

REQUIREMENT ANALYSIS PHASE

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

DATE	NOV 2, 2025
TEAM ID	NM2025TMID03787
PROJECT NAME	Optimizing User, Group, and Role Management with Access Control and Workflows
MAXIMUM MARKS	4 MARKS

1 Introduction

This phase defines the **functional** and **non-functional requirements** essential for developing a secure and automated **task management workflow** in ServiceNow. The system supports two key user roles — **Alice (Project Manager)** and **Bob (Team Member)** — overseen by the **Admin**, who configures user roles, ACLs, and automation workflows within the platform.

2 Functional Requirements

ID	Requirement	Description	Actor
FR1	Create User Roles	The system must support two primary roles — Project Manager and Team Member.	Admin
FR2	Create Tasks	Alice should be able to create and assign tasks to Bob.	Alice
FR3	Update Tasks	Bob must be able to update only the <i>Status</i> and <i>Comments</i> fields of his assigned tasks.	Bob
FR4	Apply ACLs	The system must restrict Bob's access to only the permitted fields via Access Control Lists.	Admin
FR5	Automate Workflow	The system should automatically trigger Flow Designer when a record is created or updated.	System
FR6	Request Approval	When a task is marked as "Completed," an approval request should be automatically sent to Alice.	System
FR7	Approve Tasks	Alice should be able to approve or reject task completion requests.	Alice
FR8	Display Approvals	Approved or rejected tasks must appear in the My Approvals module for visibility.	System
FR9	Store Data	Task records, user data, and approval logs must be securely stored in ServiceNow tables.	System

3 Non-Functional Requirements

ID	Category	Description
NFR1	Platform	The solution will be developed and tested on the ServiceNow Personal Developer Instance (PDI) .
NFR2	Security	All data access will be controlled by ACLs (Access Control Lists) , ensuring the principle of least privilege.
NFR3	Reliability	Approval and update processes must execute consistently and record all task status changes.
NFR4	Usability	Provide clear, role-based interfaces to minimize confusion and simplify task tracking.
NFR5	Maintainability	Configurations such as roles, tables, and flows should be easy to modify and extend.
NFR6	Performance	Workflow execution and approval processing should complete within 3 seconds per event .
NFR7	Auditability	Every update, change, or approval must be automatically logged by the system for audit tracking.

4 System Actors

Actor	Description
Admin	Configures the instance, creates users, defines roles, tables, ACLs, and builds workflows.
Alice (Project Manager)	Creates and assigns tasks to Bob, reviews progress, and approves completed work.
Bob (Team Member)	Updates assigned tasks (Status/Comments) and requests approvals.
ServiceNow System	Executes automated updates and approval flows through Flow Designer .

5 Requirement Matrix (Insert Screenshot)

The screenshot shows the ServiceNow Workflow Studio interface for creating a new flow named "Task Table Automation".

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

Action 1: Update Task Table 2 Record

- Action: Update Record
- * Record: Trigger - Record Created
- * Table: Task Table 2 [u_task_table_2]
- * Fields: Status → Completed

Action 2: Ask For Approval

Flow Logic: Add an Action, Flow Logic, or Subflow

On the right side, there is a sidebar titled "Data" with various objects listed:

- 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 Flow | Active

2 Ask For Approval

Action: Ask For Approval

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

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
- 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

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

Status: Published | Application: Global

11:57 AM 11/1/2025

User access management | chatgpt - Yahoo Search Re... | Web app or ServiceNow | ServiceNow Developers | Task Table Automation |

servicenow All Favorites History Workspaces Approvals

Approvals Created Search Actions on selected rows...

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

1 to 20 of 687

11:58 AM 11/1/2025

User access management | X | chatgpt - Yahoo Search Re... | Web app or ServiceNow | ServiceNow Developers | Approvals | ServiceNow | Task Table Automation | W | +

servicenow All Favorites History Workspaces Approvals ⚡ Search ... Update Approve Reject Delete ↑ ↓

Approval Task Table 2: Created 2025-10-29 07:32:04

Approver: alice p Approving: Task Table 2: Created 2025-10-29 07:32:04

State: Requested Approval for:

Comments: Comments Post

Activities: 1 System Administrator Approver: alice p State: Requested Field changes • 2025-10-30 23:29:19

Update Approve Reject Delete

User access management | X | chatgpt - Yahoo Search Re... | Web app or ServiceNow | ServiceNow Developers | ServiceNow | Task Table Automation | W | +

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 Select Task Table 2 Rec...

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.

Data Collapse All

- 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

Create Created | Task Table 2 | ServiceNow - Google Chrome

dev293411.service-now.com/u_task_table_2.do?&sysparm_clear_stack=true&sysparm_reference=u_task_table_2&sysparm_domain_restore=false&sysparm_use_polaris=true

Task Table 2 New record

Due Date:

Priority: -- None --

Status: -- None --

Task Name:

Description:

Comment:

Assigned To:

Submit

User access management | chatgpt - Yahoo Search Re... | Web app or ServiceNow | ServiceNow Developers | ServiceNow | Task Table Automation | W... | + | ENG IN 11:59 AM 11/1/2025

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 Created 2025-10-3...

Run test in background

Cancel **Run Test**

Data **Collapse All**

- 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

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 0 ▲

ENG IN 12:00 PM 11/1/2025

User access management | ServiceNow | chatgpt - Yahoo Search Results | Web app or ServiceNow | ServiceNow Developers | ServiceNow | Task Table Automation | Workflow Studio | Task Table Automation | Flow | Task Table Automation | Flow execution

Task Table Automation

EXECUTION DETAILS

	State	Start time	Duration	
Run as: System Administrator	Open flow logs	Waiting	2025-10-31 23:31:31	91ms

FLOW STATISTICS

TRIGGER

Task Table 2 Created

ACTIONS

- 1 Update Record
- 2 Ask For Approval

ERROR HANDLER

User access management | ServiceNow | chatgpt - Yahoo Search Results | Web app or ServiceNow | ServiceNow Developers | Approvals | ServiceNow | Task Table Automation | Workflow Studio | Task Table Automation | Flow

Create Created | Task Table 2 | ServiceNow - Google Chrome

dev293411.service-now.com/u_task_table_2.do?&sysparm.clear_stack=true&sysparm.reference=u_task_table_2&sysparm.do...

Task Table 2

New record

Due Date	2025-11-01	Description	HELLO
Priority	-- None --	Comment	HELLO
Status	In progress	Assigned To	BOB p
Task Name	NM TODAY		

Submit

DATA

Expand All

- Flow Variables
- Trigger - Record Created
- 1 - Update Record
- 2 - Ask For Approval

TRIGGER

Task Table 2 Created where (Status is null)

ACTIONS

Select multiple

- 1 Update Task Table 2 Record
- 2 Ask For Approval

Add an Action, Flow Logic, or Subflow

Error Handler section is unavailable due to system limitation.

Status: Published | Application: Global

User access management | ServiceNow | Task Table 2s | ServiceNow | Task Table Automation | W | +

servicenow All Favorites History Process Mining Workspace Task Table 2s

Assigned To Search Actions on selected rows...

All

<input type="checkbox"/>	Assigned To	Comment	Description	Due Date	Priority	Status	Task Name
	(empty)	Due date passed auto Approved task				approved	
	(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.	estng 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		alice p approved the task.	Name Find
	BOb p	alice p requested to approve task	HELLO	2025-11-01		In progress	NM TODAY
	Bop P	Initial draft assigned to Bob	Create homepage layout for project	2025-10-31		approved	Design UI Layout
	HELLO	alice p requested to approve task	HELLO	2025-11-01			NM TODAY

User access management | ServiceNow | Task Table 2s | ServiceNow | Task Table Automation | W | +

servicenow All Favorites History Process Mining Workspace Task Table 2s

Assigned To Search Actions on selected rows...

All

<input type="checkbox"/>	Assigned To	Comment	Description	Due Date	Priority	Status	Task Name
	(empty)	Due date passed auto Approved task				approved	
	(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.	estng 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		alice p approved the task.	Name Find
	BOb p	alice p requested to approve task	HELLO	2025-11-01		Completed	NM TODAY
	Bop P	Initial draft assigned to Bob	Create homepage layout for project	2025-10-31		approved	Design UI Layout
	HELLO	alice p requested to approve task	HELLO	2025-11-01			NM TODAY

User access management | ServiceNow | Task Table 2s | ServiceNow | Task Table Automation | W | +

servicenow All Favorites History Process Mining Workspace Task Table 2s

Assigned To Search Actions on selected rows...

All

<input type="checkbox"/>	Assigned To	Comment	Description	Due Date	Priority	Status	Task Name
	(empty)	Due date passed auto Approved task				approved	
	(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.	estng 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		alice p approved the task.	Name Find
	BOb p	alice p requested to approve task	HELLO	2025-11-01		Completed	NM TODAY
	Bop P	Initial draft assigned to Bob	Create homepage layout for project	2025-10-31		approved	Design UI Layout
	HELLO	alice p requested to approve task	HELLO	2025-11-01			NM TODAY

The screenshot shows a ServiceNow Approvals list page. The table has columns: State, Approver, Comments, Approval for, and Created. Most rows show the state as 'Approved' and the approver as 'alice p'. The 'Approval for' column contains '(empty)' and the 'Created' column shows various dates from October 30 to November 1, 2025.

State	Approver	Comments	Approval for	Created
Requested	alice p		(empty)	2025-10-31 23:34:27
Approved	alice p		(empty)	2025-10-31 23:34:24
Approved	alice p		(empty)	2025-10-31 23:33:26
Approved	alice p		(empty)	2025-10-31 23:31:31
Approved	alice p		(empty)	2025-10-30 23:29:19
Approved	alice p		(empty)	2025-10-30 23:20:19
Approved	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

The screenshot shows the 'Task Table Automation' flow execution details. It includes sections for FLOW STATISTICS, TRIGGER, ACTIONS, and ERROR HANDLER. The flow was run by System Administrator and completed successfully in 69ms. The trigger was 'Task Table 2 Created' and the actions included an 'Update Record' and an 'Ask For Approval' step, both completed.

Action	Type	Status	Start Time	Duration
Task Table 2 Created	Trigger	Completed	2025-10-31 23:34:27	69ms
Update Record	Action	Completed	2025-10-31 23:34:27	6ms
Ask For Approval	Action	Completed	2025-10-31 23:34:27	63ms

Suggested screenshot:

- A table showing FR1–FR9 and NFR1–NFR7 mapped to "Test ID" or "Flow Step".
- Example:
 - FR5 → “Flow Trigger: Record Created/Updated”
 - FR6 → “Ask for Approval (Alice)”
 - FR7 → “My Approvals → Approved → Flow Complete”

Traceability

Requirement Implementation Component Verification

FR1–FR3	User & Role Module	Check users/roles under System Security
FR4	ACL Configuration	Impersonate Bob and validate restricted fields
FR5–FR6	Flow Designer	View execution logs
FR7–FR8	My Approvals Module	Alice's approval visible
FR9	Table Data	u_task_table_2 records persist correctly
NFR2–NFR7	ServiceNow System Logs	Verify via audit and response times

Summary:

This requirements specification ensures that the ServiceNow solution will deliver a **secure**, **automated**, and **auditable** task management system with clear role boundaries, reliable automation, and consistent workflow behavior — ready for academic validation and real-world application.

