

PROJECT DESIGN PHASE

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

DATE	02 November 2025
TEAM ID	NM2025TMID08944
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.
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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

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Task Table Automation

Active

View: 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

OR AND

New Criteria

Advanced Options

Data

- Flow Variables
- 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)

Status: Published | Application: Global | 0

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Task Table Automation

Active

View: Test Deactivate Activate Save ...

1 Update Task Table 2 Record

Action: **Update Record**

* Record: Trigger - R... → Task Table 2 R... (Task Table 2 Record)

* 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 Handling

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Workflow Studio | Task Table Automation Flow | Active

2 Ask For Approval

Action: Ask For Approval

* Record: Trigger - Record Created → Task Table 2 Record

Table: Task Table 2 [u_task_table_2]

Approval Field: Status

Journal Field: Comment

* Rules:

- Approve When: Anyone approves (alice p)

Due Date: None

Data

- 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)

Buttons: Add another OR rule set, Delete, Cancel, Done

Status: Published | Application: Global

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servicenow All Favorites History Process Mining Workspace Task Table 2s

Assigned To: Search Actions on selected rows...

All

Assigned To	Comment	Description	Due Date	Priority	Status	Task Name
(empty)	Due date passed auto Approved task				requested	
(empty)	alice p approved the task.		2025-10-31		approved	
Bob p	alice p approved the task.	FINAL TEST	2025-10-31		approved	FINAL
Bob p	alice p approved the task.	esting approval workflow"	2025-10-31		approved	Test Approval Flow
Bob p	alice p approved the task.	AGAIN FINAL TEST	2025-10-31		approved	AGAIN FINAL
Bob P	alice p approved the task.	hello	2025-10-31		approved	Frotend
Bob p	alice p approved the task.	NOTHING	2025-10-31		approved	NAAN MUTHALVAN
Bob p	alice p approved the task.	HELLO	2025-10-31		approved	HELLO
Bob p	Due date passed auto Approved task	Vanakkam	2025-10-31		requested	Name Find
Bop P	Initial draft assigned to Bob	Create homepage layout for project	2025-10-31		approved	Design UI Layout

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servicenow All Favorites History Workspaces Approvals Approvals Search Actions on selected rows...

All

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

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Workflow Studio Task Table Automation Flow

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.

Trigger: Task Table 2 Created where (Status is I)

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.

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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

Record Table Date/Time Date/Time Object Choice Object

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Workflow Studio Task Table Automation Flow

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

Run test in background ⓘ

TRIGGER

Task Table 2 Created where (Status is I...)

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

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

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Workflow Studio Task Table Automation Flow execution

Task Table Automation

EXECUTION DETAILS

Test Run - Waiting

Show Action Details

		State	Start time	
FLOW STATISTICS	Run as: System Administrator	Open flow logs	Waiting	2025-10-31 23:31:31
TRIGGER	Task Table 2 Created	Open current record		91ms
ACTIONS	1 Update Record	Core Action Completed	2025-10-31 23:31:31	17ms
	2 Ask For Approval	Core Action Waiting	2025-10-31 23:31:31	74ms

ERROR HANDLER

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EXECUTION DETAILS Task Table Automation

Show Action Details

FLOW STATISTICS

Run as: System Administrator Open flow logs *Completed* 2025-10-31 23:34:27 69ms

TRIGGER

Task Table 2 Created Open current record *Completed*

ACTIONS

Index	Action	Type	Status	Start Time	Duration
1	Update Record	Core Action	Completed	2025-10-31 23:34:27	6ms
2	Ask For Approval	Core Action	Completed	2025-10-31 23:34:27	63ms

ERROR HANDLER

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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.