**Baseline**:

## Non-functional requirements

1. Security: Since the project involves many delivery transactions across multiple users, proper measures should be taken to keep this transaction data secure amongst the users and also while storing it in the Database.
2. Usability: The system should be easy to learn and easy to use by users from technical and nontechnical background.
3. Integrity: The system and the users participating in the delivery transaction should be able to maintain the integrity.
4. Uptime: The system should be available more than 90% of time to the accessing user.
5. Usefulness: The system should meet the requirements for which it is being designed.
6. Performance: The website designed should not take more than several seconds to load and also at the same time achieve high transaction rates.

**Dependencies**

1. In order to building a delivery system based on block chain we will be using QuarkChain-web3.js built on top of web3.js, a framework for building D-apps.
2. Access to Ethereum virtual machine resources.
3. A web stack to build the web application such as MERN.
4. Knowledge of smart contracts.

**Deliverables**

1. A web application for easy communication and transparency between the users and the sellers.
2. The web application will also have a feature to show real-time tracking to the users once the consignments are shipped.
3. The system also provides Proof of ownership technique where the involved parties have transparency.

Baseline approach:

We propose to build a web application for real-time and transparent tracking of delivery goods using the technology of blockchain. We will be using the JavaScript framework QuarkChain-web3.js for this project. Currently the delivery tracking systems used today work on primitive technologies such as using bar codes or QR codes to track the consignments. Tracking systems used today do not have transparency in their flow and are prone to manipulation.

Furthermore, such systems also cannot be trusted easily since there is no proper way of determining the proof of ownership. In order to overcome all these problems blockchain can be used, blockchain works on the principle of a distributed ledger. This distributed ledger is spread across multiple nodes. This distributed ledger can be fully exploited in this project. One of the best property of this distributed ledger is that once an entry is made into this ledger it cannot be erased or changed. Thus, this property of distributed ledger can help us maintain proper records whenever an entry is made into the system with respect to the consignment being shipped or tracked. As mentioned above we will be using the framework QuarkChain-web3.js to build our Decentralized web application. The underlying architecture of this framework perfect tunes with our requirements the project. The distributed architecture of web3.js will help us build a robust system where the goods being shipped using this blockchain based system can be verified at every point that the goods or the consignments are in proper hands and nobody is manipulating them. Thus, in this way we will be planning to build a D-app for tracking of goods and consignments using blockchain technology.