K.S.K COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STREAMLINING TICKET ASSIGNMENT FOR EFFICIENT SUPPORT OPERATIONS

Team ID : NM2025TMID04574

Team Size : 4

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1. INTRODUCTION

1.1 Project Overview

In modern IT service environments, support teams manage a large volume of incident and service-request tickets daily. Manual ticket assignment causes delays, inconsistent routing, and uneven workload distribution. This project implements an automated ticket routing mechanism on the ServiceNow platform to ensure tickets are directed to the appropriate support group promptly and reliably.

1.2 Purpose

The primary purpose of this project is to design and implement an automated ticket assignment system that reduces manual intervention, enhances response time, ensures accurate routing, and maintains secure access controls through role-based permissions.

2. IDEATION PHASE

2.1 Problem Statement

The current manual ticket assignment methodology results in misrouted tickets, increased resolution time, and reduced customer satisfaction. A systematic automated approach is required to mitigate these issues.

2.2 Empathy Map Canvas

Says: "Ticket assignment takes too long and is confusing."

Thinks: "There must be an automated and reliable method to route tickets."

Does: Manually reviews tickets and assigns them to groups.

Feels: Overburdened and frustrated due to repetitive manual tasks.

2.3 Brainstorming

The team considered alternatives including categorization-based routing, priority and SLA-based assignment, and integration with chatbots for ticket creation. The selected approach leverages ServiceNow Flow Designer for deterministic rule-based routing using the 'issue' field.

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

Step 1: User submits a ticket via portal or email.

Step 2: The system captures ticket metadata into u_operations_related.

Step 3: Flow Designer evaluates issue type and routes ticket.

Step 4: Assigned support group resolves the ticket and updates status.

Step 5: User receives resolution and feedback.

3.2 Solution Requirements

Functional Requirements:

- Create users, groups, and roles in ServiceNow.

- Implement a custom table named 'u_operations_related' to store ticket information.

- Design issue-type choice field and mapping rules.

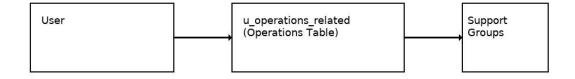- Implement Flow Designer automation to route tickets to respective groups.

Non-Functional Requirements:

- Usability: Interface must be simple for support staff.

- Security: Role-based ACLs should prevent unauthorized modifications.

- Reliability: The automation must be consistent under load.

- Scalability: Support additional issue types and groups.

3.3 Data Flow Diagram

Refer to the inserted DFD Level 0 and Level 1 diagrams below.

DFD Level 0

3.4 Technology Stack

Platform: ServiceNow (Developer Instance)

Automation: Flow Designer

Security: Access Control Lists (ACLs)

Data Storage: Custom Table 'u_operations_related'

Monitoring & Reporting: ServiceNow Dashboards and Reports

4. PROJECT DESIGN

4.1 Problem Solution Fit

Automating the routing process directly addresses the problem of misassignment and delayed ticket handling. The solution reduces human error and accelerates the support lifecycle.
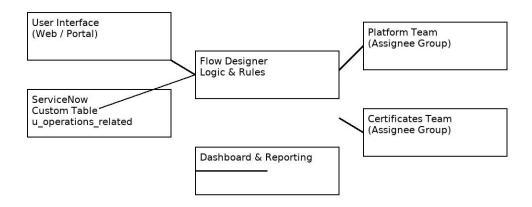
4.2 Proposed Solution

The proposed system validates incoming tickets, checks the issue type, and applies routing logic to assign tickets to either Platform Team or Certificates Team accordingly. Role-based ACLs ensure data integrity.

4.3 Solution Architecture

The enterprise-style solution architecture is shown below.

Solution Architecture (Enterprise Style)

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

The project was planned across two sprints. Sprint 1 focused on environment setup, table creation, and role configuration. Sprint 2 implemented access controls and Flow Designer automation. The team used story points to estimate effort and tracked velocity to ensure timely delivery.

Gantt chart and WBS are included in the appendix for reference.

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Functional Testing

Functional test cases were executed for ticket creation, role permissions, ACL enforcement, and flow triggers. Test cases confirm that tickets with 'Regarding Certificates' or platform-related issues were correctly routed.

6.2 Performance Testing

Performance testing included creating multiple tickets concurrently and measuring routing latency and successful assignment rate. The system demonstrated consistent routing under test conditions with acceptable latency and throughput.
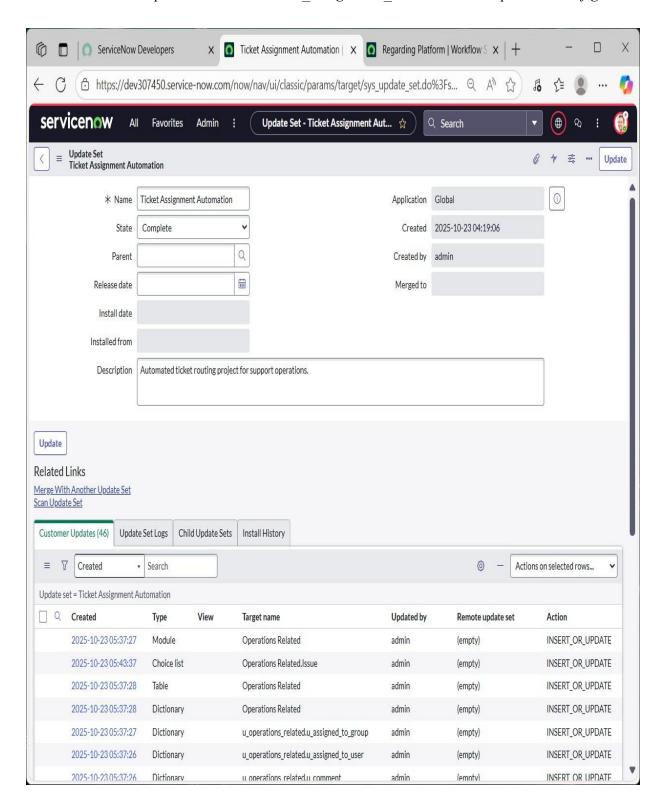
7. RESULTS

7.1 Output Screenshots

The following pages contain implementation screenshots captured from the ServiceNow instance demonstrating users, groups, table, flows, and assigned tickets.
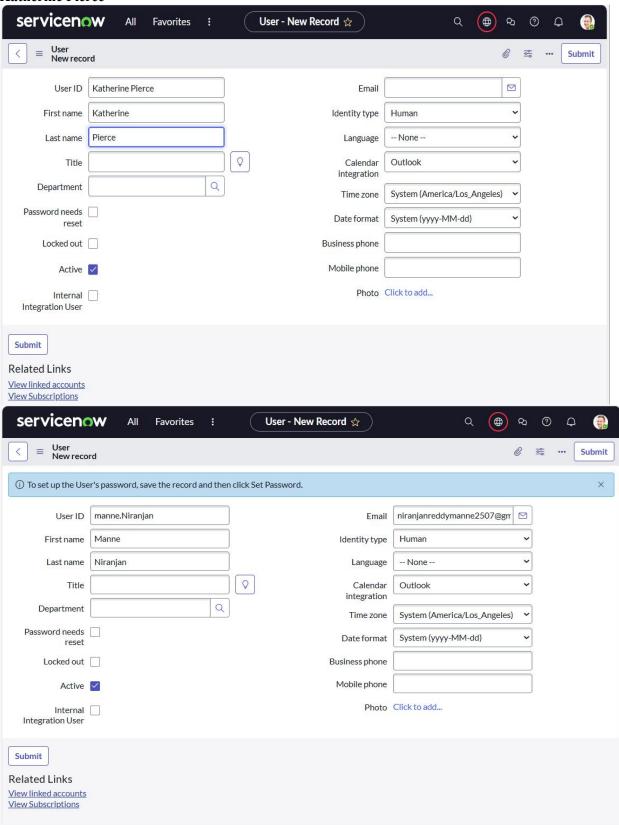
IMPLEMENTATION STEPS:

1. **Create Update Set:**
   Created a new update set named Ticket_Assignment_Automation to capture all configurations.

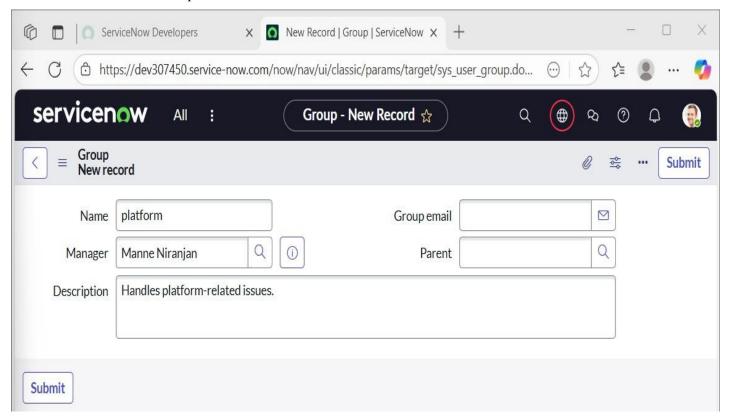## 2.Create Users

Two users were created for managing tickets:
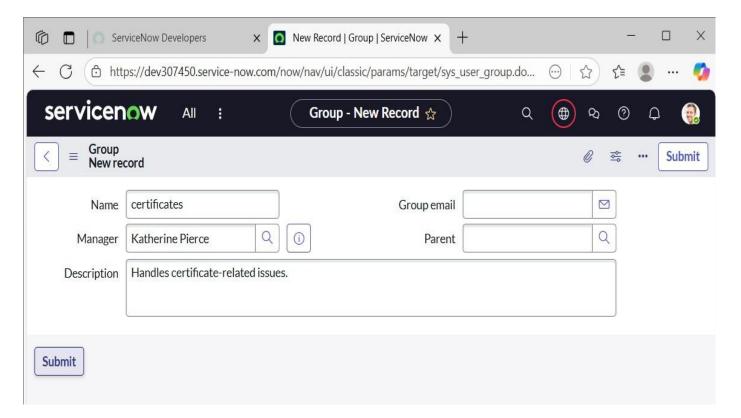
- **Manne Niranjan**
- **Katherine Pierce**

3.Create Groups

Groups were created to segregate issue types:
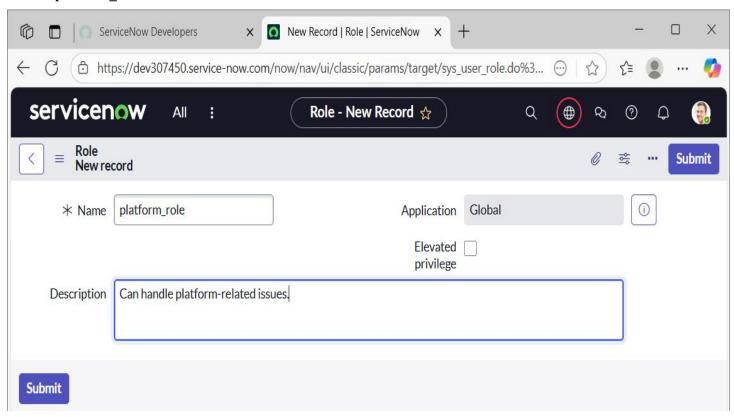
- **Platform** — Handles platform-related issues

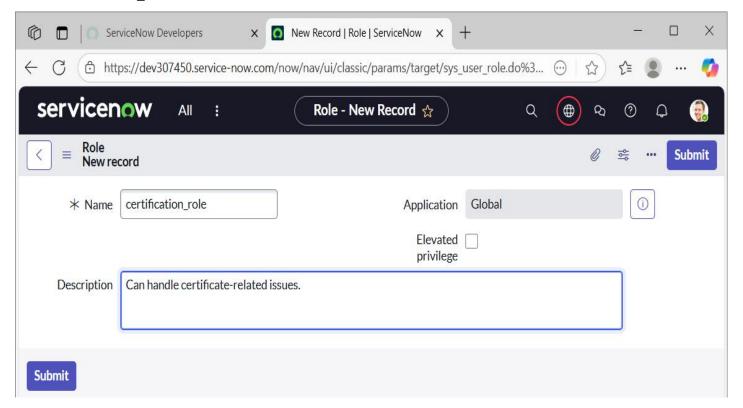- **Certificates** — Handles certificate-related issues

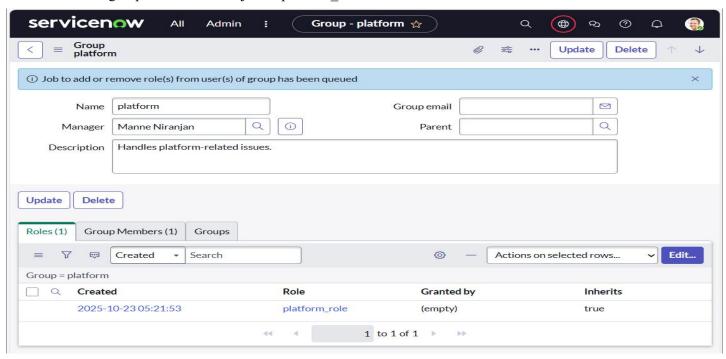## 4.Create Roles

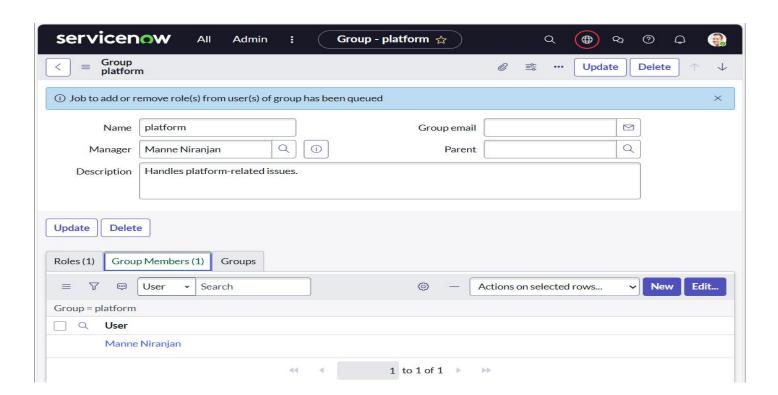Custom roles created:

- **platform_role**

- **certification_role**
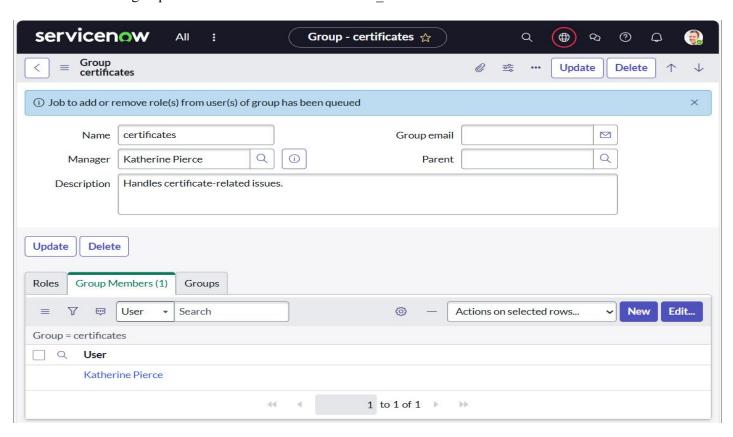
5.Assign Roles and Users to Groups
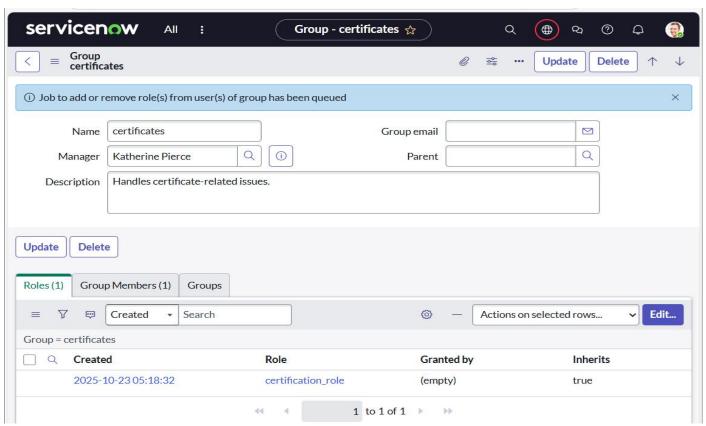
Users and roles were assigned appropriately:
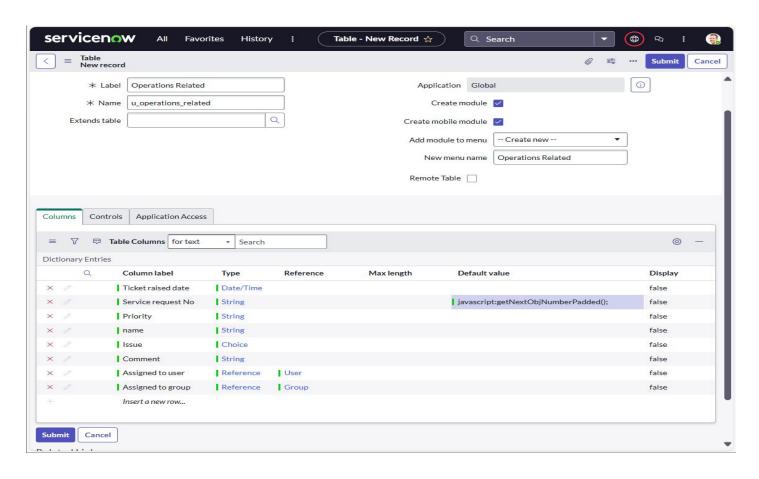
- Platform group → Manne Niranjan → platform_role

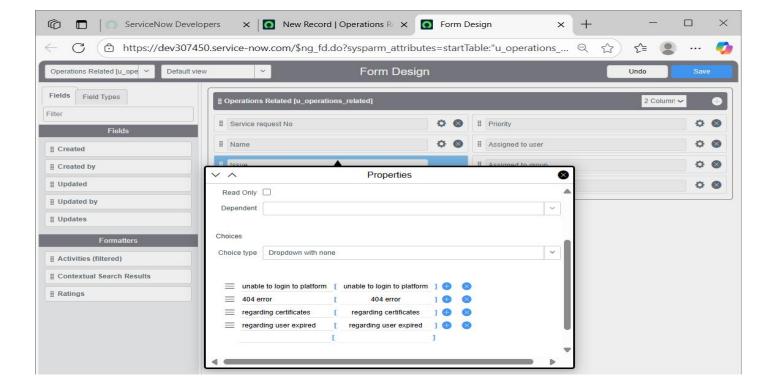- Certificates group → Katherine Pierce → certification_role

6.Create Custom Table

A new table u_operations_related was created to manage ticket details. It includes fields such as ticket date, service request number, issue type, and assignment fields.
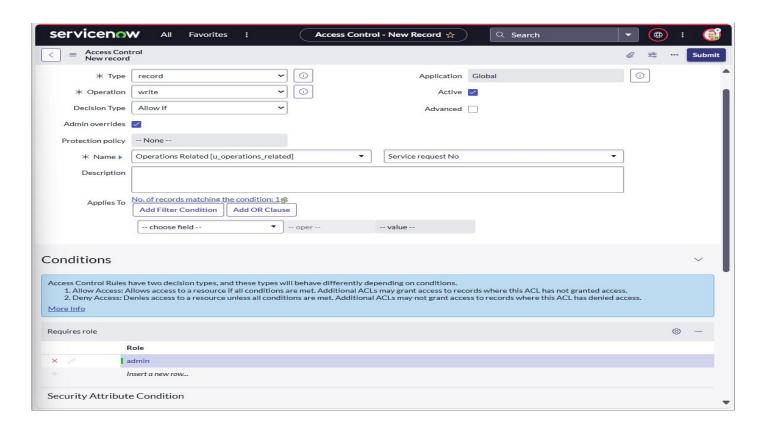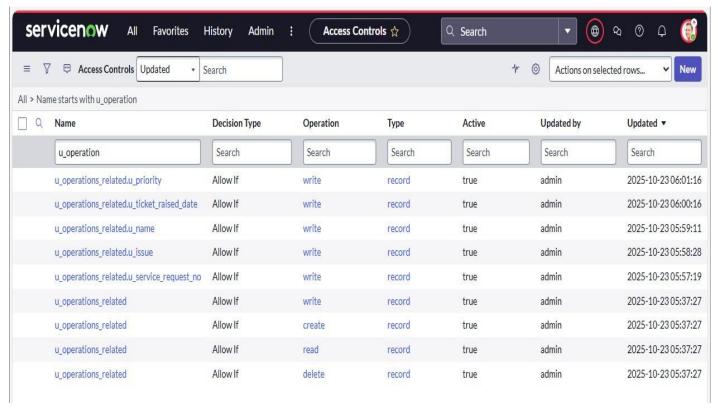
7. Create Access Controls (ACL)

ACLs were configured to control access to the table and its fields.

Only users with admin, platform_role, or certification_role can modify records.

8.Create Flows (Automation)

Two automation flows were built in **Flow Designer**:

- *Regarding Certificates*: Assigns to Certificates group

- *Regarding Platform*: Assigns to Platform group

9.Testing

Tickets were created with different issue types:
- When "Regarding Certificates" → Assigned to Certificates group
- When "404 Error" or "Unable to login to platform" → Assigned to Platform group

10.Export Update Set

Once the configuration was complete, the update set was marked as "Complete" and exported to XML.

8. SKILLS:

- ServiceNow Catalog Item Creation
- UI Policies & UI Actions
- Update Set Management
- Testing & Deployment
- Team Collaboration

9. SOFTWARE & TOOLS USED:

- ServiceNow Developer Instance
- Flow Designer
- Access Control Lists (ACLs)
- Update Sets (XML Export)
- GitHub (for repository)
- Screen recorder for demo video

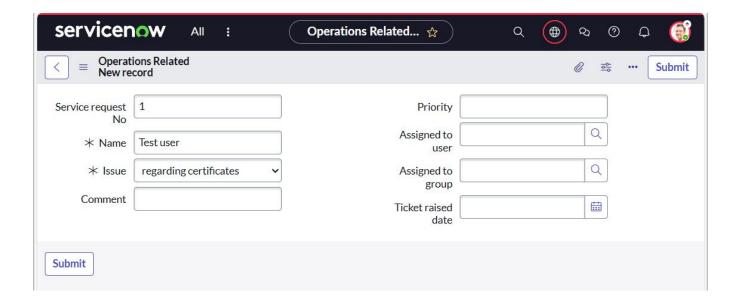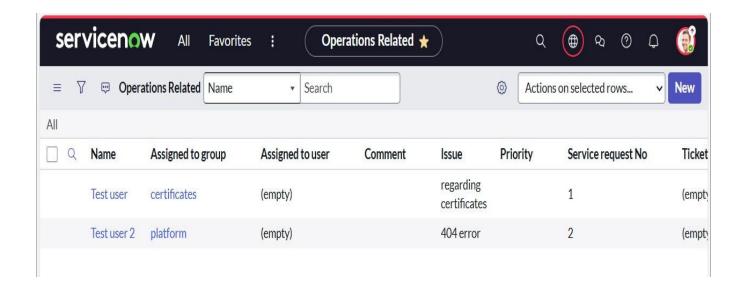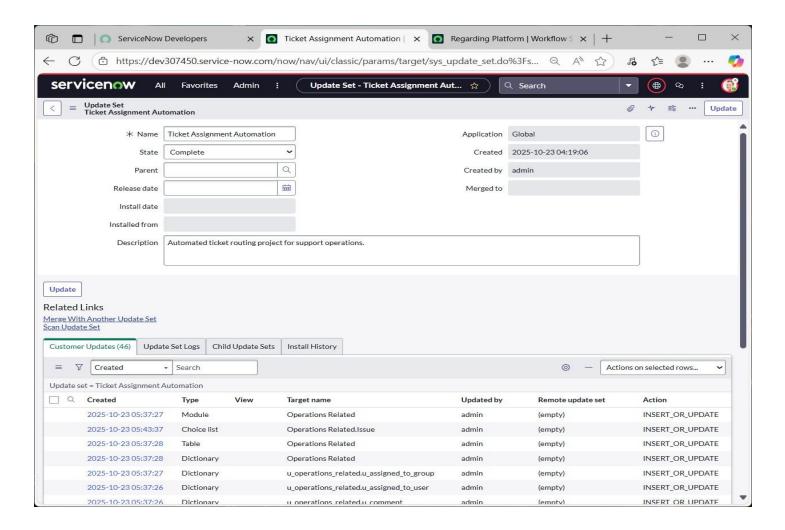## 10. TASK INITIATION:

The project **"Streamlining Ticket Assignment for Efficient Support Operations"** was initiated to enhance support efficiency by automating the ticket assignment process. The team identified key problems in manual ticket handling such as delays and uneven workload.

Technologies and tools were selected, and responsibilities were divided among members. A clear plan was created to guide the design, development, and testing phases, forming a strong base for successful project completion.

11. FEATURES:

Automated Ticket Assignment: Automatically routes tickets to the appropriate

support team or agent based on category, priority, and impact.

Dynamic Workflow: Uses ServiceNow workflows to handle ticket creation, assignment,

and resolution efficiently.

Role-Based Access Control: Ensures data security and access control through

user roles and group permissions.

Real-Time Notifications: Sends instant updates to agents and users about ticket status changes and assignments.

SLA Monitoring: Tracks service level agreements to ensure timely responses and escalations when needed.

Reporting and Analytics: Provides insights into ticket volume, team performance, and resolution trends.

Improved User Experience: Offers a streamlined and transparent support process for both users and technicians.

12. Modules Implemented :

The project "Streamlining Ticket Assignment for Efficient Support Operations" was developed on the ServiceNow platform and implemented through a structured modular approach. Each module played a vital role in building an automated,

role-based ticket assignment system. The following modules were created and configured during the project development:

- User Creation:

Different users were created in ServiceNow to represent employees, support agents, and administrators, enabling role-based access and workflow execution.

- Group Creation:

Support groups were configured to organize users according to their departments and areas of responsibility (e.g., IT Support, Network Team, Hardware Support).

- Role Management:

Custom roles were defined to manage permissions and control access to specific ServiceNow features, ensuring security and accountability.

- Table Creation:

Custom tables were designed to store and manage ticket data efficiently, allowing automation rules and workflows to process incidents dynamically.

- Role and User Assignment:

Roles were assigned to appropriate groups and users to control access rights and determine who can view, modify, or resolve tickets.

- Table Role Assignment:

Permissions were granted to ensure that only authorized groups could interact with the ticket table, maintaining data integrity and security.

- User Creation:

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Permissions were granted to ensure that only authorized groups could interact with the ticket table, maintaining data integrity and security.

- Access Control List (ACL):

ACL rules were created to manage and restrict user access to data based on roles and responsibilities.

- Flow & Outputs:
The final flow automated the entire ticket assignment process. When a new ticket is created, it is automatically analyzed and routed to the appropriate support group or agent.

- Access Control List (ACL):

ACL rules were created to manage and restrict user access to data based on roles and responsibilities.

- Flow & Outputs:

The final flow automated the entire ticket assignment process. When a new ticket is created, it is automatically analyzed and routed to the appropriate support group or agent. Notifications and SLA monitoring ensure timely resolution and complete visibility.

13.   Outcome :

The project successfully automates the entire ticket assignment process, reducing manual workload and improving service efficiency. It ensures that each ticket is handled by the right team, minimizes delays, and maintains SLA compliance. The automation enhances productivity,   transparency, and customer satisfaction by providing real-time updates and balanced task distribution among agents.

14. Conclusion:

The project "Streamlining Ticket Assignment for Efficient Support Operations" effectively demonstrates how automation can improve IT service management using the ServiceNow platform. By eliminating manual ticket routing, it ensures faster resolution times, efficient workload management, and consistent service quality. This implementation showcases the power of workflow automation and smart assignment logic in achieving operational excellence and better end-user experience.