

LAPTOP REQUEST CATALOG ITEM

1. INTRODUCTION

1.1 Project overview

This catalog item allows employees to request a new laptop for business use. Laptops are issued based on role requirements, project needs, and company standards to ensure optimal performance and security. Users can select from approved laptop models suitable for general office tasks, software development, design, or fieldwork. All laptops come pre-configured with the standard company image, licensed software, and security settings.

1.2 Purpose

The laptop is required for developing and implementing my final year project titled "*LAPTOP REQUEST CATALOG ITEM using Machine Learning and Django.*" The system will involve data preprocessing, model training, and web application development, which require a device with sufficient computational power to run Python, machine learning frameworks, and Django efficiently.

2. IDEATION PHASE

2.1 Problem statement

The current laptop request process is inefficient, leading to delays in device allocation, inadequate device allocation, and difficulties in tracking inventory. This results in reduced employee productivity and increased IT support requests. A streamlined laptop request catalog item is needed to simplify the process, ensure accurate device allocation, and improve overall efficiency.

2.2 Empathy Map Canvas

Says: "The laptop request process is slow and cumbersome."

Thinks: "There must be a simpler way to request a laptop that meets my needs."

Does: Manually fills out request forms, waits for approval, and follows up on status.

Feels: Frustrated with the delay, unsure of the status, and overwhelmed by manual paperwork.

2.3 Brainstorming

The team considered alternatives, including:

Streamlined online request forms

Automated approval workflows

Integration with inventory management systems

Self-service portal for tracking request status

3.REQUIREMENT ANALYSIS

3.1 Customer journey map

1. Awareness: Employee learns about the laptop request process and catalog item.
2. Consideration: Employee evaluates the need for a laptop and gathers required information.
3. Request Submission: Employee submits the laptop request through the catalog item.
4. Approval: Request is reviewed and approved/rejected by the relevant authority.
5. Fulfillment: Approved laptop request is processed and fulfilled.
6. Delivery: Laptop is delivered to the employee.
7. Post-Delivery: Employee sets up and uses the laptop.

3.2 Solution Requirements

Functional Requirements:

1. User-friendly interface for submitting laptop requests
2. Customizable fields for laptop specifications (e.g., processor, RAM, storage)
3. Automated workflow for request approval and fulfillment
4. Integration with inventory management system to verify laptop availability
5. Notifications for request status updates (e.g., approved, rejected, shipped)

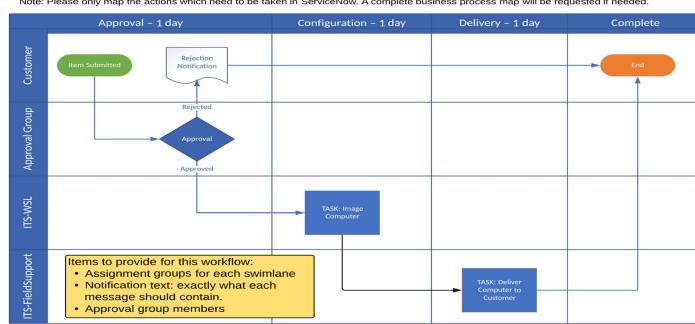
Non-Functional Requirements:

1. Usability: Easy to navigate and understand for users
2. Security: Access controls to ensure only authorized personnel can view and manage requests
3. Reliability: Consistent and accurate processing of requests
4. Scalability: Ability to handle a large volume of requests without performance issues

3.3 Data flow diagram

Sample ServiceNow Catalog Item Workflow

Note: Please only map the actions which need to be taken in ServiceNow. A complete business process map will be requested if needed.



3.4 Technology Stack

Platform: ServiceNow (Developer Instance)

Automation:Flow Designer for automated workflows

Security: Access Control Lists (ACLs) for role-based access

Data Storage: Custom Table for storing laptop request data

Monitoring & Reporting: ServiceNow Dashboards and Reports for tracking and analytics

4. PROJECT DESIGN

4.1 Problem Solution Fit

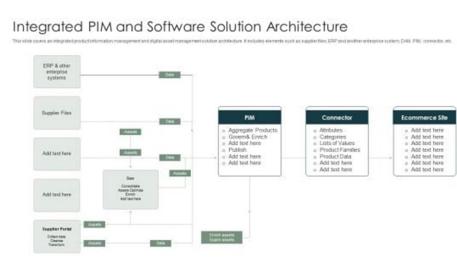
The automated laptop request process addresses the issues of manual errors, delays, and inefficiencies. By streamlining the request process, the solution improves productivity and user experience.

4.2 Proposed Solution

The proposed system includes:

1. Automated Request Submission: Employees submit laptop requests through the catalog item.
 2. Validation and Approval: Requests are validated and approved/rejected based on predefined rules.
 3. Automated Fulfillment: Approved requests are fulfilled and laptops are delivered to employees.
 4. Role-Based Access: ACLs ensure data integrity and access control

4.3 Solution Architecture



5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

The project was planned across multiple phases, including:

1. Requirements gathering: Define project scope and objectives.
2. Design: Design the laptop request catalog item and workflow.
3. Development: Develop the catalog item, workflow, and access controls.
4. Testing: Conduct functional and performance testing.
5. Deployment: Deploy the solution to production.

Project Schedule:

Sprint 1: Environment setup, table creation, and role configuration.

Sprint 2: Implement access controls and Flow Designer automation.

Project Management Tools:

Gantt chart: Visualize project timeline and dependencies.

Work Breakdown Structure (WBS): Decompose project into smaller tasks.

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Functional Testing

Functional testing included:

1. Catalog item submission: Verify laptop request submission process.
2. Workflow validation: Validate workflow logic and routing rules.
3. Access control: Test role-based access and permissions.

6.2 Performance Testing

Performance testing included:

1. Concurrent requests: Test system performance under load.
2. Response time: Measure system response time and latency.
3. Throughput: Evaluate system's ability to handle multiple requests.

7. Results

7.1 Output Screenshots

The following pages contain implementation screenshots captured from the serviceNow instance demonstrating users, groups, table, flows, and assigned tickets.

IMPLEMENTATION STEPS:

Update Set - laptop request project

Created	Type	View	Target name	Updated by	Remote update set	Action
2025-10-29 00:05:28	Catalog UI Policy	show.accessories.details	admin	(empty)		INSERT_OR_UPDATE

Customer Updates [10]

Created	Type	View	Target name	Updated by	Remote update set	Action
2025-10-29 00:05:28	Catalog UI Policy	show.accessories.details	admin	(empty)		INSERT_OR_UPDATE
2025-10-29 00:07:36	Catalog UI Policy Action	accessories_details	admin	(empty)		INSERT_OR_UPDATE
2025-10-29 23:58:29	Variable	Additional Accessories	admin	(empty)		INSERT_OR_UPDATE
2025-10-29 23:56:55	Variable	Justification	admin	(empty)		INSERT_OR_UPDATE
2025-10-29 00:00:49	Variable	Accessories Details	admin	(empty)		INSERT_OR_UPDATE
2025-10-29 23:53:00	Variable	Laptop Model	admin	(empty)		INSERT_OR_UPDATE
2025-10-29 23:52:11	Catalog Item	Laptop Request	system	(empty)		INSERT_OR_UPDATE
2025-10-29 23:52:11	Catalog Items Catalog	Service Catalog.Laptop Request	admin	(empty)		INSERT_OR_UPDATE
2025-10-29 23:52:11	Catalog Item Category	Hardware.Laptop Request	admin	(empty)		INSERT_OR_UPDATE
2025-10-29 00:12:35	UI Action	Reset Form	admin	(empty)		INSERT_OR_UPDATE

Servicenow All Favorites History Workspaces : Retrieved Update Set - laptop request project

Retrieved Update Set laptop request project

Name	laptop request project	Committed	2025-10-29 00:26:58
Application	Global	Inserted	0
Update source		Updated	10
Parent		Deleted	0
State	Committed	Collisions	0
Loaded	2025-10-29 00:16:13	Total	10
Description			
Application name	Global		

[Update](#) [Delete](#)

Related Links
Show Commit Log
Show All Preview Records

Customer Updates (10) Child Update Sets

Remote update set = laptop request project

Name	Type	Target name	Table	View	Action
Retrieved Update Set laptop request project	Retrieved Update Set - laptop request project				

[Actions on selected rows...](#)

Servicenow All Favorites History Workspaces : Retrieved Update Set - laptop request project

Retrieved Update Set laptop request project

Show Commit Log
Show All Preview Records

Customer Updates (10) Child Update Sets

Remote update set = laptop request project

Name	Type	Target name	Table	View	Action
catalog_ui_policy_9a0a3336837032107efa11d6fead3e5	Catalog UI Policy	show accessories details			INSERT_OR_UPDATE
catalog_ui_policy_action_74aa3776837032107efa11d6fead342	Catalog UI Policy Action	accessories_details			INSERT_OR_UPDATE
item_option_new_4679fbe833032107efa11d6fead3ea	Variable	Additional Accessories			INSERT_OR_UPDATE
item_option_new_4b1833e833032107efa11d6fead34f	Variable	Justification			INSERT_OR_UPDATE
item_option_new_8f197bfe833032107efa11d6fead3f0	Variable	Accessories Details			INSERT_OR_UPDATE
item_option_new_c19757e833032107efa11d6fead3aa	Variable	Laptop Model			INSERT_OR_UPDATE
sc_cat_item_6196b3fa833032107efa11d6fead371	Catalog Item	Laptop Request			INSERT_OR_UPDATE
sc_cat_item_catalog_c6577b3e833032107efa11d6fead3c0	Catalog Items Catalog	Service Catalog.Laptop Request			INSERT_OR_UPDATE
sc_cat_item_category_ca5577b3e833032107efa11d6fead3c8	Catalog Item Category	Hardware.Laptop Request			INSERT_OR_UPDATE
sys_ui_action_246fbfb6837032107efa11d6fead3ee	UI Action	Reset Form	Shopping Cart [sc_cart]		INSERT_OR_UPDATE

[Actions on selected rows...](#)

1 to 10 of 10

https://dev337042.servicenow.com/ys_update_xml.do?sys_id=8ad3fb68337032107efa11d6

Retrieved Update Set - laptop request project

Name	laptop request project	Committed	2025-10-29 00:26:58
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Update source		Updated	10
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State	Committed	Collisions	0
Loaded	2025-10-29 00:16:13	Total	10
Description			
Application name	Global		

Customer Updates (10) Child Update Sets

Type	Target name	Table	View	Action

Remote update set = laptop request project

Related Links

- Show Commit Log
- Show All Previous Records

Actions

Update **Delete**

Requested item - RITM0010001

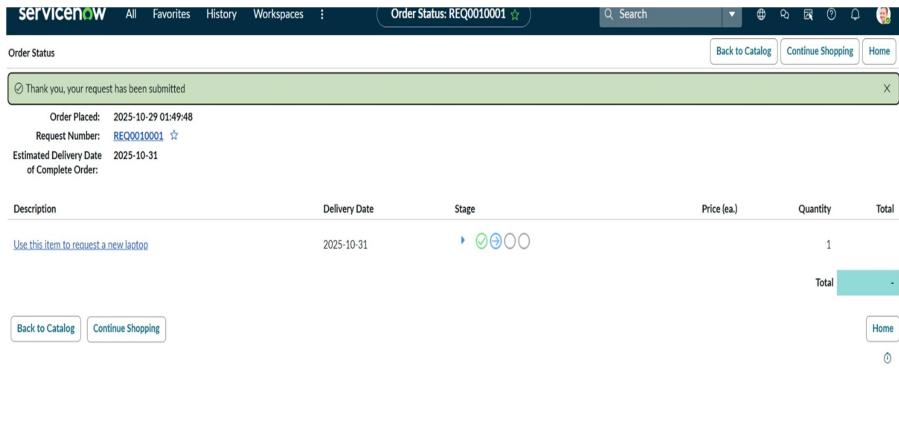
Number	RITM0010001	Opened	2025-10-29 01:49:48
Item	Laptop Request	Opened by	System Administrator
Request	REQ0010001	Stage	Assess or Scope Task
Requested for	System Administrator	State	Open
Due date	2025-10-31 01:49:48	Quantity	1
Configuration item		Estimated delivery	
Watch list		Backordered	<input type="checkbox"/>
		Order Guide	

Variables

Laptop Model	hp
Justification	Multi line text
<input checked="" type="checkbox"/> Additional Accessories	
Accessories Details	Multi line text

Requested item - RITM0010001

Activities: 1		Field changes • 2025-10-29 01:49:48																					
 System Administrator Impact 3 - Low Opened by System Administrator Priority 4 - Low State Open																							
Catalog Tasks (2)																							
Catalog Tasks (2) Approvers Group approvals <table border="1"> <thead> <tr><th>Number</th><th>Assignment group</th><th>Assigned to</th><th>Short description</th><th>Actual start</th><th>Actual end</th><th>Order</th></tr> </thead> <tbody> <tr><td>SCTASK0010002</td><td>Software</td><td>(empty)</td><td>Provide requested service</td><td>(empty)</td><td>(empty)</td><td>200</td></tr> <tr><td>SCTASK0010001</td><td>Field Services</td><td>(empty)</td><td>Assess or Scope Task</td><td>2025-10-29 01:49:53</td><td>(empty)</td><td>100</td></tr> </tbody> </table>			Number	Assignment group	Assigned to	Short description	Actual start	Actual end	Order	SCTASK0010002	Software	(empty)	Provide requested service	(empty)	(empty)	200	SCTASK0010001	Field Services	(empty)	Assess or Scope Task	2025-10-29 01:49:53	(empty)	100
Number	Assignment group	Assigned to	Short description	Actual start	Actual end	Order																	
SCTASK0010002	Software	(empty)	Provide requested service	(empty)	(empty)	200																	
SCTASK0010001	Field Services	(empty)	Assess or Scope Task	2025-10-29 01:49:53	(empty)	100																	



8. SKILLS

ServiceNow development and configuration

Catalog item creation and management

UI policies and UI actions

Access Control Lists (ACLs) configuration

Flow Designer development

Testing and quality assurance

Team collaboration and communication

9. SOFTWARE & TOOLS USED

ServiceNow Developer Instance

Flow Designer

Access Control Lists (ACLs)

Update Sets (XML Export)

GitHub (for version control)

Screen recording tools (for demo videos)

10. PROJECT INITIATION

The project was initiated to streamline the laptop request process, reducing manual errors and improving efficiency. The team identified key problems in the current process and selected ServiceNow as the platform for automation.

11. FEATURES

Automated Request Processing: Automatically routes laptop requests to the appropriate team or agent.

Dynamic Workflow: Uses ServiceNow workflows to handle request creation, approval, and fulfillment efficiently.

Role-Based Access Control: Ensures data security and access control through user roles and group permissions.

12. MODULES

1. Catalog Item Module:

Created a user-friendly catalog item for laptop requests

Designed forms and fields to capture relevant information (e.g., laptop specifications, user details)

Configured validation rules to ensure accurate data collection

2. Workflow Automation Module:

Implemented automated workflows using Flow Designer to route requests to approvers and fulfillment teams

Defined approval rules and escalation procedures

Automated task assignments and notifications

3. Access Control Module:

Configured role-based access controls (ACLs) to ensure data security and access control

Defined user roles and permissions

Implemented data encryption and secure storage

4. Notification Module:

Set up notifications for request status updates (e.g., approved, rejected, fulfilled)

Configured email notifications and in-app notifications

Customized notification templates

5. Inventory Management Module:

Integrated with inventory management system to verify laptop availability

Automated inventory updates and tracking

Defined inventory thresholds and alerts

6. Request Fulfillment Module:

Automated fulfillment process, including laptop allocation and delivery

Defined fulfillment rules and escalation procedures

Integrated with delivery and logistics systems

7. Reporting and Analytics Module:

Implemented dashboards and reports for tracking request history and inventory levels

Defined key performance indicators (KPIs) and metrics

Provided insights for continuous improvement

13. Outcome

The laptop request catalog item project has successfully automated the entire request process, reducing manual workload and improving service efficiency. Key benefits include:

Faster request fulfillment

Improved transparency through real-time updates

Balanced task distribution among support teams

Enhanced customer satisfaction

Reduced errors and delays

14. Conclusion

The laptop request catalog item project demonstrates the effectiveness of automation in improving IT service management using the ServiceNow platform. By streamlining the request process, we have achieved:

Faster resolution times

Efficient workload management

Consistent service quality

Improved end-user experience