This system is developed as an online shopping platform, using distributed systems. There are mainly 4 components in the system:

1. Frontend – developed using HTML, CSS, JavaScript, jQuery and AJAX
2. Backend – developed using NodeJS, Mongo DB
   1. Buyer service
   2. Seller Service
   3. Login/Register service
3. Dummy services (Delivery, Mobile Payment and Card Payment)
4. Rest APIs – To establish the connection between backend, frontend and the database

There can be types of customers in the web application. They are,

1. Buyers
2. Sellers

The type of the user is taken into the system when they are getting registered. After registering They can log in to the system. Using valid credentials. As a security mechanism, passwords are encrypted and stored in the database. So, in the login function it again decrypt the stored password and check with the input password. If the credentials are valid, the users will be redirected in to the start page.

Seller

When a seller is logged in to the system, that person can do both selling and buying items from the website. But only sellers can add items(selling) into the system. So, for sellers only there will be a button in the navigation bar that will take them to the page where they can add, update, delete or search items. In order to add items, the system should be provided with item name, price and the description. And they also can enter the item name and perform search or delete functions there along with search function.

Then those details will be sent to the backend from the frontend using an API. The API calls relevant function in the backend services running on distributed ports to get the job done. Finally, the database will be updated.

Buyer

When a buyer is logged into the system, that person will not be able to do modifications to the item details. Add items button in the navigation bar will not be visible for them. They can only follow buying items process. All the items in the database will be retrieved to the span with relevant price. Then they can select the item they want and give the quantity that he/she wishes to purchase and click add to cart. If they want something else too, that items can also be added to the cart as mentioned above. They can add any number of items to the cart which is displayed right below with a calculation of the total bill for the selected items.

Then they can select the preferred delivery method out of,

1. Standard Delivery Service Rs.150.00
2. Same Day Delivery Rs.190.00
3. Overnight Shipping Services Rs.250.00

These 3 options which are displayed as radio buttons with the relevant price. When they select and confirm, that delivery price will also be added to the total price. After successfully completing that they can select the payment method. There will be two options for that.

* Mobile payment

The user is required to enter a valid mobile number and if it is valid(10 numbers), and OTP is bound to be sent to the user (Note that it is implemented as a dummy service for the time being) which will be asked next from the system in order to complete the payment process through mobile phone. If the OTP is valid (A 4-digit code) then the

* Credit card payment

If the user selects credit card payment, they will next be asked to enter card number, CVC code, and the card holders name. If the credentials are valid then they can proceed.

Upon successfully providing payment credentials a button will be displayed to pay the total bill. When the pay button is clicked an email or SMS will be sent to the user for the given credentials (Note that it is implemented as a dummy service for the time being).