

PROJECT DESIGN PHASE

Project Title: Optimizing User, Group, and Role Management with Access Control and Workflows

DATE	NOV 2, 2025
TEAM ID	NM2025TMID02832
PROJECT NAME	Optimizing User, Group, and Role Management with Access Control and Workflows
MAXIMUM MARKS	4 MARKS

1. System Architecture

Role	Description	Key Permissions
Admin	Configures roles, ACLs, and workflow	Full system access
Alice (Project Manager)	Creates tasks, reviews updates, approves completion	Create/Read/Update/Delete
Bob (Team Member)	Works on assigned tasks, updates only status & comments	Limited edit access (ACL controlled)

Architecture Description:

The system follows a **Role-Based Access Control (RBAC)** structure:

- Admin configures users, groups, roles, and ACLs.
- Alice acts as the **approver**, responsible for project-level oversight.
- Bob acts as the **executor**, responsible for updating progress within restricted fields. This ensures security, accountability, and automation throughout the project lifecycle.

(Insert a small architecture diagram screenshot if you have it — showing Admin, Alice, Bob interacting with the Task Table.)

2. Database Design

Primary Table: u_task_table_2

Purpose: To store all project task-related data for the workflow.

Field Name	Type	Description	Access
Task Name	String	Title of the task	Read/Write (Alice only)
Description	String	Details about the task	Read/Write (Alice only)
Assigned To	Reference (User)	Task assigned user (Bob)	Read (Bob)
Status	Choice	Task progress (New, In Progress, Completed)	Read/Write (Bob)
Comments	String	Notes or feedback on the task	Read/Write (Bob)
Priority	Choice	Task importance level	Read (Bob)
Due Date	Date	Target completion date	Read (Bob)

Database Logic:

- When a record is created or updated, ACLs determine who can access which fields.
- Data is securely stored in ServiceNow's platform database; each update triggers associated Flow Designer automation.

3. Workflow Design

Workflow Engine: ServiceNow Flow Designer

Trigger Event:

- Record created or updated in u_task_table_2

Flow Logic:

1. **Trigger:** On record creation or update
2. **Condition:**
 - Status = "In Progress"
 - Comment = "Feedback"
 - Assigned To = Bob
3. **Action 1:** Update record → Status = "Completed"
4. **Action 2:** Ask for Approval → Approver = Alice (Project Manager)
5. **Action 3:** Await Approval → On approval, update approval status and notify the user

4. Process Flow Description

Step 1: Alice creates a new task and assigns it to Bob.

Step 2: Bob edits only Status and Comment fields.

Step 3: Flow Designer automatically detects the update.

Step 4: The system updates Status → Completed.

Step 5: An approval request is sent to Alice.

Step 6: Alice views the approval in *My Approvals* and marks it Approved.

Step 7: The flow ends successfully, confirming the task is complete.

5 Insert Screenshot: Flow Diagram

User access management

chatgpt - Yahoo Search Re

Web app or ServiceNow

ServiceNow Developers

ServiceNow

Task Table Automation | V

dev293411.service-now.com/now/workflow-studio/builder?table=sys_hub_flow&sysId=e33b24c783f43210ecdba6d0deaad3f9

Workflow Studio

Task Table Automation

Task Table Automation Flow

Task Table Automation

Active

View: [Diagram] [Code]

Test

Deactivate

Activate

Save

...

?

TRIGGER

Task Table 2 Created where (Status is In progress; Assigned To is Bob p; Comment is feedback)

Trigger: Created

* Table: Task Table 2 [u_task_table_2]

Condition: All of these conditions must be met

Status is In progress

Assigned To is Bob p

Comment is feedback

New Criteria

Advanced Options

Status: Published

Application: Global

1

Update Task Table 2 Record

Action: Update Record

* Record: Trigger - R... Task Table 2 R...

* Table: Task Table 2 [u_task_table_2]

* Fields: Status Completed

+ Add field value

Delete

Cancel

Done

2

Ask For Approval

+ Add an Action, Flow Logic, or Subflow

ERROR HANDLER

javascriptvoid(0)

Application: Global

Data

Collapse All

Flow Variables

Task Table 2 Record

Task Table 2 Table

Run Start Time UTC

Run Start Date/Time

1 - Update Record

Task Table 2 Record

Task Table 2 Table

Action Status

2 - Ask For Approval

Approval State

Action Status

11:56 AM

11/1/2025

dev293411.service-now.com/now/nav/ui/classic/params/target/sysapproval_approver_list.do%3Fsysparm_clear_stack%3Dtrue

serviceNow

AllFavoritesHistoryWorkspaces

Approvals

Search

Actions on selected rows...

All

	State	Approver	Comments	Approval for	Created
<input type="radio"/>	Requested	alice p		(empty)	2025-10-30 23:29:19
<input type="radio"/>	Requested	alice p		(empty)	2025-10-30 23:20:19
<input type="radio"/>	Requested	alice p		(empty)	2025-10-30 23:20:19
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 03:18:23
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 03:18:21
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:46:26
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:46:23
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:43:12
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:43:03
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:42:32
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:42:25
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:29:24
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:29:21
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:26:23
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 02:13:10
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 01:59:21
<input type="radio"/>	Approved	alice p		(empty)	2025-10-30 00:17:23

1 to 20 of 687

dev293411.service-now.com/now/workflow-studio/builder?table=sys_hub_flow&sysId=e33b24c783f43210ecdba6d0deaad3f9

Workflow Studio

Task Table Automation

Task Table Automation

Test flow

Run your flow to make sure it has no errors before you activate it. When the test finishes running, check the execution details to see each action's configuration, runtime values, and the log messages for any errors that occurred.

* Task Table 2 Record

Select Task Table 2 Rec...

☐ Run test in background

Cancel

Run Test

TRIGGER

Task Table 2 Created where (Status is)

ACTIONS

Select multiple

1 Update Task Table 2 Record

2 Ask For Approval

ERROR HANDLER

If an error occurs in your flow, the actions you add here will run.

Status: Published | Application: Global

Data

Flow Variables

Trigger - Record Created

Task Table 2 Record

Task Table 2 Table

Run Start Time UTC

Run Start Date/Time

1 - Update Record

Task Table 2 Record

Task Table 2 Table

Action Status

2 - Ask For Approval

Approval State

Action Status

Workflow Studio

Task Table Automation

Task Table Automation Flow

Task Table Automation

Deactivate

Activate

Save

TRIGGER

Task Table 2 Created where (Status is)

ACTIONS

Select multiple

1

Update Task Table 2 Record

2

Ask For Approval

+

Add an Action, Flow Logic, or Subflow

ERROR HANDLER

If an error occurs in your flow, the actions you add here will run.

Status: Published

Application: Global

Test flow

×

Run your flow to make sure it has no errors before you activate it. When the test finishes running, check the execution details to see each action's configuration, runtime values, and the log messages for any errors that occurred.

* Task Table 2 Record

Created 2025-10-3...

×

🔍

+

🕒

☐ Run test in background

Cancel

Run Test

Data

Collapse All

▶

Flow Variables

▶ Trigger - Record Created

Trigger - Record Created

▶ Task Table 2 Record

Record

▶ Task Table 2 Table

Table

▶ Run Start Time UTC

Date/Time

▶ Run Start Date/Time

Date/Time

▼ 1 - Update Record

▶ Task Table 2 Record

Record

▶ Task Table 2 Table

Table

▶ Action Status

Object

▼ 2 - Ask For Approval

▶ Approval State

Choice

▶ Action Status

Object

Workflow Studio

Task Table Automation

Task Table Automation Flow execution

EXECUTION DETAILS

Task Table Automation

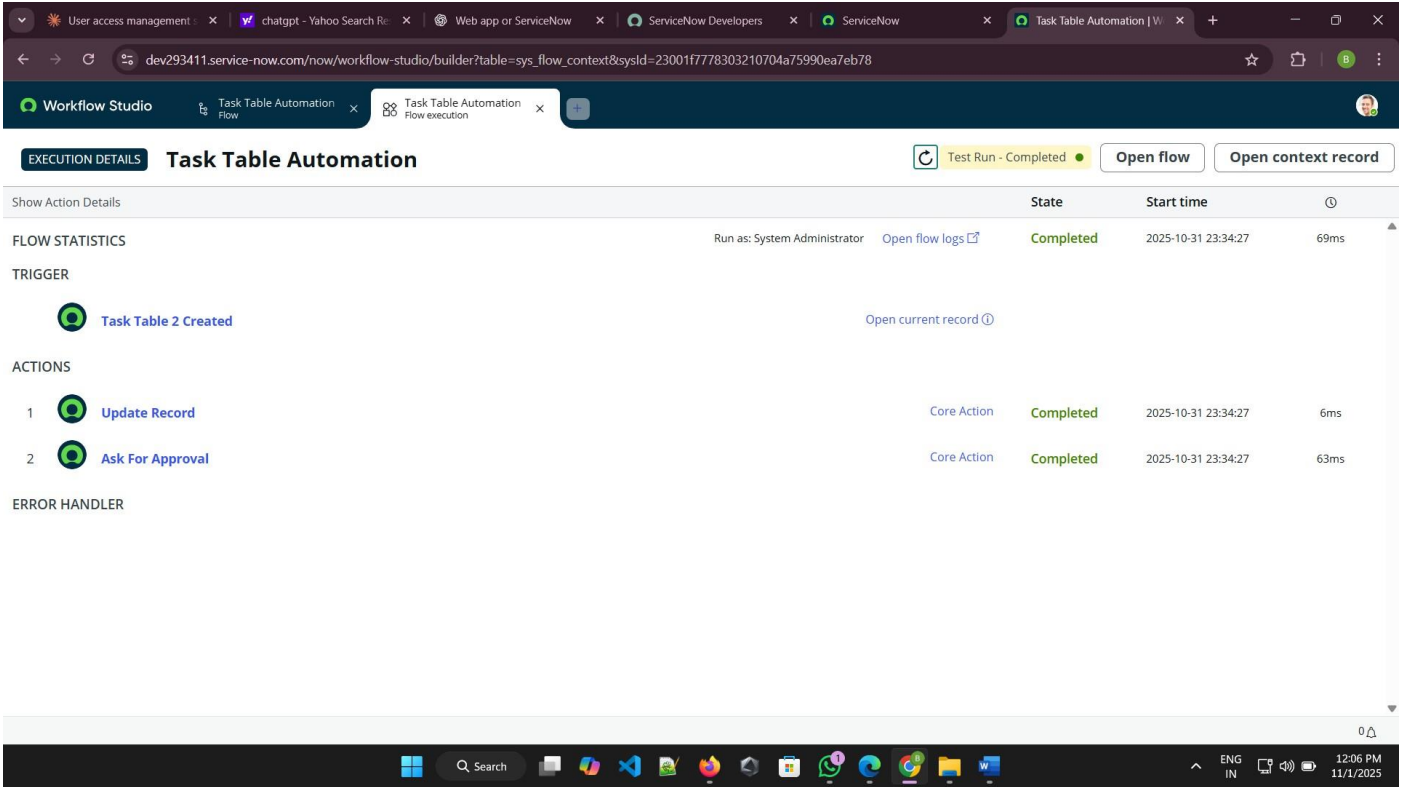
Test Run - Waiting

Cancel flow

Open flow

Open context record

Show Action Details	State	Start time	
FLOW STATISTICS	Run as: System Administrator	Open flow logs	Waiting
TRIGGER			2025-10-31 23:31:31
		Open current record	91ms
ACTIONS			
1	Update Record	Core Action	Completed
2	Ask For Approval	Core Action	Waiting
ERROR HANDLER			
			2025-10-31 23:31:31
			74ms



6 Design Validation

Component	Tested	Result
User Roles	■	Correct roles assigned
Table Fields	■	Properly configured
ACLs	■	Bob restricted correctly
Flow Designer	■	Trigger and actions executed
Approval Process	■	Alice approval received

7 Conclusion

The **Project Design Phase** defines the system architecture, table schema, and workflow automation logic for efficient role-based task management. By combining ACL security and Flow Designer automation, this design ensures only authorized users can modify data, while all approvals are tracked transparently.