



# Legacy Consulting

## Capstone Presentation

Group 9



# TODAY'S AGENDA

- 01 Introduction
- 02 Project Management
- 03 Cost Management
- 04 Quality Management
- 05 Risk Management
- 06 Resources
- 07 Technical
- 08 Demo
- 09 Lessons Learned
- 10 Q&A

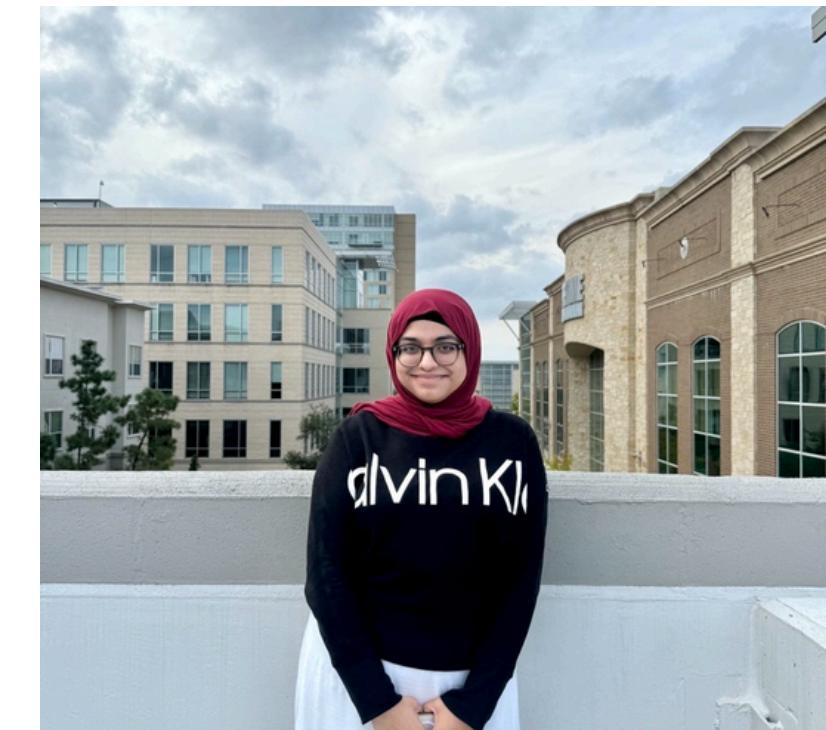
# Meet the team



Brittany Zimmerman  
Project Manager



Mariya Biji  
Assistant PM



Aliza Latif  
Lead Developer



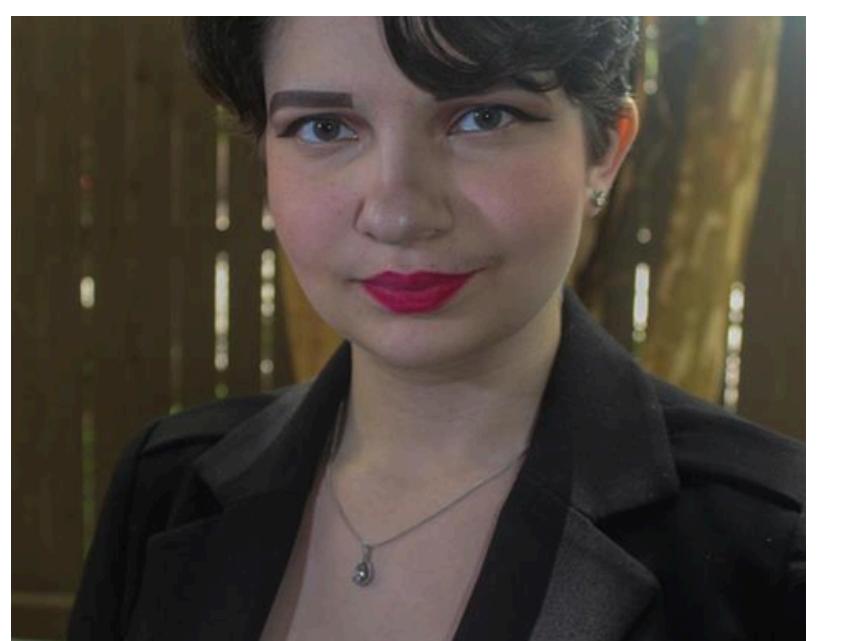
Architecture  
Jeremy Duong



Architecture  
Annie George



Developer  
Long Nguyen



Developer  
Haley Heyman



# Militia Protection

## CLIENT OVERVIEW

- **Company:** Militia Protection
- **Business:** Smart security systems that also offer power and aquatic services. They are partnered with vector security.
- **Location:** Based in Porter, Texas
- **Owners:** Wesley Wood and Ronnie Durrance
- Established in 2019
- SMB with just under 25 employees
- Manage around 300 SKUs

Haley

# Militia Protection



## Stakeholders



Wesley Wood  
co-owner  
Militia Protection



Ronnie Durrance  
co-owner  
Militia Protection



Professor  
Jose Martinez  
University of Houston



# PROJECT MANAGEMENT

Group 9



# INITIATION ACTIVITIES

## INCEPTION

### Repo & Branch Setup

- Github main
- Branches for members

### Team Cadence

- Schedule
- Contact Methods

### Team Branding

- Logo
- Colors
- Email Signature

### PM Methodology

- Project Charter

### Technical Infrastructure Setup

- AWS
- EC2
- S3

### Documenting/ SDLC

#### Process

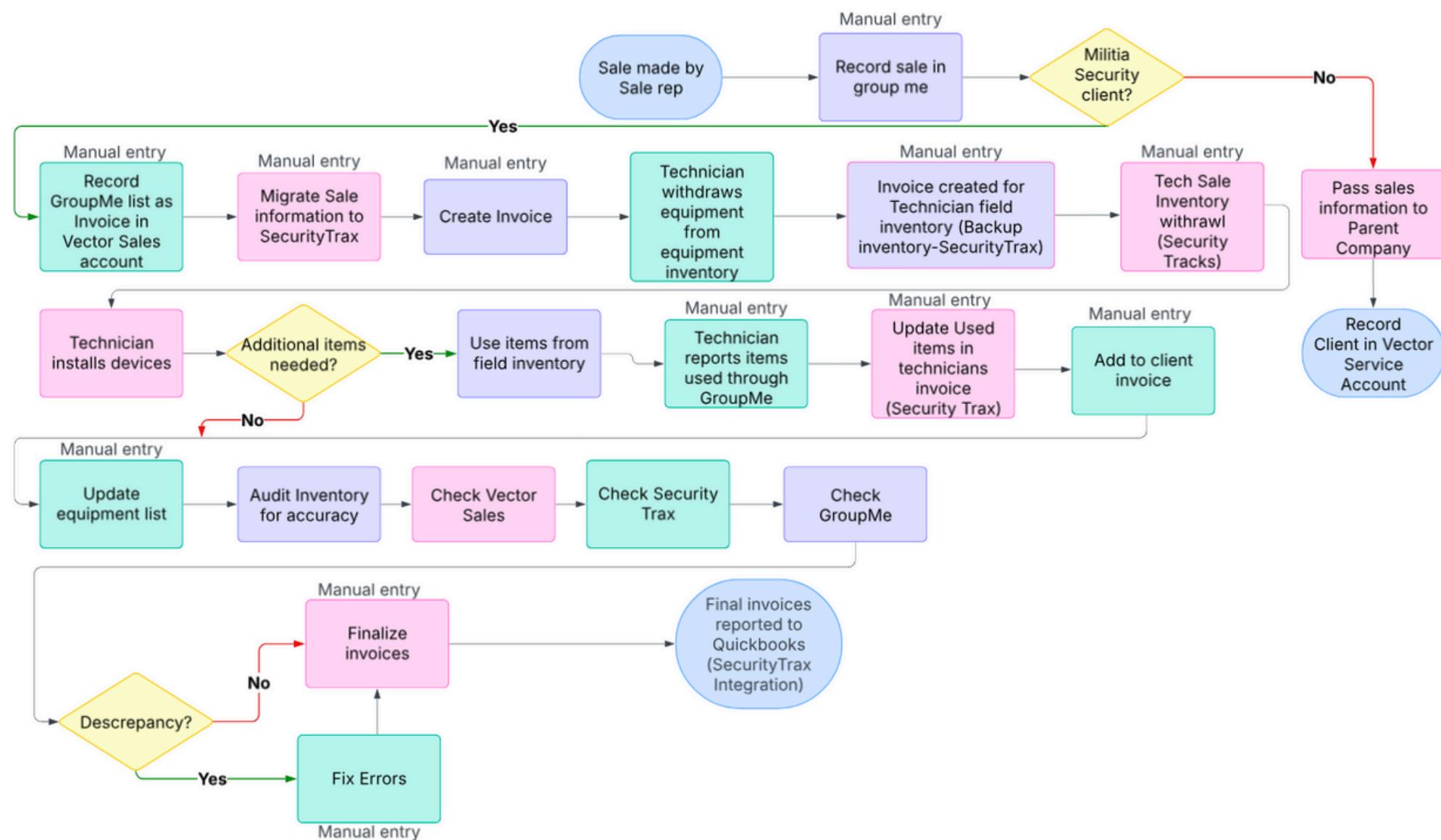
- Push to branch
- Pull into main
- Deploy

### Elicit & Identify Sponsors

- Mini Charter Agreement



# CURRENT SYSTEM



## Key elements:

- Sales
- Technician Assignment & Inventory
- Technician Reporting
- Admin Monitoring
- Manual Data Entry
- Manual Checks & Replenishment

## Issues:

- > 10 manual data entry points

# SWOT ANALYSIS



## STRENGTH

- Stakeholders with some tech skills
- Steady years of operation
- Experience with inventory management.
- Knowledge of inventory stock
- Guidance-based development

## WEAKNESS

- AWS cost management
- Group me workflows
- No automation with inventory management
- Many manual processes
- Short Timeline

## OPPORTUNITY

- Create dynamic web application.
- Minimize GroupMe workflow.
- Direct information flow from Techs & Sales reps.

## THREATS

- Communication Availability
- Scope creep
- Technical roadblocks
- Lack of standardized inventory

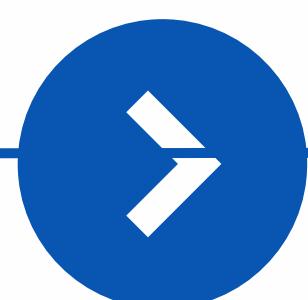
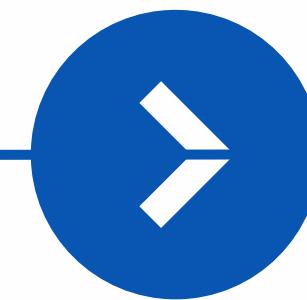
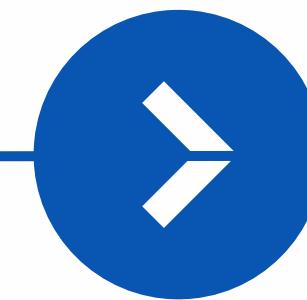
# PROJECT PURPOSE



- Develop a user-friendly, responsive inventory management application.
- Streamline inventory processes.
- Accelerate Admin process.
- Enhance visibility.
- Minimize shrinkage.
- Reduce inventory search time.
- Consolidate information in a secure environment.
- Deliver a standalone solution supporting manual data entry for accounting due to client API constraints.



# PHASED APPROACH



## Deliver

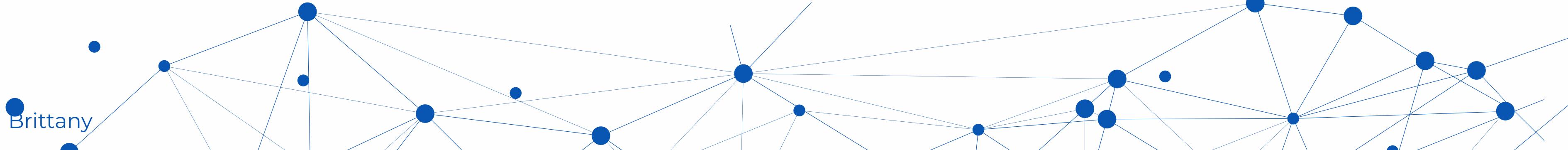
- Industry-standard inventory system.
- Establish the core platform for future expansion.

## Expand & Improve

- Build upon Phase 1.
- Secure, identity-based login.
- Dedicated front-ends.
- Minimize GroupMe

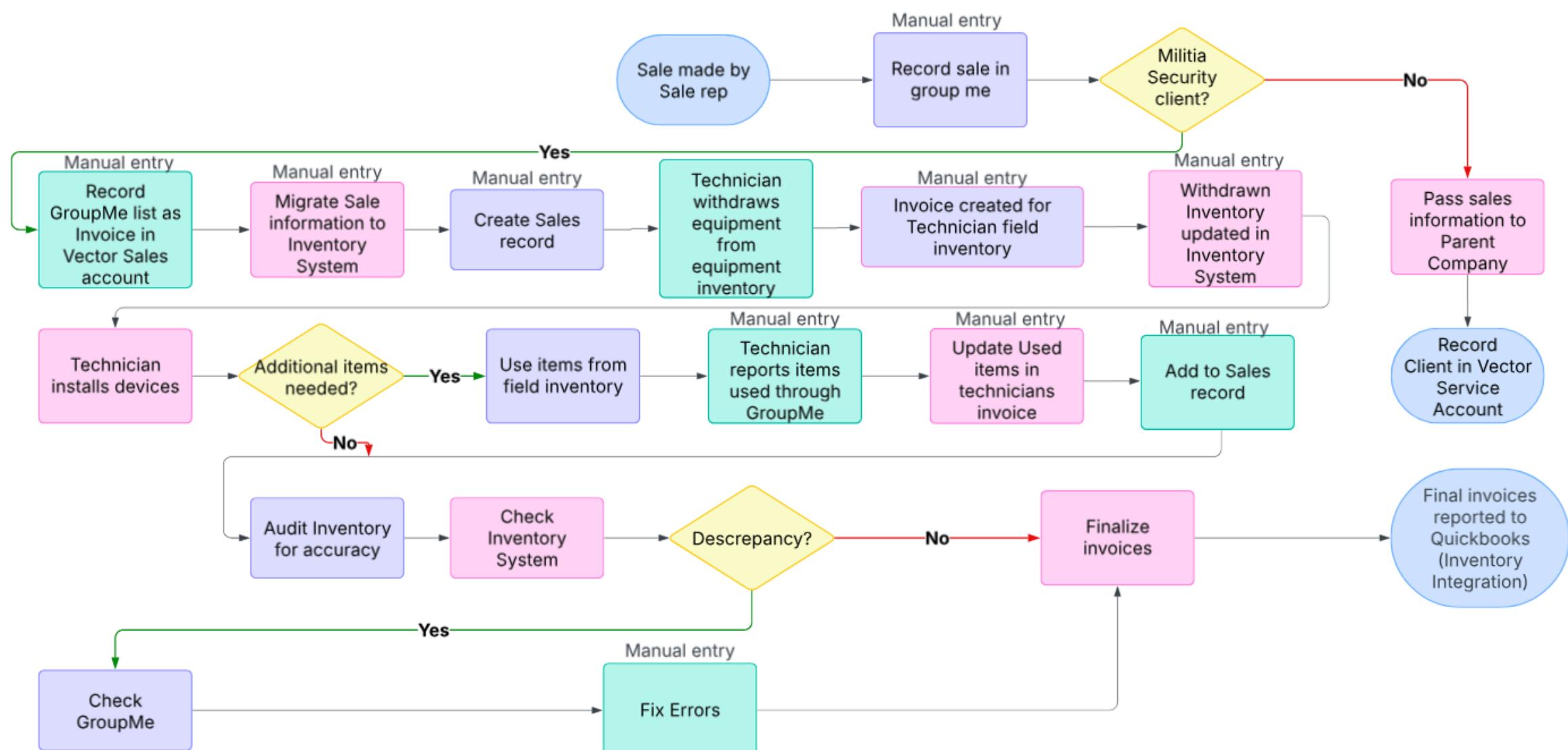
## Security, Extensibility, & Stretch

- Evaluate security practices.
- Integrate troubleshooting.
- Extensible design.

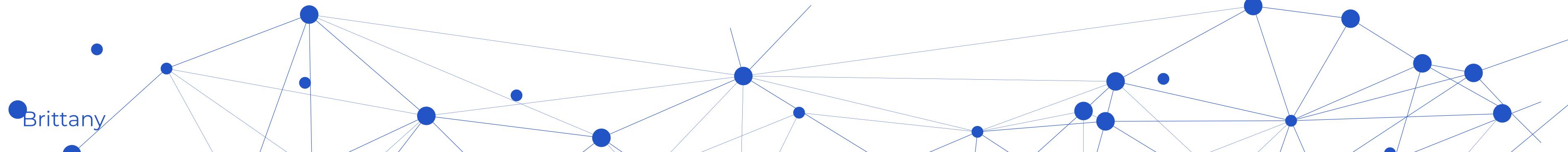


# PROCESS IMPROVEMENT

## PHASE 1

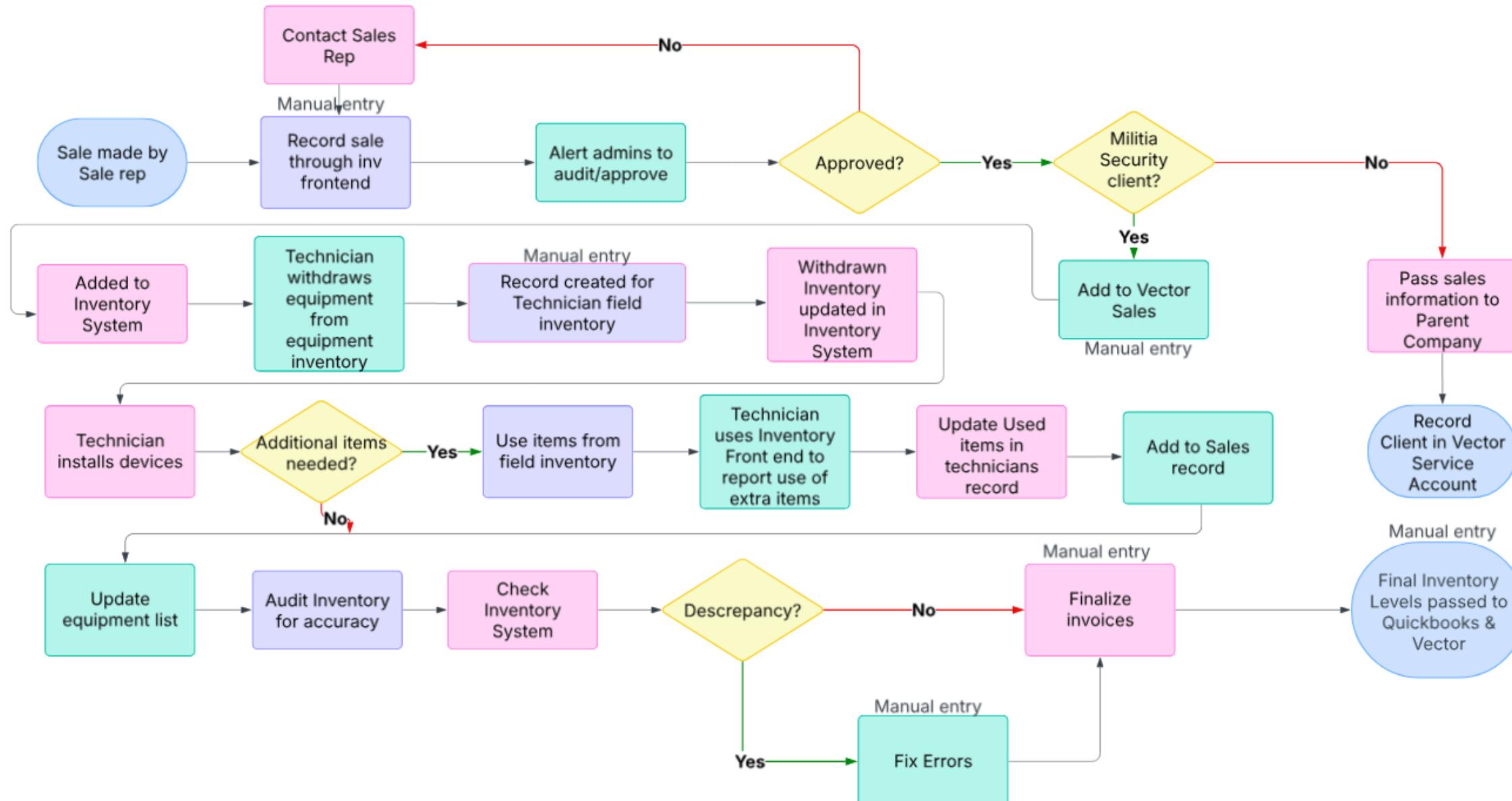


- 9 points of manual entry
- In-house inventory tracking

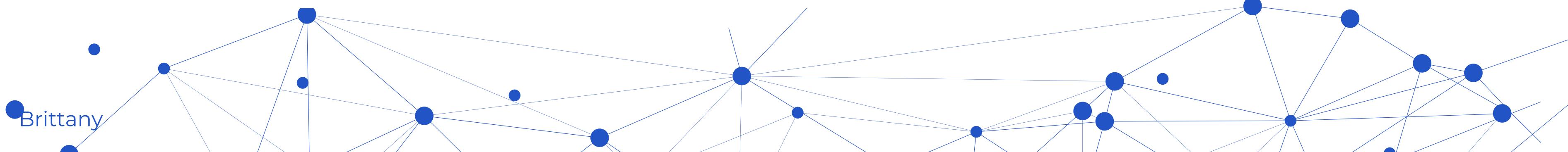


# PROCESS IMPROVEMENT

## PHASE 2



- 4 points of manual entry
- Secure reporting methods



# PROJECT SCOPE



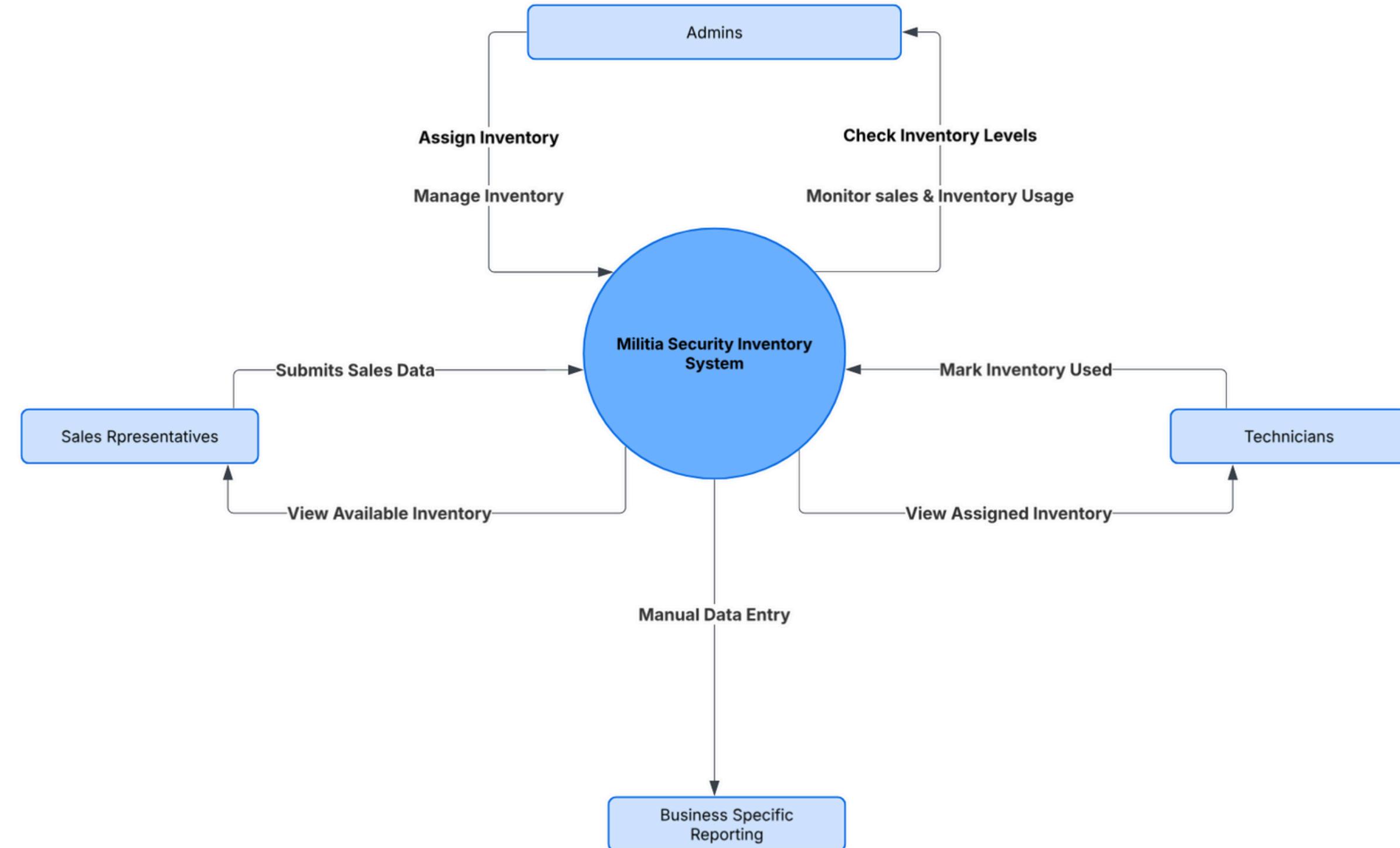
## In Scope

- User friendly front-end.
- Responsive
- Identity-based access
- Secure system
- Secure log-in
- AWS cost scaling considerations
- Phased value approach
- Front-end for sales & technicians
- Admin interface for admin operations

## Out of Scope

- Consolidate all business activities.
- Complete CRM
- Financial management
- POS functions
- Replace full legacy system
- E-commerce
- Manage supply chain
- QuickBooks integrations
- Integrate all applications

# SCOPE DIAGRAM



Long

# SCOPE STATEMENT



This project aims to deliver a web application with a user-based access front-end for admins, technicians, and sales representatives. They will have the ability to add sales and change inventory levels through basic CRUD operations and a soft delete.

Administrators will have access to all functions as well as a consolidated area for reviewing inventory, sales, and technician inventory for audit purposes. While direct QuickBooks integration is not possible due to client constraints on API access, the system will support manual data export for financial reporting purposes.

# PROJECT OBJECTIVES



## Three-Phased Approach

1. Deliver
  - a. Basic Functionality
2. Expand and Improve
  - a. Additional Functionality
  - b. Improved Workflows
3. Security and Extendability

Militia Protection Inventory Management System Project Objectives	
<b>Phase 1</b>	<b>Deliver</b>
Objective 1	Inventory system that meets industry standards for security, cost, reliability, and design.
Objective 2	CRUD operations are available to admins.
Objective 3	User-friendly Front-End Interface.
Objective 4	Consolidate inventory activities.
Objective 5	Updates are tracked in close-to-real-time.
Objective 6	Cost-conscious maintenance.
<b>Phase 2</b>	<b>Expand and improve</b>
Objective 1	Front-end integrations for sales reps.
Objective 2	Implement safeguards for accurate sales rep reporting.
Objective 3	Front-end integrations for technicians.
Objective 4	Implement safeguards for accurate technician reporting.
Objective 5	Pathway to eliminate GroupMe workflow.
Objective 6	Transition sales reps and technicians reporting to app.
<b>Phase 2</b>	<b>Security, and Extendability</b>
Objective 1	Revisit security considerations.
Objective 2	Prepare the system for future development & expansions.



# WBS

ID	Name	Assigned To
<b>1 Inception</b>		
1.1	Team Branding	Mariya Biji
1.2	Team Cadence	Jeremy Duong
	Elicit & Identify	
1.3	Sponsors	Brittany Zimmerman
Project Manager		
1.4	Tasks	Brittany Zimmerman
	Generalized	
1.5	Development	Aliza Latif
Application		
1.6	Architecture	Annie George
	Version Control	
1.7	System	Aliza Latif
<b>2 Planning</b>		
	Documenting/SDLC	
2.1	Process	Aliza Latif
2.2	PM Methodology	Brittany Zimmerman
<b>3 Execution</b>		
Application		
3.1	Deployment	Aliza Latif
	Core Inventory Management	
3.2	Operations for Admin	Haley Heyman

	Template Design & Creation &	
3.3	Deployment	Mariya Biji
3.4	Env Deployment	Jeremy Duong
3.5	Security & Reliability	Annie George
	User-Friendly Interface	
3.6	Integration	Haley Heyman
3.7	Considerations	Long Nguyen
3.8	Real-time Inventory	Haley Heyman
Cost-Conscious		
3.9	Deployment	Aliza Latif
3.1	Sales Rep Frontend	Haley Heyman
3.11	Technician Frontend	Long Nguyen
	Eliminate/Minimize	
3.12	GroupMe Workflows	Haley Heyman
Core Service Infrastructure		
3.13	Infrastructure	Jeremy Duong
	Basic Infrastructure	
3.14	& redeployment	Jeremy Duong
Frontend Hosting		
3.15	Infrastructure	Annie George
	Load Balancing for	
3.16	Frontends	Jeremy Duong
Deployment Pipelines for		
3.17	Frontends	Aliza Latif

	Scalability	
3.18	Enhancements	Annie George
	Advanced Security	
3.19	Infrastructure	Long Nguyen
	Monitoring &	
4	Controlling	
4.1	Monitoring & Testing	Aliza Latif
4.2	Expand Integrations	Long Nguyen
4.3	Security	Long Nguyen
4.4	Extensibility	Haley Heyman
Infrastructure as Code		
4.5	Code	Jeremy Duong
5	Closure	
Team Testing Review		
5.1	& Documentation	Mariya Biji
5.2	Project Report	Brittany Zimmerman
Training and User Manual		
5.3	Manual	Brittany Zimmerman
5.4	Presentation	Brittany Zimmerman
5.5	Final Code Push	Aliza Latif
	Final Meeting &	
5.6	Close	Brittany Zimmerman

Aliza

# RACI



RACI Full									
Project		Inventory Management System			Sponsor	Militia Protection			
Project Manager		Brittany Zimmerman			Updated	4/27/2025 23:02			
		Brittany Zimmerman	Mariya Biji	Aliza Latif	Jeremy Duong	Annie George	Haley Heyman	Long Nguyen	
<b>PROJECT</b>									
Documenting/SDL C process	A	C	R	C	C	C	C		
Project Manager Tasks	R	A	I	I	I	I	I		
PM Methodology	R	A	C	C	C	C	C		
Application Architecture	C	I	A	C	R	I	I		
Core Inventory Management Operations for Admin	C	I	A	I	I	R	I		
Monitoring & Testing	C	I	A	C	C	C	R		
Template Design & Creation & Deployment	C	I	C	R	A	I	I		
Env Deployment	C	I	C	R	A	I	I		
Security & Reliability	C	I	C	R	C	C	A		
User-Friendly Interface	C	I	A	I	I	R	C		

RACI Milestones										
Project					O	Sponsor	0			
Project Manager					O	Updated	1/0/1900 0:00			
		Brittany Zimmerman	Mariya Biji	Aliza Latif	Jeremy Duong	Annie George	Haley Heyman	Long Nguyen		
Pre-Project Activities		R	A	C	I	I	I	I		
Initial Infrastructure & General Dev Plan		A	I	R	C	C	C	C		
Infra Initialized & Main Dev		C	I	C	R	A	I	I		
Core Inventory System Dev		C	I	C	I	I	R	A		
Core Inventory System Infra		C	I	C	R	A	I	I		
Additional Frontends		C	I	C	C	C	A	R		
Minimize/eliminate groupme Workflows		C	I	C	C	R	A			
Documentation		C	I	I	R	C	C	A		
Re-Evaluate Documentation		R	A	C	I	I	I	I		
Re-Evaluate Security		C	I	R	I	I	I	A		
Re-Evaluate System		A	C	R	C	C	C	C		

Aliza



# ADO WORKFLOWS

## - TIMELINE



ID	Title	Assigned To	State	Area Path	Tags	Comments	Activity Date
150	Closure	Brittany Zimmerman	New	Team09	Project		3/3/2025 11:15:20 PM
149	Executing	Latif, Aliza A	New	Team09	Development		3/3/2025 8:07:14 PM
187	Inception	Unassigned	New	Team09			3/3/2025 11:03:59 PM
47	Monitoring & Controlling	Latif, Aliza A	Active	Team09	Development		3/3/2025 8:07:25 PM
158	Planning	Unassigned	New	Team09			3/3/2025 8:06:57 PM

Brittany

# SCHEDULE - FEATURES



Sprint 1 2/11 - 2/17	Sprint 2 2/18 - 3/10	Sprint 3 3/11 - 3/24	Sprint 4 3/25 - 4/7	Sprint 5 4/8 - 4/14	Sprint 6 4/15 - 4/21
<p>Team Branding • Closed • Bijji, Mariya Parent: Inception...</p> <p>Project</p>	<p>Documenting/SDLC process • Resolved • Latif, Aliza A Parent: Planning</p> <p>Project</p>	<p>Security &amp; Reliability • New • George, Annie Parent: Executing</p> <p>Development</p>	<p>Sales Rep Frontend • New • Heyman, Haley A Parent: Executing</p> <p>Development</p>	<p>Eliminate/minim... • New • Heyman, Haley A Parent: Executing</p> <p>Development</p>	<p>Expand integrati... • New • Nguyen, Long Parent: Monitoring</p> <p>Development</p>
<p>Team Cadence • Closed • Brittany Zimmerman Parent: Inception...</p> <p>Project</p>	<p>PM Methodology • Resolved • Brittany Zimmerman Parent: Planning</p> <p>Project</p>	<p>User-Friendly Interface • New • Heyman, Haley A Parent: Executing</p> <p>Development</p>	<p>Technician Frontend • New • Nguyen, Long Parent: Executing</p> <p>Development</p>	<p>Deployment pip... • New • Nguyen, Long Parent: Executing</p> <p>Infrastructure</p>	<p>Security • New • Nguyen, Long Parent: Monitoring</p> <p>Development</p>
<p>Elicit &amp; Identify ... • Closed • Brittany Zimmerman Parent: Inception...</p> <p>Project</p>	<p>Core Inventory Management Operations for Admin • Resolved • Heyman, Haley A Parent: Executing</p> <p>Development</p>	<p>Quickbooks Integration • New • Nguyen, Long Parent: Executing</p> <p>Development</p>	<p>Frontend Hosting Infrastructure • New • George, Annie Parent: Executing</p> <p>Infrastructure</p>	<p>Team testing rev... • New • Bijji, Mariya Parent: Closure</p> <p>Project</p>	<p>Extensibility • New • Heyman, Haley A Parent: Monitoring</p> <p>Development</p>
<p>Project Manager... • Resolved • Brittany Zimmerman Parent: Inception...</p> <p>Development</p>	<p>Monitoring &amp; Testing • Active • Latif, Aliza A Parent: Monitoring &amp; C...</p> <p>Development</p>	<p>Real-time Inventory • New • Heyman, Haley A Parent: Executing</p> <p>Development</p>	<p>Load Balancing for frontends • New • Duong, Jeremy V Parent: Executing</p> <p>Infrastructure</p>	<p>Project Report • New • Brittany Zimmerman Parent: Closure</p> <p>Project</p>	<p>Scalability enhan... • New • George, Annie Parent: Executing</p> <p>Infrastructure</p>
<p>Generalized Dev... • Closed • Latif, Aliza A Parent: Inception...</p> <p>Development</p>	<p>Template Design &amp; Creation &amp; Deployment • Active • Bijji, Mariya Parent: Executing</p> <p>Infrastructure</p>	<p>Cost-Conscious Deployment • New • Latif, Aliza A Parent: Executing</p> <p>Development</p>		<p>Training and Use... • New • Brittany Zimmerman Parent: Closure</p> <p>Project</p>	<p>Advanced Securi... • New • Duong, Jeremy V Parent: Executing</p> <p>Infrastructure</p>
<p>Application Arch... • Active • George, Annie Parent: Inception...</p> <p>Infrastructure</p>	<p>Env Deployment • Active • Duong, Jeremy V Parent: Executing</p> <p>Infrastructure</p>	<p>Core Service Infrastructure • New • Duong, Jeremy V Parent: Executing</p> <p>Infrastructure</p>		<p>Presentation • New • Brittany Zimmerman Parent: Closure</p> <p>Project</p>	<p>Infrastructure as ... • New • Duong, Jeremy V Parent: Monitoring</p> <p>Infrastructure</p>
<p>Version Control ... • Closed • Latif, Aliza A Parent: Inception...</p> <p>Development</p>		<p>Basic Infrastructure &amp; Monitoring • New • Duong, Jeremy V Parent: Executing</p> <p>Infrastructure</p>		<p>Final Code Push • New • Latif, Aliza A Parent: Closure</p> <p>Project</p>	<p>Final meeting &amp; ... • New • Brittany Zimmerman Parent: Closure</p> <p>Project</p>

Brittany

# SCHEDULE - USER STORIES



Sprint 1 2/11 - 2/17	Sprint 2 2/18 - 3/10	Sprint 3 3/11 - 3/24	Sprint 4 3/25 - 4/7	Sprint 5 4/8 - 4/14	Sprint 6 4/15 - 4/21
<ul style="list-style-type: none"> <li>create slogan           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Parent <a href="#">Team...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>APM Weekly Tasks           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Parent <a href="#">PM Methodology</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>APM Weekly Tasks           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Project</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Project Management           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Project</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Test Documenta...           <ul style="list-style-type: none"> <li>Closed</li> <li>Brittany Zimmerman</li> <li>Parent <a href="#">Docu...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Review security ...           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">Security</a></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>create logo           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Parent <a href="#">Team...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>PM Weekly Tasks           <ul style="list-style-type: none"> <li>Closed</li> <li>Brittany Zimmerman</li> <li>Project</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Project Management           <ul style="list-style-type: none"> <li>Closed</li> <li>Brittany Zimmerman</li> <li>Parent <a href="#">PM Methodology</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>APM Weekly Tasks           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Project</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Finalize &amp; Store ...           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Parent <a href="#">Docu...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Explore MFA           <ul style="list-style-type: none"> <li>Closed</li> <li>Nguyen, Long</li> <li>Parent <a href="#">Security</a></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>choose colors           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Parent <a href="#">Team...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Inventory Filtering           <ul style="list-style-type: none"> <li>Closed</li> <li>Heyman, Haley A</li> <li>Parent <a href="#">Core Inventory...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Target \$80 mothly cost range           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">Cost-Conscious D...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>View current inventory Levels           <ul style="list-style-type: none"> <li>Closed</li> <li>Nguyen, Long</li> <li>Parent <a href="#">Sales Rep Front...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Document Deplo...           <ul style="list-style-type: none"> <li>Closed</li> <li>Brittany Zimmerman</li> <li>Parent <a href="#">Docu...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Readable &amp; read...           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">Extensi...</a></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>team name           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Parent <a href="#">Team...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Ability to Read &amp; Write           <ul style="list-style-type: none"> <li>Closed</li> <li>Nguyen, Long</li> <li>Parent <a href="#">Core Inventory...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Reliability           <ul style="list-style-type: none"> <li>Closed</li> <li>Nguyen, Long</li> <li>Parent <a href="#">Security &amp; Relia...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Create sales orders           <ul style="list-style-type: none"> <li>Closed</li> <li>Nguyen, Long</li> <li>Parent <a href="#">Sales Rep Front...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Safeguards &amp; A...           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">Elimin...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Readable &amp; read...           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">Infrast...</a></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>create team style           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> <li>Parent <a href="#">Team...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Ability to add new inventory items           <ul style="list-style-type: none"> <li>Closed</li> <li>Heyman, Haley A</li> <li>Parent <a href="#">Core Inventory...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Inventory system secure to industry standar...           <ul style="list-style-type: none"> <li>Closed</li> <li>Heyman, Haley A</li> <li>Parent <a href="#">Security &amp; Relia...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>View assigned inventory           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">Technician Front...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Deploy to S3           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">Deplo...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Review security ...           <ul style="list-style-type: none"> <li>Closed</li> <li>Duong, Jeremy V</li> <li>Parent <a href="#">Advan...</a></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>Discovery meeti...           <ul style="list-style-type: none"> <li>Closed</li> <li>Brittany Zimmerman</li> <li>Parent <a href="#">Elicit &amp;...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Ability to (soft) delete inventory items           <ul style="list-style-type: none"> <li>Closed</li> <li>Brittany Zimmerman</li> <li>Parent <a href="#">Core Inventory...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Intuitive Dashboard           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">User-Friendly Int...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Report used inventory           <ul style="list-style-type: none"> <li>Closed</li> <li>Nguyen, Long</li> <li>Parent <a href="#">Technician Front...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Pre-Implementa...           <ul style="list-style-type: none"> <li>Closed</li> <li>Biji, Mariya</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Post-Implement...           <ul style="list-style-type: none"> <li>Closed</li> <li>Brittany Zimmerman</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>Finalize best-fit s...           <ul style="list-style-type: none"> <li>Closed</li> <li>Brittany Zimmerman</li> <li>Parent <a href="#">Elicit &amp;...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Ability to Update Inventory Items           <ul style="list-style-type: none"> <li>Closed</li> <li>Nguyen, Long</li> <li>Parent <a href="#">Core Inventory...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Easy to navigate           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">User-Friendly Int...</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Installation Reports           <ul style="list-style-type: none"> <li>Closed</li> <li>Latif, Aliza A</li> <li>Parent <a href="#">Technician Front...</a></li> </ul> </li> </ul>		

Brittany

# SCHEDULING WORKFLOW



Backlog

Not Started 0 In Progress 0/5 Completed

+ New item

Infrastructure

Development

Project

499 Pre-Implementation Process  
Closed  
Biji, Mariya  
Project  
1/1

512 Deploy to S3  
Closed  
Latif, Aliza A  
Development Infrastructure  
3/3

523 Extensibility  
Closed  
George, Annie  
Development  
2/2

325 Review security considerations  
Closed  
Latif, Aliza A  
Development  
3/3

462 Project Management  
Closed  
Brittany Zimmerman  
Project  
3/3

A screenshot of a project management application interface showing a backlog and workflow stages. The backlog is on the left, and the workflow is divided into Not Started, In Progress, and Completed sections. The completed section contains five items, each with a summary, status, assignees, and a progress bar. The progress bar for each item shows a yellow segment followed by a blue segment, with the total count (e.g., 1/1, 3/3) displayed at the end of the bar.

Mariya

# COST MANAGEMENT

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# IMPLEMENTATION COST

Relational Database Service	\$4.57
Virtual Private Cloud	\$4.07
EC2 - Other	\$2.87
EC2	\$1.05
<b>TOTAL</b>	<b>\$12.56</b>



# MAINTENENCE COST

Monthly AWS Database	\$80
Yearly Manual Input Labor Cost	\$10,400
One Time Staff Training	\$1,000
<b>TOTAL</b>	<b>\$11,480</b>

# Benefits

## Benefits

### *Quantifiable*

Item	Description	Savings
Admin Time Savings	Estimates 4 hrs/week * \$50/hr * 52 weeks	\$10,400/year
Reduced Shrinkage	Estimated 3% reduction in shrink on \\$260,000 Inventory Value	\$7,800/year
Error Reduction	Reduced errors & rework	\$5,200/year
GroupMe Workflow Reduction	1.5 hrs/week saved * \$50/hr * 52 weeks	\$3,900/year

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### *Intangible*

Item Descriptions
Improved visibility & accuracy
More secure system
Extensible design for future customizations and enhancements
Improved reporting capabilities
Better auditing workflows
Enhanced customer service due to improved processes

# QUALITY MANAGEMENT

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Legacy Consulting

# QUALITY METRICS / TESTING



Metrics	Implementation Details	Testing Measurment
		Responsive Design
View Adaptability	LoginView uses width:100% for responsivenees and flexbox for centering	Rendering on difference screensizes/types successful
Flexible Tables	data-table used in Admin & Customer views for horizontal scrolling on smaller screens	Tables remain usable on smaller screens
Modal Responsiveness	Usage of % based widths	Modals remain usable across various screen sizes

User Friendly			Secure		
Form validation	Required field indication, pop-up validation before submission	Deletes and field entries with validation	Authentication Implementation	JWT token-based auth	All endpoints validate token before access
Loading states	Show loading messahed when performing API operations	All main API validation with loading state	Authorization controls	Role-bbased access with middleware checks: authorizeAdmin & authenticateUser	Admin operations & add technician inventory protected
Navigation efficiency	Tab-based navigation	Low number of clicks to complete tasks	Password hashing	password hashing with 10 salt rounds	All passwords hashed
			SQL Injection Prevent	Parameterized queries in codebase	Most SQL queries using parametes

# RISK MANAGEMENT

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Legacy Consulting



# RISKS FACED

## Vendor Information

Timely feedback and SKU numbers from the vendor are crucial to complete the database.

## Team Communication

Regular communication within the team is essential to mitigate roadblocks, discuss development plans, ask questions, and check progress.

## Technical Roadblocks

Any technical roadblocks, such as a lack of knowledge or bugs, should be addressed immediately in order to avoid delays.

## Schedule Delays

Planning for and mitigating delays early to prevent compounding issues within the constrained timeline.

## Quickbooks Integration

Client constraints on API access, manual data entry will be required for financial reporting, which may introduce human error.

## Cost Considerations

Since this is a school project for a small business, our team is operating on a very low budget, meaning that managing costs are crucial.

# INITIAL AND KNOWN RISKS



Project Risk Log											
#	Category	Risks	Impact 1-5 (ignoring controls)	Likelihood 1-5 (ignoring controls)	Total Risk Score Low = 1-7 Med = 8-15 High = 16-25	Mitigation	Risk Trigger	Risk Trigger Date	Risk Mitigation Owner	Risk Status	Comments / Action Status
1	Vendor	Communication delay with vendor may cause issues in getting timely feedback from the sponsor	3	2	Low	Communication schedule will be set upon completion of testing environment. Several communication channels will be made available.	Issues that arise when testing	Testing period	Brittany Zimmerman	Monitoring	If system works as planned, this will be less of an issue.
2	Communication	Complicated schedules may make meeting planning difficult	4	3	Medium	Utilize communication channels, send out meeting recaps, meet during times we are already in-house, & send information needs communicated	Weekly			Monitoring	If we find time each week, this will not become an issue.
3	Technical	API Integration Difficulty	4	3	Low	Communicate with sponsor about current API integration and research integration methods	API Testing	Testing period	Dev Team	Mitigation in Progress	Teams are researching and developing around until absolutely necessary
4	Requirements / Scope	Scope & Schedule delays due to infrastructure deployment	5	4	High	Make faster tasks available to start when delays blocking others, Gather feedback on blockers and mitigate in real time.	Delay identified	27-Feb	Brittany Zimmerman	Mitigation in Progress	Initial infrastructure set-up largest schedule bottleneck.
5	Finance	Cost exceeds monthly amount	3	2	Low	Client willing to increase threshold if benefits outweigh the cost. Cost estimates will be used to stay around client's current monthly expenditure.	AWS feature added	Weekly		Monitoring	Cost monitored in AWS while building
6	Project Management	Schedule constrained	4	4	High	Frequent check-ins, address blockers, phased deliverable approach	Immediate		Brittany Zimmerman, APM	Mitigation in Progress	Development time is small, phased approach designed to give clarity on value delivered upon phase completion
7	Technical	Team upskilling	3	2	Low	Group development sessions	Sprint			Monitoring	Each sprint may brink unfamiliar tools.
8	Technical	Lack of access to SKU numbers	5	3	Medium	Prompt client for list of SKUs early, develop entry templates	Completion of DB	Testing period	Brittany Zimmerman, DB Devs	Mitigation in Progress	Client needs to communicate full SKU list for full implementation

# RESOURCES

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# COMMUNICATION CHART

ID	Communication	Description	Frequency	Format	Owner	Recipient/Attendees
1	Microsoft Teams Channels	Primary platform for daily internal team collaboration, document sharing, task discussions, and milestone updates.	Daily, As needed	Teams Post/Threads	PM, APM	Full Project Team
2	Microsoft Teams Chat	Quick, informal messaging for clarifications, troubleshooting, and rapid decision-making within the team.	As needed	Teams Chat	All Team Members	Full Project Team
3	Outlook Email	Formal communication used for external updates to the client, milestone deliverable sharing, meeting scheduling, and approvals.	Weekly or as needed	Email	PM, APM, Haley - Client Contact	Client (Wesley and Ronnie), Program Manager (Jose Martinez)
4	Internal Team Meetings	Virtual meetings focused on sprint planning, task allocation, progress syncs, and blocker discussions.	<b>Team:</b> 2-3 times per week <b>Client:</b> weekly/biweekly	Teams Video Meeting	PM	Full Project Team



# STAKEHOLDER ANALYSIS

Stakeholder	Role	Impact	Influence	Need
Professor Jose Martinez	Program Manager	4	4	Oversee project from university's perspective
Wesley Wood	Co-founder	4	3	High interest in project's overall success
Ronnie Durrance	Co-founder	5	3	High interest in project's overall success
Militia Protection	Employees	3	2	Needs user-friendly system that reduces manual entry
Legacy Consulting	Project Team	5	5	Deliver functional application meeting client expectations

# PARKING LOT



To keep our Inventory Management System project on track, we used a "parking lot" tool, visually represented in this chart, to manage important but non-critical items. This allowed us to document and defer functionalities like additional integrations or stretch goals for later review. The chart tracked key details for each item, including ID, description, impact, revisit date, owner, and entry/resolution dates.



# PARKING LOT

A	B	C	D	E	F	G	H	I	J	K
1	Parking Lot									
2	Project	Inventory Management System			Sponsor	Militia Protection				
3	Project manager	Brittany Zimmerman			Updated	4/23/2025 22:18				
4	ID	Description	Est. Project Impact	Revisit Date	Owner	Date Entered	Date Resolved			
5	1	Additional Integrations	Low	18-Mar	Aliza Latif	21-Feb	18-Mar			
6	2	QuickBooks Integration	Medium	7-Apr	Aliza Latif/Brittany Zimmerman	28-Mar	7-Apr			
7	3	stretch goals	Low	13-Apr	PMs	5-Apr	13-Apr			
8										
9										

Haley

# ISSUE LOG



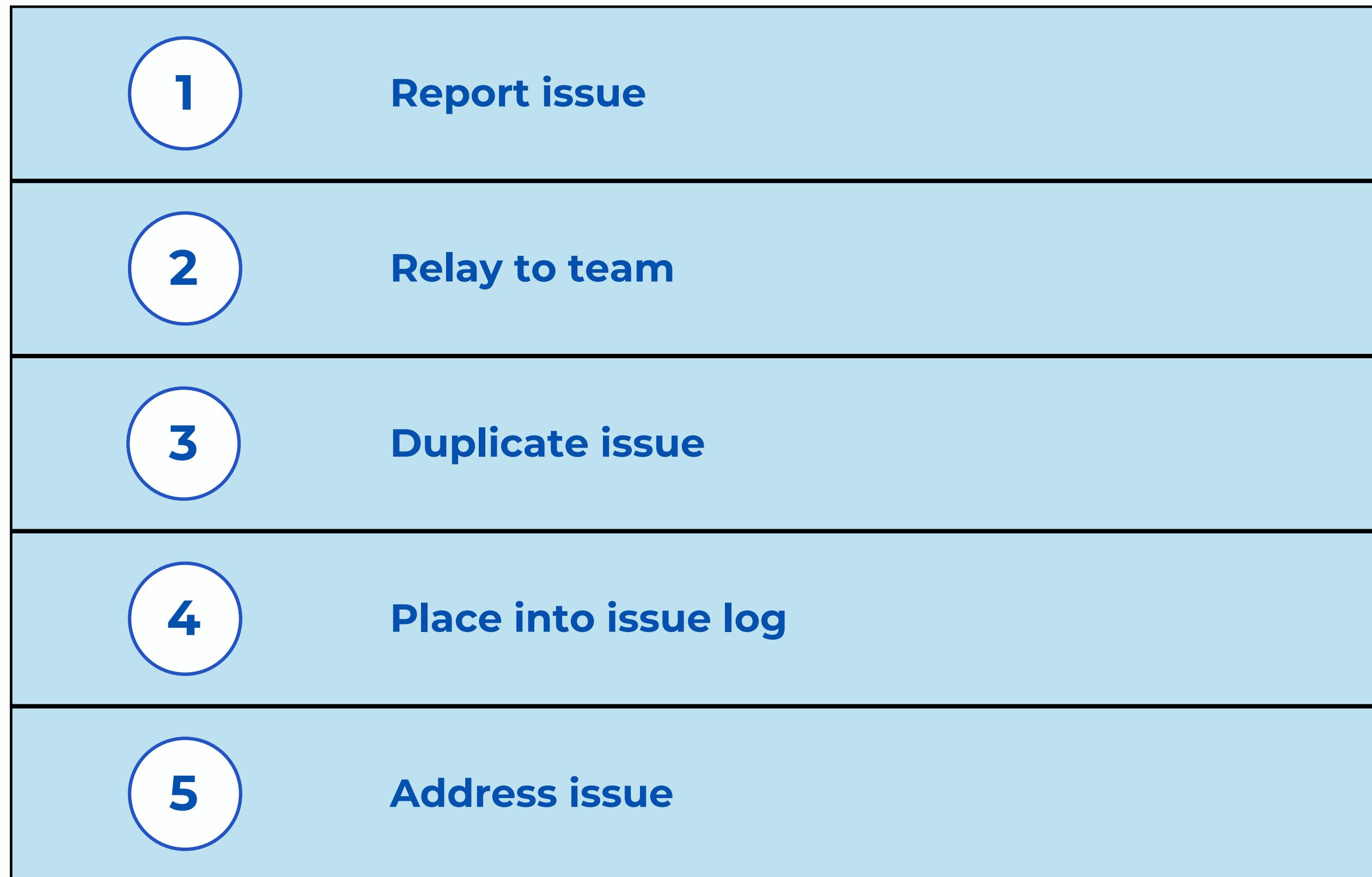
- The document serves as a central repository for tracking and managing problems or deviations encountered during this project.
- Each identified issue is meticulously recorded with key details.
- The goal is to facilitate efficient resolution of the issues.



# ISSUE LOG

A	B	C	D	E	F	G	H	I
ID	Issue Description	Project Impact	Action Plan/Resolution	Owner	Date Entered	Date to Review	Date Resolved	
4								
5	1 AWS permissions blocking deployment	Schedule delay	Meet with TA, follow up	Jeremy Duong	26-Feb	26-Feb	28-Feb	
6	2 Various Coding errors difficult to trace down	Functionality	Add error logging code	Brittany Zimmerman	1-Mar	3-Mar	28-Mar	
7	3 Date filtering not working in orders view	User experience	Restructure filteredOrders as computed property	Hayley Heyman	3-Mar	4-Mar	5-Mar	
8	4 MySQL DateTime format errors causing API failures	Data Integrity	Implement date format conversion before API calls	Long Nguyen	7-Mar	7-Mar	15-Mar	
9	5 Order details display cluttered in main table	User experience	Create modal popup for order details	Aliza Latif	10-Mar	10-Mar	30-Mar	
10	6 Add Items modal not closing promptly	User experience	Restructure code to close modal before async operations	Aliza Latif	15-Mar	15-Mar	1-Apr	
11	7 Missing editOrder method causing console errors	Functionality	Implement missing method in component	Long Nguyen	15-Mar	15-Mar	16-Mar	
12	8 EC2 instance unreliable with dynamic IP System availability	System Availability	Assign ElasticIP	Jeremy Duong	20-Mar	20-Mar	25-Mar	
13	9 Missing DELETE routes for technicians and sales reps	Functionality	Add missing Routes	Long Nguyen	25-Mar	25-Mar	2-Apr	
14	10 Path inconsistencies between frontend and backend	API Failed	Update missing API paths	Aliza Latif	1-Apr	1-Apr	3-Apr	
15	11 Technician filter appearing on wrong tab User confusion	User experience	Move filter HTML elements to correct div	Brittany Zimmerman	2-Apr	1-Apr	5-Apr	
16	12 Inventory quantities set to NULL on technician assignment removal	Data Corruption	Fix variable name mismatch	Aliza Latif	3-Apr	3-Apr	6-Apr	
17	13 Plaintext password storage security vulnerability	Security Risk	Implement bcrypt password hashing	Brittany Zimmerman	3-Apr	3-Apr	10-Apr	
18	14 Missing soft delete endpoint for users	Functionality	Add proper endpoint	Brittany Zimmerman	10-Apr	10-Apr	12-Apr	
19	15 Foreign key dependency issues when deleting users	Data Integrity	Add dependency checks	Heyman	10-Apr	10-Apr	12-Apr	
20								

# ISSUE RESOLVE PLAN



# ADDITIONAL LOGS



## Decision

ID	Decision Description	Date Entered	Originator
1	MySQL for backend servers	4-Feb	LEGACY
2	Decision to implement phased approach	4-Feb	
3	Deletion will be soft deletion unless otherwise specified	10-Feb	
4	Dev, test, prod on separate accounts - AWS	19-Feb	
5	Vue.js for frontend	19-Feb	
6	Node.js & Express for backend	20-Feb	
7	Cloudformation for repeat deployment	21-Feb	
8	Role-based access with JWT auth	15-Mar	
9	Implement future phase value ahead of blockers	30-Mar	
10		2-Apr	



## Change Control

ID	Change Description	Originator	Date Entered	Status	Date of Decision	Originator
1	Move away from CloudFormation template to manual deployment	Infrastructure team	28-Feb	Resolved	6-Mar	LEGACY
2	Go back to CloudFormation plan to mitigate budget issue	Infrastructure team	2-Mar	Resolved	11-Mar	
3	Moving away from AWS IAM	Infrastructure team	28-Feb	Resolved	16-Mar	
4	Keeping a home page	Development Team	8-Mar	Resolved	4-Apr	
5	Utilizing only one EC2 instance	Infrastructure team	16-Mar	Resolved	16-Mar	
6	Adjust Inventory schema to accommodate dates	Development Team	7-Apr	Resolved	8-Apr	
7	QuickBooks integration phased out	Team	7-Apr	Resolved	11-Apr	
8	Phase 3 stretch goal integrations officially phased out	Team	7-Apr	Resolved	4.11	



## Constraints

Constraints				
9	Client has \$80 monthly cost target	Client would like us to stay within this range, but is flexible for added value.	Cost	11-Feb
10	Small development timeframe	Capstone project has little development time	Schedule	11-Feb
11	Team meeting	Conflicting schedules need active monitoring to allow team meeting times	Schedule	15-Feb
12	Team knowledge	We are constrained to the development platforms we know	Scope	11-Feb
	Quickbooks	Quickbooks integration dependent on client API keys		10-Mar



## Assumptions

Assumptions				
1	Infrastructure needs standard	The small nature of the company means requirements will be general and standard.	Scope	11-Feb
2	Quickbooks integration timely & feasible	Quickbooks is a widely used program that has many integration options.	Technical	12-Feb
3	Phase 1 & 2 possible in time constraint	It is likely the team will end somewhere in the middle of phase 2 in implementation.	Schedule	12-Feb
4	AWS functionality	AWS will function properly and normally	Technical	12-Feb
5	Inventory	Inventory will not use SKU system in near future	Technical	1-Mar

Brittany

# FUTURE IMPROVEMENTS

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Brittany



# EXPAND PHASE 3 VALUE

## Integrations

- Extend integrations
- Eliminate GroupMe entirely
- Automated Processes

## Extended testing

- Incorporate end-user feedback
- Ongoing debugging
- Security Testing

## Deployment

- Add to Infrastructure templates



# TECHNICAL

Group 9

# SDLC

## Frequent Code Commits and Review

Developers commit changes regularly to keep progress gradual and manageable. Review each feature and verify functionality.

01

## Merge to Main Branch

Once features pass review, pull to main. This ensures main stays clean and functional.

02

## Deployment to Development Environment

Deploy code from the main branch to the AWS development environment for further testing.

03

## Environment Testing

Test the application in the development environment and confirm end-to-end functionality. Identify any integration issues.

04



# SDLC IN PRACTICE

```
commit 61fa5d65b4520b5319d036cf7f34015795884dcb
Author: BrittanyZimmerman <136195164+BrittanyZimmerman@users.noreply.github.com>
Date:   Sat Apr 5 17:30:09 2025 -0500

    Updated login etc

commit 373f26a6c0592fb74682ab4c14743fbb5cd7dd6f
Author: Long Nguyen <52888330+longuyen8@users.noreply.github.com>
Date:   Fri Apr 4 18:24:06 2025 -0500

    Updated login to redirect to home page after login.

commit 8e704863adafb7d6ccc7154546ded96529c8bb93
Author: Long Nguyen <52888330+longuyen8@users.noreply.github.com>
Date:   Fri Apr 4 18:03:30 2025 -0500

    Created full login system with frontend view and backend integration and added log out functionality.

commit bdd9d34d468e1facf21e0aac7cce73c54cbf2d48
Merge: a5c5a14 5d22aa6
Author: Long Nguyen <52888330+longuyen8@users.noreply.github.com>
Date:   Wed Apr 2 17:58:13 2025 -0500

    Merge branch 'Aliza-Latif' into Long-Nguyen

commit 24290f2a585413839590f1d694633a9137929625
Merge: 6158c53 5d22aa6
Author: BrittanyZimmerman <136195164+BrittanyZimmerman@users.noreply.github.com>
Date:   Wed Apr 2 10:22:49 2025 -0500

    Merge pull request #10 from alizalatif05/Aliza-Latif

    Aliza latif

commit 5d22aa652434799eb739e14e25b45acd4cfa9718
Author: aliza <alizalatif05@gmail.com>
Date:   Sat Mar 29 00:25:09 2025 -0500

    style changes

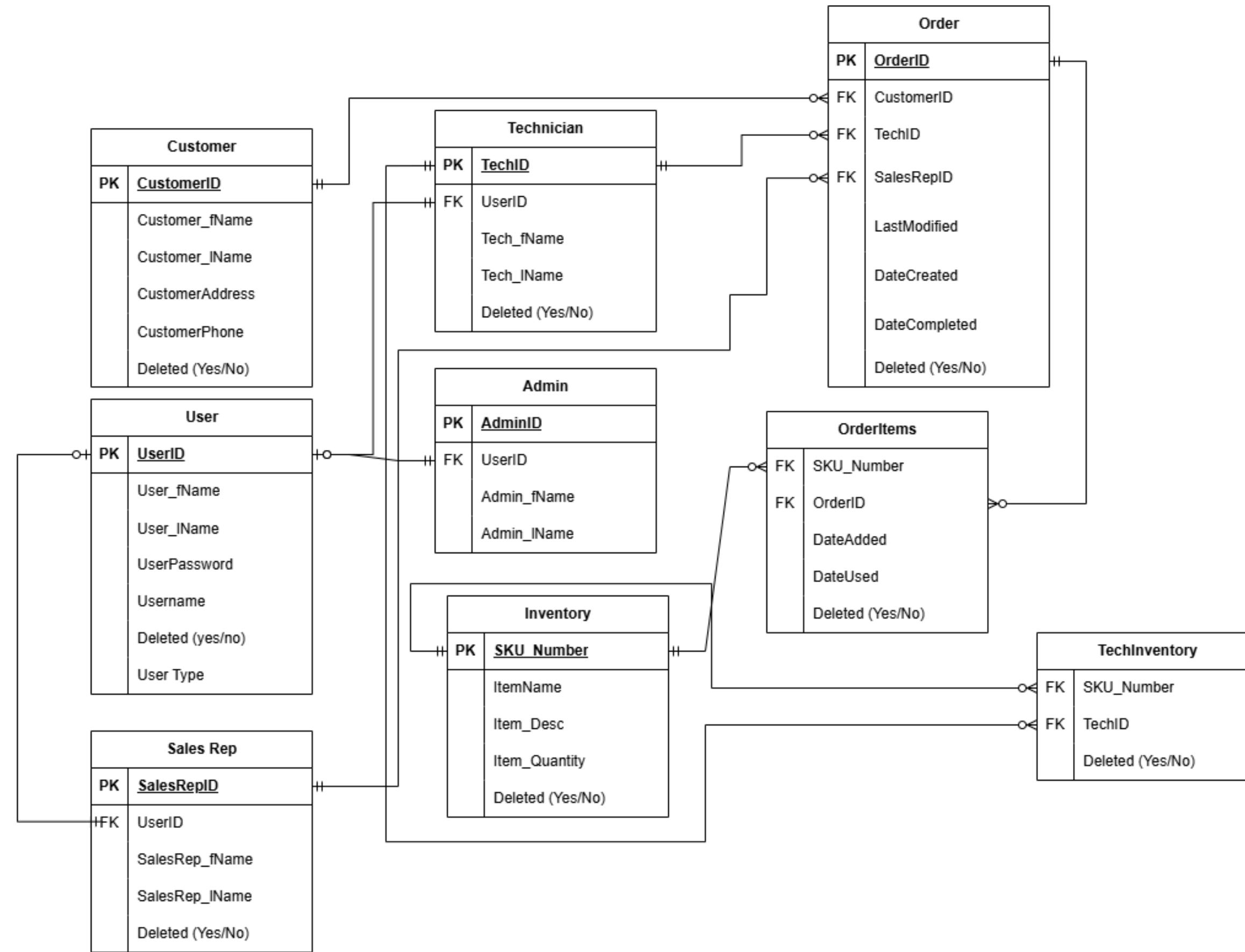
commit cec547bab14cd92d12fae3a0f3d1ffb2ea85b6b9
Author: aliza <alizalatif05@gmail.com>
Date:   Fri Mar 28 23:52:06 2025 -0500

    ensure API functionality and integration with front-end

commit a00d3277dd9939e70de5f4e815fd89076ad896cf
Author: aliza <alizalatif05@gmail.com>
Date:   Wed Mar 26 17:53:21 2025 -0500
```

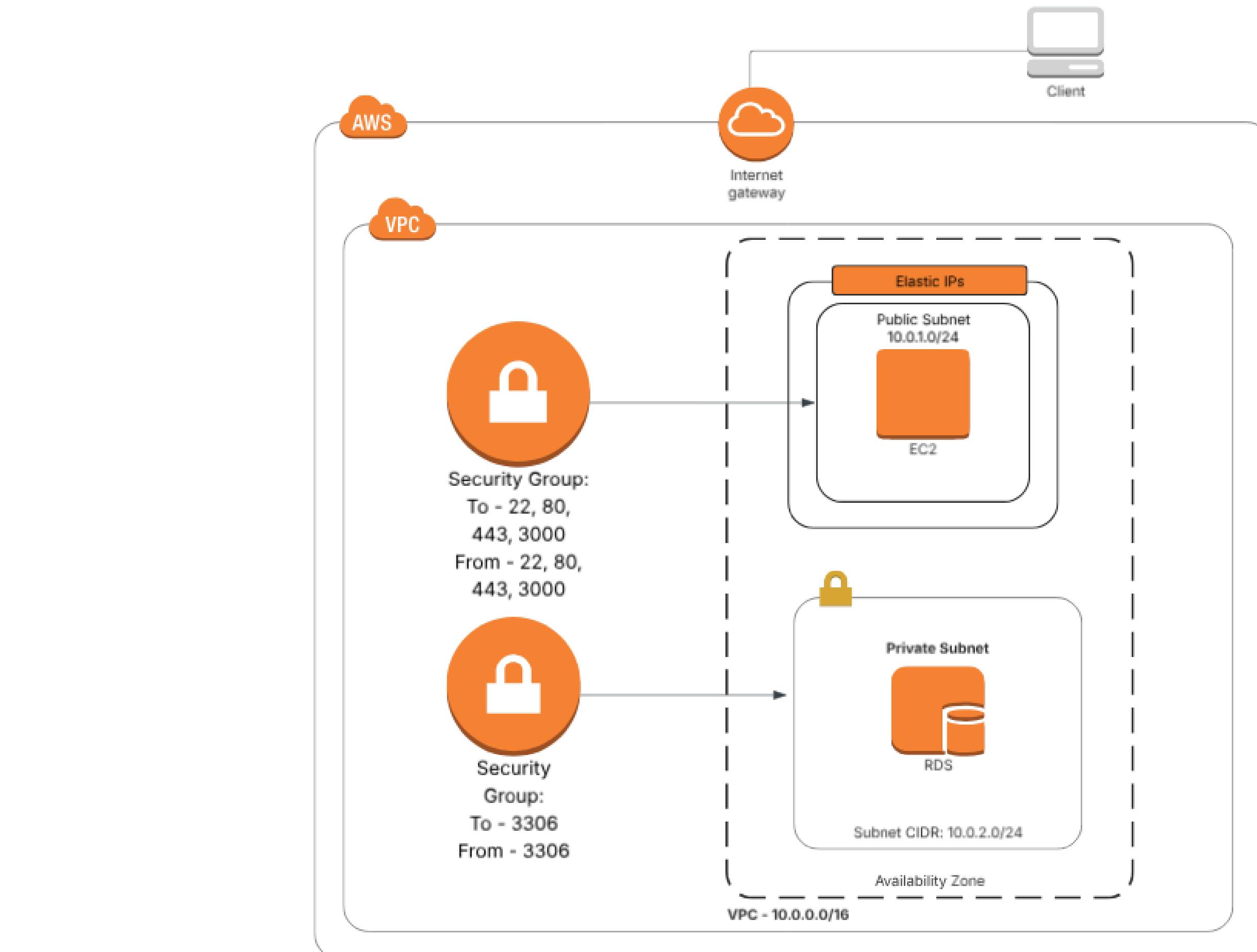
- Frequent Small Commits
  - Update features regularly
- Clear Commit Messages
  - ex. “Updated login etc”
- Branch Merging
  - Branches pulled back into the main development branch
- Author Collaboration
  - Multiple developers actively contribute
- Progressive Feature Development
  - Backend and frontend integrations handled incrementally

# ERD



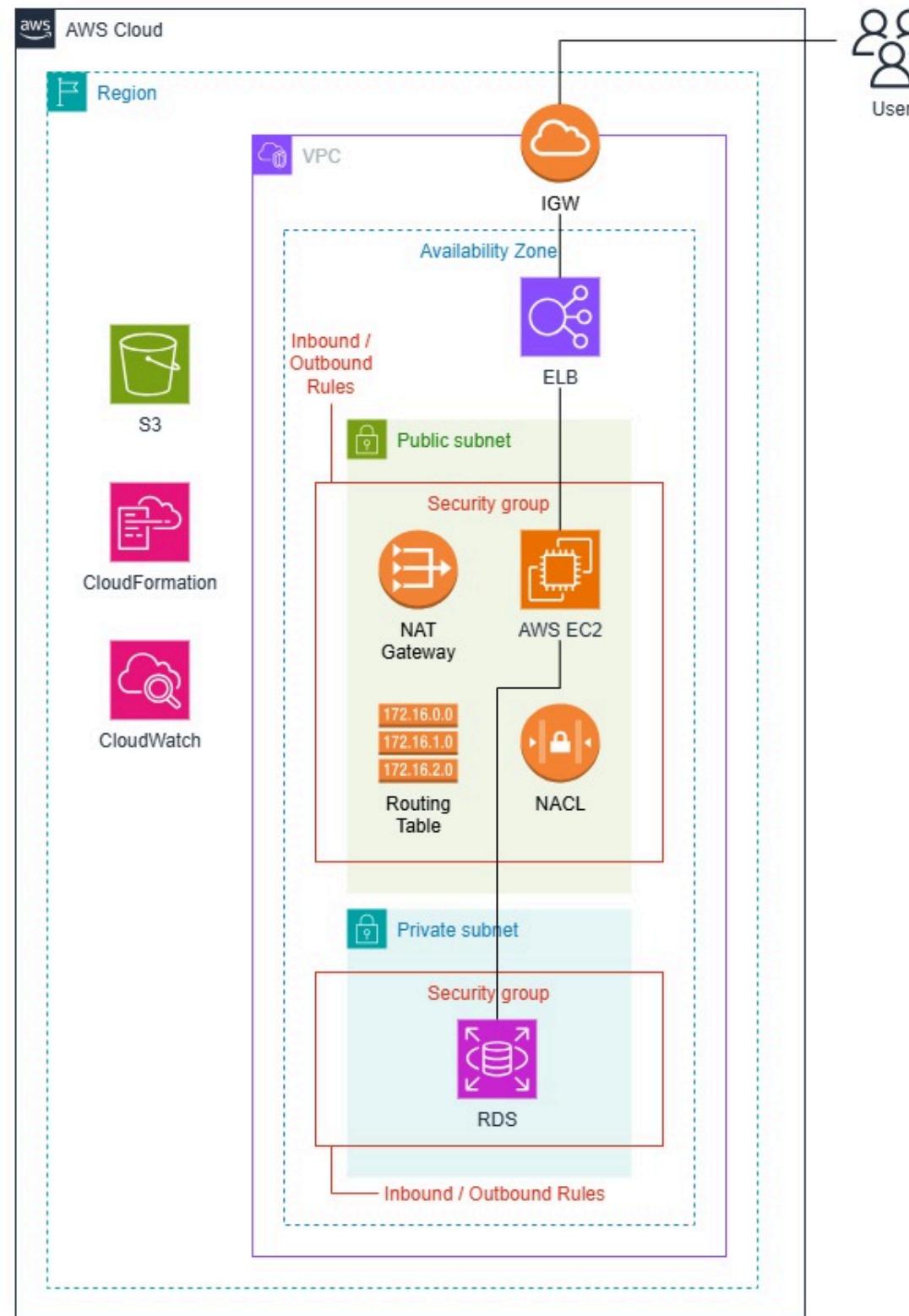
Haley

# NETWORK DIAGRAM



Annie

# ARCHITECTURE DIAGRAM



## 3 tier architecture

### Frontend:

- Static website hosted on AWS S3
- Built using HTML, CSS, JavaScript for admins, sales rep and technicians
- Publicly accessible via S3 Website Hosting w/ CORS configured

### Backend:

- Node.js application hosted on an EC2 instance (Amazon Linux 2)
- Handles authentication (JWT), inventory management, customer records, and technician tracking
- Managed w/ PM2 for process uptime and resilience.

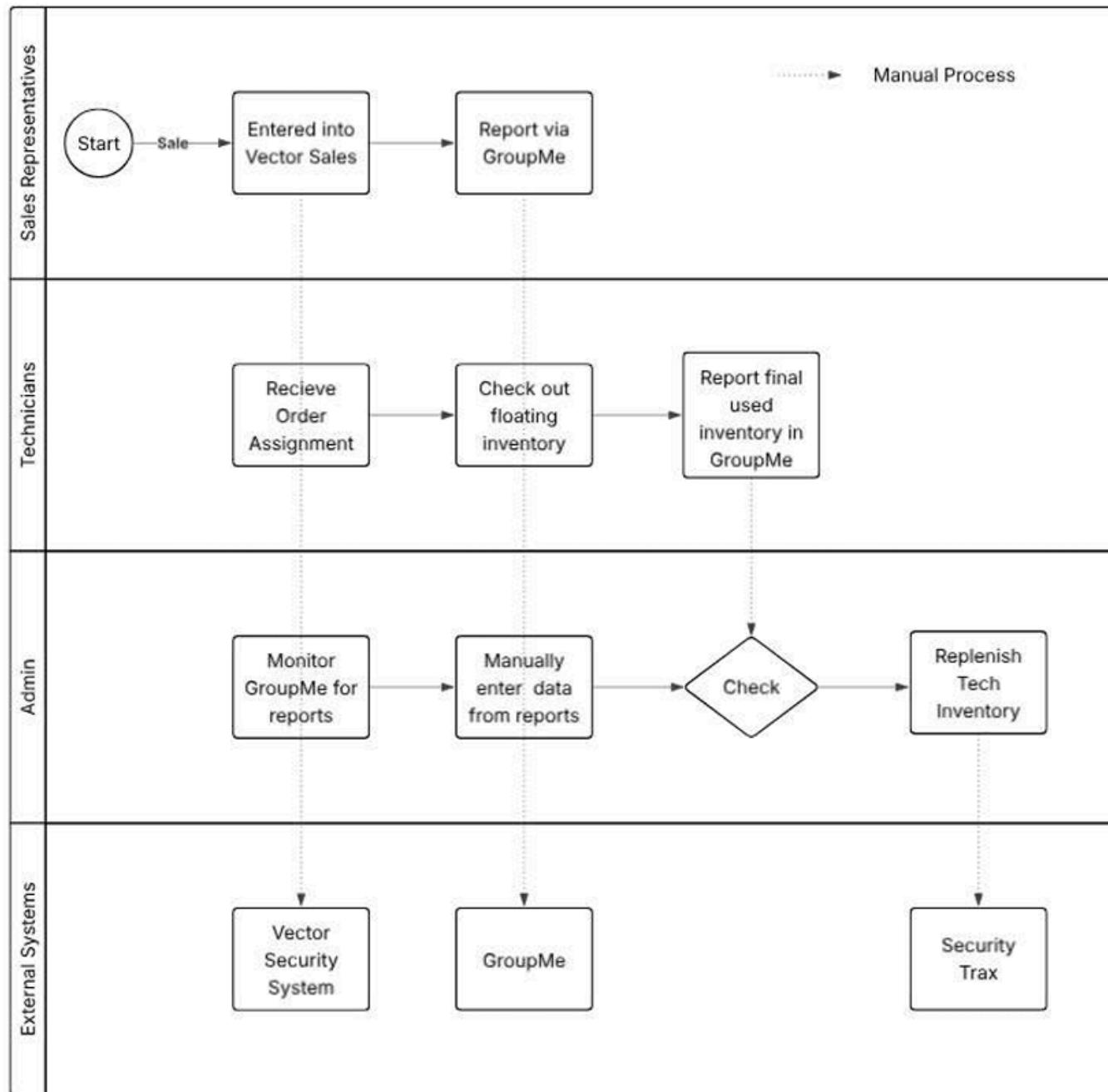
### Database:

- Amazon RDS MySQL database stores all structured data: inventory, users, customers, orders, and technician assignments.
- Access restricted to the backend EC2 instance via security groups.

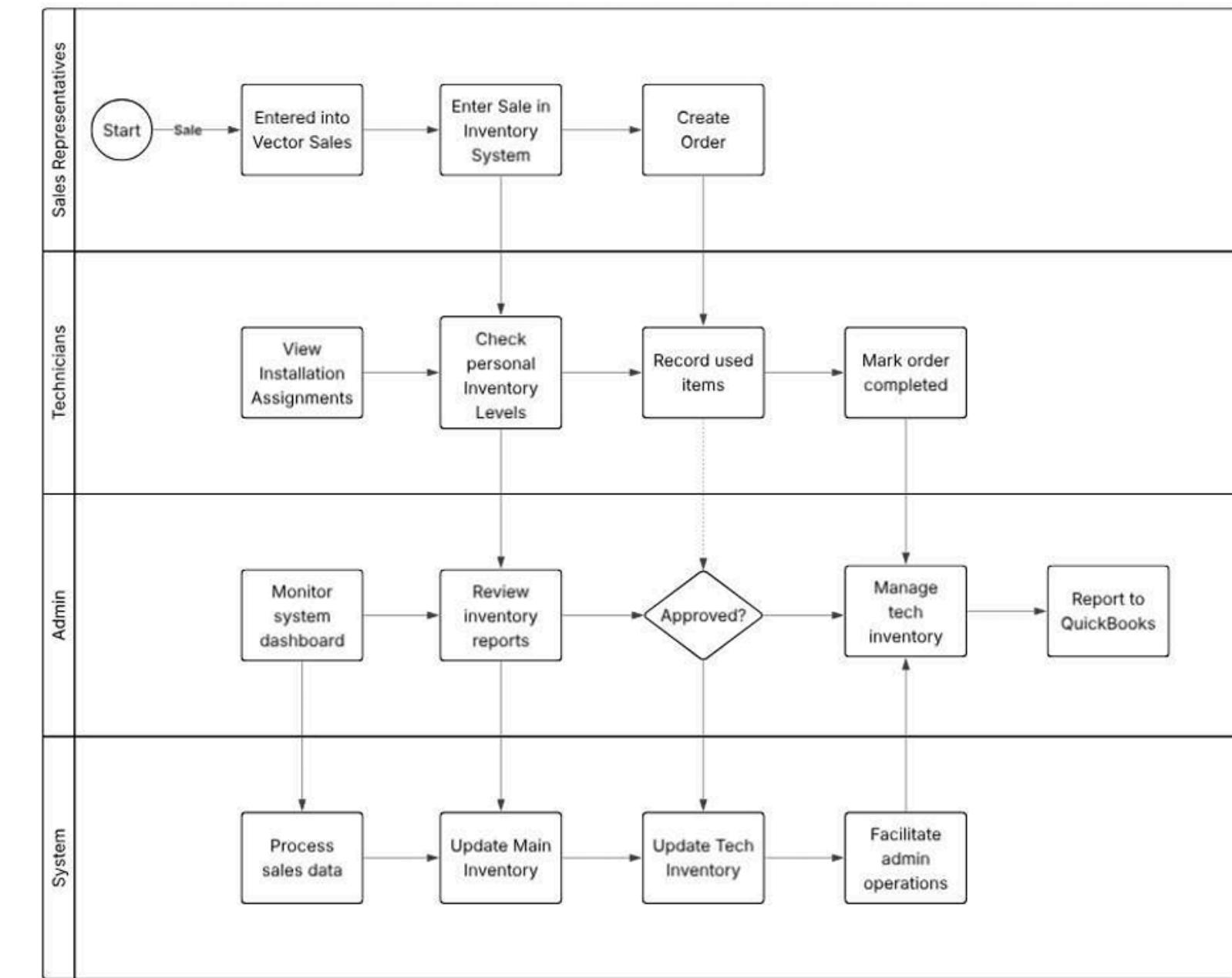


# PROCESS SWIMLANES

Before



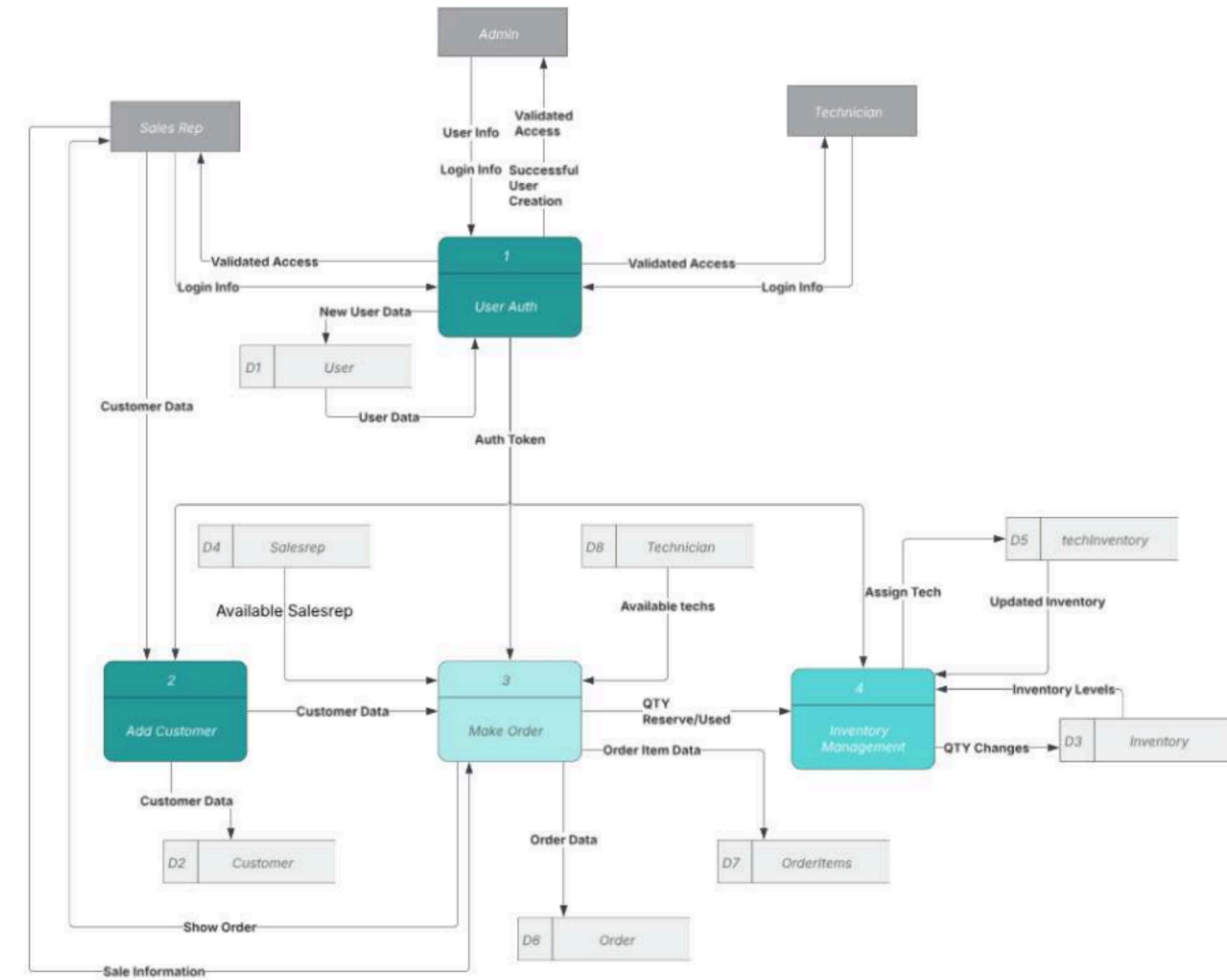
Our System



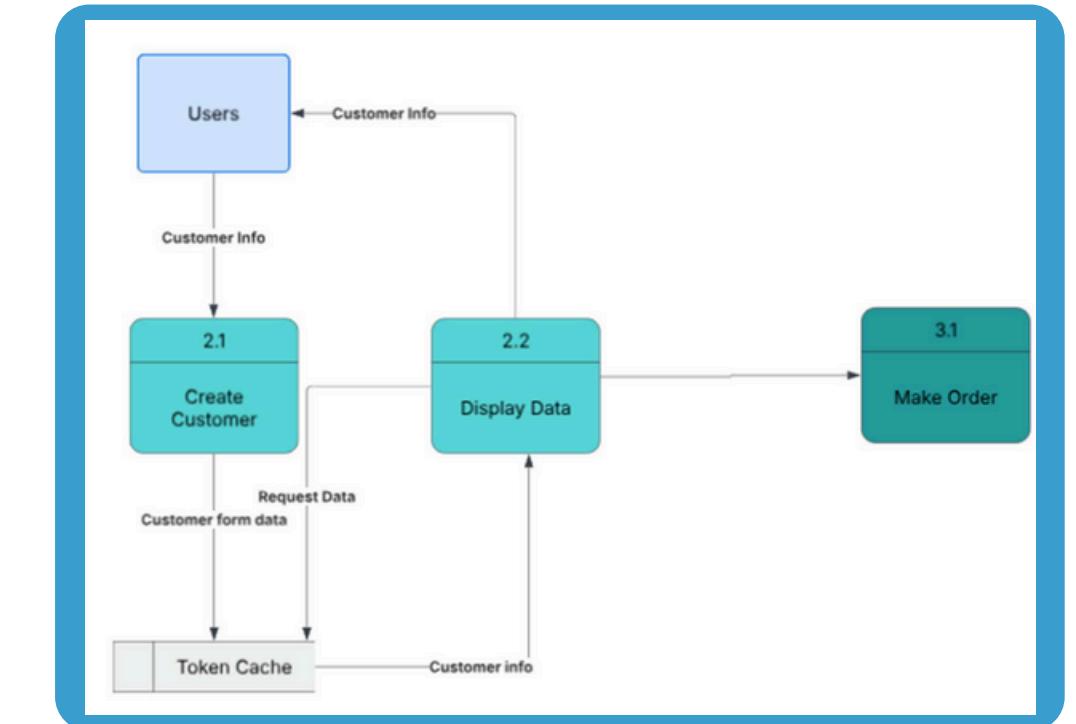
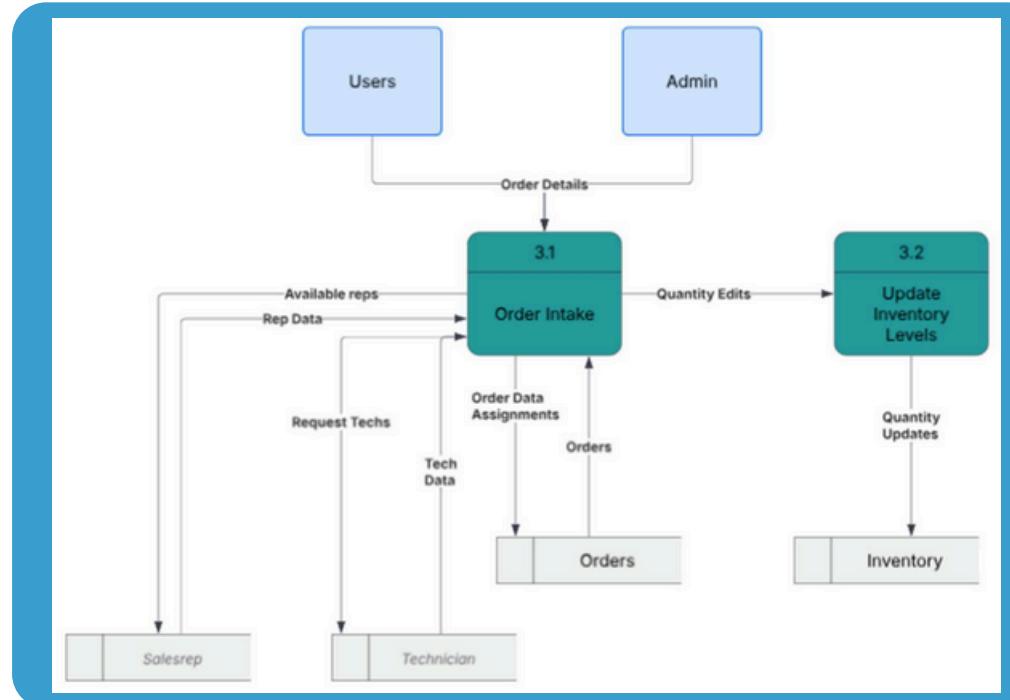
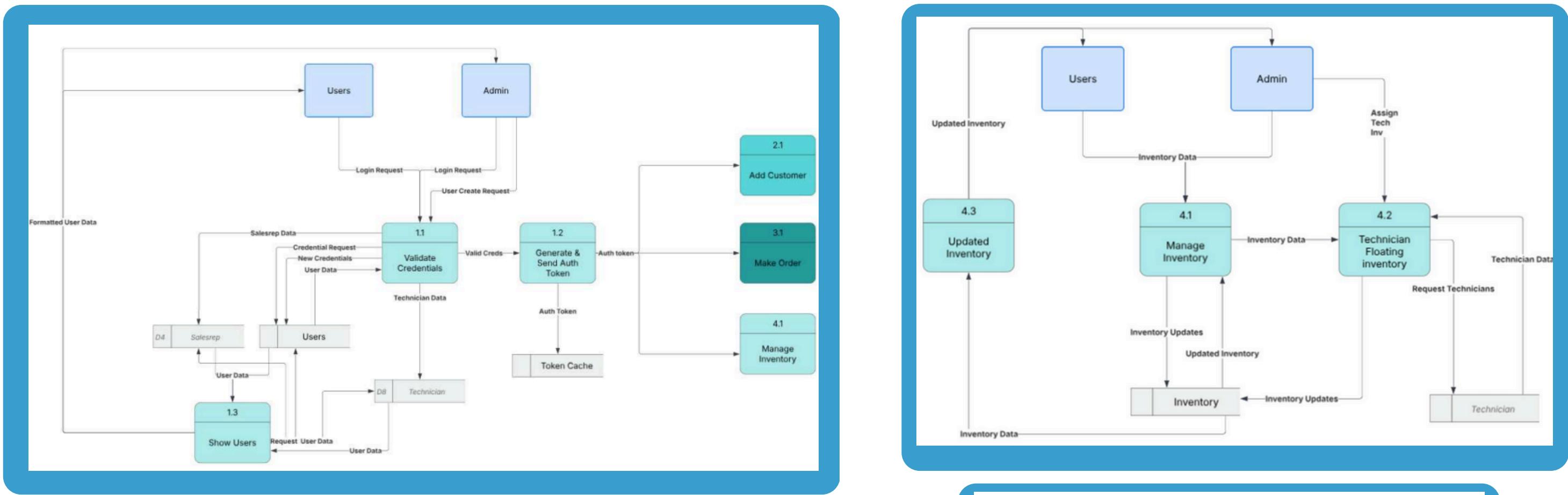
Jeremy



# DFD - LEVEL 1



# DFD - LEVEL 2

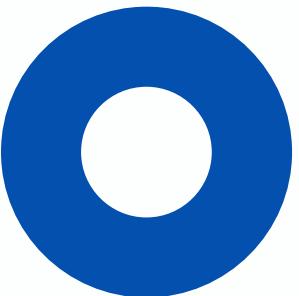
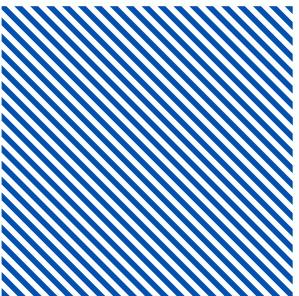


Aliza



# DEV TEST CASE

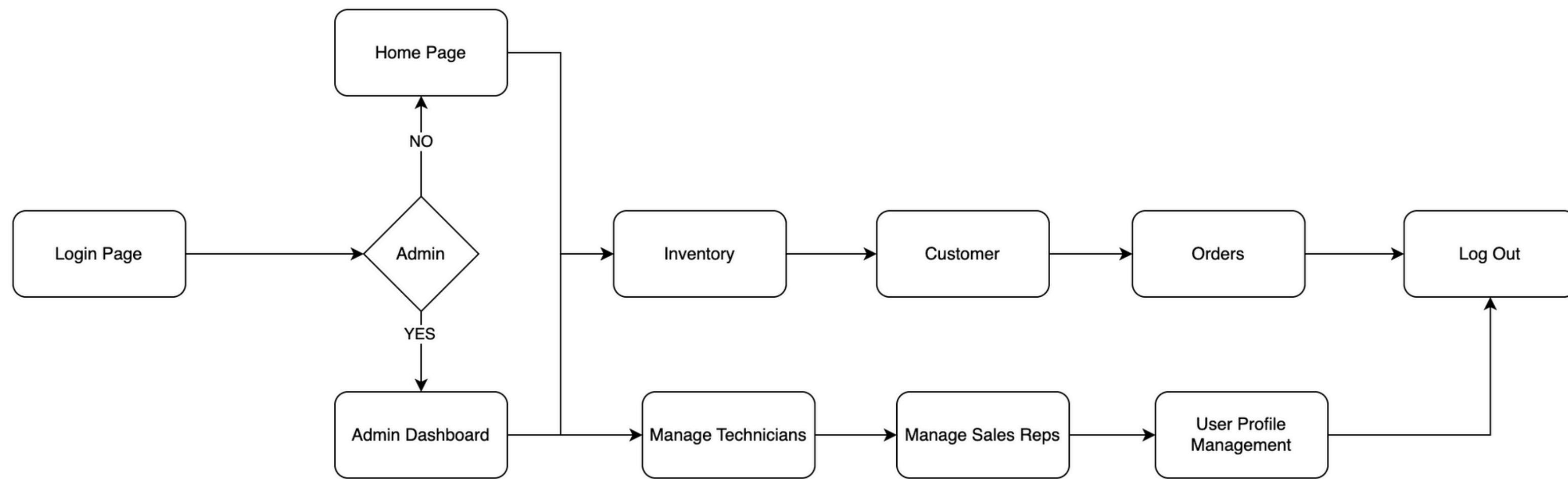
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- API Status Check
- Authentication testing
- Error Handling
- Console Logging
- Transaction Safety
- Connection Testing
- Validation Logic
- Manual Testing

```
Server running on port 3000
Checking for passwords that need migration...
Successfully connected to MySQL database.
No passwords needed migration.
```

# USER GUIDES



Long



# ADMIN AND UA TEST CASE

Admin	User Acceptance
<ul style="list-style-type: none"><li>• Core functions</li><li>• Access Control</li><li>• Data management</li><li>• Timestamps</li><li>• Technician Assignments</li></ul>	<ul style="list-style-type: none"><li>• Key functions work for all roles</li><li>• User Experience</li><li>• Responsive</li><li>• Security</li><li>• Documentation</li></ul>

# DEPLOYMENT



## How We Deployed The System?

- Created a full deployment plan so everything would go smoothly.
- Utilized AWS CloudFormation to set up all the infrastructure for us.

## What We Deployed?

- S3 bucket - host frontend as a static website
- EC2 instance to run the Node.js backend app
- RDS MySQL database to store all the system's data
- Custom VPC w/ public subnets & security groups to keep everything connected and secure.

### Steps:

- 1). Identify parameters, like picking instance types, setting up database credentials, and making a key pair for SSH access.
- 2). Launch the CloudFormation stack, which would spun up all the resources automatically.
- 3). Initialize the database and added some sample inventory data.
- 4). Test everything, making sure the frontend loaded, backend server is running, and database is set up correctly.

# FUTURE CONSIDERATIONS



## Deployment

- Addition of more AWS services such as
  - IAM
  - Cloudwatch Metrics
  - Automated Backups

## Debugging

- Ensure calculations work under all conditions
- Automated debugging
  - Scripts for certain errors

## Special Cases

- Add hard delete option for Admins
- Full approval system
- Automated Reporting



# Demo



# LESSONS LEARNED



- Consider large features first.
- Prioritization between different obligations



- Always Communicate blockers at the beginning of each week.

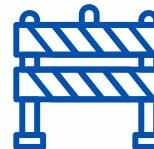


- Update documentation early to save time, stay accurate, and avoid last-minute stress.



## More Group Standardization

- Have set standards for things like variable names to better accommodate for different coding styles and platform preferences.



- Delaying tasks only leads to wasted time and last-minute stress. Take ownership and start early.
- Don't put off setting up CloudWatch; it's essential and saves you time troubleshooting later.



- Develop API to handle more generalized calls vs. feature focused.
- Building reliability and safety into the system early.
- Instead of just writing code, also need to have mentality of preparing for anything that could go wrong.



# Questions?



**Thank You**  
for Your Time and Attention  
Legacy Consulting

Group 9  
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And we're out !