



Lab Performance

Only for course Teacher						
		Needs Improvement	Developing	Sufficient	Above Average	Total Mark
Allocate mark & Percentage		25%	50%	75%	100%	5
Clarity	1					
Content Quality	2					
Spelling & Grammar	1					
Organization and Formatting	1					
Total obtained mark						
Comments						

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Batch: 41

Section: K-1

Course Code: SE 231 **Course Name:** System Analysis & Design Capstone Project

Course Teacher Name: Tahmina Meem **Designation:** Lecturer **Submission Date:** 6/19/2025

1.1 Overview

1.1.1. Background

In most traditional supply chains, keeping track of compliance is a big challenge. Companies usually depend on paperwork, spreadsheets, and phone calls to make sure everything is going according to the rules. This process is not only time-consuming but also increases the chances of making mistakes. For example, sometimes documents get lost, or it's hard to check if a supplier is actually following all the rules and regulations.

On top of that, there's usually no proper system where all the supply chain data is stored in one place. So when a company needs to do an audit or check if a supplier has the right certificates, they have to search through different files and systems. This creates delays and makes the whole supply chain less efficient.

Also, if any issue happens—like a supplier not meeting safety or environmental standards—it becomes difficult to find out who is responsible and fix the problem quickly. So, to solve all these problems and make the process smoother, a digital system like Chain Guard can help track everything automatically, reduce paperwork, and make the supply chain more transparent and reliable.

1.1.2. Objectives

Chain Guard: Digital Supply Chain Compliance Tracker will be a web-based system designed to solve the traditional problems related to tracking and managing supply chain compliance. Since web-based systems are accessible, scalable, and easy to maintain, this solution is more efficient and reliable than a manual or offline approach. The system will have different levels of users with specific roles and access.

The users will be:

1. System Administrator

2. Software Developer

3. User

4. Supplier

The list of operations that the system will provide are:

1. Creating and managing digital profiles for suppliers.
2. Storing and updating documents such as certifications, audit results, and compliance reports.
3. Allowing software developer to review and verify supplier documents.
4. Giving industries the ability to upload required certificates and compliance documents.

5. Sending automatic alerts if any compliance document is missing or expired.
6. Enabling the administrator to set rules and compliance checklists for suppliers.
7. Providing a dashboard to view real-time compliance status across the supply chain.
8. Generating reports to support audits and improve decision-making.

1.1.3. Scope

This project will mainly focus on developing a web-based platform to help companies manage supply chain compliance in a more organized and digital way. The system will cover the basic and most important features that are needed to track supplier records, documents, and compliance status.

In this system, there will be four types of users—Admin, Industry, software developer, User. The Admin will manage user access and set compliance rules. The Software developer can check and verify supplier documents and provide software compliance, and the industry can upload their compliance files like certificates or audit reports and other information.

The system will allow automatic notifications when any document is missing or about to expire. It will also show an overall dashboard where the compliance status of each supplier can be easily checked.

This version of the system will be designed mainly for small to medium-sized companies who want to make their supply chain more transparent and avoid risks related to non-compliance. Advanced features like blockchain integration, AI-based risk prediction, or multi-language support are out of the scope for this version but can be added in future updates.

1.1.4. Assumptions and Constraints

Assumptions:

1. All users (Admin, Compliance Manager, Supplier) will have a stable internet connection to access the web-based system.
2. Users will provide correct and up-to-date information and documents during registration or upload.
3. Industries will already have their compliance documents (certificates, audit reports) in digital format.
4. The system will be used by small to medium-sized businesses, so the load will be manageable.
5. All users have basic knowledge of using web applications (login, upload, view data, etc.).

Constraints:

1. The system will not include advanced features like mobile app support or offline mode in this version.
2. Real-time verification of compliance documents through third-party databases will not be available.
3. The project will be developed using limited resources.

4. Only basic security features will be included—no advanced encryption or two-factor authentication.
5. The system interface will be in English only and will not support multiple languages in this version.

1.1.5. Dependencies and Risks

Dependencies:

1. The system depends on a reliable internet connection since it is web-based.
2. It requires a proper hosting server to run the web application and store all data securely.
3. The users must have devices like computers or smartphones to access the system.
4. Availability of valid and updated compliance documents from the industries is necessary for the system to work correctly.
5. The development process depends on the availability of required tools and technologies like a web development framework, database system, and code editor. **Risks:**

1. Data loss or corruption – If the server crashes or there is no proper backup, important compliance data might be lost.
2. Security issues – If proper security measures are not taken, unauthorized users might try to access sensitive supplier data.
3. User errors – Users might upload incorrect or expired documents, which can affect the compliance status.
4. Delayed updates – If industries do not upload their compliance documents on time, the system may show wrong information.
5. Technical bugs – Errors in the system during development or after deployment might cause some features not to work properly.

1.1.6 Stakeholders

1. System Administrator
2. Software Developer
3. User
4. Supplier
5. Compliance Manager

1.1.7 SDLC (Software Development Life Cycle)

This model allows the system to be built and delivered in small, manageable parts (increments), making it ideal for a project like Chain Guard that involves multiple user roles and features that may evolve over time.

Why Incremental Model is Suitable:

- Each core module (e.g., document upload, admin panel, alert system) can be developed and tested separately.
- Early modules (like user login and document uploads) can be released sooner, allowing for feedback and gradual improvement.
- It handles evolving requirements better than a rigid model like Waterfall.
- Easier to manage risks and changes during development.
- Allows functional parts of the system to be used even before the full system is complete.

1.1.8 Use Cases Diagram

○ Actors For This System

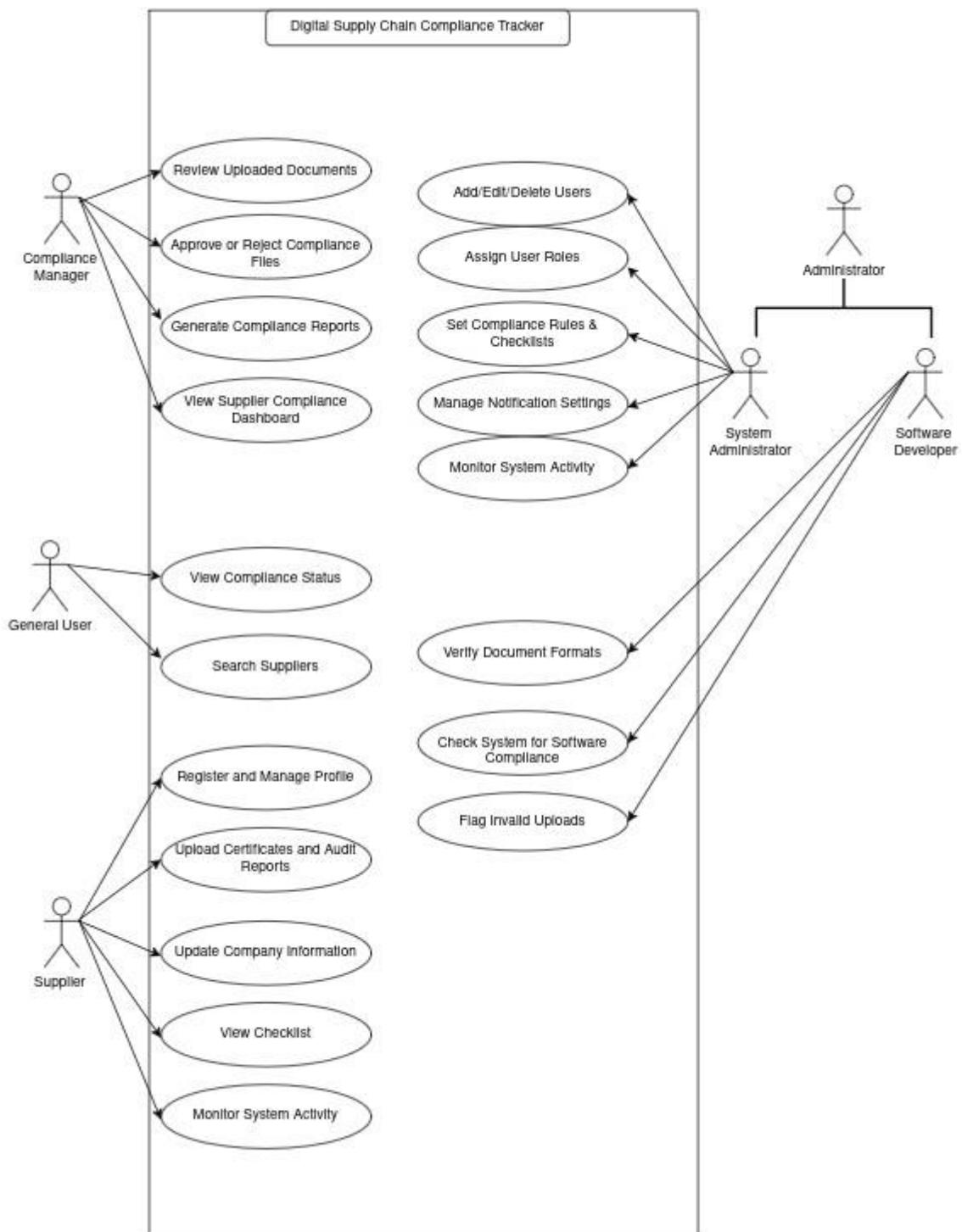
- System Administrator
- Compliance Manager
- Supplier / Industry Representative
- Software Developer
- General User

○ Use Cases For The System :

- Add/Edit/Delete Users
- Assign User Roles
- Set Compliance Rules & Checklists
- Manage Notification Settings
- Monitor System Activity
- Review Uploaded Documents
- Approve or Reject Compliance Files

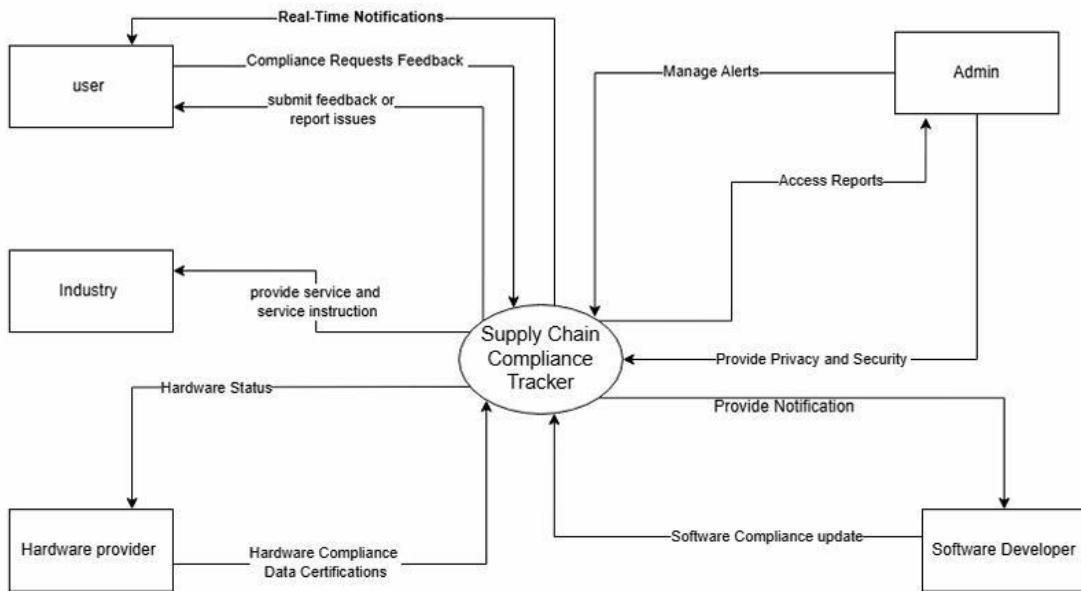
- Generate Compliance Reports
- View Supplier Compliance Dashboard
- Register and Manage Profile
- Upload Certificates and Audit Reports
- Update Company Information
- View Checklist
- Receive Expiry Notifications
- Verify Document Formats
- Check System for Software Compliance
- Flag Invalid Uploads
- View Compliance Status
- Search Suppliers

○ Use Case Diagram



1.1.8 DFD(Data Flow Diagram)

† Level 0



1.1.8 Work Distributions

Background, Objectives, SDLC, Use Case Diagram, Use case , DFD	Minhazul Islam Bhuiyan
Dependencies and Risks, Scope, Assumptions and Constraints, DFD,	Nadimul Islam Nadim
Scope, Assumptions and Constraints, Use Case Diagram, Use case Stakeholders, DFD	Sathi Begum
Dependencies and Risks, Scope, Assumptions and Constraints, DFD	Liza Akter

1.1.9 Project Resources

- † <https://www.zebra.com/us/en.html>
- † <https://www.netsuite.com/portal/resource/articles/erp/digital-supplychain.shtml>