**Design Constraints and requirements**

**Design Constraints**

1. **Economic factors**

* Cost Efficiency: Utilizing pen-source technologies like Angular, Spring Boot, MySQL, and Docker can significantly reduce costs compare to using software.
* By choosing modern frameworks and tools, we can reduce development time and maintenance costs due to the availability of documentation and community support.

1. **Reliability**

* Test cases ensure that the application functions as expected, catching bugs and issues early in the development process. This leads to a more reliable and stable application.

1. **Sustainability and Environmental factors**

* Efficient Resource Usage: Docker can help optimize resource usage by running multiple service on the same hardware, reducing the overall environmental footprint.

1. **Ethics**

* Design the system to be accessible to all users.
* Be transparent about how inventory data is managed, who has access, and for what purposes it is used.

**Requirements**

1. **Functions**

* Add Items: Allow users to add new items to the inventory with details.
* View Items: Display a list of all items in the inventory, allowing users to see item details.
* Edit Items: Enable users to update existing item details.
* Delete Items: Provide functionality to remove items from the inventory.
* Filter Items: Allow users to filter the item list based on criteria.
* Sell Items: Enable users to mark items as sold, updating the inventory accordingly.

1. **Objectives**

* User-Friendly: The system should be easy to use with a clean and intuitive user interface.
* Scalable: The system should be able to handle an increasing number of items and users without performance degradation.
* Reliable: The system should be highly reliable, with minimal downtime and robust error handling.
* Maintainable: The codebase should be maintainable, with clear documentation and modular design to facilitate future updates and maintenance.
* Efficient: The system should efficiently handle operations, minimizing load times and resource usage.