH</b>
	How do customers feel before they have a problem (or job and afterward)? • Prudential, worried, confused trying to delete users. • Satisfied after deletion attempt to deleted or notified it failed.		Prevent deletion of users assigned to protect incidents • Be sure hosts, hosts perfect want to action to use incident records, such as those include with logic and error messages. • Limit deletion attempt if worked adequately to the recipients.		4.1 ONLINE • ServiceNow admin portal UI 4.2 OFFLINE • No other reliable offline channels	
	<b>4. EMOTIONS: BEFORE / AFTER</b>	<b>EM</b>			<b>8.2 OFFLINE</b>	
	Felling frustrated, worried, confused trying to delete user accounts afterward? • Feeling remanded remain commands attempt to reflect above • Satisfaction after deleting attempts solution, and notified if downed, e.g., user refine in reached a...				What's the best way to get different and novel behavior in the system	



Problem-Solution Fit canvas is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 4.0 license.

Created by Daria Vaynshtain / Amaltama.com



### 4.1 Problem Solution Fit

The solution directly addresses the issue of unauthorized user deletion by enforcing strict validation and access control within the ServiceNow environment.

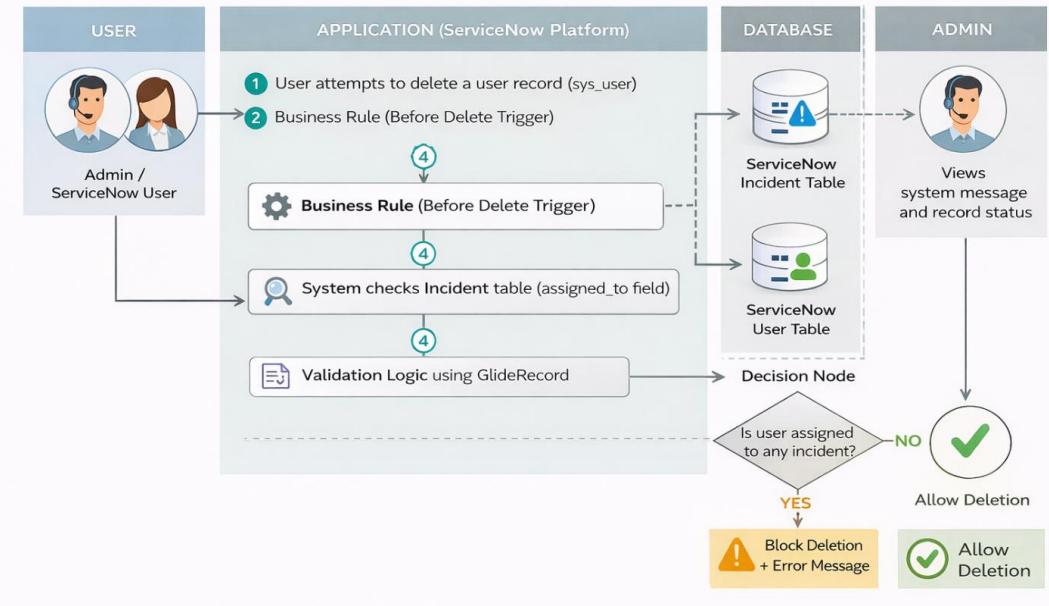
### 4.2 Proposed Solution

The proposed solution is to implement a ServiceNow business rule that prevents deletion of user records unless the user has proper administrative privileges, ensuring data safety and system control.

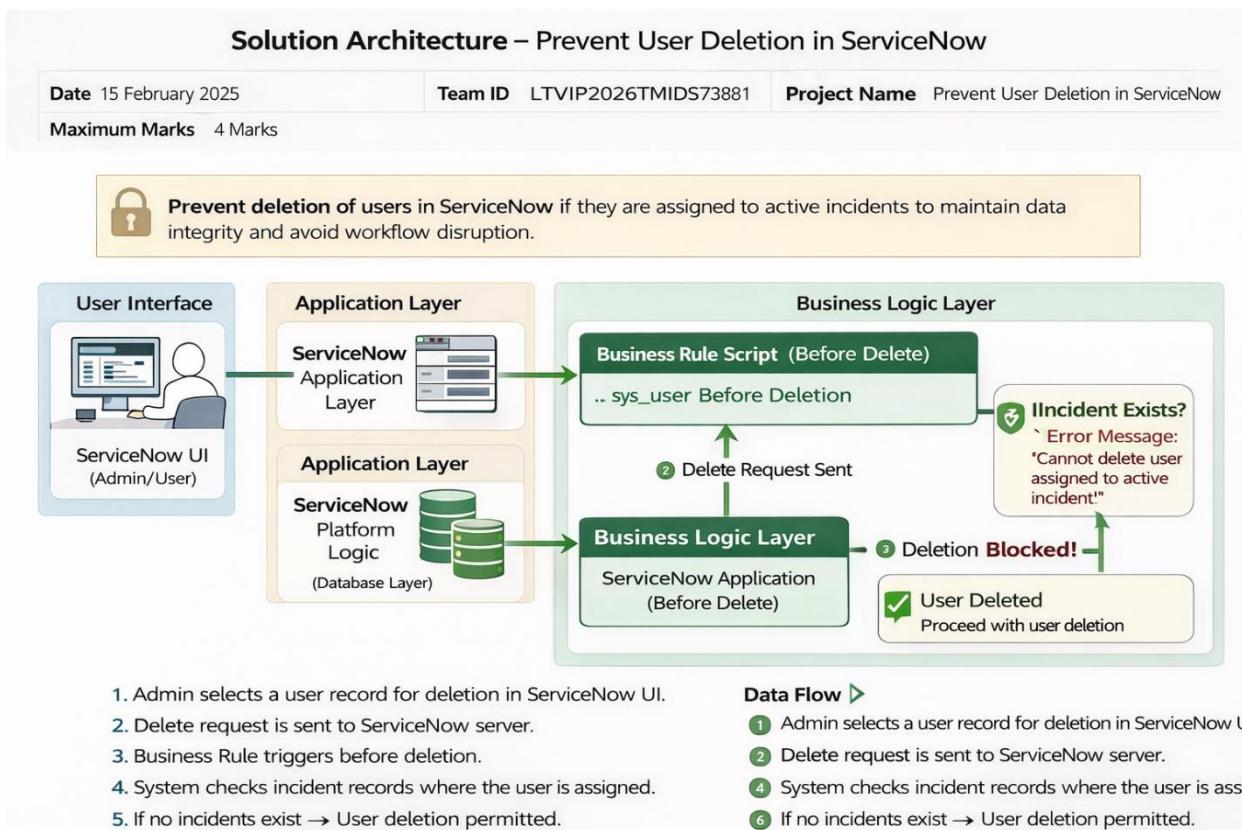
### 4.3 Solution Architecture

User/Admin Interface → ServiceNow Application Layer → Business Rule (Deletion Validation) → Role & Permission Check → Database (User Table) → Audit Logs.

### Architecture Flow – Prevent User Deletion in ServiceNow using Business Rule



## 5. PROJECT PLANNING & SCHEDULING



## 5.1 Project Planning

The project was divided into phases including ideation, requirement analysis, design, development, testing, and documentation. Tasks were allocated among team members and completed using sprintbased planning.

## 6. FUNCTIONAL AND PERFORMANCE TESTING

### 6.1 Performance Testing

The system was tested by attempting multiple user deletion scenarios with different roles. The business rule performed efficiently with instant validation and no noticeable performance delay.

## 7. RESULTS

### 7.1 Output Screenshots

Users						
Name						
Actions on selected rows... New						
This user cannot be deleted because they are assigned to one or more incidents.						
All	User ID	Name	Email	Active	Created	Updated
	abel.tuter	Abel Tuter	abel.tuter@example.com	true	2012-02-17 19:04:52	2026-01-28 00:27:19
	abraham.lincoln	Abraham Lincoln	abraham.lincoln@example.com	true	2013-07-23 17:15:54	2026-01-28 00:27:20
	adela.cervantsz	Adela Cervantsz	adela.cervantsz@example.com	true	2012-02-17 19:04:50	2026-01-28 00:27:16
	alileen.mottern	Aileen Mottern	alileen.mottern@example.com	true	2012-02-17 19:04:49	2026-01-28 00:27:19
	ajay123	Ajay Pydi		true	2026-01-28 21:05:14	2026-01-28 21:05:14
	akhil123	Akhil Reddy		true	2026-01-28 22:01:33	2026-01-28 22:01:33
	alejandra.prenatt	Alejandra Prenatt	alejandra.prenatt@example.com	true	2012-02-17 19:04:52	2026-01-28 00:27:16
	alejandro.mascall	Alejandro Mascall	alejandro.mascall@example.com	true	2012-02-17 19:04:52	2026-01-28 00:27:20
	alene.rabeck	Alene Rabeck	alene.rabeck@example.com	true	2012-02-17 19:04:53	2026-01-28 00:27:21
	alfonso.griglen	Alfonso Griglen	alfonso.griglen@example.com	true	2012-02-17 19:04:51	2026-01-28 00:27:16
	alissa.mountjoy	Alissa Mountjoy	alissa.mountjoy@example.com	true	2012-02-17 19:04:52	2026-01-28 00:27:19
	allan.schwartzd	Allan Schwartzd	allan.schwartzd@example.com	true	2012-02-17 19:04:53	2026-01-28 00:27:20
	allie.pumphrey	Allie Pumphrey	allie.pumphrey@example.com	true	2012-02-17 19:04:52	2026-01-28 00:27:20
	allyson.gillispie	Allyson Gillispie	allyson.gillispie@example.com	true	2012-02-17 19:04:50	2026-01-28 00:27:16
	alva.pennington	Alva Pennington	alva.pennington@example.com	true	2012-02-17 19:04:50	2026-01-28 00:27:21
	alyssa.biastotti	Alyssa Biastotti	alyssa.biastotti@example.com	true	2012-02-17 19:04:52	2026-01-28 00:27:16
	amelia.caputo	Amelia Caputo	amelia.caputo@example.com	true	2012-02-17 19:04:52	2026-01-28 00:27:20
	amos.linnan	Amos Linnan	amos.linnan@example.com	true	2012-02-17 19:04:51	2026-01-28 00:27:18
	andrew.jackson	Andrew Jackson	andrew.jackson@example.com	true	2013-07-23 17:34:44	2026-01-28 00:27:19
	andrewv.nrh	Andrewv Nrh	andrewv.nrh@example.com	true	2026-12-01 09:45:00	2026-01-28 00:27:19

The system successfully prevented unauthorized user deletion and allowed deletion only for authorized roles. Screenshots demonstrate blocked and allowed deletion cases.

## 8. ADVANTAGES & DISADVANTAGES

Advantages:

Improves data security

Prevents accidental deletion

Enhances system reliability

Easy to implement using ServiceNow business rules

Disadvantages:

Dependent on correct role configuration

Limited to ServiceNow environment

## **9. CONCLUSION**

The Prevent User Deletion in ServiceNow project successfully provides a secure mechanism to protect critical user records by implementing role-based deletion restrictions and backend validation logic.

## **10. FUTURE SCOPE**

Integration with advanced audit dashboards

AI-based anomaly detection for suspicious actions

Multi-level approval workflow before deletion

Extension to other critical tables in ServiceNow

## **11. APPENDIX**

Source Code: ServiceNow Business Rule Scripts

Dataset Link: Not Applicable GitHub & Project Demo Link:

<https://github.com/Nikhilreddy810/Prevent-User-Deletion-ServiceNow>