

A.R.J

COLLEGE OF ENGINEERING& TECHNOLOGY



EDAIYARNATHAM, MANNARGUDI-614 001 (APPROVED BY AICTE, NEW DELHI & AFFILIATED FOR ANNA UIVERSITY) (AN ISO 9001:2000 CERTIFIED INSITITUTION)



NM1051—SERVICENOW ADMINISTRATOR



DEPARTMENT OF COMPUTER SCIENCE

PROJECT TITLE: LAPTOP REQUEST CATALOG ITEM

TEAM ID: NM2025TMID04100

SUBMITTED BY:

Team Leader: Kishore Kannan J

Team member: Veeramuthu S

Team member: Mohanaram S

Team member: Vinodha A

Team member: Prithika L

LAPTOP REQUEST CATALOG ITEM

ABSTRACT

In many organizations, managing laptop requests for employees involves manual processes such as filling out physical forms, sending emails, and waiting for approvals from multiple departments. These traditional methods often lead to delays, miscommunication, and lack of transparency in tracking requests. To address these issues, the ServiceNow Laptop Request Catalog System automates the entire laptop request workflow through a centralized IT Service Management (ITSM) platform.

This project focuses on designing and implementing a catalog-based request system within ServiceNow that enables users to easily submit laptop requests, allows managers to review and approve them, and lets the IT team fulfill and close requests efficiently. Key components such as catalog items, variables, workflows, UI policies, and update sets were configured to achieve a seamless process.

The system enhances operational efficiency by reducing approval time, minimizing manual errors, and improving visibility of each request's status in real time. It demonstrates the effectiveness of ServiceNow in automating IT-related administrative tasks, leading to faster service delivery and higher user satisfaction.

TABLE OF CONTENT

1. Introduction

- 1.1 Overview of IT Service Management (ITSM)
- 1.2 About ServiceNow
- 1.3 Problem Statement
- 1.4 Objectives of the Project
- 1.5 Scope and Limitations

2. Existing System

- 2.1 Description of Current Process
- 2.2 Drawbacks of the Existing System

3. Proposed System

- 3.1 Overview of Proposed Solution
- 3.2 Features of the System
- 3.3 Benefits of Automation

4. System Analysis

- 4.1 Functional Requirements
- 4.2 Non-Functional Requirements

5. System Design

5.1 System Architecture Diagram (Only Diagram Section)

6. Module Description

- 6.1 User Module
- 6.2 Admin Module

7. Implementation

- 7.1 Overview
- 7.2 Steps in Implementation
 - Laptop Request Catalog Item
 - Update Set Creation
 - Service Catalog Item Creation
 - Add Variables
 - Create UI Policy and Action
 - Export and Retrieve Update Set
 - Testing Catalog Item
- 7.3 Result
- 7.4 Screenshots
- 8. **Testing**
- 9. Results and Discussion
- 10. Advantages
- 11. Limitations
- 12. Future Enhancement
- 13. Conclusion
- 14. References

1. INTRODUCTION

1.1 OVERVIEW OF IT SERVICE MANAGEMENT (ITSM)

IT Service Management (ITSM) refers to the systematic approach used by organizations to design, deliver, manage, and improve the IT services they provide to users. It ensures that IT services align with business needs and deliver value to customers efficiently. ITSM focuses on service delivery, problem management, incident resolution, and continuous improvement of IT operations.

1.2 ABOUT SERVICENOW

ServiceNow is a powerful cloud-based ITSM platform that automates and streamlines service management processes across organizations. It offers a wide range of applications for incident management, request management, asset tracking, and workflow automation. Through its Service Catalog feature, employees can easily request IT services, such as hardware or software, using pre-defined forms and workflows.

1.3 PROBLEM STATEMENT

In many organizations, employees requesting laptops or other hardware follow a manual process involving emails, forms, and approvals through multiple channels. This leads to delays, lack of tracking, miscommunication, and errors in fulfillment. There is a need for a centralized and automated system to handle laptop requests efficiently.

1.4 OBJECTIVES OF THE PROJECT

- To automate the laptop request process using ServiceNow.
- To create a user-friendly catalog form for employees.
- To enable automatic approval and fulfillment workflows.
- To improve request tracking and transparency.
- To reduce manual effort and processing time.

1.5 SCOPE AND LIMITATIONS

Scope:

The project focuses on automating the internal laptop request process using ServiceNow's Service Catalog. It includes catalog creation, approval workflow, fulfillment, and closure stages.

Limitations:

- The system requires internet access.
- Limited customization in the free ServiceNow developer version.
- Only authorized users can access the catalog.

2. EXISTING SYSTEM

2.1 DESCRIPTION OF CURRENT PROCESS

In the existing system, employees who require a new laptop or replacement device have to manually raise a request, typically through emails, phone calls, or physical request forms. Once the request is made, it is forwarded to the concerned department or manager for approval. The IT department then verifies the request details, checks the availability of laptops in the inventory, and assigns one manually after receiving managerial approval.

All these steps are performed without a centralized platform, which makes it difficult to track the status of requests. Employees often have to follow up through multiple emails or visits to get updates. Approvers and IT staff also face challenges in managing the increasing volume of requests, leading to delays and confusion. The absence of an automated workflow causes duplication of work, inconsistency in request formats, and a lack of clear accountability at each stage of the process.

Overall, the manual nature of the current system results in inefficient communication, delayed approvals, and difficulty in maintaining accurate records of laptop allocation and usage history.

2.2 DRAWBACKS OF THE EXISTING SYSTEM

- **Delay in approvals and fulfillment:** Since every request must go through several manual steps, it takes considerable time for employees to receive laptops.
- Lack of centralized tracking system: There is no single system where users or administrators can view the current status of requests.
- Chances of data loss or miscommunication: With communication happening over emails and paper forms, important details can be missed or lost.
- **Increased workload for IT staff:** The IT department spends significant time managing requests manually instead of focusing on other critical support tasks.
- **No real-time visibility for users:** Employees have no clear way to know whether their requests are pending, approved, or fulfilled.
- **Difficult record maintenance:** Tracking the history of approvals and fulfilled requests requires manual documentation, which is prone to human error.
- **Limited accountability:** Without automated workflows, it is hard to identify which stage or person is responsible for delays.
- **Inefficient reporting:** Managers cannot easily generate reports or analyze the number of requests, approval times, or laptop allocation statistics.

3. PROPOSED SYSTEM

3.1 OVERVIEW OF PROPOSED SOLUTION

The proposed ServiceNow-based Laptop Request Catalog System automates the process of requesting, approving, and fulfilling laptops. It replaces manual work with a structured workflow integrated within the ServiceNow platform.

3.2 FEATURES OF THE SYSTEM

- Online request submission through Service Catalog.
- Automatic routing to approvers.
- Status tracking for users.
- Notifications and workflow automation.
- centralized record management.

3.3 BENEFITS OF AUTOMATION

- Reduces human error.
- Speeds up the approval and delivery process.
- Enhances transparency and accountability.
- Saves time and effort for employees and IT teams.

4. SYSTEM ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

1. User Request Submission:

Employees should be able to access the Service Catalog in ServiceNow and submit a laptop request through a well-designed Laptop Request form. The form should capture essential details such as laptop type, purpose, and quantity.

2. Form Validation:

The system must validate all required input fields before submission to avoid incomplete or incorrect data entry. Users should be prompted with clear error messages if any mandatory information is missing.

3. Approval Workflow:

Once a request is submitted, it should automatically be routed to the appropriate manager or administrator for approval based on the organization's hierarchy. This ensures accountability and a structured approval process.

4. Status Tracking:

Users must be able to track the progress of their requests in real time. The request status should update dynamically through stages like *Submitted*, *Approved*, *Rejected*, and *Fulfilled* within the ServiceNow portal.

5. Notifications:

Automated email notifications should be sent to users and managers during each stage of the workflow — upon submission, approval, rejection, and completion. This keeps all stakeholders informed without manual follow-up.

6. Admin Management:

Administrators should have full access to monitor all laptop requests, make necessary modifications, manage approvals, and mark requests as fulfilled. They can also handle workflow adjustments and catalog updates when needed.

7. Record Maintenance:

Every approved and completed laptop request should automatically be recorded and stored in the ServiceNow database. These records help in maintaining data consistency and can be used for audit or reporting purposes.

4.2 NON-FUNCTIONAL REQUIREMENTS

1. Performance:

The system should ensure fast and efficient processing. The laptop catalog form must load quickly, and requests should be processed without noticeable delays to maintain smooth performance.

2. Reliability:

The platform should provide consistent functionality without failures or data corruption. Every request and approval must be securely saved, even in the event of network interruptions.

3. Security:

Access should be restricted based on user roles. Only authorized employees can submit requests, and only designated managers or admins can perform approvals and fulfillments, ensuring secure operations.

4. Usability:

The interface should be clean, intuitive, and easy to navigate. Field labels and instructions should be clear so that users with minimal technical knowledge can use the system without confusion.

5. Scalability:

The system should efficiently handle multiple concurrent requests from different users without affecting speed or performance. It should also be flexible for adding new catalog items or workflows in the future.

6. Maintainability:

Any future updates to workflows, variables, or UI policies should be easy to apply using ServiceNow's Update Sets. This makes system maintenance, troubleshooting, and enhancement simple and efficient.

5. SYSTEM DESIGN

5.1 SYSTEM ARCHITECTURE DIAGRAM

The **System Design** of the *ServiceNow Laptop Request Catalog System* defines how various components—such as the catalog item, workflow, approval process, and notification

system—interact within the ServiceNow platform.

This design ensures smooth request submission, automated approval routing, efficient fulfillment, and reliable data storage, creating a fully streamlined experience for both users and administrators.

DESCRIPTION

1. Service Catalog Item:

The user begins the process by selecting the predefined **Laptop Request** item from the Service Catalog. This serves as the entry point where the employee initiates a new laptop request.

2. Catalog Variables:

The catalog form contains multiple input fields (variables) such as *Laptop Type*, *Justification*, *Quantity*, and *Delivery Location*. These variables capture essential request information to help the IT department process the request accurately.

3. UI Policy & Actions:

UI Policies and Actions are implemented to dynamically control form behavior. They ensure fields are shown, hidden, or marked as mandatory based on user selections, improving both usability and data accuracy.

4. Workflow:

Upon submission, a **ServiceNow Workflow** is automatically triggered. The workflow handles the complete request lifecycle—managing approvals, sending notifications, assigning tasks to the IT team, and updating the final fulfillment status.

5. Approval Module:

The system routes each submitted request to the appropriate **Manager or Administrator** for approval. The approver can review, approve, or reject the request directly from the ServiceNow interface, ensuring a fast and transparent process.

6. Notifications:

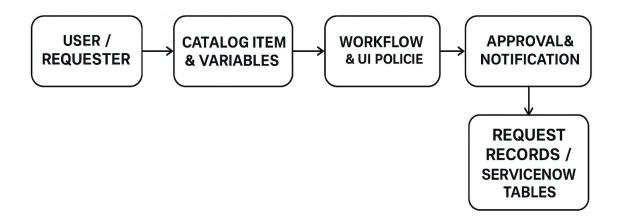
Automated email notifications are sent to the requester and approver at key stages—such as submission, approval, rejection, and fulfillment. This keeps all stakeholders informed in real time without manual follow-ups.

7. Update Set Management:

All configurations—including catalog items, variables, workflows, and UI policies—are stored in an **Update Set**. This allows easy migration of system components between instances and provides a secure backup for future updates.

8. Request Records:

All details related to laptop requests are automatically saved in ServiceNow's internal database tables, such as $sc_request$ and sc_req_item . These records support reporting, tracking, and audit functions, ensuring data reliability and traceability.



6. MODULE DESCRIPTION

The ServiceNow Laptop Request Catalog System is structured into two primary modules — the User Module and the Admin Module.

Each module has distinct responsibilities to ensure seamless request submission, approval, tracking, and fulfillment within the ServiceNow platform.

6.1 USER MODULE

The **User Module** is developed for employees or end-users who need to request a laptop through the ServiceNow Service Catalog.

This module provides a simple and guided interface that allows users to raise requests efficiently and monitor their status in real time.

FUNCTIONS:

1. Access Catalog:

Users log into the ServiceNow self-service portal and navigate to the *Laptop Request* catalog item available under the IT Services section.

2. Submit Request:

The user fills out the catalog form by entering necessary details such as Laptop Model, Quantity, Justification, and Delivery Location, ensuring accurate information is captured.

3. Form Validation:

UI Policies and Client Scripts validate mandatory fields before submission, ensuring that all essential information is provided correctly and consistently.

4. Track Request Status:

Once the request is submitted, users can view its progress in real-time under the *My Requests* section, where statuses like **Submitted**, **Approved**, **Rejected**, or **Fulfilled** are displayed.

5. Email Notifications:

The system automatically sends email updates to users at every key stage — request submission, approval/rejection, and fulfillment — keeping them informed without the need for manual follow-ups.

6.2 ADMIN MODULE

The **Admin Module** is designed for administrators and managers responsible for overseeing, approving, and fulfilling laptop requests.

This module provides tools to manage workflows, monitor progress, and maintain system configurations efficiently.

FUNCTIONS:

1. Approval Management:

The administrator or manager reviews submitted laptop requests and makes decisions to approve or reject them directly within the ServiceNow platform.

2. Monitor Requests:

The admin can view all request statuses — pending, approved, rejected, or fulfilled — using the ServiceNow *Request* and *Requested Item* tables, ensuring transparency and control.

3. Fulfillment Process:

After approval, the admin coordinates the delivery or assignment of the requested laptop and updates the request status to **Fulfilled**, completing the workflow.

4. Update Set Management:

Administrators manage configurations like catalog items, workflows, and UI policies using **Update Sets**, enabling smooth migration of system updates between different ServiceNow instances.

5. Audit and Reports:

All approved and completed laptop requests are securely stored for audit purposes. Reports can be generated periodically to analyze request trends, approval durations, and overall IT service efficiency.

7. IMPLEMENTATION

7.1 OVERVIEW

The **Implementation Phase** focuses on configuring, customizing, and deploying the *Laptop Request Catalog System* within the ServiceNow platform.

This stage involves the creation of catalog items, variable definitions, workflows, UI policies, and actions to automate the entire laptop request process.

The main objective is to build a **user-friendly**, **efficient**, **and fully automated system** that simplifies request submission, approval, and fulfillment while minimizing manual effort.

7.2 STEPS IN IMPLEMENTATION

1. LAPTOP REQUEST CATALOG ITEM

A new catalog item named "Laptop Request" is created under the Service Catalog module. This catalog item serves as the main entry point for employees to initiate laptop requests. It includes a clear title, description, and category to make it easily identifiable within the portal.

2. UPDATE SET CREATION

An **Update Set** is created to record all configurations made during development — including catalog items, variables, workflows, and UI policies.

This allows administrators to **migrate or reuse** the same configurations in another ServiceNow instance, ensuring version control and backup integrity.

3. SERVICE CATALOG ITEM CONFIGURATION

The catalog item is configured with key attributes for proper categorization and functionality:

Name: Laptop RequestCategory: IT Services

• Short Description: Request for a new or replacement laptop

• Table Used: sc request / sc req item

This ensures that every request is stored systematically and can be tracked easily throughout the workflow.

4. ADDING VARIABLES

Multiple variables are added to the catalog item to collect user input.

Each variable represents a field in the request form and ensures that all required information is captured accurately.

Common variables include:

- Employee Name
- Department
- Laptop Type / Model
- Quantity
- Justification
- Delivery Location

These variables form the foundation of the user input process and are referenced during approvals and fulfillment.

5. CREATING UI POLICY AND UI ACTION

UI Policies and **UI Actions** are implemented to enhance interactivity and control form behavior dynamically.

They are used to:

- Make specific fields mandatory based on conditions
- Show or hide fields according to user selections
- Enable or disable submission buttons based on validation rules

These rules ensure smooth user interaction and prevent incomplete or invalid form submissions.

6. EXPORT AND RETRIEVE UPDATE SET

After completing all configurations, the **Update Set** is exported as an XML file. This exported file can be stored for **backup** or **migrated** to another ServiceNow instance. Once imported into a new environment, the Update Set is previewed, validated, and committed to apply the changes safely.

7. TESTING THE CATALOG ITEM

Comprehensive testing is conducted by submitting **sample laptop requests** to verify end-to-end functionality.

Testing includes:

- Request form validation
- Approval workflow routing
- Email notifications
- Fulfillment updates

All features are validated to ensure the catalog item functions correctly and meets user expectations.

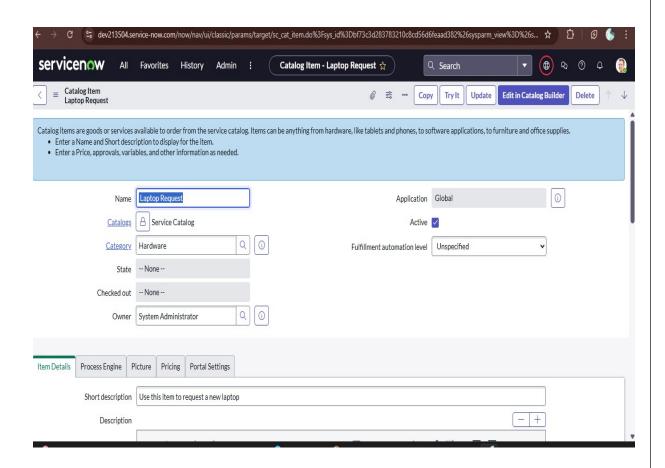
7.3 RESULT

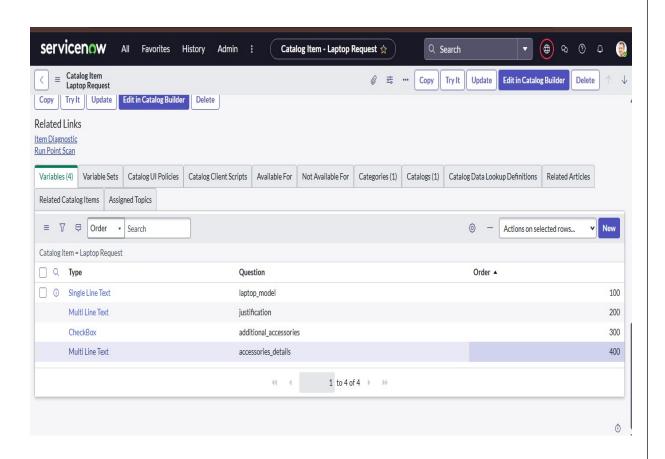
After successful implementation, employees can easily raise laptop requests through the **ServiceNow Service Catalog**.

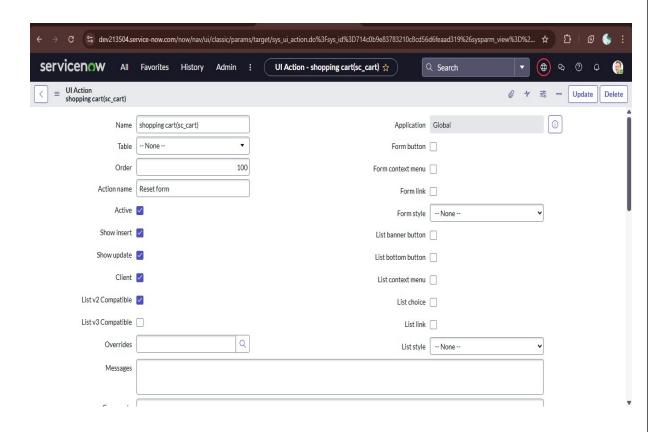
The configured workflow automatically handles approvals, sends notifications to relevant stakeholders, and records all actions within the ServiceNow database.

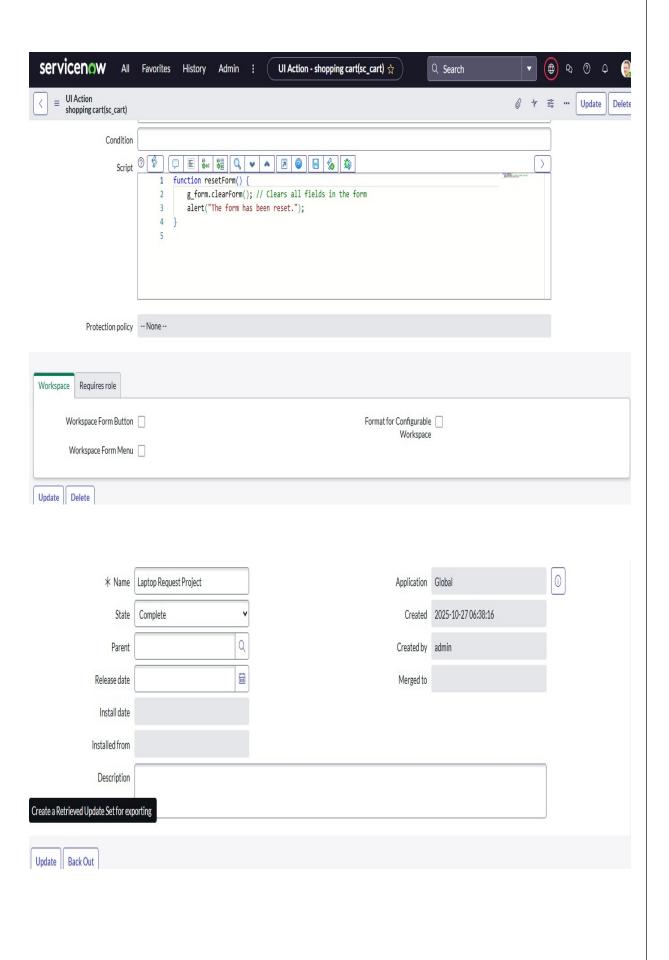
This automation has resulted in **faster approvals**, better tracking, and complete digital record management, enhancing IT service efficiency and reducing manual workload.

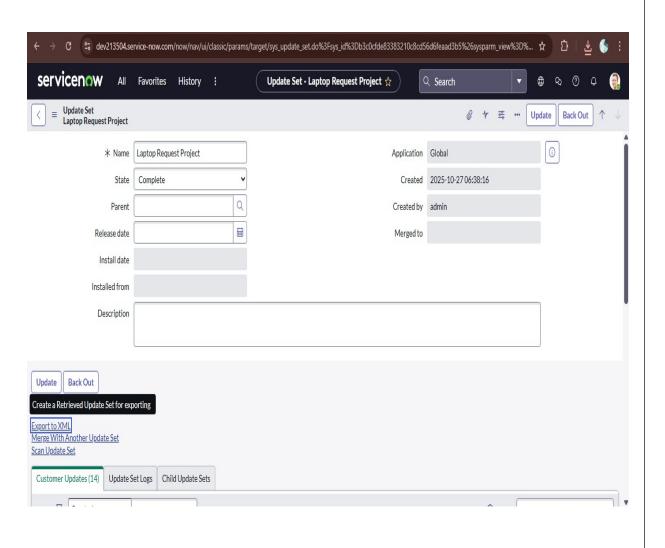
7.4 SCREENSHOTS

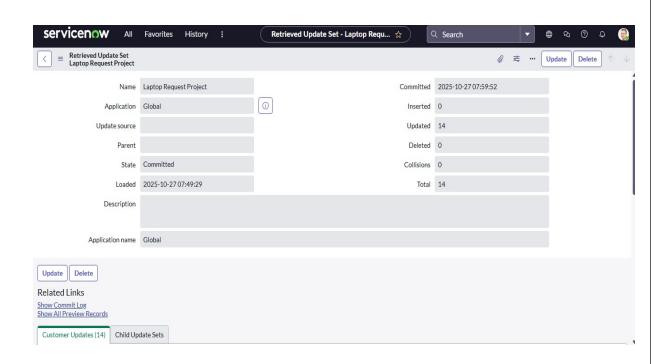




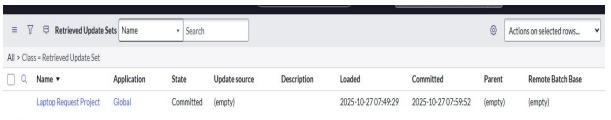






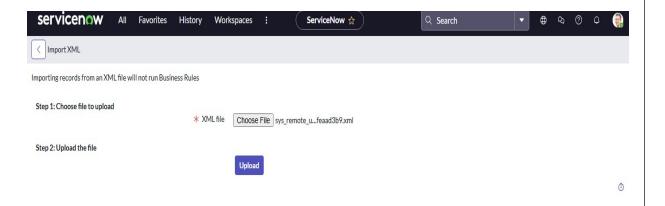


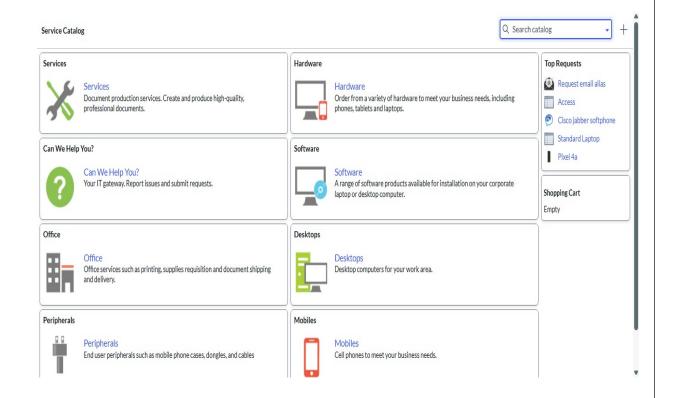
catalog_ui_policy_action_196b8/5e83/83210c8cd56d6feaad3d/	Catalog UI Policy Action	accessories_details	INSERT_OR_UPDATE
catalog_ui_policy_d1ba4b1e83783210c8cd56d6feaad3a0	Catalog UI Policy	Show Accessories Details	INSERT_OR_UPDATE
item_option_new_27358b1683783210c8cd56d6feaad3bc	Variable	justification	INSERT_OR_UPDATE
item_option_new_91c8039a83783210c8cd56d6feaad3ad	Variable	accessories_details	INSERT_OR_UPDATE
item_option_new_a328875a83783210c8cd56d6feaad3db	Variable	laptop_model	INSERT_OR_UPDATE
item_option_new_b9888f1a83783210c8cd56d6feaad383	Variable	additional_accessories	INSERT_OR_UPDATE
item_option_new_cd5407d283783210c8cd56d6feaad34a	Variable	laptop_model	INSERT_OR_UPDATE
item_option_new_cf654f5683783210c8cd56d6feaad330	Variable	additional Accessories	INSERT_OR_UPDATE
item_option_new_d8680f1a83783210c8cd56d6feaad364	Variable	justification	INSERT_OR_UPDATE
item_option_new_e3a5839683783210c8cd56d6feaad333	Variable	accessories_details	INSERT_OR_UPDATE
sc_cat_item_bf73c3d283783210c8cd56d6feaad382	Catalog Item	Laptop Request	INSERT_OR_UPDATE
sc_cat_item_catalog_ec044fd283783210c8cd56d6feaad33d	Catalog Items Catalog	Service Catalog. Laptop Request	INSERT_OR_UPDATE
sc_cat_item_category_ac044fd283783210c8cd56d6feaad342	Catalog Item Category	Hardware, Laptop Request	INSERT_OR_UPDATE
sys_ui_action_714c0b9e83783210c8cd56d6feaad319	UI Action	shopping cart(sc_cart)	INSERT_OR_UPDATE

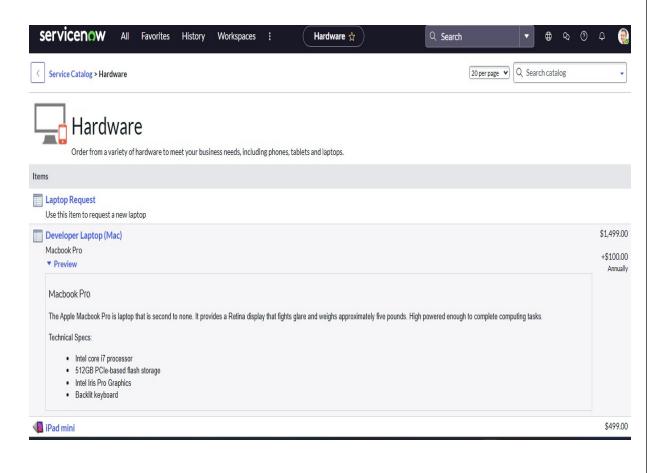


Related Links

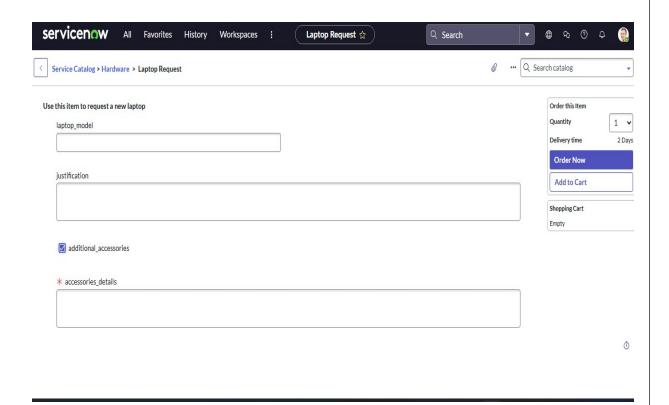
Import Update Set from XML











8. TESTING

Testing was an important phase in ensuring that the **ServiceNow Laptop Request Catalog System** performed efficiently and met all the functional requirements.

It helped verify that every component — such as the catalog item, workflow, approvals, and notifications — worked smoothly without errors.

During testing, several **sample laptop requests** were created and processed to check how the system responded under real-time conditions.

This ensured that form validations, approval routing, and notifications were functioning as designed.

Any issues identified were corrected before final deployment.

Major Areas of Testing

1. Catalog Item Verification:

Confirmed that the Laptop Request catalog item loaded correctly and was visible in the Service Catalog.

2. Form Validation:

Checked that all required fields were mandatory and properly validated before submission.

3. Approval Workflow:

Verified that requests automatically routed to the correct manager or admin for approval and rejection.

4. Email Notifications:

Ensured that automatic emails were triggered at each stage — when submitted, approved, or fulfilled.

5. Data Accuracy:

Verified that all request details were accurately stored in ServiceNow tables without data duplication or loss.

6. User Tracking:

Confirmed that users could view real-time updates of their request status within the portal.

Testing Outcome

The system passed all functional and performance tests successfully.

All workflows, UI policies, and notifications operated seamlessly within the ServiceNow environment.

After testing, the Laptop Request Catalog System was declared stable, reliable, and ready for organizational use.

9.RESULTS AND DISCUSSION

The ServiceNow Laptop Request Catalog System successfully automated the laptop request process, making it faster, transparent, and user-friendly. Users can now submit requests easily through the catalog, and the system handles approval, fulfillment, and notifications automatically — reducing manual effort and human error.

KEY OUTCOMES:

- Improved Efficiency: Requests are processed within minutes using automated workflows.
- Error Reduction: Mandatory fields and validations prevent incomplete submissions.
- Centralized Management: All requests are securely stored and easily trackable.
- Enhanced User Experience: Users can raise, track, and receive updates effortlessly.
- **Transparency:** Clear approval stages improve accountability.
- **Seamless Communication:** Automatic notifications at every stage keep all users informed.
- Scalability: The same model can extend to other IT assets.

Overall, the system met its objectives by providing a reliable, scalable, and efficient solution for managing IT asset requests using ServiceNow.

10. ADVANTAGES

The ServiceNow Laptop Request Catalog System streamlines the IT request process through automation, accuracy, and ease of use.

MAIN ADVANTAGES:

- 1. Automated Workflow: Eliminates manual tracking and speeds up approvals.
- 2. **User-Friendly Design:** Simple catalog form for easy submissions.
- 3. **Real-Time Tracking:** Users can monitor request progress anytime.
- 4. Centralized Records: All data stored securely in one place.
- 5. High Accuracy: Validations ensure complete and correct inputs.
- 6. **Instant Notifications:** Automatic alerts keep users updated.
- 7. Reduced Errors: Automation minimizes manual mistakes.
- 8. **Easy Maintenance:** Configurations can be updated or reused effortlessly.
- 9. Scalable System: Can adapt to other hardware or service requests.
- 10. Better Control: Admins can track, audit, and manage all requests efficiently.

11. LIMITATIONS

1. Limited Customization:

UI and workflow changes are restricted to ServiceNow's built-in options; major customizations need scripting or admin rights.

2. Internet Dependency:

As a cloud-based system, users must have an active internet connection to access or submit requests.

3. Role Restrictions:

Only specific roles (Employee, Manager, IT Admin) can perform certain actions, reducing flexibility for other users.

4. No External Integration:

The system doesn't connect with external inventory or procurement tools, so stock updates are manual.

5. Basic Reporting:

Only standard reports are available; advanced analytics need extra setup or licenses.

6. Platform Dependency:

Functionality relies fully on ServiceNow's infrastructure and updates, which may impact existing workflows.

12. FUTURE ENHANCEMENTS

1. Inventory Integration:

Connect with the organization's asset database to auto-check stock and update availability in real time.

2. Mobile & Email Approvals:

Enable one-click approval or rejection through mobile apps or emails for faster processing.

3. AI Recommendations:

Use AI to suggest suitable laptop models based on user roles or previous requests.

4. Advanced Analytics:

Add dashboards to track request trends, approval times, and delivery performance.

5. Chatbot Support:

Integrate a chatbot for raising requests, checking status, and getting quick assistance.

6. Multi-Language Option:

Provide multi-language support for global employee accessibility.

13. CONCLUSION

The implementation of IT Service Management (ITSM) using **ServiceNow** provides a powerful, efficient, and automated solution for handling IT-related service requests within an organization. This project successfully demonstrated how ServiceNow streamlines processes such as incident management, request fulfillment, and workflow automation, reducing manual effort and improving overall productivity.

By developing and customizing catalog items, workflows, and UI policies, the project enhanced user experience and ensured consistent service delivery. The automation features of ServiceNow help minimize human error, accelerate request resolution, and maintain transparency in operations.

In conclusion, ServiceNow proves to be a highly effective platform for organizations seeking to optimize their IT service delivery. Its scalability, integration capabilities, and user-friendly interface make it a valuable tool for digital transformation in IT operations.

14. REFERENCES

ServiceNow Documentation – https://docs.servicenow.com/
Official documentation used to understand catalog item creation, workflows, UI policies, and update sets.

- 2. **ServiceNow Developer Portal** https://developer.servicenow.com/
 - Used for practical learning, instance setup, and tutorials on building and automating catalog items.
- 3. ITSM Fundamentals ServiceNow Learning Portal
 - Course materials explaining IT service management concepts, request handling, and catalog configuration.
- 4. **ServiceNow Community Forum** https://www.servicenow.com/community Reference for troubleshooting issues and exploring real-world ServiceNow implementations.
- 5. YouTube Tutorials on ServiceNow
 - Video guides that helped in understanding catalog item design, workflows, and UI policy configuration.
- 6. Books and Study Materials
 - IT Service Management: A Guide for ITIL Foundation Exam Candidates Ernest Brewster et al.
 - ServiceNow Development Handbook Tim Woodruff
- 7. ARJ College of Engineering and Technology, Mannargudi

Department of Computer Science Engineering reference materials for project guidance and documentation.