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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
PROJECT TITLE :LAPTOP REQUEST CATALOG ITEM

College Code: 9632

Technology: Artificial Intelligence

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BONAFIDE CERTIFICATE

Certified that this project report "**LAPTOP REQUEST CATLOG ITEM**" is the bonafide work of _____ who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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TABLE OF CONTENT

1. Introduction

2. Ideaction Phase

3. Requirement Phase

4. Project Design

5. Project Planning & Scheduling

6. Functional & Performance Testing

7. Results

8. Advantages & Disadvantages

9. Conclusion

10.Future Scope

11.Appendix

LAPTOP REQUEST CATALOG ITEM

1. INTRODUCTION

1.1 Project Overview

The *Laptop Request Catalog Item* project aims to simplify and automate the process of requesting laptops within the organization through the ServiceNow Service Catalog. Instead of relying on manual forms or email-based approvals, this catalog item enables employees to submit laptop requests digitally, ensuring faster processing, transparency, and accurate tracking.

1.2 Purpose

The main purpose of this project is to create a user-friendly, standardized, and automated platform for employees to request laptops as per their project or role requirements. It reduces manual effort, minimizes approval delays, and ensures compliance with organizational IT asset policies. By implementing this catalog item, the organization aims to:

- Streamline the hardware request and approval process.
- Improve tracking and accountability for IT assets.
- Enhance employee satisfaction through faster service delivery.
- Maintain security and standardization across all issued laptops.

2 IDEATION PHASE

2.1 Problem Statement

The existing laptop request process in the organization is largely manual and time-consuming. Employees must contact the IT department through emails or physical forms, leading to delays, communication gaps, and lack of transparency. Approvals are often missed or delayed, and IT teams struggle to track asset allocation efficiently.

To address these challenges, a Laptop Request Catalog Item is proposed within the ServiceNow platform to automate the request, approval, and fulfillment workflow, ensuring smooth and efficient laptop provisioning.

- The manual laptop request process often results in **data inconsistency** and **missing information**, making it difficult for IT administrators to verify and fulfill requests correctly.
- There is **no centralized system** to monitor request history, asset allocation, or user-specific hardware records.
- **Approval bottlenecks** occur when requests get stuck with managers or IT teams due to lack of automated reminders.
- **Tracking and accountability** of issued laptops are poor, increasing the risk of asset mismanagement or loss.

- Employees experience **long waiting times** and uncertainty due to lack of visibility into request status.
- IT support staff face a **heavy workload** managing repetitive request tickets manually. **2.2**

Empathy Canvas

Aspect	Description
Who are we	Employees requesting laptops and IT support staff handling these empathizing with?
requests.	
What do they need to	Employees need to quickly request laptops for project work; IT staff do? need
to manage, approve, and track these requests efficiently.	
request	Lengthy manual processes, delays in approval, lack of clarity on status, and inconsistent communication.
What do they see?	
do they hear?	Colleagues complaining about slow laptop provisioning and unclear approval workflows.
What do they say and	They express frustration about waiting times and often follow up
do?	repeatedly via email or chat.
What do they think	They feel frustrated, undervalued, and less productive due to delays and and feel?
inefficiencies in the process.	

2.3 BrainStromming

During the brainstorming sessions, the project team collaborated to identify practical and innovative solutions to streamline the laptop request process. Multiple ideas were generated, analyzed, and refined to address pain points like delays, manual approvals, and poor tracking. The following key ideas were shortlisted and discussed in detail:

1. Automated Catalog Workflow

To eliminate the dependency on manual communication and paperwork, the team proposed the development of an automated catalog workflow within **ServiceNow**.

This workflow would handle the entire process—from submission to approval to fulfillment—using preconfigured logic. Automation ensures faster processing, consistent approvals, and reduced human error, ultimately saving time for both employees and IT staff.

2. Role-based Laptop Options

Employees in different roles have different technical and performance needs. To accommodate this, predefined laptop configurations would be created based on user roles (e.g., **Developer, Analyst, Manager**, etc.).

This approach ensures each employee receives the right device for their job function, improving performance, cost efficiency, and standardization across the organization.

3.Real-time Status Tracking

A major frustration identified during ideation was the lack of transparency. The solution proposed includes **real-time request tracking**, allowing users to view each stage of their request—such as *Submitted, Pending Approval, Approved, Fulfillment in Progress*, and *Delivered*.

This not only enhances user satisfaction but also reduces the number of follow-up emails and inquiries to the IT team.

4.Approval Notifications

To prevent delays in the approval process, automatic notifications and reminders would be sent to managers and approvers via **ServiceNow notifications or email alerts**.

This ensures timely actions, avoids bottlenecks, and helps maintain accountability at each step of the process.

5. Integration with Asset Management

To maintain accurate and up-to-date inventory data, the proposed solution integrates with the **IT Asset Management (ITAM)** module in ServiceNow.

Each approved laptop request automatically updates inventory records, tracks asset ownership, and maintains lifecycle details.

This integration enhances visibility, supports audits, and helps optimize future procurement decisions.

6. Feedback Collection.

After the laptop delivery is completed, a **post-fulfillment feedback form** would be triggered automatically.

Employees can rate their experience and provide comments about the process or the device quality. The feedback helps IT teams identify process gaps, measure satisfaction levels, and continuously improve the overall service experience.

Outcome of Brainstorming

The brainstorming sessions concluded that implementing an automated, role-based, and integrated catalog item within ServiceNow would significantly enhance efficiency, reduce manual effort, and improve transparency in the laptop request process. The ideas generated formed the foundation for the subsequent **Requirement Phase** and **System Design** stages of the project.

3. REQUIREMENT PHASE

The Requirement Phase is a crucial stage of the project, where all functional and non-functional needs of the system are identified, analyzed, and documented. This ensures that the *Laptop Request Catalog Item* is designed to meet the expectations of end users, IT staff, and management while maintaining efficiency, security, and usability.

3.1 User Journey Map

The **User Journey Map** helps visualize how different users interact with the catalog item throughout the process.

Stage	Employee (Requester)	Manager (Approver)	IT (Fulfillment Team)	Support
1.Request Initiation and opens the Laptop Request Catalog Item.	Logs into the ServiceNow portal	—	—	
2.Form Submission	Fills details like justification, role, preferred laptop model, and submits request.	—	—	
3.Approval	Waits for approval notification. justification →	Receives request notification → reviews approves/rejects request.	—	Process
4.Fulfillment	—	Receives status assigns laptop from updates.	Receives task automatically → inventory → updates asset record.	
5.Delivery & Closure	the fulfillment task and laptop confirmation message. form.	and —	Closes triggers	Receives feedback

3.2 Functional Requirements

No.	Requirement Description
FR1	Employees shall be able to submit laptop requests via the ServiceNow catalog.
FR2	The form shall include fields for employee details, justification, role, and laptop type.
FR3	The system shall provide predefined laptop models based on user role.
FR4	Requests shall be automatically routed to the approver.
FR5	Approvers shall be able to approve/reject requests via email or portal.
FR6	Fulfillment tasks shall be automatically generated for IT support.

3.3 Non-Functional Requirements

No.	Requirement Description
NFR1	The system shall ensure data confidentiality and integrity.
NFR2	The catalog shall be available 24/7 via the organization portal.
NFR3	Form response and load time shall be under 3 seconds.
NFR4	The workflow shall scale for multiple simultaneous requests.
NFR5	The interface shall be intuitive and mobile-friendly.

3.4 Solution Requirements

The proposed solution must:

- Enable employees to request laptops digitally with minimal input.
- Include automated approval routing based on reporting hierarchy
- Provide real-time tracking for users and IT staff.
- Integrate with ServiceNow IT Asset Management (ITAM) for inventory updates

3.5 Data Flow Diagram (DFD – Level 1 Explanation)

The Data Flow Diagram represents how data moves within the system.

Entities:

- Employee (Requester)
- Manager (Approver)

- ServiceNow Catalog System
- IT Asset Management
- IT Fulfillment Team

3.6 Technology Stack

Component	Technology Used	Purpose
Platform	ServiceNow	To build the catalog item and workflows.
Frontend	Service Catalog UI (Service Portal / UI Builder)	For user interaction and form submission.
Backend Logic	Flow Designer / Workflow Editor	For automating approvals and fulfillment.
Database	ServiceNow CMDB & Asset Tables	For storing request, user, and asset data.
Notifications	Email & ServiceNow Notification Engine	For alerts and reminders.
Authentication	LDAP / SSO	For secure user login and access control.

4.PROJECT DESIGN

The Project Design Phase focuses on translating the requirements into a practical, implementable design. This phase defines how the *Laptop Request Catalog Item* will work, including the system architecture, workflows, data handling, and UI design

4.1System Architecture

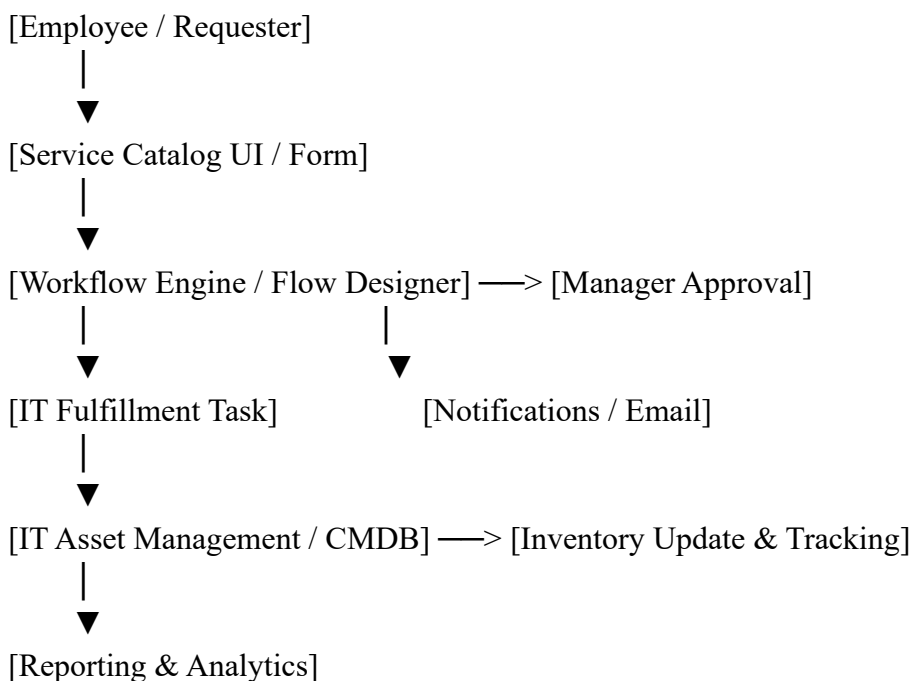
~~The system architecture ensures a clear structure of all components and their interactions. For this project,~~
a **ServiceNow-based client-server architecture** is used:

Components:

1. **User Interface (UI):** Service Catalog portal / UI Builder for employees to submit requests.

2. **Workflow Engine:** ServiceNow Flow Designer manages approvals, notifications, and fulfillment tasks.
3. **Business Logic Layer:** Automates role-based laptop selection, approvals, and inventory updates.
4. **Database Layer:** ServiceNow CMDB and Asset Management tables store request, user, and laptop data.
5. **Integration Layer:** REST APIs connect workflows with IT Asset Management and notification systems.
6. **Reporting & Analytics:** Dashboards and reports for IT admins and managers

Textual Architecture Diagram:



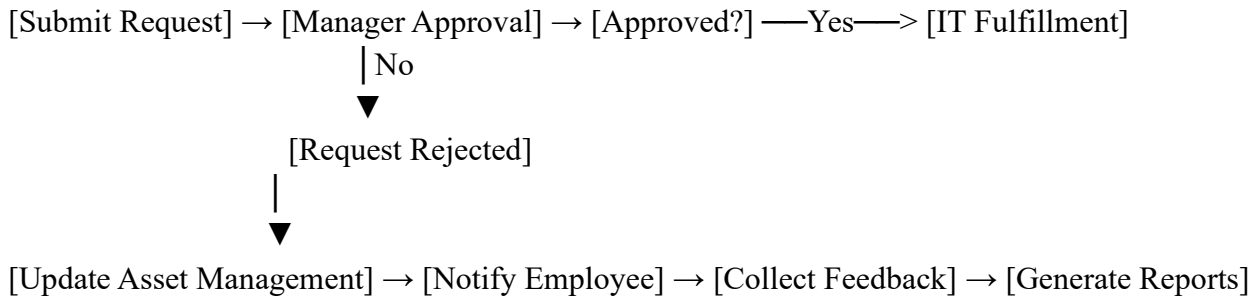
4.2 Workflow Design

The **workflow** represents the complete process from request submission to laptop delivery:

1. **Request Submission:** Employee fills the catalog form with role, justification, and laptop type.
2. **Approval Stage:** Request is routed automatically to the employee's manager. Manager approves or rejects.
3. **Notification:** Notifications are sent to requesters and IT team at every stage.
4. **Fulfillment:** Approved requests generate IT tasks for laptop allocation and delivery.

5. **Asset Update:** IT Asset Management records are updated automatically.
6. **Feedback Collection:** Employee receives a post-delivery feedback form.
7. **Reporting:** Dashboard reflects request status, approvals, and fulfillment metrics.

Workflow Diagram (Textual Version for Report):



4.3 Form Design

The **Laptop Request Form** is a key part of the catalog item. It should be **simple, intuitive, and rolespecific**.

Fields to Include:

- Employee Name (auto-populated)
- Employee ID / Department (auto-populated)
- Role (Developer / Analyst / Manager)
- Justification for Laptop Request
- Laptop Type / Configuration (predefined based on role)
- Project Name / Assignment (optional)
- Delivery Location

Form Behavior:

- Required fields must be validated before submission.
- Role-based dropdown dynamically filters available laptop models.
- Form triggers workflow automation upon submission.
- Feedback option appears after fulfillment completion.

4.4 Data Flow Design

Data Flow Overview:

1. Employee submits request → data stored in request table.
2. Workflow triggers manager approval → decision recorded.
3. Approved request → IT task generated → asset table updated.
4. Status updates and notifications sent → request visible on dashboard.
5. Feedback stored for reporting and analytics.

Security & Access Control Design

- Employees have **read/write access** to their own requests.
- Managers have access to **requests pending their approval**.
- IT admins have access to **all requests, asset updates, and reports**.
- Role-based access ensures compliance with **organization security policies**.

5.PROJECT PLANNING & SCHEDULING:

Phase	Key Tasks	Duration
Design	Architecture, workflow, form & security	9 hrs
Development	Form, workflow, integration, feedback setup	14 hrs
Testing	Functional, performance, UAT, fixes	14 hrs
Deployment & Go-Live	Deploy, monitor, feedback	6 hrs
Post-Deployment Support	Monitoring & reporting	Ongoing

6.FUNCTIONAL AND PERFORMANCE TESTING

Testing ensures that the Laptop Request Catalog Item works as expected, meets all functional requirements, and performs efficiently under different conditions. Both functional testing and performance testing are essential before deployment.

6.1 Functional Testing

- Verifies that all features and workflows function correctly.
- Ensures that role-based laptop selection, approvals, notifications, and asset updates work as intended.
- Checks form validations and feedback collection after fulfillment.

6.2. Performance Testing

- Measures system response time under normal and peak loads.
- Ensures that multiple users submitting requests simultaneously do not cause delays.
- Verifies that dashboards and status tracking remain accurate under load

7.RESULTS

1. Create a local update set
2. Create Service Catalog Items
 - Add Variables
3. Creating Catalog UI Policy
4. Craete UI Action
5. Export update changes
6. Login To Another Instance
 - Retrieving the update set
7. Tesing
8. Conclusion

OUTPUT SCREENSHOTS

Creation of local update set

The screenshot shows the ServiceNow interface for a 'Catalog Item - Laptop Request'. The browser address bar displays the URL: `dev317068.service-now.com/now/nav/ui/classic/params/target/sc_cat_item.do%3Fsys_id%3Da5aa9cc7837032109dacc750ceaad357%26sysparm_record_list%3Dtype...`. The page header includes the ServiceNow logo and navigation tabs: All, Favorites, History, Admin. The main header shows 'Catalog Item - Laptop Request' with a search bar and a red circle around the globe icon. Below the header, there are buttons: Copy, Try It, Update, Edit in Catalog Builder (circled in red), and Delete. The 'Related Links' section includes 'Item Diagnostic' and 'Run Point Scan'. The 'Variables (4)' tab is selected, showing a table of related catalog items. The table has columns: Type, Question, and Order. The data rows are:

Type	Question	Order
Single Line Text	Laptop Model	100
Multi Line Text	Justification	200
CheckBox	:Additional Accessories	300
Multi Line Text	Accessories Details	400

The bottom of the screen shows the Windows taskbar with the search bar and system tray.

Creation of servicenow catalog Item

The screenshot shows the ServiceNow interface for a 'Catalog Item - Laptop Request'. The browser address bar displays the URL: `dev317068.service-now.com/now/nav/ui/classic/params/target/sc_cat_item.do%3Fsys_id%3Da5aa9cc7837032109dacc750ceaad357%26sysparm_record_list%3Dtype...`. The page header includes the ServiceNow logo and navigation tabs: All, Favorites, History, Admin. The main header shows 'Catalog Item - Laptop Request' with a search bar and a red circle around the globe icon. Below the header, there are buttons: Copy, Try It, Update, Edit in Catalog Builder (circled in red), and Delete. The 'Related Links' section includes 'Item Diagnostic' and 'Run Point Scan'. The 'Variables (4)' tab is selected, showing a table of related catalog items. The table has columns: Type, Question, and Order. The data rows are:

Type	Question	Order
Single Line Text	Laptop Model	100
Multi Line Text	Justification	200
CheckBox	:Additional Accessories	300
Multi Line Text	Accessories Details	400

The bottom of the screen shows the Windows taskbar with the search bar and system tray.

Creation of UI Action

The screenshot shows the 'Update Set - Laptop Request' form in ServiceNow. The form includes fields for Name (Laptop Request), State (Complete), Parent, Release date, Install date, Installed from, and Description. It also has fields for Application (Global), Created (2025-10-29 02:05:12), Created by (admin), and Merged to. Below the form are buttons for 'Update' and 'Back Out'. There are also links for 'Export to XML', 'Merge With Another Update Set', and 'Scan Update Set'. At the bottom, there are tabs for 'Customer Updates (15)', 'Update Set Logs', 'Child Update Sets', and 'Install History'. A message states 'No templates are available' with a link to 'Create A New One?'. The Windows taskbar is visible at the bottom.

Creation of Catalog UI Policy

The screenshot shows the 'UI Action - New Record' form in ServiceNow. A red box highlights a note: 'Condition field should be specified to restrict execution of this UI Action to certain users. For example, current.canWrite() condition restricts the UI Action to the users who can modify the current record, gs.hasRole("admin") condition restricts the UI Action to the users with admin role.' Below this, there is a 'Script' field with the following code:

```
1 function resetForm() {  
2   g_form.clearForm(); // Clears all fields in the form  
3   alert("The form has been reset.");  
4 }  
5
```

Below the script field is a 'Protection policy' dropdown set to '-- None --'. At the bottom, there are tabs for 'Workspace' and 'Requires role'. The 'Workspace' tab is active, showing options for 'Workspace Form Button' and 'Workspace Form Menu', both of which are unchecked. There is also a 'Format for Configurable Workspace' checkbox, which is checked. A message at the bottom states 'No templates are available' with a link to 'Create A New One?'. The Windows taskbar is visible at the bottom.

Exploring update changes

Platform Login Credentials - P... - Student ServiceNow Developers Laptop Request | Update Set |

dev317068.service-now.com/now/nav/ui/classic/params/target/sys_update_set.do%3Fsys_id%3De235d44f833032109dacc750ceaad320%26sysparm_view%3D...

servicenow All Favorites History Admin Update Set - Laptop Request

Update Set
Laptop Request

Parent
Release date
Install date
Installed from
Description

Update Back Out

Related Links
[Export to XML](#)
[Merge With Another Update Set](#)
[Scan Update Set](#)

Customer Updates (15) Update Set Logs Child Update Sets Install History

Created Search

Update set = Laptop Request

No templates are available Create A New One?

Recent download history

sys_remote_update_set_112ae88783f032109dacc750ceaad305.xml
81.6 KB • Done

AES Files.zip
41.5 KB • 19 hours ago

Troubleshoot notification record not accessible.pdf
9.5 KB • 19 hours ago

Common Service Data Model (CSDM) 3.0 White Paper rev2.pdf
4.6 MB • 20 hours ago

CSDM Overview Audio Script.pdf
83.2 KB • 20 hours ago

CMDB Overview Audio Script.pdf
78.9 KB • 20 hours ago

VA Topic Blocks.pdf
264 KB • 21 hours ago

VA PRE BUILT TOPICS.pdf

Full download history

Retrieving the update set

Laptop Request | Retrieved Up... +

dev317068.service-now.com/now/nav/ui/classic/params/target/sys_remote_update_set.do%3Fsysparm_record_target%3Dsys_remote_update_set%26sysparm_reco...

servicenow All Favorites History Retrieved Update Set - Laptop Requ... Search

Retrieved Update Set
Laptop Request

Name
Application
Update source
Parent
State
Loaded
Description
Application name

Laptop Request
Global

Committed
2025-10-29 03:34:08

Global

Committed
Inserted
Updated
Deleted
Collisions
Total

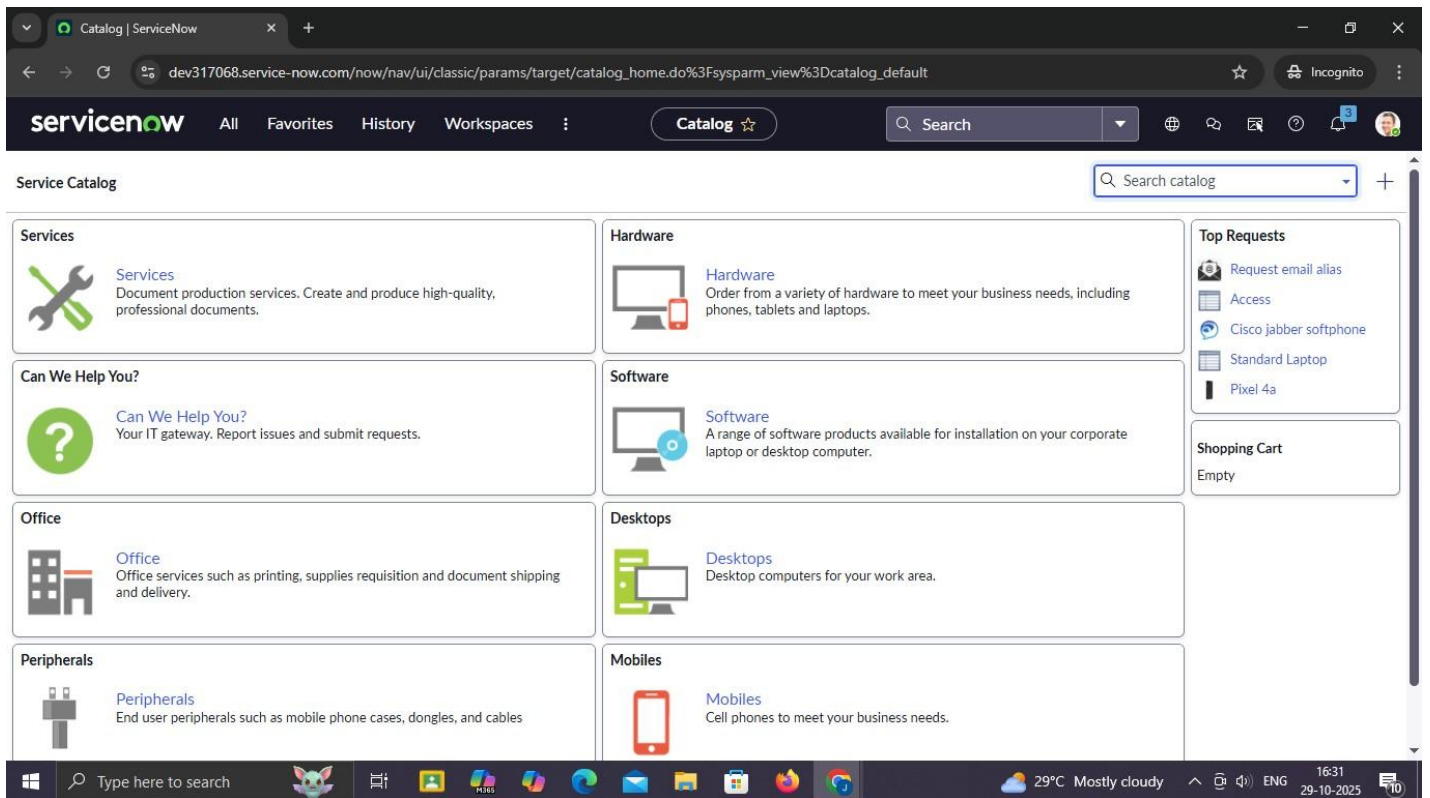
2025-10-29 03:54:35
0
14
0
1
15

Update Delete

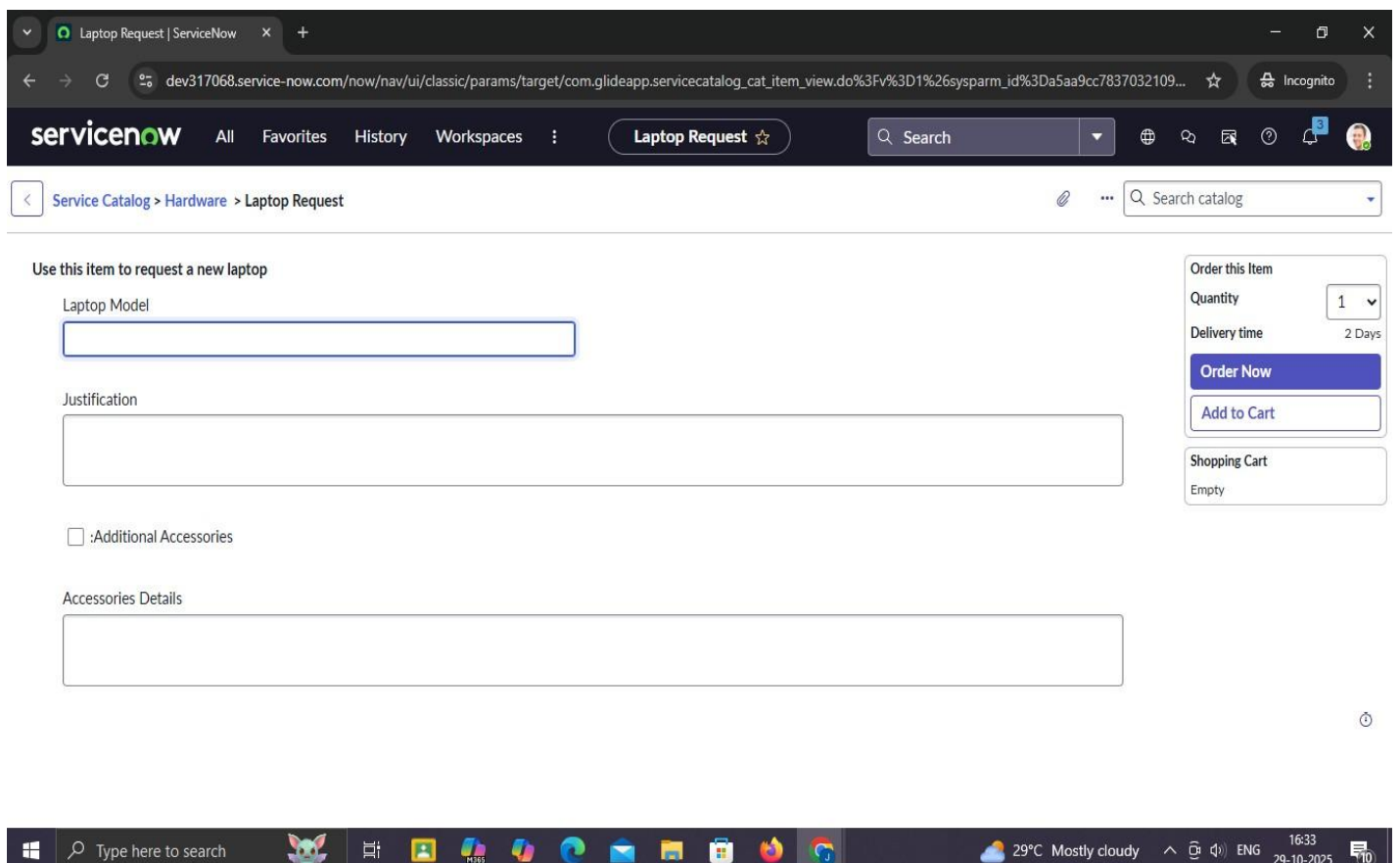
Related Links
[Show Commit Log](#)
[Show All Preview Records](#)

No templates are available Create A New One?

Testing



The screenshot shows the ServiceNow Catalog homepage. The browser address bar displays the URL: `dev317068.service-now.com/now/nav/ui/classic/params/target/catalog_home.do%3Fsysparm_view%3Dcatalog_default`. The ServiceNow logo is in the top left, followed by navigation links: All, Favorites, History, Workspaces, and a Catalog button. A search bar is on the right. Below the header, the 'Service Catalog' section features a search bar and a grid of service tiles: Services (wrench icon), Hardware (monitor icon), Can We Help You? (question mark icon), Software (monitor with gear icon), Office (building icon), Desktops (monitor with gear icon), Peripherals (USB icon), and Mobiles (phone icon). Each tile includes a brief description. On the right sidebar, 'Top Requests' lists items like 'Request email alias', 'Access', 'Cisco jabber softphone', 'Standard Laptop', and 'Pixel 4a'. Below that, the 'Shopping Cart' is shown as 'Empty'. The Windows taskbar at the bottom shows the search bar, task view, and various application icons, along with system tray information: 29°C, Mostly cloudy, 16:31, 29-10-2025.



The screenshot shows the 'Laptop Request' form in the ServiceNow Catalog. The browser address bar displays the URL: `dev317068.service-now.com/now/nav/ui/classic/params/target/com.glideapp.servicecatalog_cat_item_view.do%3Fv%3D1%26sysparm_id%3Da5aa9cc7837032109...`. The ServiceNow logo is in the top left, followed by navigation links: All, Favorites, History, Workspaces, and a 'Laptop Request' button. A search bar is on the right. Below the header, the breadcrumb navigation shows: < Service Catalog > Hardware > Laptop Request. The form is titled 'Use this item to request a new laptop'. It includes a 'Laptop Model' text field, a 'Justification' text area, and a checkbox for 'Additional Accessories'. Below the checkbox is an 'Accessories Details' text area. On the right sidebar, the 'Order this Item' section shows 'Quantity' as 1 and 'Delivery time' as 2 Days, with 'Order Now' and 'Add to Cart' buttons. Below that, the 'Shopping Cart' is shown as 'Empty'. The Windows taskbar at the bottom shows the search bar, task view, and various application icons, along with system tray information: 29°C, Mostly cloudy, 16:33, 29-10-2025.

8. ADVANTAGES & DISADVANTAGES

Advantages

- Automates the entire laptop request and approval process.
- Saves time and reduces manual effort.
- Provides role-based laptop allocation for accuracy.
- Enables real-time request tracking and status updates

Disadvantages

- Requires initial setup and configuration time.
- Depends on ServiceNow platform and network availability.
- Needs basic user training for first-time users.
- Requires periodic maintenance and updates
- Complex workflows may need scripting support.

9. CONCLUSION

The **Laptop Request Catalog Item** project successfully streamlines and automates the laptop procurement process within the organization using ServiceNow. It replaces traditional manual procedures with a **digital, role-based, and transparent workflow**, improving efficiency and reducing delays..

10.FUTURE SCOPE

- Extend the catalog to include **other IT assets** such as monitors, accessories, and mobile phones.
- Integrate with **HR onboarding** so laptop requests are auto-generated for new employees.
- ☐ Add **AI or predictive analytics** to suggest the best laptop models based on job role and project type

11.APPENDIX

- **Source code** : NO External code used Servicenow platform
- **Dataset Link**: Not applicable
- **GitHub link & Project Demo**: <https://github.com/mercy182022-source/LAPTOP-REQUEST-CATALOG-ITEM.git>