

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

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Table of contents

| S.No | Title | Page No |
|-------------|---|----------------|
| 1 | About the Project | 1 |
| 2 | Creating Users | 2 |
| 3 | Creating Groups | 4 |
| 4 | Creating Roles | 5 |
| 5 | Creating Tables | 6 |
| 6 | Assign Users to Groups | 8 |
| 7 | Assign Roles to Users | 9 |
| 8 | Assign table access to the Application | 11 |
| 9 | Create ACL | 12 |
| 10 | Creating Flow Designer | 14 |
| 11 | Conclusion | 18 |

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 creation interface. The form is titled 'User - alice p' and includes the following fields and options:

- User ID:** alice
- First name:** alice
- Last name:** p
- Title:** (empty)
- Department:** (empty)
- Email:** alice@gmail.com
- Language:** -- None --
- Calendar integration:** Outlook
- Time zone:** System (America/Los_Angeles)
- Date format:** System (yyyy-MM-dd)
- Business phone:** (empty)
- Mobile phone:** (empty)
- Photo:** Click to add...
- Options:**
 - Password needs reset: ☐
 - Locked out: ☐
 - Active: ☒
 - Web service access only: ☐
 - Internal Integration User: ☐

Buttons: Update, Set Password, Delete

Related Links:
[View linked accounts](#)
[View Subscriptions](#)
[Reset a password](#)

Entitled Custom Tables: Roles (4), Groups (1), Delegates, Subscriptions, User Client Certificates

Table: Search

User: alice p

| Table | Application | Role |
|-------|-------------|------|
|-------|-------------|------|

Create one more user:

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

naan mudhalvan login

- Student

Bob p | User | ServiceNow

chatgpt - Search

Project statement opti

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ServiceNow Developer

https://dev226259.service-now.com/now/nav/ui/classic/params/target/sys_user.do%3Fsys_id%3D714dd87783232103d90f6b6feaad3e3%26sysparm_record_targ...

servicenow

All Favorites History Workspaces Admin

User - Bob p

Search

User Bob p

Update Set Password Delete

User ID

bob

First name

Bob

Last name

p

Title

Department

Password needs reset

☐

Locked out

☐

Active

☒

Web service access only

☐

Internal Integration User

☐

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...

Update Set Password Delete

Related Links

[View linked accounts](#)
[View Subscriptions](#)
[Reset a password](#)

Entitled Custom Tables Roles (2) Groups (1) Delegates Subscriptions User Client Certificates

Table

Search

User = Bob p

Table

Application

Role

3

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 'Group - project team' form. The form has the following fields:

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

Below the form are 'Update' and 'Delete' buttons. A tabbed interface shows 'Roles', 'Group Members (2)', and 'Groups'. The 'Roles' tab is active, displaying a table with columns: Created, Role, Granted by, and Inherits. The table is currently empty, showing 'No records to display'.

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

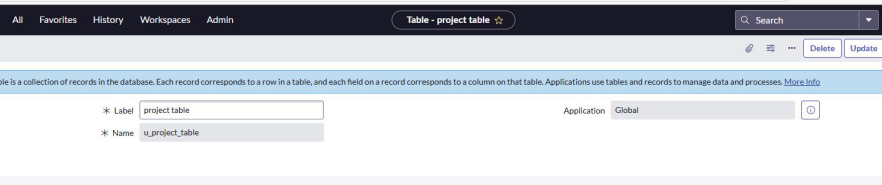
The screenshot shows the ServiceNow interface for creating a new role. The form is titled 'Role - project member'. It has fields for 'Name' (filled with 'project member'), 'Application' (set to 'Global'), and 'Description'. There are 'Update' and 'Delete' buttons. Below the form, there is a 'Related Links' section with a link 'Run Point Scan'. At the bottom, there is a table with tabs for 'Contains Roles', 'Applications with Role (1)', 'Modules with Role', and 'Custom Tables'. The 'Contains Roles' tab is selected, showing a search bar and a table with the header 'Role = project member' and a sub-header 'Contains'. The table is currently empty, displaying 'No records to display'.

Create one more role:

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

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

Check the boxes Create module & Create mobile module

- 

The screenshot displays the ServiceNow interface for defining a table. The top navigation bar shows the user is logged in as 'naan mudhalvan login'. The main header indicates the current page is 'Table - project table'. Below the header, a search bar and several action buttons (Delete, Update, Delete All Records) are visible. A blue informational banner states: 'A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More info](#)'.

The main content area is divided into two tabs: 'Columns' and 'Controls'. The 'Columns' tab is active, showing the table structure. It includes a 'Table Columns' section with a search bar and a list of columns. The columns are defined as follows:

| Column label | Type | Reference | Max length | Default value | Display |
|---------------------|---------------|-----------|------------|---------------|---------|
| description | String | (empty) | 40 | | false |
| Updates | Integer | (empty) | 40 | | false |
| project name | String | (empty) | 40 | | false |
| Updated by | String | (empty) | 40 | | false |
| project id | Integer | (empty) | 40 | | false |
| Updated | Date/Time | (empty) | 40 | | false |
| end date | Date | (empty) | 40 | | false |
| status | Choice | (empty) | 40 | | false |
| Created by | String | (empty) | 40 | | false |
| Sys ID | Sys ID (GUID) | (empty) | 32 | | false |
| Created | Date/Time | (empty) | 40 | | false |
| project manager | String | (empty) | 40 | | false |
| start date | Date | (empty) | 40 | | false |
| Insert a new row... | | | | | |

The 'Dictionary Entries' section is currently empty. At the bottom right, there is a '+ New' button.

9. Create another table as: task table 2 and fill with following details.

10. Click on submit.

naan mudhalvan login x - Student x task table 2 | Table | S x chatgpt - Search x Project statement opt x developer.servicenow x ServiceNow Developer x

https://dev226259.servicenow.com/now/nav/ui/classic/params/target/sys_db_object.do%3Fsys_id%3D1ff935cc837b62103d90f6b6feaad370%26sysparm_record_t...

servicenow All Favorites History Workspaces Admin Table - task table 2 Search

Table task table 2 Delete Update Delete All Records

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More Info](#)

* Label task table 2 Application Global

* Name u_task_table_2

Columns Controls Application Access

Table Columns for text Search 1 to 13 of 13 New

Dictionary Entries

| Column label | Type | Reference | Max length | Default value | Display |
|--------------|---------------|-----------------|------------|---------------|---------|
| due date | Date | (empty) | 40 | (empty) | false |
| Created by | String | (empty) | 40 | (empty) | false |
| Sys ID | Sys ID (GUID) | (empty) | 32 | (empty) | false |
| Created | Date/Time | (empty) | 40 | (empty) | false |
| comments | String | (empty) | 40 | (empty) | false |
| u_approver | Reference | User [sys_user] | 32 | (empty) | false |
| status | Choice | (empty) | 40 | (empty) | false |
| Updated by | String | (empty) | 40 | (empty) | false |
| Updates | Integer | (empty) | 40 | (empty) | false |
| Updated | Date/Time | (empty) | 40 | (empty) | false |
| assigned to | String | (empty) | 40 | (empty) | false |
| task name | String | (empty) | 40 | (empty) | false |
| task id | Integer | (empty) | 40 | (empty) | false |

Insert a new row...

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

The screenshot shows the ServiceNow interface for the 'Group - project team' page. The page has a header with the ServiceNow logo and navigation tabs: All, Favorites, History, Workspaces, Admin. Below the header, there's a search bar and a breadcrumb trail: Group > project team. The main content area is divided into two sections. The top section contains form fields for 'Name' (project team), 'Group email', 'Manager', 'Parent', and 'Description'. The bottom section is titled 'Group Members (2)' and shows a table of users. The table has a search bar and a 'User' column. The users listed are 'alice p' and 'Bob p'. The table is currently showing 1 to 2 of 2 rows.

| User |
|---------|
| alice p |
| Bob p |

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 profile page for 'alice p'. The page includes fields for User ID, First name, Last name, Title, Department, Email, Language, Calendar integration, Time zone, Date format, Business phone, and Mobile phone. There are also checkboxes for 'Password needs reset', 'Locked out', 'Active', 'Web service access only', and 'Internal Integration User'. Below these fields are buttons for 'Update', 'Set Password', and 'Delete'. A 'Related Links' section contains links for 'View linked accounts', 'View Subscriptions', and 'Reset a password'. At the bottom, there is a table titled 'Entitled Custom Tables' with columns for Role, State, Inherited, and Inheritance Count. The table lists three roles: 'u_task_table_2_user', 'u_project_table_user', and 'project member', all with a state of 'Active' and 'Inherited' set to 'false'.

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

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.

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- Student

Bob p | User | ServiceNow

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https://dev226259.servicenow.com/now/nav/ui/classic/params/target/sys_user.do%3Fsys_id%3D714dd877832322103d90f6b6feaad3e3%26sysparm_record_targ...

servicenow

All Favorites History Workspaces Admin

User - Bob p

Search

Update Set Password Delete

User ID

Bob

First name

Bob

Last name

p

Title

Department

Password needs reset

☐

Locked out

☐

Active

☒

Web service access only

☐

Internal Integration User

☐

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...

Update Set Password Delete

Related Links

[View linked accounts](#)
[View Subscriptions](#)
[Reset a password](#)

Entitled Custom Tables Roles (2) Groups (1) Delegates Subscriptions User Client Certificates

Role

Search

u_task_table_2_user

Active

false

Team member

Active

false

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 'Application Menu - project table' configuration page in ServiceNow. The page includes a form with the following fields:

- * Title: project table
- Application: Global
- Active: ☒
- Roles: project member
- Category: Custom Applications
- Hint: (empty)
- Description: (empty)

At the bottom, there is a table listing the application menu items:

| 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 |

5. Search for task table2 and click on edit application.

6. Give the project member and team member role for task table 2 application

The screenshot shows the 'Module - task table 2s' configuration page in ServiceNow. The page includes a form with the following fields:

- Title: task table 2s
- Application menu: task table 2
- Order: (empty)
- Hint: (empty)
- Display name: task table 2s

Below the form, there is a section for 'Roles' with the following roles assigned:

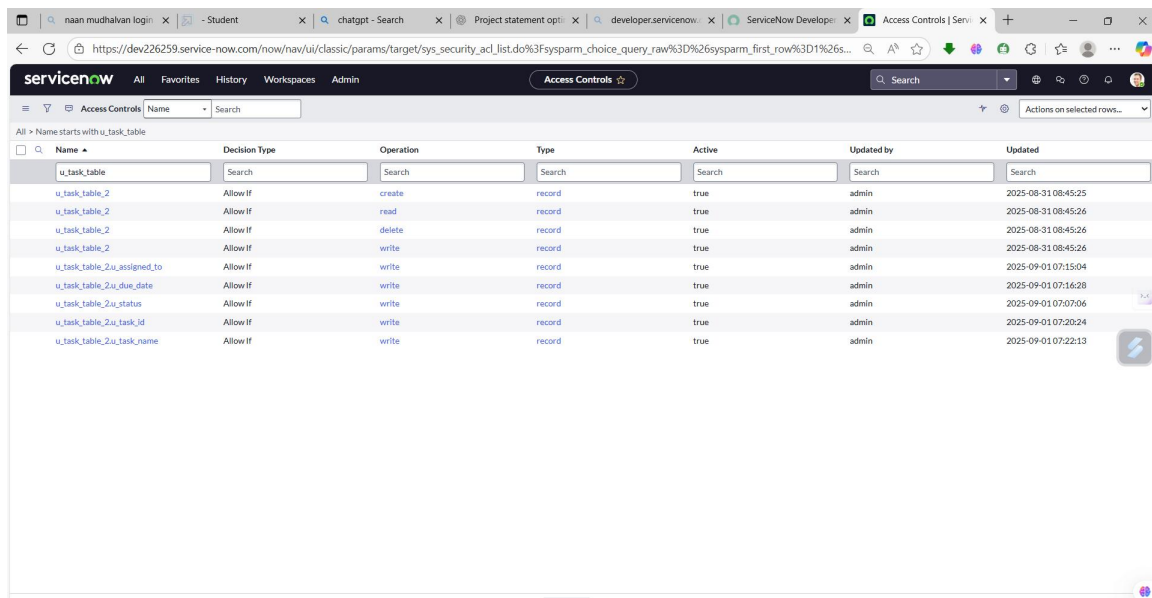
- u_task_table_2_user, Team member, project member

At the bottom, there is a table listing the application menu items:

| Name | Active | Application menu | Filter | Order | Path | Path Relative To Root | Roles | Domain | Table |
|---------------|--------|------------------|--------|-------|------|-----------------------|---------------------|--------|-------------------------------|
| task table 2s | true | task table 2 | | | | false | u_task_table_2_user | global | task table 2 [u_task_table_2] |

Milestone 8 :Access control list Activity 1: Create ACL

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 interface. The top navigation bar includes 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. The main header is 'Access Controls' with a search bar. Below the header, there is a table of ACLs. The table has columns: Name, Decision Type, Operation, Type, Active, Updated by, and Updated. The table contains 10 rows of ACLs, all with 'Allow If' decision type and 'record' type. The operations are create, read, delete, and write. The updated by field is 'admin' for all entries, and the updated date is '2025-08-31 08:45:25' for the first four rows and '2025-09-01 07:07:06' for the last six rows.

| 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 |

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

naan mudhalvan login x - Student x chatgpt - Search x Project statement opti x developer.servicenow x ServiceNow Developer x Create Created | task t x

https://dev226259.service-now.com/now/nav/ui/classic/params/target/u_task_table_2.do%3Fsys_id%3D-1%26sys_js_list%3Dtrue%26sys_target%3Du_task_table_2%...

servicenow All Favorites History Process Mining Workspace task table 2 - Create Created

task table 2 New record

task id status -- None --

due date assigned to

comments task name

u_approver

Submit

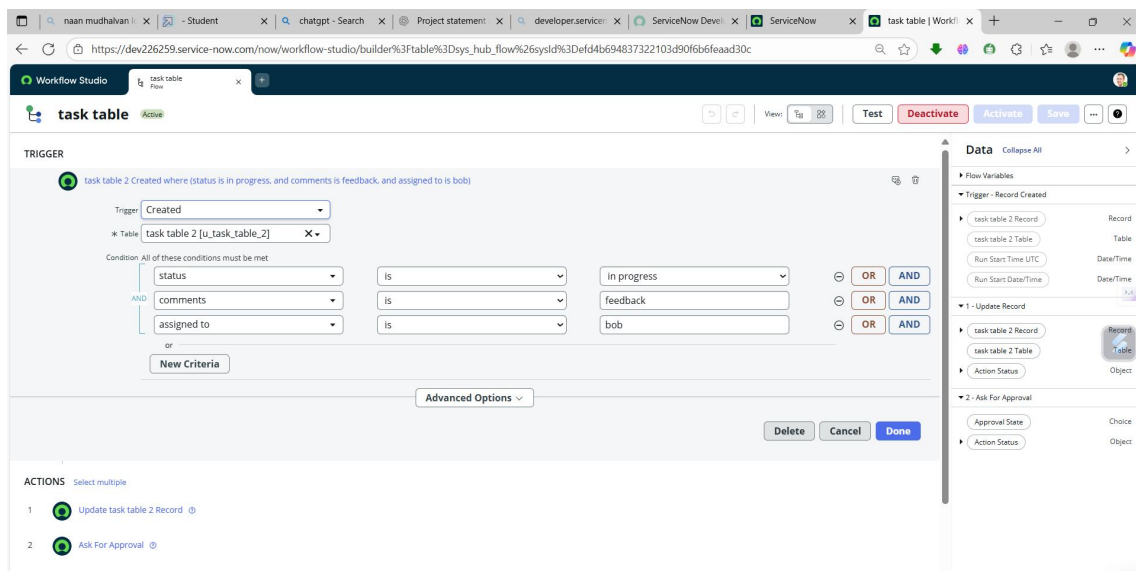
Milestone 9: Flow

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

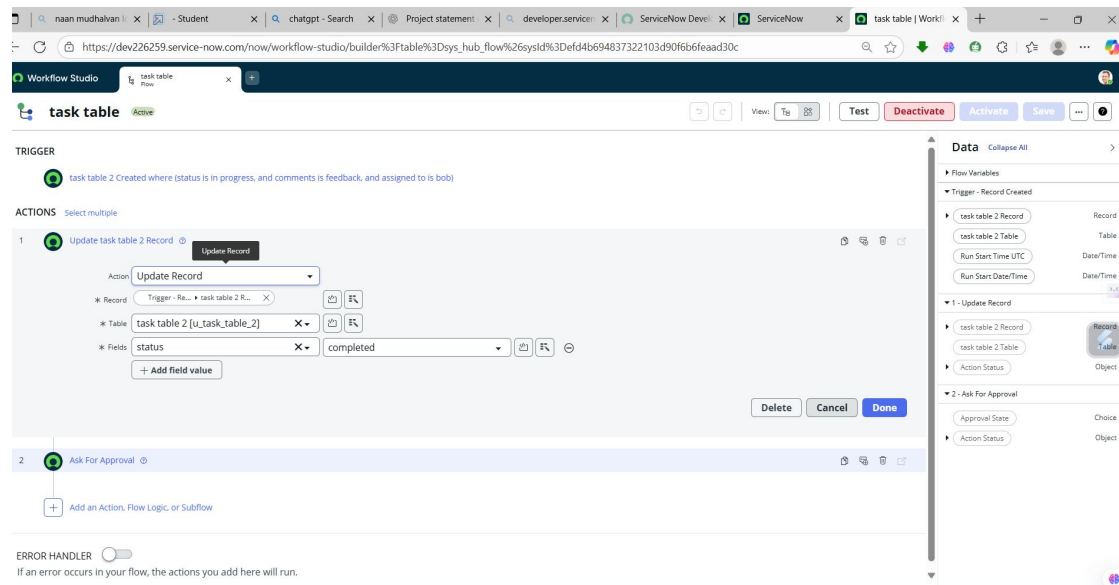


5. After that click on Done.

Next step:

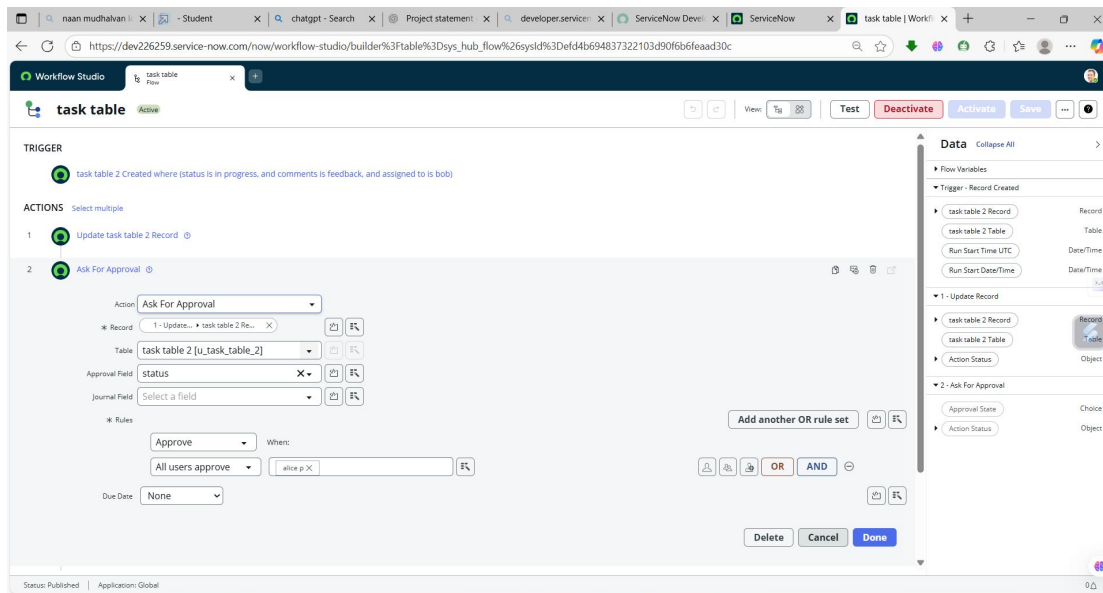
1. Click on Add an action.
2. Select action in that ,search for “ update records”.

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.



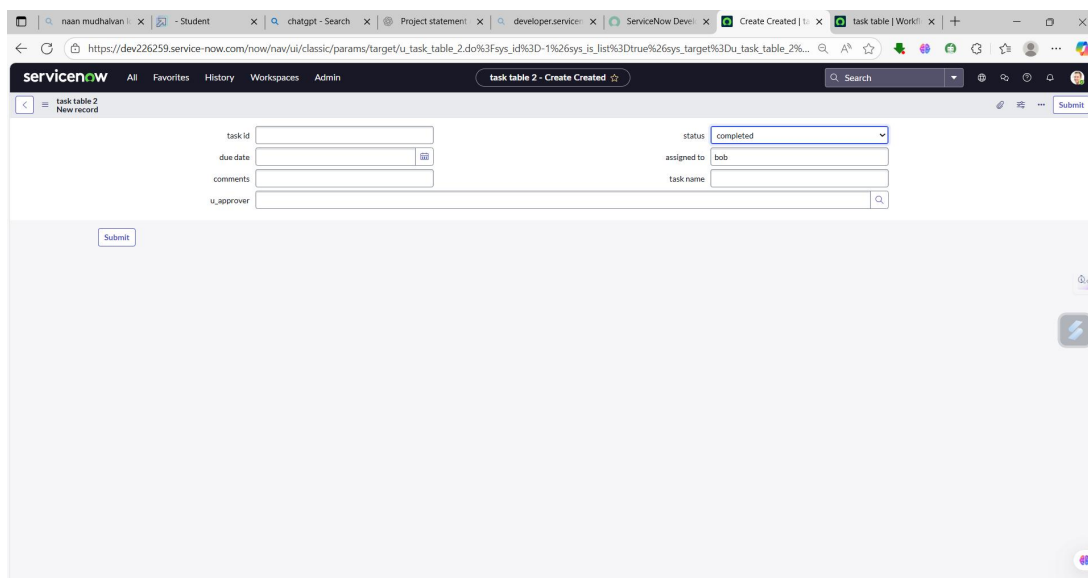
Next step:

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.



9.Go to application navigator search for task table.

10.It status field is updated to completed



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

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https://dev226259.service-now.com/now/nav/ui/classic/params/target/sysapproval_approver_list.do%3Fsysparm_userpref_module%3De0f011dbff02110053ccffffff...

servicenow All Favorites History Process Mining Workspace Approvals

Approvals State Search Actions on selected rows...

All > Sys ID = NULL .or. Approver = alice p

| | State | Approver | Comments | Approval for | Created |
|--------------------------|----------|----------|----------|--------------|---------------------|
| <input type="checkbox"/> | Approved | alice p | | (empty) | 2025-09-03 07:27:35 |

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.