

OPTIMIZING USER, GROUP, AND ROLE MANAGEMENT WITH ACCESS CONTROL AND WORKFLOWS

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Problem Statement:

In a small project management team consisting of a Project Manager (Alice) and a Team Member (Bob), there is a need to efficiently manage project tasks and ensure accountability throughout the project lifecycle. The current system lacks clear role definitions, access controls, and a structured workflow, leading to confusion regarding task assignments and progress tracking.

Objective:

The project aims to design and implement a streamlined framework for managing users, groups, and roles in an enterprise system, with robust access control policies and automated workflows. This ensures secure, efficient, and role-based access to resources, thereby improving system governance, reducing administrative overhead, and enhancing compliance with organizational and regulatory requirements.

Skills:

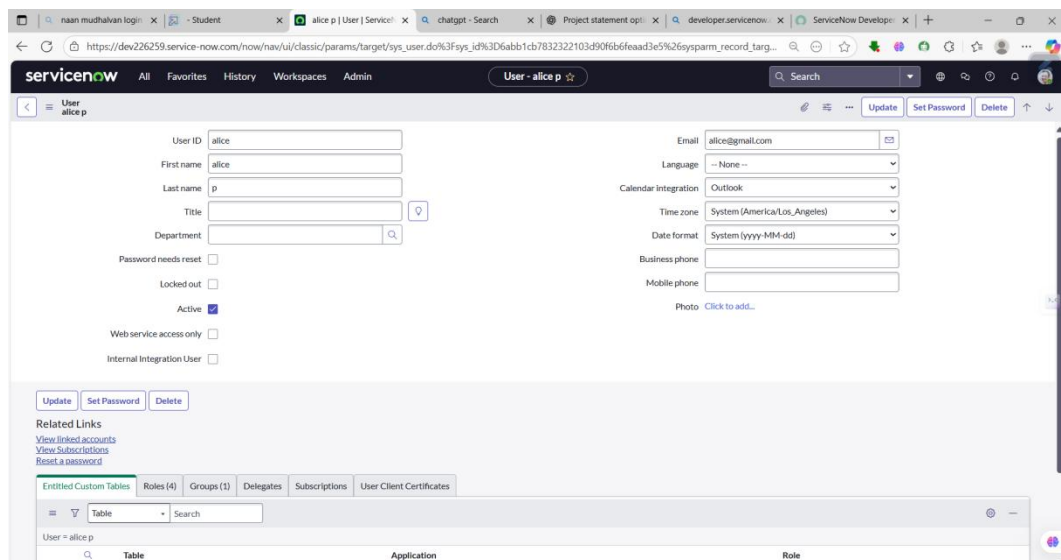
- **Technical Skills:** User, group, and role management, access control (RBAC), workflow automation, IAM tools (ServiceNow/Active Directory), scripting for automation, audit & compliance management.
- **Soft Skills:** Problem-solving, analytical thinking, project management, teamwork, documentation, and attention to detail

TASK INITIATION

Milestone 1 : Users

Activity 1: Create Users

1. Open service now
2. Click on All >> search for users
3. Select Users under system security
4. Click on new
5. Fill the following details to create a new user
6. Click on submit



The screenshot shows the ServiceNow 'User - alice p' form. The form is divided into two main sections: 'User Information' and 'User Settings'. The 'User Information' section includes fields for User ID (alice), First name (alice), Last name (p), Title, and Department. The 'User Settings' section includes fields for Email (alice@gmail.com), Language (None), Calendar integration (Outlook), Time zone (System (America/Los_Angeles)), Date format (System (yyyy-MM-dd)), Business phone, and Mobile phone. There are also checkboxes for 'Password needs reset', 'Locked out', 'Active' (checked), 'Web service access only', and 'Internal Integration User'. At the bottom, there are buttons for 'Update', 'Set Password', and 'Delete'. Below the form, there are 'Related Links' and a 'Table' section with a search bar and a table header.

User	Table	Application	Role
alice p			

Fig 1.1 Creating user1

Create one more user:

7. Create another user with the following details
8. Click on submit

The screenshot shows the ServiceNow 'User - Bob p' form. The form is divided into two main sections. The left section contains fields for 'User ID' (203), 'First name' (Bob), 'Last name' (p), 'Title' (empty), and 'Department' (empty). Below these are checkboxes for 'Password needs reset', 'Locked out', 'Active' (checked), 'Web service access only', and 'Internal Integration User'. The right section contains fields for 'Email' (bob@gmail.com), 'Language' (None), 'Calendar integration' (Outlook), 'Time zone' (System (America/Los Angeles)), 'Date format' (System (yyyy-MM-dd)), 'Business phone' (empty), and 'Mobile phone' (empty). There is a 'Photo' field with a 'Click to add...' link. At the bottom of the form are buttons for 'Update', 'Set Password', and 'Delete'. Below the form is a 'Related Links' section with links for 'View linked accounts', 'View Subscriptions', and 'Reset a password'. At the very bottom, there are tabs for 'Entitled Custom Tables', 'Roles (2)', 'Groups (1)', 'Delegates', 'Subscriptions', and 'User Client Certificates'.

Fig 1.1 Creating user2

Milestone 2 : Groups

Activity 1: Create Groups

1. Open service now.
2. Click on All >> search for groups
3. Select groups under system security
4. Click on new
5. Fill the following details to create a new group
6. Click on submit **Project Title**

The screenshot shows the ServiceNow interface for creating a new group. The form is titled 'Group - project team'. It contains the following fields:

- Name: project team
- Group email: [empty]
- Manager: [empty]
- Parent: [empty]
- Description: [empty]

Below the form, there are tabs for 'Roles', 'Group Members (2)', and 'Groups'. The 'Roles' tab is selected, showing a table with the following columns: 'Created', 'Role', 'Granted by', and 'Inherits'. The table is currently empty, with a message 'No records to display' at the bottom.

Fig 2.1 Creating groups

Milestone 3 : Roles

Activity 1: Create roles

1. Open service now.
2. Click on All >> search for roles
3. Select roles under system security
4. Click on new
5. Fill the following details to create a new role
6. Click on submit

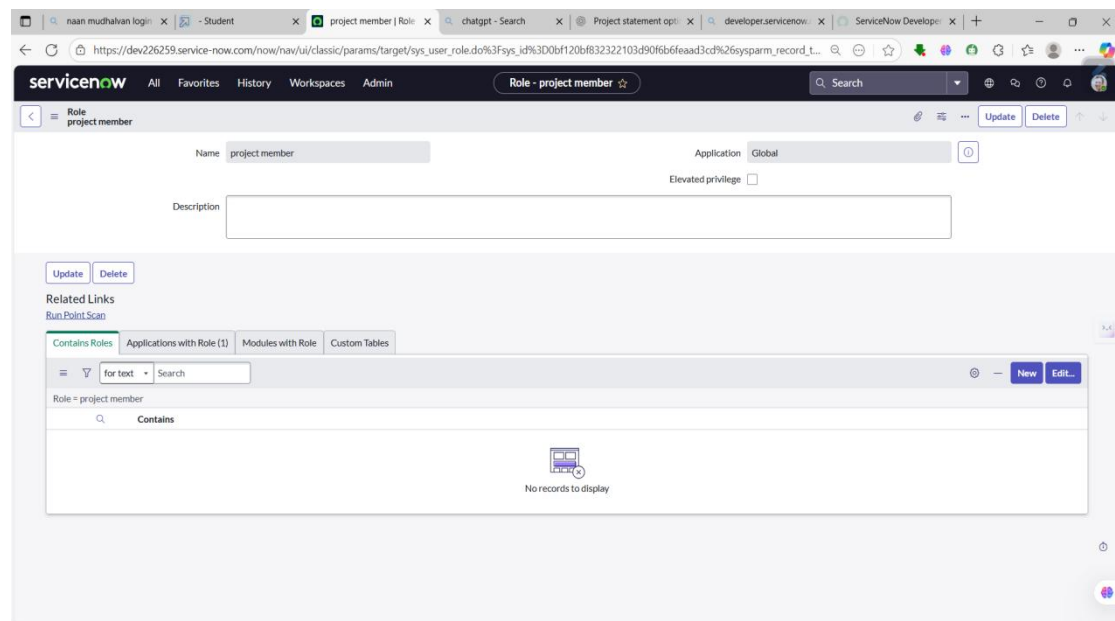


Fig 3.1 Creating roles

Create one more role:

7. Create another role with the following details
8. Click on submit

Milestone 4 : Table Activity 1: Create Table

1. Open service now.
2. Click on All >> search for tables
3. Select tables under system definition
4. Click on new
5. Fill the following details to create a new table

Label : project table

Check the boxes Create module & Create mobile module

6. Under new menu name : project table
7. Under table columns give the columns
8. Click on submit

The screenshot shows the ServiceNow interface for creating a new table named 'project table'. The 'Columns' tab is active, displaying a list of columns to be added to the table. The columns are listed in a table with columns: Column label, Type, Reference, Max length, Default value, and Display. The columns listed are: description (String, 40, false), Updates (Integer, 40, false), project name (String, 40, false), Updated by (String, 40, false), project id (Integer, 40, false), Updated (Date/Time, 40, false), end date (Date, 40, false), status (Choice, 40, false), Created by (String, 40, false), Sys ID (Sys ID (GUID), 32, false), Created (Date/Time, 40, false), project manager (String, 40, false), and start date (Date, 40, false). There is an 'Insert a new row...' button at the bottom of the list.

Fig 4.1 Creating table1

Create one more table:

9. Create another table as: task table 2 and fill with following details.
10. Click on submit.

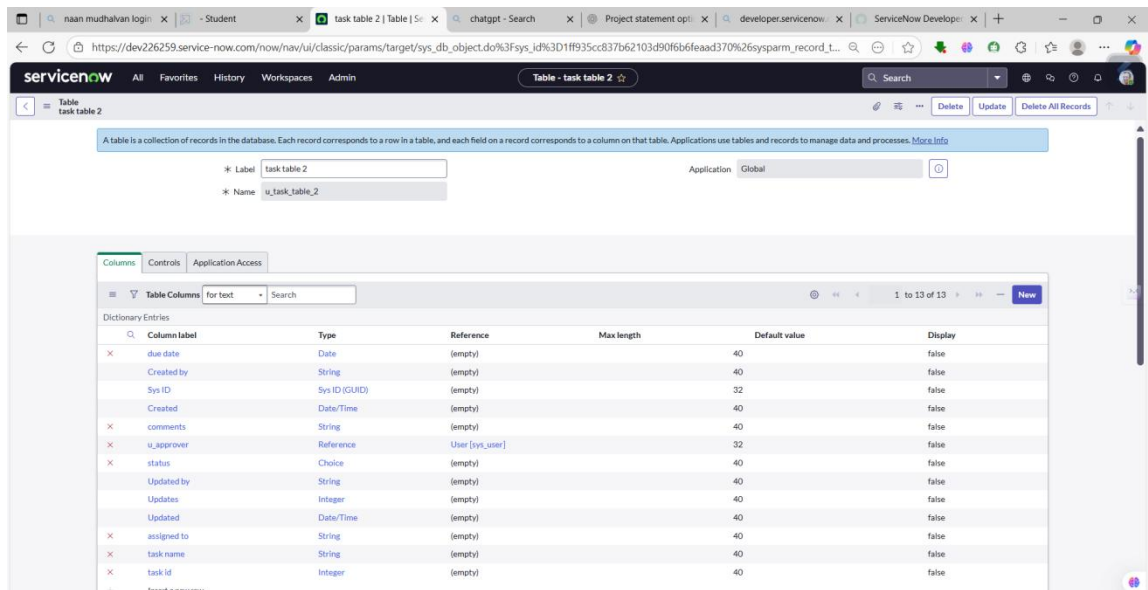


Fig 4.2 Creating table2

Milestone 5 : Assign users to groups

Activity 1: Assign users to project team group

1. Open service now.
2. Click on All >> search for groups
3. Select tables under system definition
4. Select the project team group
5. Under group members
6. Click on edit
7. Select alice p and bob p and save

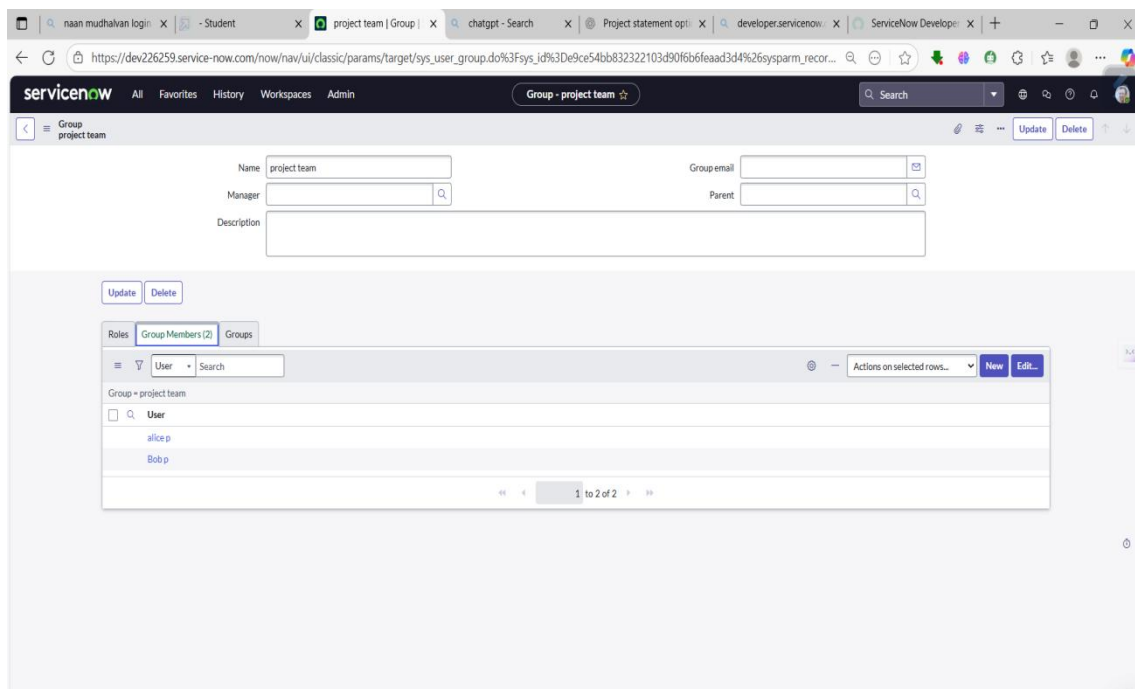


Fig 5.1 Assigning users to groups

Milestone 6 : Assign roles to users

Activity 1: Assign roles to alice user

1. Open servicenow. Click on All >> search for user
2. Select tables under system definition
3. Select the project manager user
4. Under project manager
5. Click on edit
6. Select project member and save
7. click on edit add u_project_table role and u_task_table role
8. click on save and update the form.

The screenshot shows the ServiceNow user management interface for a user named 'alice p'. The 'Roles' tab is selected, displaying a table of assigned roles. The table has columns for 'Role', 'State', 'Inherited', and 'Inheritance Count'. The assigned roles are 'u_task_table_2_user', 'u_project_table_user', and 'project member', all in an 'Active' state and not inherited.

Role	State	Inherited	Inheritance Count
u_task_table_2_user	Active	false	
u_project_table_user	Active	false	
project member	Active	false	

Fig 6.1 Assigning roles to alice

Activity 2: Assign roles to bob user

1. Open servicenow. Click on All >> search for user
2. Select tables under system definition
3. Select the bob p user
4. Under team member
5. Click on edit

6. Select team member and give table role and save

7. Click on profile icon Impersonate user to bob

8. We can see the task table2.

The screenshot shows the ServiceNow user profile page for 'Bob p'. The page includes fields for user information, a 'Related Links' section, and a table of roles assigned to the user.

User Information:

- User ID: 262
- First name: Bob
- Last name: p
- Title:
- Department:
- Email: bob@gmail.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](#)

Entitled Custom Tables:

- Roles (2)
- Groups (1)
- Delegates
- Subscriptions
- User Client Certificates

User ~ Bob p

Role	State	Inherited	Inheritance Count
u_task_table_2_user	Active	false	
Team member	Active	false	

Fig 6.2 Assigning roles to bob

Milestone 7 : Application access

Activity 1: Assign table access to application

1. while creating a table it automatically create a application and module for that table
2. Go to application navigator search for search project table application
3. Click on edit module
4. Give project member roles to that application

The screenshot shows the ServiceNow 'Application Menu - project table' configuration page. The page includes several input fields and checkboxes for configuring the application menu. The 'Title' field is set to 'project table'. The 'Application' dropdown is set to 'Global'. The 'Active' checkbox is checked. The 'Roles' field is set to 'project member'. The 'Category' dropdown is set to 'Custom Applications'. The 'Hint' and 'Description' fields are empty. At the bottom, there is a table listing the modules for the application menu.

Title	Table	Active	Filter	Order	Link type	Device type	Roles	Updated
project tables	project table [u_project_table]	true			List of Records		u_project_table_user	2025-08-31 08:30:29

Fig 7.1 Assigning table access to project table

5. Search for task table2 and click on edit application.
6. Give the project member and team member role for task table 2 application

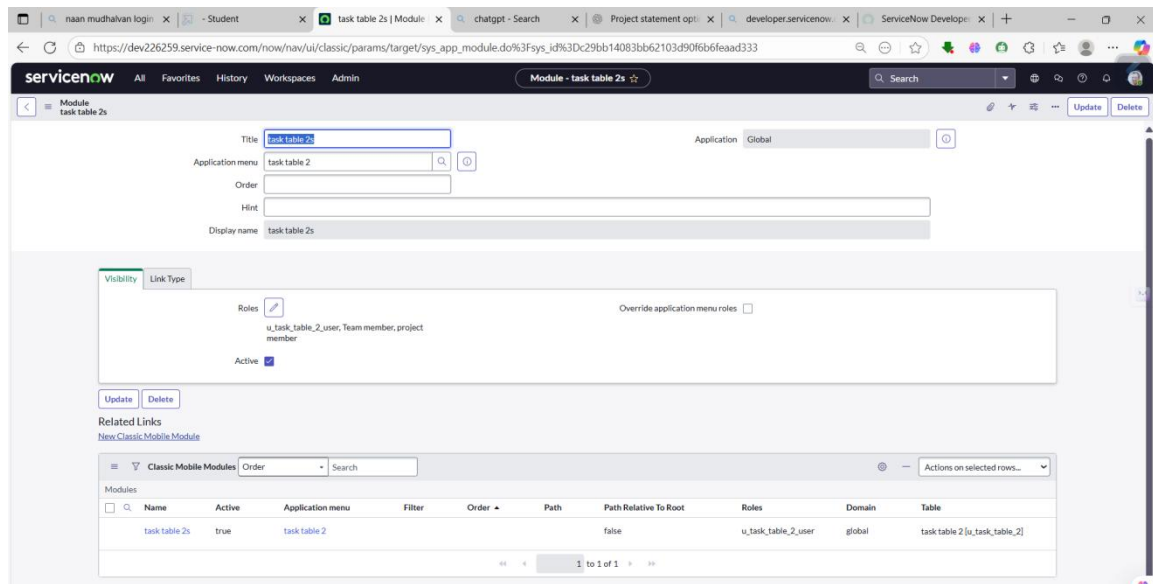
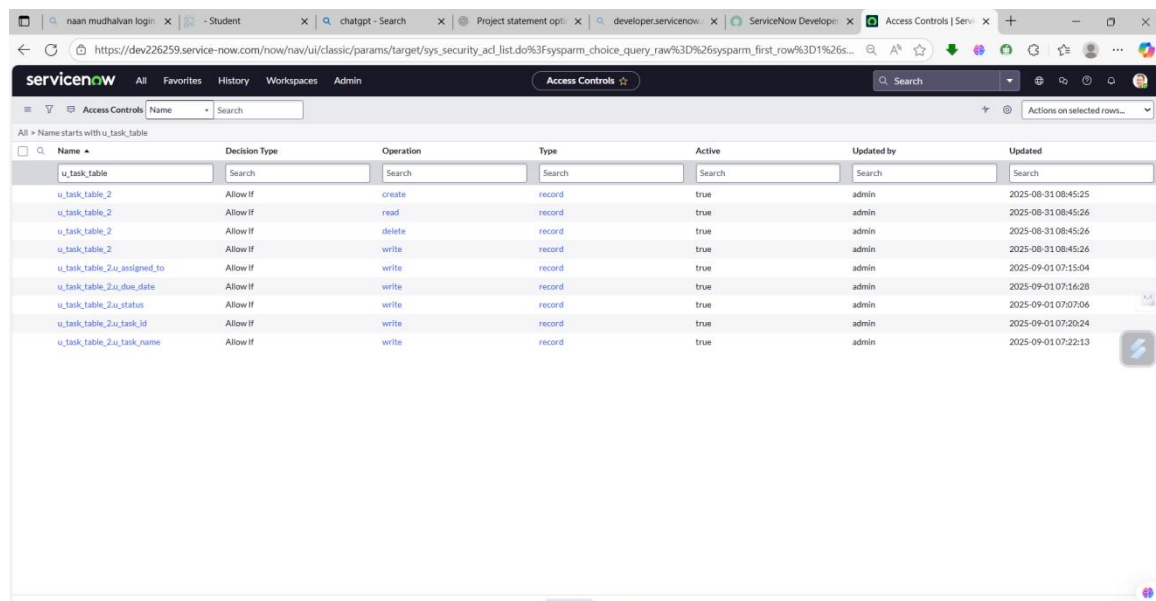


Fig 7.2 Assigning table access to task table2

Milestone 8 :Access control list

Activity 1: Create ACL (Access Control)

1. Open service now.
2. Click on All >> search for ACL
3. Select Access Control(ACL) under system security
4. Click on elevate role 5. Click on new
6. Fill the following details to create a new ACL
7. Scroll down under requires role
8. Double click on insert a new row
9. Give task table and team member role
10. Click on submit
11. Similarly create 4 acl for the following fields



The screenshot shows the ServiceNow 'Access Controls' page. A table lists several ACLs, all with 'Allow If' decision type and 'record' type. The table columns are Name, Decision Type, Operation, Type, Active, Updated by, and Updated.

Name	Decision Type	Operation	Type	Active	Updated by	Updated
u_task_table	Allow If	create	record	true	admin	2025-08-31 08:45:25
u_task_table_2	Allow If	read	record	true	admin	2025-08-31 08:45:26
u_task_table_2	Allow If	delete	record	true	admin	2025-08-31 08:45:26
u_task_table_2	Allow If	write	record	true	admin	2025-08-31 08:45:26
u_task_table_2u_assigned_to	Allow If	write	record	true	admin	2025-09-01 07:15:04
u_task_table_2u_due_date	Allow If	write	record	true	admin	2025-09-01 07:16:28
u_task_table_2u_status	Allow If	write	record	true	admin	2025-09-01 07:07:06
u_task_table_2u_task_id	Allow If	write	record	true	admin	2025-09-01 07:20:24
u_task_table_2u_task_name	Allow If	write	record	true	admin	2025-09-01 07:22:13

Fig 8.1 Creating similar 4 ACL

12. Click on profile on top right side
13. Click on impersonate user
14. Select bob user
15. Go to all and select task table2 in the application menu bar
16. Comment and status fields are have the edit access

The screenshot shows a web browser window with the ServiceNow interface. The browser's address bar displays a URL starting with 'https://dev26259.service-now.com'. The ServiceNow header includes the logo and navigation links like 'All', 'Favorites', 'History', and 'Process Mining Workspace'. The main title of the page is 'task table 2 - Create Created'. Below the title, there is a form with several input fields: 'task id', 'due date', 'comments', 'u_approver', 'status' (a dropdown menu currently showing '-- None --'), 'assigned to', and 'task name'. A 'Submit' button is located at the bottom left of the form area. The browser's tab bar shows multiple open tabs, including 'naan mudhalvan login', 'Student', 'chatgpt - Search', 'Project statement opti...', 'developer.servicenow...', 'ServiceNow Develop...', and 'Create Created | task t...'.

Fig 8.2 Task table2 with comment and status fields have the edit access

Milestone 9: Flow

Activity 1: Create a Flow to Assign operations ticket to group

1. Open service now.
2. Click on All >> search for Flow Designer
3. Click on Flow Designer under Process Automation.
4. After opening Flow Designer Click on new and select Flow.
5. Under Flow properties Give Flow Name as “ task table”.
6. Application should be Global.
7. Click build flow. **next step:**
 1. Click on Add a trigger
 2. Select the trigger in that Search for “create record” and select that.
 3. Give the table name as “ task table ”.
 4. Give the Condition as Field : status Operator :is Value : in progress
Field : comments Operator :is Value : feedback
Field : assigned to Operator :is Value : bob

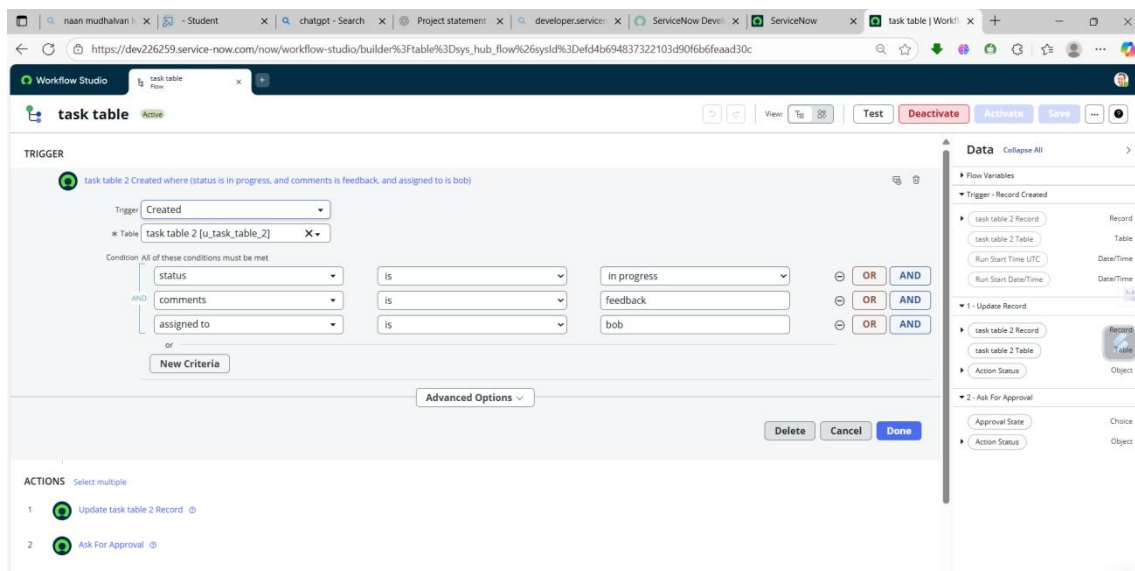


Fig 9.1 Create record

5. After that click on Done.

Next step:

1. Click on Add an action.

2. Select action in that ,search for “ update records”.
3. In Record field drag the fields from the data navigation from Right Side(Data pill)
4. Table will be auto assigned after that
5. Add fields as “status” and value as “completed”
6. Click on Done.

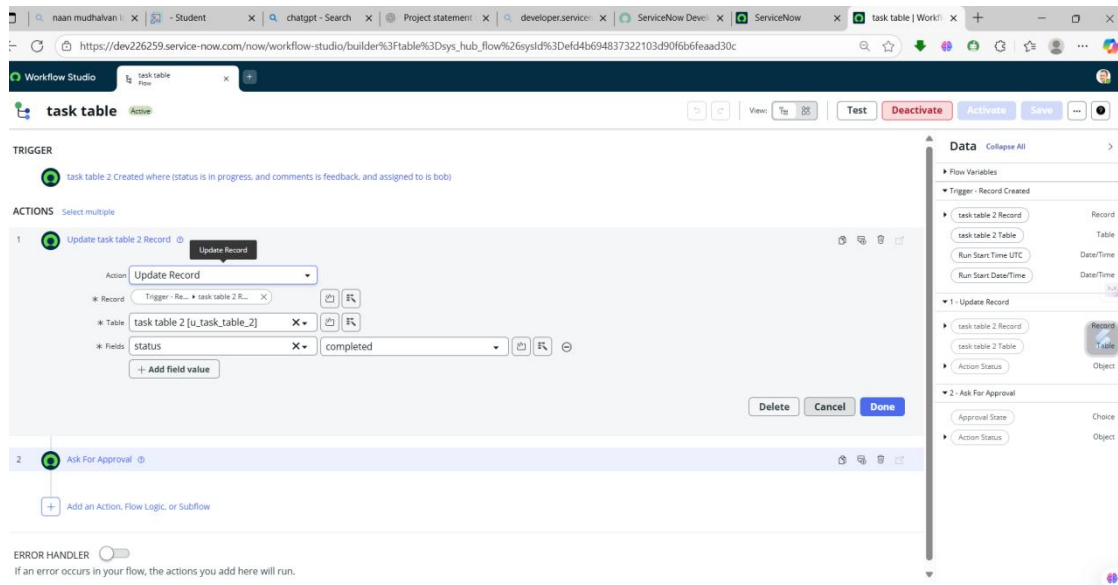


Fig 9.2 Update record

Next step:

1. Now under Actions.
2. Click on Add an action.
3. Select action in that ,search for “ ask for approval ”.
4. In Record field drag the fields from the data navigation from Right side
5. Table will be auto assigned after that
6. Give the approve field as “ status” 7. Give approver as alice p
8. Click on Done.

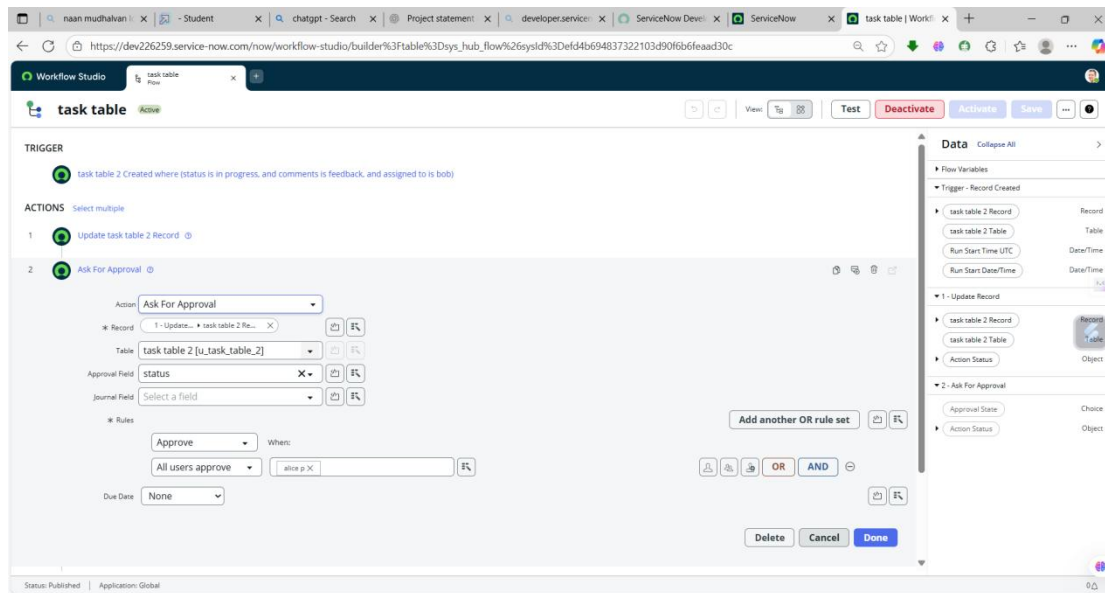


Fig 9.3 Approval record

9.Go to application navigator search for task table.

10.It status field is updated to completed

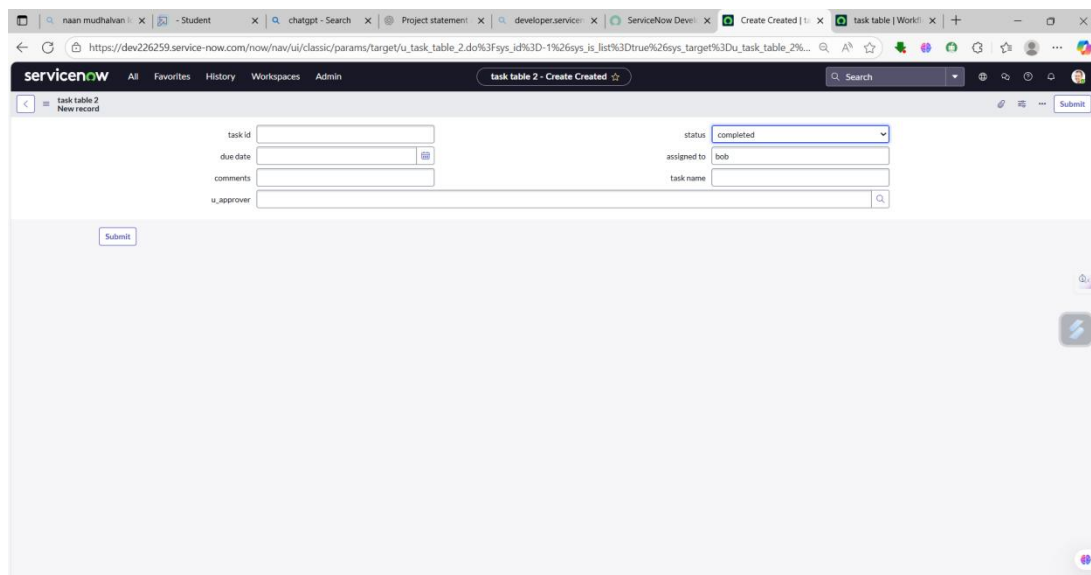


Fig 9.4 Checking status field

11.Go to application navigator and search for my approval

12.Click on my approval under the service desk.

13. Alice p got approval request then right click on requested then select approved

The screenshot shows the ServiceNow 'Approvals' page. The table has the following data:

State	Approver	Comments	Approval for	Created
Approved	alice.p		(empty)	2025-09-03 07:27:35

Fig 9.5 Checking for approval of alice

Conclusion :

This project on **optimizing user, group, and role management with access control and workflows** has shown the importance of establishing a structured approach to identity and access management within organizations. By implementing role-based access control (RBAC), the system ensures that users receive the right access at the right time, reducing the risks of unauthorized activities and maintaining the principle of least privilege.

The introduction of **workflow automation** further enhanced efficiency by streamlining processes such as onboarding, approvals, and de-provisioning. This not only reduced manual effort but also improved accuracy and accountability, while audit trails and compliance features provided greater transparency for governance. Together, these elements strengthened security while improving overall productivity.

In conclusion, the project demonstrates that effective user and role management is not just a technical necessity but a strategic requirement for modern organizations. By combining access control with automated workflows, organizations can achieve scalability, compliance, and operational efficiency, creating a secure and sustainable framework for managing digital identities.