ONLINE INVENTORY MANAGEMENT SYSTEM

STIGroup

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Narrative

STIGroup is a Cybersecurity and Information Technology Consulting company based in Glen Rock, New Jersey. Its services typically involve: Security assessments, security program development, incident response and forensics, and managed security services. The security assessment consists of evaluating an organization's security posture, including penetration testing, vulnerability assessments, and compliance reviews. The security program development consists of helping companies design and implement security strategies, policies, and procedures. The incident response and forensics consist of providing support if an organization experiences a security breach, including investigation, containment, and remediation. Finally, the managed security services consist of offering continuous or ongoing security monitoring and management for businesses that do not have in-house resources or that need additional expertise. STIGroup is a small firm that has about 100 employees and is marked in the 51-200 count on public records. The company is looking for a new inventory management system; they believe an "all-in-one" inventory system would save time and money.

The old system goes as follows: the first step is to tag an asset with a physical sticker, and then the serial number, asset tag number, and device name are all collected and written down to be put into an Excel file. A new Excel file is created, and all of the information collected is put into the File. The Excel sheet is then saved into a folder where it sits and waits to be used to calculate active asset life and store depreciated assets. Once the deprecation needs to be calculated, the specific Excel sheet is dug up and is used to create a new Excel sheet that has all of the information. This new depreciation Excel file is then saved to the same location as all of the other Excel files.

The job is tedious because all of the Excel files are done separately, and there is not a single mass Excel sheet that keeps track of everything. The process is time-consuming and inefficient because it is heavily dependent on physical labor. Ultimately, the main issues with the system are that it's hard to keep track of everything and that everything has to be done physically, step by step.

SWOT Analysis of the Current System

The Strengths, Weaknesses, Opportunities, and Threats of the current system can be found below:

- Strengths
    - **Familiarity:** The current system is well-known and understood by supervisors and employees.
    - **Simplicity:** The current system is straightforward and easy to use.
    - **Established Process:** STIGroup has the system process for inventory management outlined and well defined.
- Weaknesses
    - **Efficiency:** A highly manual and labor-intensive process that is time-consuming and prone to human error during manual data entry.
    - **Functionality:** The system gets the job done, but lacks the ability to do computations without consistent user inputs.
- Opportunities
    - **Modernization**: Implementing a new system can significantly improve the efficiency, functionality, and data management capabilities.

- **Analytics**: Better forecasting for IT asset lifecycle management; real-time analytics would allow for valuable insights into when to start looking for new assets.
- **“All-In-One”:** Automating asset tagging with barcode/QR code technology, creating a centralized database for all inventory information in one seamless process.

- Threats
  - **Laborious Process:** The manual steps of the current system make the overall inventory management process very laborious and time-consuming
  - **Outdated Process:** Relying on this manual labor-intensive system is an outdated approach when compared to modern inventory management systems.

Structure chart of the Current System

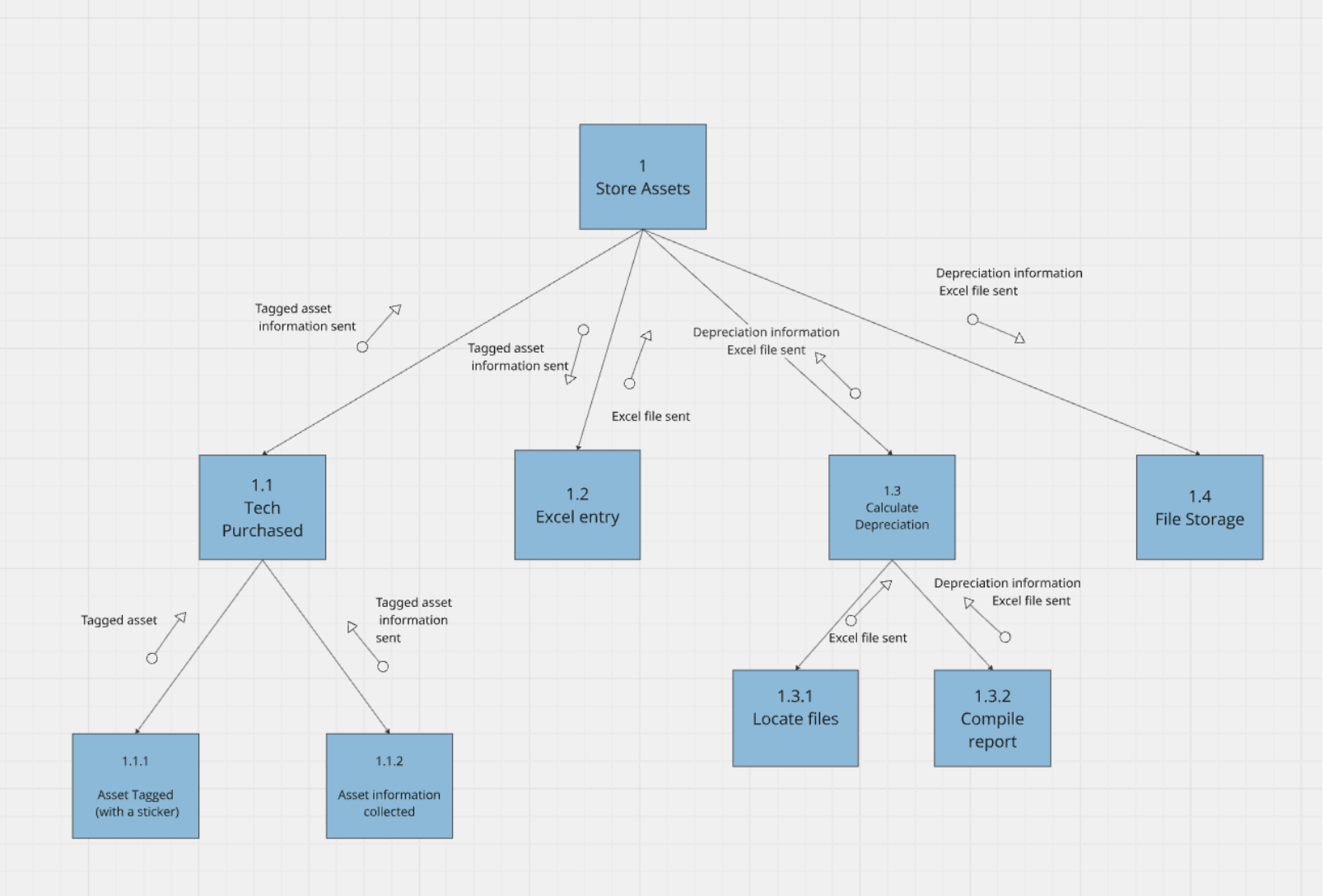


Diagram 1

The diagram shown above dives deeper into the current system and provides a comprehensive breakdown, including the module hierarchy and data flow. The current inventory management system process begins with the purchase of new assets, as seen in module 1.1. This initial step involves several sub-processes to ensure accurate tracking and management of assets. Firstly, the new asset is tagged with a sticker, as illustrated in module 1.1.1 This tagging process is crucial for maintaining a unique identifier for each asset. Following the tagging, all relevant

information regarding these assets is meticulously collected, as explained in module 1.1.2. This information includes details such as the asset's description, purchase date, cost, and location within the company. After tagging and collecting the information, everything is entered into an Excel file, as you can see in module 1.2. This helps in maintaining a digital record of all assets, ensuring that data is easily accessible and manageable. The Excel file is then stored in the inventory folder, which is module 1. This centralized storage system helps organize and retrieve asset information efficiently. When the company decides to calculate its depreciation, the relevant file is located, as shown in module 1.3.1. This step involves identifying the specific assets that require depreciation calculation. Once the file is located, it undergoes thorough analysis to compile a detailed report, as seen in module 1.3.2. This analysis includes calculating the depreciation value based on factors such as the asset's useful life and depreciation method. The compiled report is then used to create a new Excel sheet labeled "Depreciation," which is subsequently stored in the inventory folder. This process ensures that all depreciation-related information is systematically recorded and easily accessible for future reference. Overall, the inventory management system is a long and meticulous process that involves multiple steps to ensure accurate tracking, management, and reporting of assets.

Issues with the Current System

The issues with the current system are the lack of coordination between how assets are processed for inventory and the amount of physical labor required to put an asset into the inventory sheet. These issues have contributed to a massive amount of time-dated Excel files that are full of data and are time-consuming to do analytics with. The inventory asset folder is a scary place; digging for a specific asset can take a few minutes because of the number of files needing

to be looked through. The Excel sheet method does work, but it makes more work because all Excel does is store the information and not compile it into one extensive document that does analytics on the spot.

A few factors contributed to these issues, including management, organization, and a lack of efficient use of technology. The first factor needing to be addressed is management: they have overlooked the need for a new system because Excel does the job. They have failed to invest in a new system that does the job efficiently and train employees on how to use the new system. The next factor to address is the organizational factors: there is a lack of willingness to change because what's established works. This has led to everyone getting ingrained in the inefficient system because upper management says that everyone must use Excel to document inventory. The final factor to address is the lack of efficient use of technology; the main issue is how labor-intensive and inefficient the system is, as it is a bunch of different Excel sheets in a folder. In our interview with Christine Fleischmann, she talked about how nice it would be to have everything done in one place.

Requirements and Constraints of the Proposed System

Requirements and constraints of the proposed system were determined by utilizing information found from the issues with the current system, in addition to the interview with Christine Fleischmann, Director of Corporate Administration. and the knowledge from our team leader, Kyle, who has used the system firsthand. These sources gave significant insight into the previous system, allowing for the proposed system requirements and constraints to be identified. The requirements and constraints are documented below:

- **Application requirements**

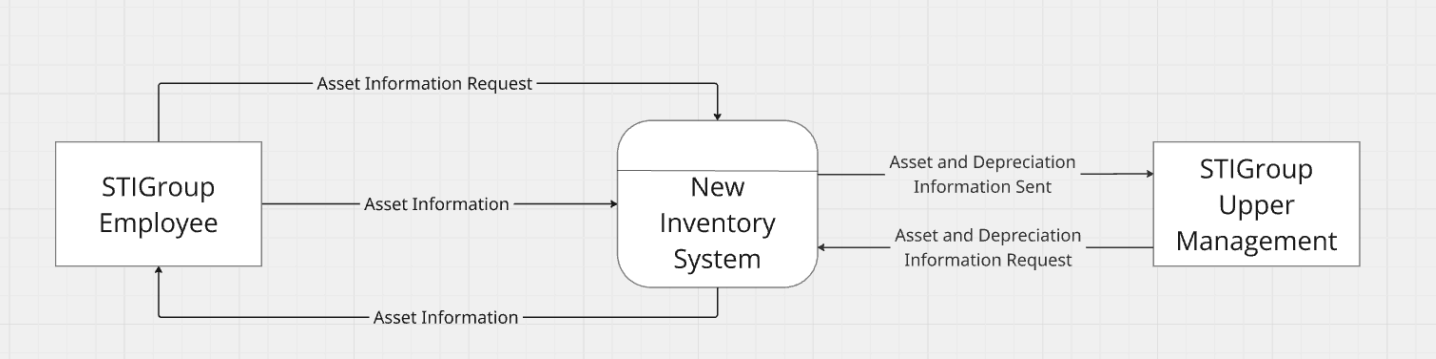
    - Support barcode/QR code scanning for asset tagging
    - Allow bulk data import/export capabilities
- **Database and Reporting Requirements**
    - Accommodate simultaneous access by multiple users
    - Maintain a centralized database for all inventory information
    - Support asset lifecycle tracking from acquisition to disposal
- **Infrastructure Requirements**
    - Operate on a platform that provides extensibility, redundancy, scalability, reliability, and connectivity
    - Ensure minimal system downtime for updates and maintenance
- **Workstation/Hardware Compatibility**
    - Work with any internet browsers
    - Support mobile device operation for on-the-go inventory management
    - Compatible with standard barcode/QR scanners and printers
- **Security Requirements**
    - Encrypt data at rest, in transit, and on backup media
- **Functional Requirements**
    - Enable real-time depreciation calculations and forecasting
    - Automate asset tagging and data entry processes
    - Track asset location, status, and assignments in real-time
    - Calculate depreciation automatically based on configurable parameters
    - Generate alerts for warranty expirations and replacement cycles
    - Support asset check-in/check-out functionality

- Maintain historical records of asset movements and modifications
- Provide a searchable inventory database with filtering capabilities

Based on the information provided, we assume that STIGroup wants to move from a manual Excel-based system to a more efficient, automated, online solution. STIGroup has the necessary IT infrastructure to support the proposed system and is willing to invest in a new depreciation management system to address the limitations of the current process. The current Excel-based system lacks standardization, and the Excel files are all over the place, with different information on each file. Some questions that the team had that are still unanswered can be found below.

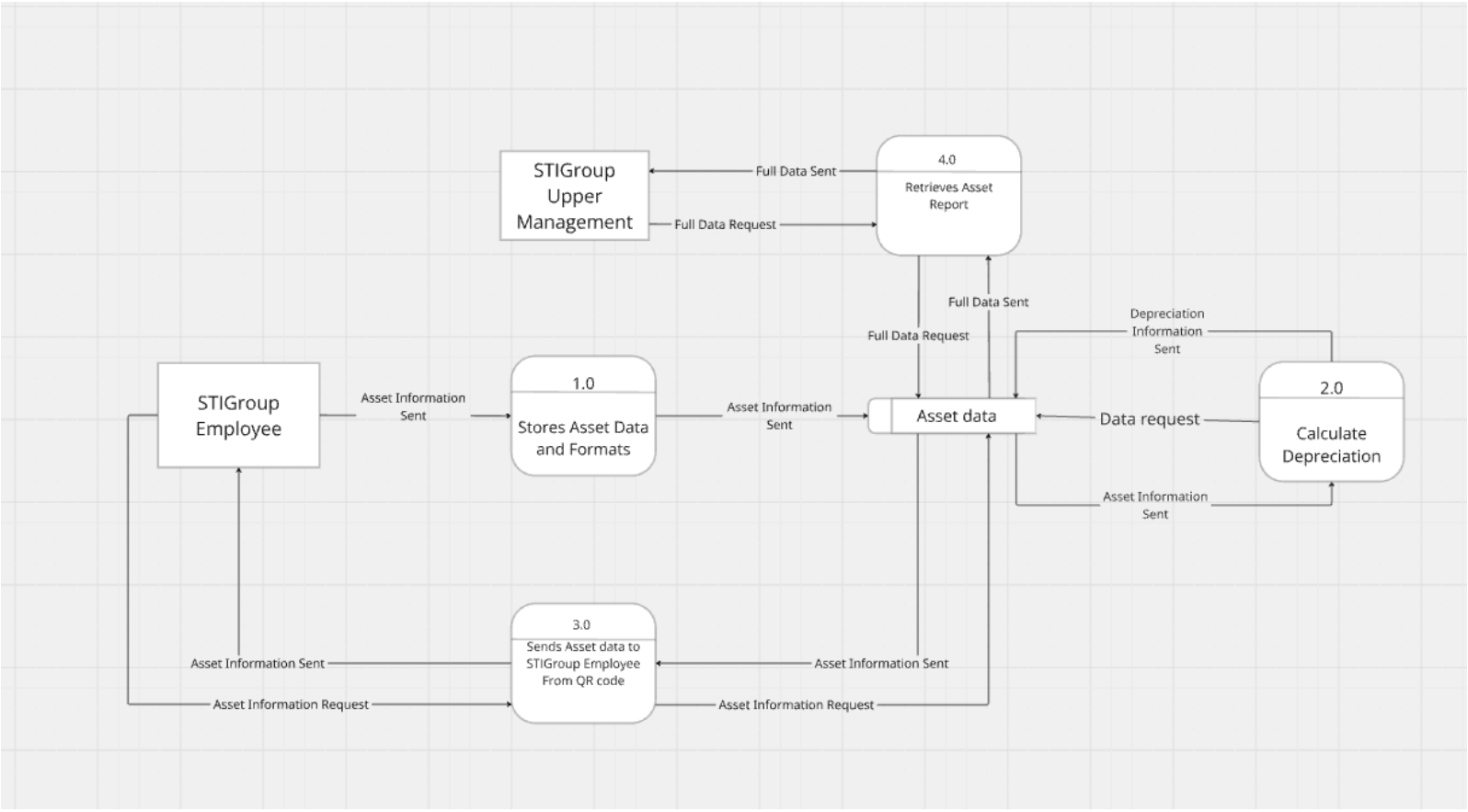
- Unanswered Questions:
    - What is STIGroup's current budget and timeline for implementing the new depreciation management system?
    - How many employees will need to be trained on the new system, and what is the STIGroup's capacity to support the training effort?

Context Diagram for the Proposed System



This is the context diagram for the new inventory system. It contains two entities, STIGroup Employee and STIGroup Upper Management, that interact with the system. It starts with the “STIGroup Employee” gathering information on the newly added assets and adding it to the system. The “STIGroup Upper Management” can request the asset depreciation information, and the system processes the request and sends the correlated information back. Another function of the system allows the “STIGroup Employee” to scan the QR code on a tagged asset, the system gets the request and sends the corresponding information.

Level 0 Diagram

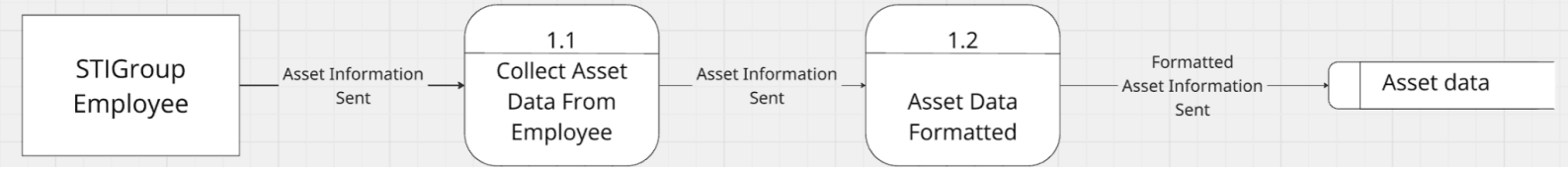


This is the level 0 diagram for the new inventory management system, which provides a more detailed look into how the system works. The two entities from the diagram are displayed, and a breakdown of the new inventory system is provided. The new system begins when a new piece of technology is purchased; the employee writes down the asset's information and puts a unique QR code sticker on the physical asset. The employee then uploads the information into the system, where it formats and stores it in the “asset data” data store, as seen in module 1.0. The system sees the new data uploaded, and it uses the information to calculate asset depreciation figures; it attaches those numbers to the assets and stores them back in the “asset data” data store, as seen in function 2.0. The next function of the system is to give asset information to an employee when they scan an asset QR code. When an employee scans a QR

code, the system sees the request and sends back the corresponding asset information, as seen in function 3.0. The final process of the system is when Upper management requests information. The system sees the request as seen in function 4.0, and goes to retrieve a full asset report, and then sends it back to Upper management.

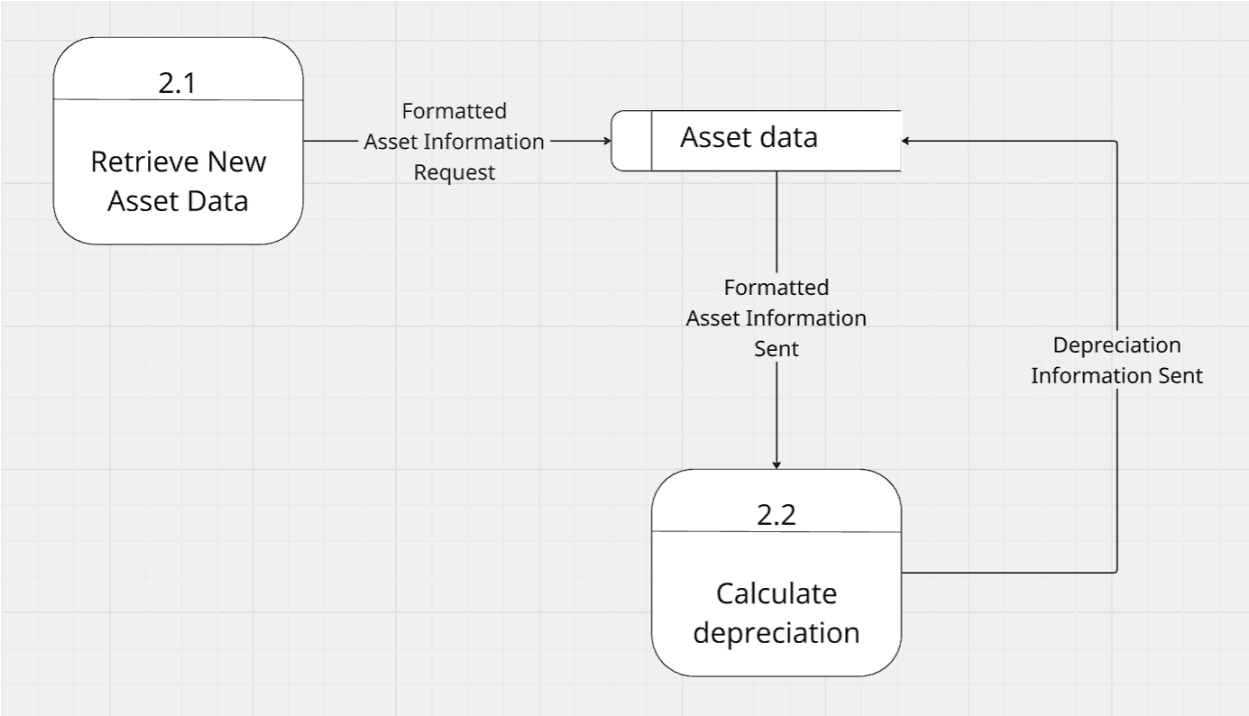
Functional Primitive Level DFDs

Function 1



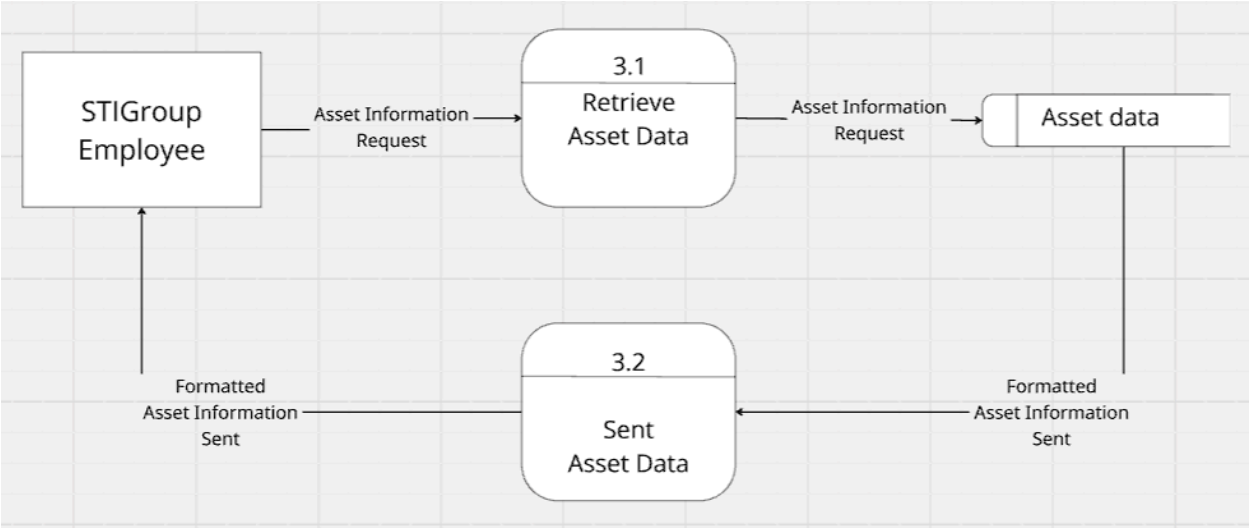
This is Function 1 of the inventory management system, “Stores Asset data and Formats” It begins with the “STIGroup Employee” adding and sending the asset information to the system, as seen in Function 1.1. Then, Function 1.2 receives and formats the asset data. That formatted data then gets stored in the “Asset data” data store.

Function 2



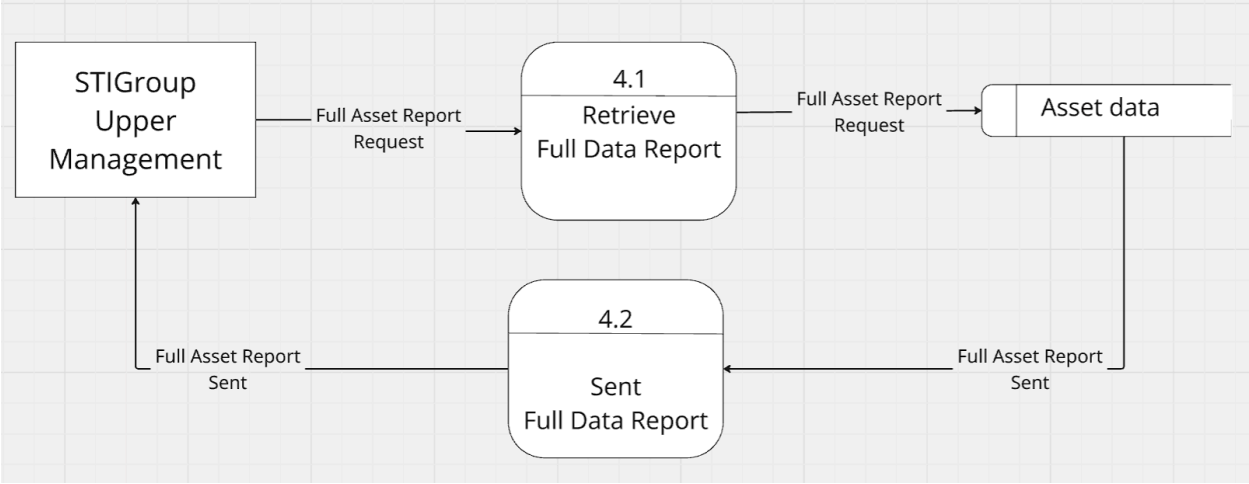
This is Function 2 of the inventory system, “Calculate depreciation.” It begins with the added information in the “Asset data” data store, as seen in function 2.1. Then, function 2.2 receives the added information, calculates the depreciation, and sends the information back to the “Asset data” data store, with tagged asset IDs.

Function 3



This is a function 3, “Sends Asset data to STIGroup Employee from QR code”. It begins with an “STIGroup Employee” scanning a physical QR code on an asset. The system sees the request and retrieves the corresponding asset data from the data store, as seen in function 3.1. The system then sends the data back to the employee, as seen in function 3.2, where they receive a mini asset report.

Function 4



This is a function 4, “Retrieves Asset Report”. It begins with an “STIGroup Upper Management” requesting a report for all current assets. The system sees the request and retrieves all current asset and depreciation information, as seen in function 4.1. The system then sends the data back to upper management, as seen in function 4.2, where they receive a detailed current asset and depreciation report.

Use Case Descriptions

Use Cases:

Use Case Name: Stores Asset data and Formats.	ID: 1	Importance Level: High
Primary Actors: STIGroup Employees		
Short Description: Process for adding, formatting, and storing asset information in the system		
Trigger: New tech is purchased Type: **External** / Temporal		
Preconditions: 1. Asset information to add 2. The employee can access the system 3. A unique QR code and ID has been made Normal Course: 1. Employee collects new asset information 2. Employee sends information to the system 3. The system formats and stores data in the data store Postconditions 1. Asset information is properly formatted and stored in the system 2. The data store is updated with the new information		

Use Case Name: Calculate Depreciation	ID: _2_	Importance Level: High
Primary Actors: Inventory System		
Short Description: Collect new data from the system, calculate depreciation, and store calculations		
Trigger: New asset information added to the data store Type: External / **Temporal**		
Preconditions: 1. New Asset Information has been uploaded into the system 2. Assets require a depreciation calculation Normal Course: 1. Systems receives new data to be processed 2. The system calculates depreciation 3. The calculations get sent back into the data store Postconditions 1. Calculations are stored in the data store with corresponding asset IDs		

<table>
<tr><td>Use Case Name: Sends Asset data to STIGroup Employee from QR code</td><td>ID: 3</td><td>Importance Level: High</td></tr>
<tr><td colspan="3">Primary Actor: STIGroup Employee</td></tr>
<tr><td colspan="3">Short Description: Sends data back to the employee after an asset QR code is scanned.</td></tr>
<tr><td colspan="3">Trigger: Employee scans asset QR code

Type: External / Temporal</td></tr>
<tr><td colspan="2">Preconditions:

1. Asset has been tagged
2. Asset information exists in the data store

Normal Course:

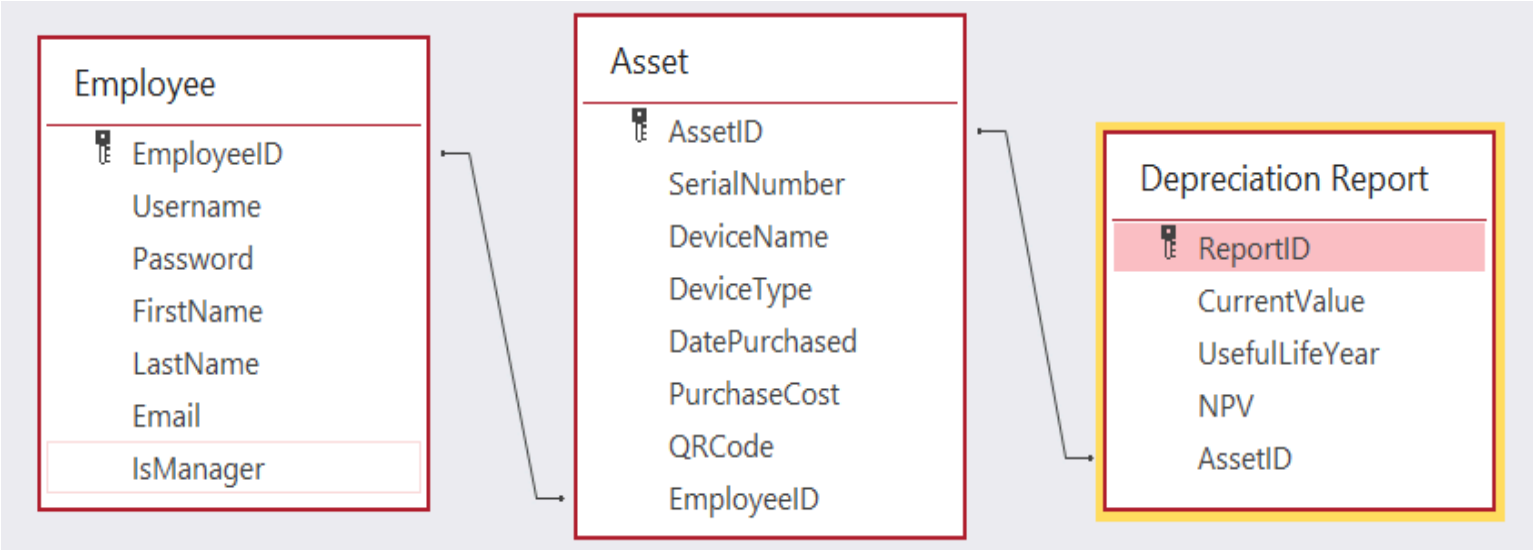
1. Employee scans asset QR code
2. The system receives a request
3. The system collects correlated asset information
4. The system sends a mini asset report to the employee

Postconditions

1. Employee successfully receives the report</td><td></td></tr>
</table>

Use Case Name: Retrieves Asset Report	ID: _4_	Importance Level: High
Primary Actor: STIGroup Upper Management		
Short Description: Sends Upper Management a full, detailed current asset report		
Trigger: Upper Management requests a full asset report Type: **External** / Temporal		
Preconditions: 1. Data is able in the data store 2. STIGroup Upper Management can access system Normal Course: 1. Upper Management requests a full current asset report 2. The system acknowledges the request 3. The system pulls all current data and sends it to Upper Management Postconditions 1. STIGroup Upper Management receives a detailed current asset and depreciation report		

Database Design Diagram



This is the database design diagram for the inventory management system. It contains three interconnected tables: Employee, Asset, and Depreciation Report. Each table has a primary key that acts as a unique identifier and stores related information.

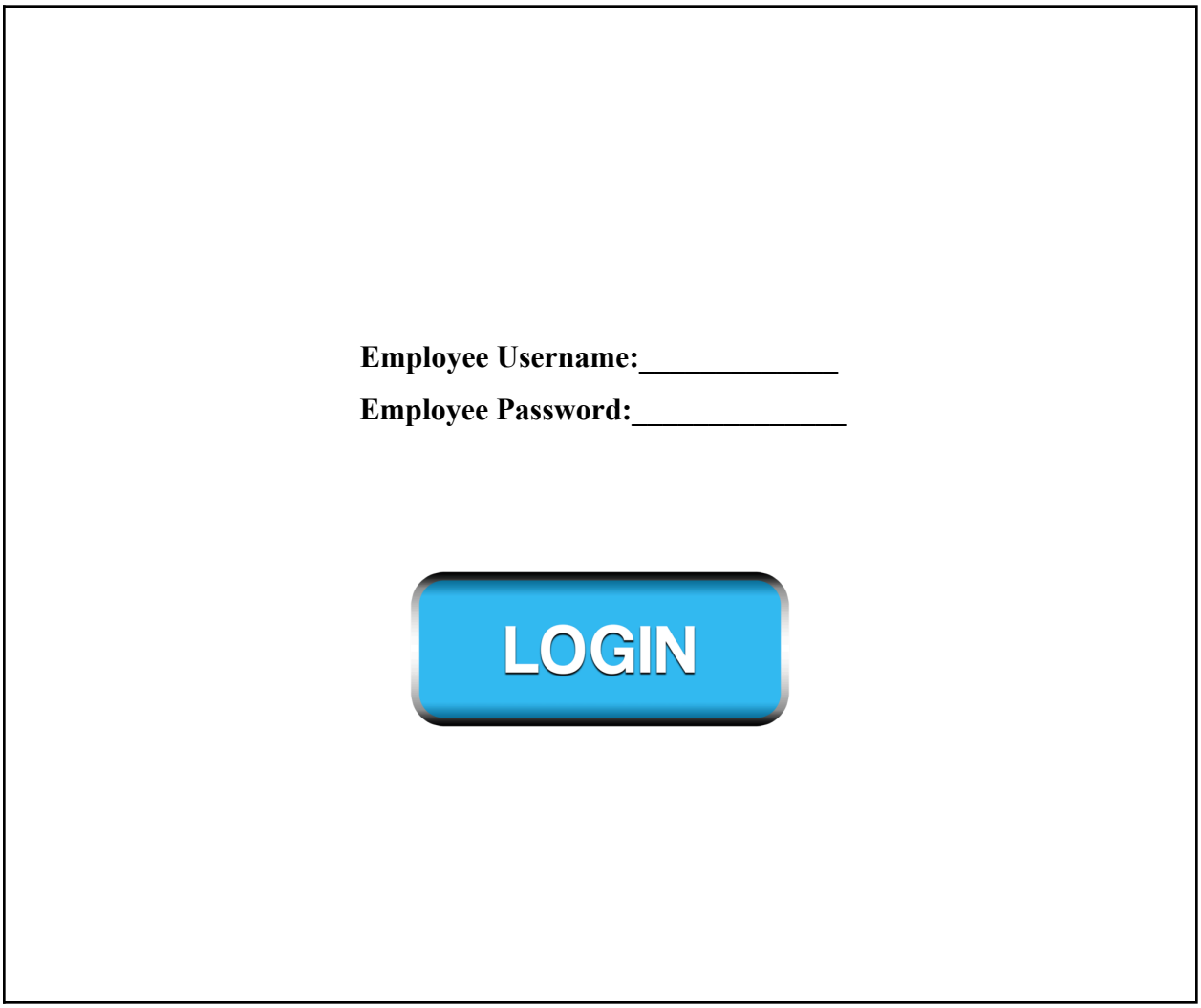
- The Employee table has the primary key EmployeeID and includes username, password, first name, last name, email, and a boolean IsManager flag indicating whether the employee has managerial privileges. This table stores all employee data needed for system access and identification.
- The Asset table has the primary key AssetID. It includes serial number, device name, device type, date purchased, purchase cost, QR code, and a foreign key EmployeeID that connects to the Employee table. This table tracks all company assets along with their specifications and assigns each asset to a specific employee to track who added the asset.
- The Depreciation Report table has the primary key ReportID. It includes current value, useful life year, NPV (Net Present Value), and a foreign key AssetID that connects to the

Asset table. This table allows for financial tracking of assets over time, calculating their depreciation and current values for accounting purposes.

The relationships show that employees can be assigned many assets, and each asset can generate many depreciation reports over time.

Sample forms and reports.

Login Page



The login page to our system is shown above. Once the user logs onto our website, they are prompted with this login screen. This screen prevents unwanted users from accessing the system and ensures that only employees can access and change data. The login page asks for an employee username and password; after the user logs in, they can access what their credentials have access to.

New Asset form

New Asset form

Asset ID:_____

Serial Number:_____

Device Name:_____

Device Type:_____

Date Purchased:_____

Purchase Cost:_____

The New Asset Form, shown above, is the form employees fill out to submit data to the system. Employees can access this form after they log in on the main screen. The employee has to collect the primary data points for each asset for proper asset tracking. After they fill out the information, they are given a dropdown menu to choose the next available ID where they can attribute a QR code for the asset. After filling out all of the fields, the employee clicks the big blue submit data button to send the data to the server.

Mini Asset report

Mini Asset report

Asset ID:_____1_____

Serial Number:___6fdg7f-dfsd_____

Device Name:___ASUS VG248qe__

Device Type:_____Monitor_____

Date Purchased:___5/3/2025_____

Purchase Cost:____$300_____

Useful Life:_____5_____

Shown above is the Mini Asset report generated after an employee scans an asset's QR code. The QR code is attached to the asset ID, which allows the system to pull up all of the information originally entered for a specific asset and its remaining useful life. This information is only accessible after the user logs in. An example asset report is shown.

Full asset report request form

Full Asset Report Request

Employee Username:_____

Employee Password:_____

The complete asset report request form is shown above. Upper management uses this form to request all of the current assets in a table. They must log in a second time to ensure the data is secured because proper security methods go a long way in the corporate world. After they put in their credentials, they click the big data request button to submit the request to the server.

Full Asset Report

Asset ID	Serial Number	Device Name	Device Type	Date Purchased	Purchase Cost	Current Value	Useful Life (Years)	Net Present Value (NPV)
1	6fdg7f-dfsd	ASUS VG248qe	Monitor	5/3/2025	$300	$299.99	5	$16.98
2								
3								
4								
5								

Shown above is the Full Asset Report. This is the report that is generated after upper management requests a full report. This report contains all of the asset information as well as calculated depreciation information. This table will have all current assets that have not been taken out of service yet. An example asset is shown above; this was also the example used in the mini asset report. The report will be sent to the user who requested the report, and that will be done with the user who logged in before submitting the form.

A list of hardware required

- **Standard Web Server**
  - OS: Window Server
  - Software: Apache, MySQL
  - Hardware: 4 TB HDD, 16 core i9-12900k
  - Network: 1000 Mbps Ethernet

- **Standard Desktop Client**
  - OS: Windows 10, Mac-OS, Linux
  - Network: Always-on Ethernet
  - Hardware: 512 GB SSD, Intel Core i5-12300

    - Software: Modern web browser

- **Standard Mobile Client**
    - OS: iOS 15+ or Android 12+
    - Network: Wifi?4G/5G
    - Hardware: Camera-enabled smartphone or tablet
    - Software: Mobile Browser or inventory app

- **Standard Database Server**
    - OS: Windows server 2022
    - Software: MYSQL,Apache
    - Hardware: 16 TB SSD rack, Xeon 16-core processor
    - Network: 10 Gbps Ethernet

Our system benefits from its accessibility as a website making it device-agnostic. The system can be accessed through any device able to use the internet with a browser of modern design. Access is not dependent upon the user being on-site. Our team performed tests in order to confirm that STIGroup's existing computers would work with our system. Only internet access is a fundamental requirement. Optimal configurations are represented within the listed specifications above, though performance trade-offs will occur on less powerful hardware.

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The QR code scanning functionality requires a device having a camera so that the device could be a smartphone, tablet, or a laptop with built-in webcam. For the greatest performance, use barcode/QR scanners made specifically for inventory management stations. The scalable

hardware infrastructure is one that can easily accommodate future growth in inventory volume or additional users.

An explanation of network requirements (Policies, procedures, equipment, etc.)

The network requirements for the Online Inventory Management System must be robust and secure to support STIGroup's operational needs. The system requires reliable and high-speed connectivity to ensure seamless access by employees across all departments. A minimum bandwidth of 100Mbps is recommended to handle multiple simultaneous users accessing the system, especially during peak inventory periods when numerous employees may be processing assets concurrently.

To ensure security and data integrity, the network must implement end-to-end encryption for all data transfers. This is crucial for protecting sensitive asset information as it moves between client devices and the central server. The network infrastructure must also include proper firewall protection and intrusion detection systems to prevent unauthorized access to the inventory management system.

For broader accessibility, the network should support both wired Ethernet connections for office workstations and secure Wi-Fi access for mobile users. This dual connectivity approach ensures that employees can process inventory and scan QR codes regardless of their location within company facilities. VPN capabilities should be implemented to allow for secure remote access when necessary, enabling managers and authorized staff to access inventory data even when they are not physically present in the office.

The network design must incorporate redundancy to prevent system downtime. This includes backup internet connections and regular data backups to ensure continuous availability

of the inventory management system. Network monitoring tools should be implemented to proactively identify and address any connectivity issues before they impact system performance.

To accommodate future growth, the network infrastructure should be scalable, allowing for an increase in users and data without requiring a complete redesign. The current system needs to support approximately 100 STIGroup employees but should be able to scale up as the company workforce expands or as additional features are added to the inventory management system.

Lastly, the network must be compatible with STIGroup's existing IT infrastructure, including integration with current security protocols and authentication systems. This integration will allow for seamless data flow between systems and eliminate the need for duplicate data entry, enhancing overall efficiency.

Task List

		Task Name	Start	Finish	Duration
1	○	Define project goals, scope, and establish stakeholder engagement	2/24/2025	3/21/2025	4 weeks
2	○	Validate feasibility, gather functional and non-functional requirements	3/21/2025	4/17/2025	4 weeks
3	○	Design system architecture and detailed specifications	4/17/2025	5/14/2025	4 weeks
4	○	Build IMS according to design specifications	5/14/2025	6/24/2025	6 weeks
5	○	Validate system functionality, performance, and security	6/24/2025	7/7/2025	2 weeks
6	○	Deploy IMS into environment	7/7/2025	7/18/2025	2 weeks
7	○	Prepare for the new IMS system	7/18/2025	7/31/2025	2 weeks
8	○	Final rollout and ensure system remains functional after full deployment	7/31/2025	8/6/2025	1 week

Above is our plan for developing and rolling out the system. Our first step is, “Define project goals, scope, and establish stakeholder engagement.” Our team planned for this step to take four weeks to ensure we could correctly identify everything that needs to be accomplished and to reach out to stakeholders. During this step, our team will develop a project charter that includes estimated timelines and budget, outlines key functionalities and goals, documents the project scope, and conducts stakeholder meetings to refine project goals and expectations.

The next step in our project is to “Validate feasibility and gather detailed functional and non-functional requirements.” Our team also planned for this step to take four weeks because we wanted to ensure that our approach is not only feasible but also cost-effective and addresses key features. During this step, we plan to create an extensive requirements specification document and a cost-benefit analysis to ensure the system is worth developing. In addition, we planned to conduct workshops and interviews with STIGroup staff to gather additional requirements.

The next two steps go together: “Design system architecture and detailed specifications” and “ Build IMS according to design specifications.”. In the first half, our team will start developing the system architecture, data flow diagrams, and UI mockups to specifications; we allocated four weeks for this process. Once finished, our team will review the design with stakeholders for validation and refinement. Then, we continued to the second step, which we planned to take six weeks, because our team wanted ample time to program the system and work out all the bugs, to ensure a strong foundation. During this step, our team will program the system, implement security, set up tools and documents, and conduct code reviews to ensure the system is going to function up to standard.

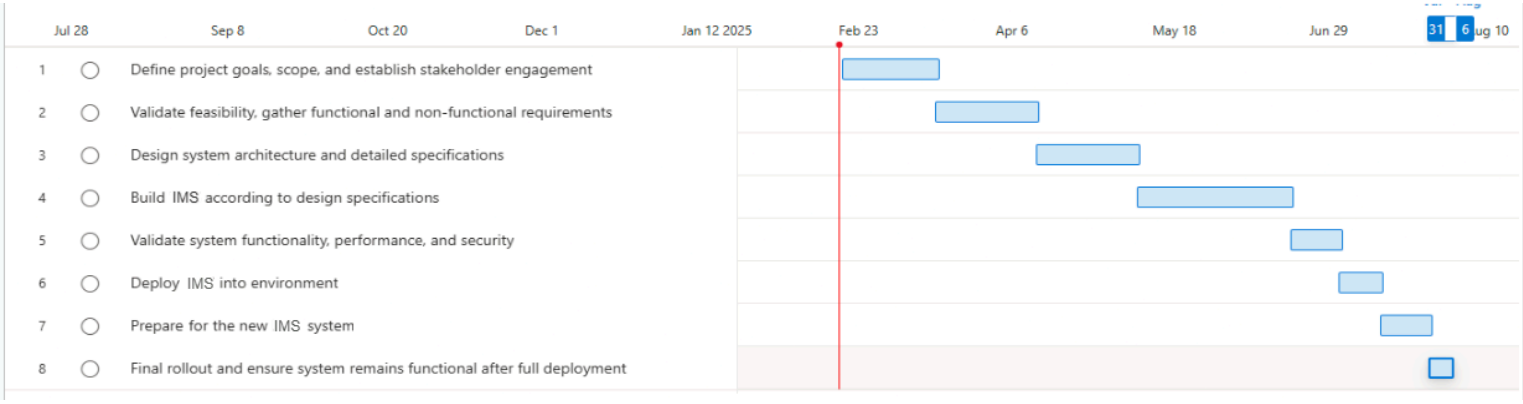
The next step is to “Validate the system’s functionality, performance, and security.” Our team planned for this step to take two weeks as we have been actively quality-checking

throughout the development process; however, quality is our number one priority, so we have given ourselves that time to ensure the IMS is perfect on release. During this step, we will develop test cases based on requirements, conduct general system testing, document and address any issues identified, and run user acceptance testing with selected STIGroup staff.

The final part of our plan has three steps: “Successfully deploy the IMS into the environment”, “Prepare for the new IMS”, and “Final rollout and ensure the system remains functional after full deployment”. The first step, we planned to take two weeks, because we are doing a soft launch of the IMS. During this step, we will complete the data migration and ensure the accurate import of all current assets. The next step we also planned to take two weeks, because we wanted to give the staff enough time to learn how to use the new system. During this step, our team will develop training materials and collect user feedback to identify any challenges or areas for improvement. The next step is the last; we planned for it to take one week. During this step, we will create a maintenance schedule for system updates, implement feedback mechanisms for user input to identify issues, and monitor the performance of the system to ensure it's up to standard.

Our team believes that this schedule will allow us to make a beautiful system that is cost-effective, feasible, long-lasting, efficient, and better than the competition. The project, based on estimates, will take 25 weeks to complete. See the full “Time Schedule” below:

Time schedule



This is a Gantt chart for the inventory management system implementation project. Starting from February 23, 2026, to August 10, 2026, with the red line marking the starting date. Each sequential phase needs to be completed before the next one can start. This project consists of 8 sequential phases:

1. Define project goals, scope, and establish stakeholder engagement (scheduled for late February-early March 2026)
2. Validate feasibility, gather functional and non-functional requirements (scheduled for early March-mid April 2026)
3. Design system architecture and detailed specifications (scheduled for mid April-early May 2026)
4. Build IMS according to design specifications (scheduled for early May-early June 2026)
5. Validate system functionality, performance, and security (scheduled for early June-mid June 2026)
6. Deploy IMS into environment (scheduled for mid June-mid June 2026)
7. Prepare for the new IMS system (scheduled for mid June-late July 2026)
8. Final rollout and ensure system remains functional after full deployment (scheduled for late July-early August 2025)

Cost/Benefit analysis

Cost/Benefit Analysis	Year 0	Year 1	Year 2	Year 3	Total
Value of benefits		$ 50,000	$ 50,000	$ 50,000	
Discount factor (3%)		0.97	0.94	0.92	
Present Value of Benefits		$48,500.00	$47,000.00	$46,000.00	$ 141,500
Development Cost	($60,000)				$ (60,000)
Ongoing Costs		($10,000)	($10,000)	($10,000)	
Discount factor (3%)		0.97	0.94	0.92	
Present Value of Ongoing Costs		($9,700.00)	($9,400.00)	($9,200.00)	$ (28,300)
PV of Net of Benefits and Costs	($60,000)	$38,800.00	$37,600.00	$36,800.00	
Cumulative NPV	($60,000)	($21,200.00)	$16,400.00	$53,200.00	
Payback Period	1 years + 21200/(21200+16400) =				1.6
3-Year Return on Investment	(141500-(60000+28300))/(60000+28300) =				60.25%

The cost/benefit analysis shown above is about the inventory management system, with a 3-year projected analysis using a 3% discount rate. It will cost $60,000 upfront development cost, which includes software development, around $40,000 hardware cost, around $10,000, and Training cost around $10,000—looking at the main components of this analysis, which are the benefits and cost. The projected annual benefits are $50,000, which comes from time saving, labor reallocation, better accuracy, and faster audits and reports. The ongoing costs are projected to be $10,000 a year. The cost includes system maintenance and support, updates, security, and training. The system is scoped to have a net present value of $53,200 by the end of 3 years with a 1.6-year payback period and a return on investment calculated at 60.25% over the 3 years.

Alternative Software Packages Analysis

After conducting thorough research on available inventory management solutions, we have analyzed several potential software packages that could meet STIGroup's requirements. Each solution has been evaluated based on functionality, integration capabilities, customization options, and cost-effectiveness.

AssetPanda

AssetPanda offers a comprehensive inventory management solution with robust asset tracking features. The system provides customizable fields, workflows, and reporting capabilities that align with STIGroup's need for flexibility. It also supports QR code/barcode scanning, which is a key requirement for the company's asset tagging process.

However, AssetPanda's pricing structure is based on a per-user model, which could become costly for an organization with 100 employees. Additionally, while it offers API integration options, connecting with STIGroup's existing cybersecurity systems may require custom development work, potentially increasing implementation costs and complexity.

Zoho Inventory

Zoho Inventory provides a user-friendly interface with strong inventory tracking capabilities. The system offers customizable fields, automated workflows, and detailed analytics for tracking asset depreciation. It also supports mobile access for on-the-go inventory management.

While Zoho Inventory integrates well with other Zoho applications, integration with STIGroup's existing security systems might present challenges. The platform is more focused on sales inventory rather than IT asset management, which might require workarounds to adapt it to STIGroup's specific needs for tracking technical equipment and cybersecurity assets.

InvGate Assets

InvGate Assets provides a sophisticated IT asset management platform with strong security features that would align well with STIGroup's cybersecurity focus. The system offers automated discovery, depreciation tracking, and lifecycle management capabilities.

While InvGate meets many of STIGroup's requirements, its enterprise focus means it might be more complex than needed for a 100 employee company. The pricing structure might also be designed for larger organizations, potentially making it less cost-effective for STIGroup's size.

Snipe IT

Snipe-IT is an open-source IT asset management system designed specifically for tracking technology assets. It offers comprehensive depreciation calculation features, customizable fields, and strong reporting capabilities. Being open-source, it provides more flexibility for customization and potential cost savings.

However, implementing and maintaining Snipe-IT would require more technical resources and expertise than cloud-based solutions. STIGroup would need to dedicate IT staff to manage the system, handle security updates, and develop any required customizations. While this might provide cost savings in licensing fees, it could increase operational costs.

Upkeep

UpKeep offers asset management with preventive maintenance features. The system is mobile-friendly and includes work order management and inventory control capabilities that could benefit STIGroup's operational processes.

While UpKeep handles basic asset tracking well, it might lack some detailed IT asset management features that STIGroup needs. The focus on maintenance might add unnecessary complexity for what is primarily an IT asset inventory management requirement.

Based on our analysis, we recommend conducting a detailed evaluation of these top contenders, with particular attention to integration capabilities with STIGroup's existing cybersecurity tools, total cost of ownership, and alignment with the specific workflow requirements outlined in our earlier process analysis. A Request for Information (RFI) to these vendors would provide more detailed information on costs, implementation timelines, and integration approaches to inform the final selection.

Conclusion

After analyzing the current system and the requirements of the new system and researching software package alternatives, our team believes that building the proposed inventory management system will best resolve STIGroup's issues in the future. The alternative software packages do not entirely fulfill STIGroup's needs concerning requirements, notably for integration with dedicated cybersecurity tools and workflows.

Our team will work directly with STIGroup to create a web based solution that is uniquely fulfilling. As the companies need to evolve, the system will scale. We have created a system that is going to solve all of the current inventory management issues present in STIGroup's Excel-based system. The system also offers a secure central location for tracking assets, collecting information for depreciation data analysis, and generating thorough reports.

This proposed system tackles the main issues with current processes since it does away with separate Excel files, standardizes the inventory process, and provides strong data analysis abilities. Because the digital workflow will greatly reduce asset inventory management time, data accuracy and

accessibility will improve. Managers will be able to track depreciation by using the system's built-in analytics.

This will enable STIGroup staff to create and access inventory information far more efficiently than before, through the system database, safely storing confidential asset data. After this system is implemented, STIGroup can expect its operational efficiency to improve substantially. Management decisions with better information will be made, management of the asset lifecycle will be improved, performance of the organization will improve, and costs will be reduced.

Works cited

ManageEngine. (n.d.). *Hardware inventory management*. Hardware Inventory | Computer Inventory Management Software & Tools - ManageEngine Endpoint Central. https://www.manageengine.com/products/desktop-central/hardware-inventory.html

Home. InventorSoft. (n.d.). https://inventorsoft.co/blog/inventory-management-requirements-and-features

NetSuite.com. (n.d.). *The bells and whistles of an inventory management system*. Oracle NetSuite. https://www.netsuite.com/portal/resource/articles/inventory-management/inventory-management-system-features.shtml