OOPs concepts used:

1. **Method Overloading**
   Method overloading has been used while taking the wallet initial balance when a new customer registers and thus there are two methods which are overloaded and one of them takes 4 parameters and the other takes 5 parameters. If the wallet balance is given then 5 parameters would be passed or else only 4 and default value of wallet would be 0 in the sql query executed.

2. **Constructor Overloading**
   Constructor overloading has been used in the pickup panel where the mobile number field has been kept optional and so thus the number of parameters passed varies depending upon if the mobile was entered.

3. **Multiple Inheritance using interface implementation**
   Multiple inheritance has been implemented by creating an fetchMobileNumber interface and then in the pickup class it has been inherited and the fetchMobileNumber1 method to fetch customer mobile has been overridden.

4. **this keyword**
   this keyword has been used to refer to the current instance of the class and thus close it by using setVisible as false and create an object of other class to open and make it visible by using setVisible - true.

5. **Exception handling using try-catch block**
   Exception handling has been used at several places for ensuring that if any error occurs while establishing a connection with the database then the exception is caught and to ensure that the wallet balance and the mobile number are always entered numeric so they have been parsed into integer and if any exception occurs in parsing that means some other character instead of an integer has been entered into a mobile number or wallet balance and there is a number format exception and that exception would be caught by the catch block.

6. **Method Overriding for methods in interface**
   Method overriding has been used while giving the definition to the fetchMobileNumber1 method of the fetchMobileNumber interface and it is used for to autofill mobile number of customer by name in the pickup panel.

7. **Final keyword**
   The final keyword has been used in the customer registered panel in the sqlQuery method of the query class so as to prevent it from being overridden in some other class.

8. **Static keyword**
   Static keyword has been used in the sqlQuery method of the query class in customer register panel so that it can be called without the creation of an object as it belongs to the whole class and no meaning for it to be specific for every instance of the class.

9. **Protected keyword**
   Protected keyword has been used in the sqlQuery method of the query class so that it is not accessible from other packages.

10. **Encapsulation**
    Encapsulation has been used while overriding the fetchMobileNumber1 method as it takes the input parameter of name and returns the mobile number and is thus similar to get and set methods as we use while encapsulation for read and write operations.

Issues we faced

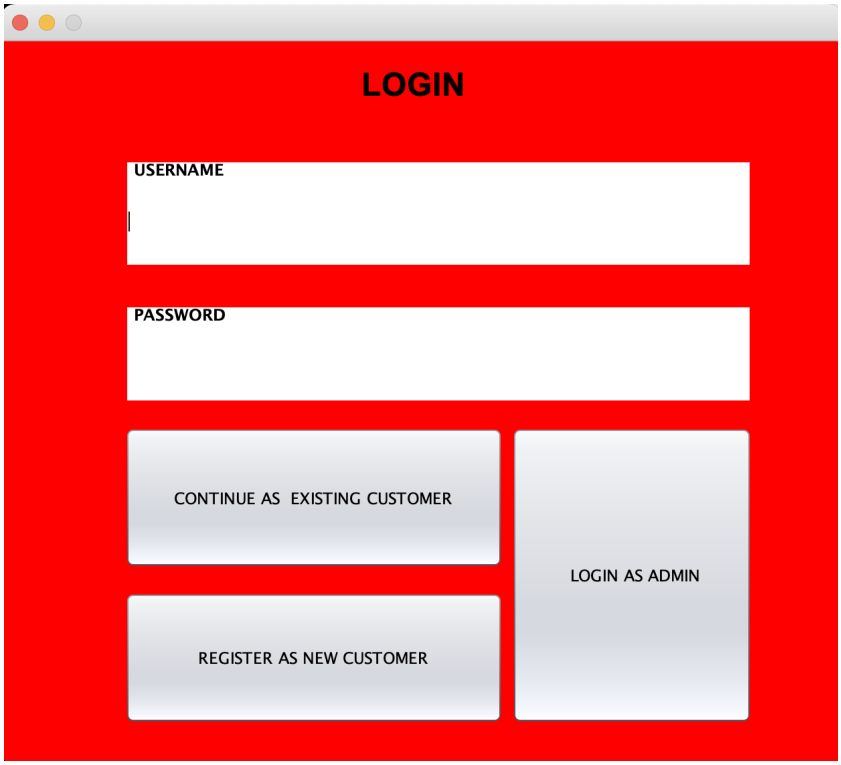
1. As we already know, Threading is an important topic in object oriented programming but unfortunately we were not able to use important concepts of Threads in our project as generally threading is used when we need to perform multiple time consuming operations together to use the multiple processors at the same time. But we didn't have any application of any such activity which required intense time and parallel working. One place where we thought to implement it was the admin panel to simultaneously update multiple details but all the three processes in it were O(1) time complexity and didn't actually require multithreading.

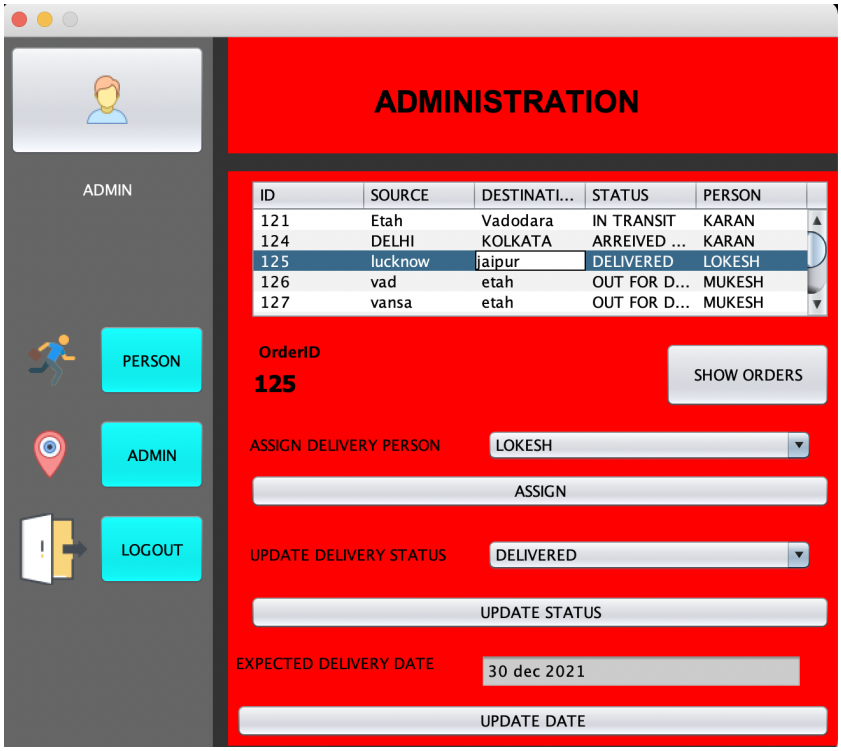
2. Another problem we faced was the simultaneous working of multiple team members on the project as some had installed the Oracle NetBeans and after sometime it was removed from the web and only Apache netbeans was available which was very similar but had a few changes like we were not getting the Libraries option in it and we had to import a MySQL jar file in the Libraries folder to establish connection with the database and so working was getting difficult at initial stage though later the issue was solved by finding the same at other location.

Future plans of the project:

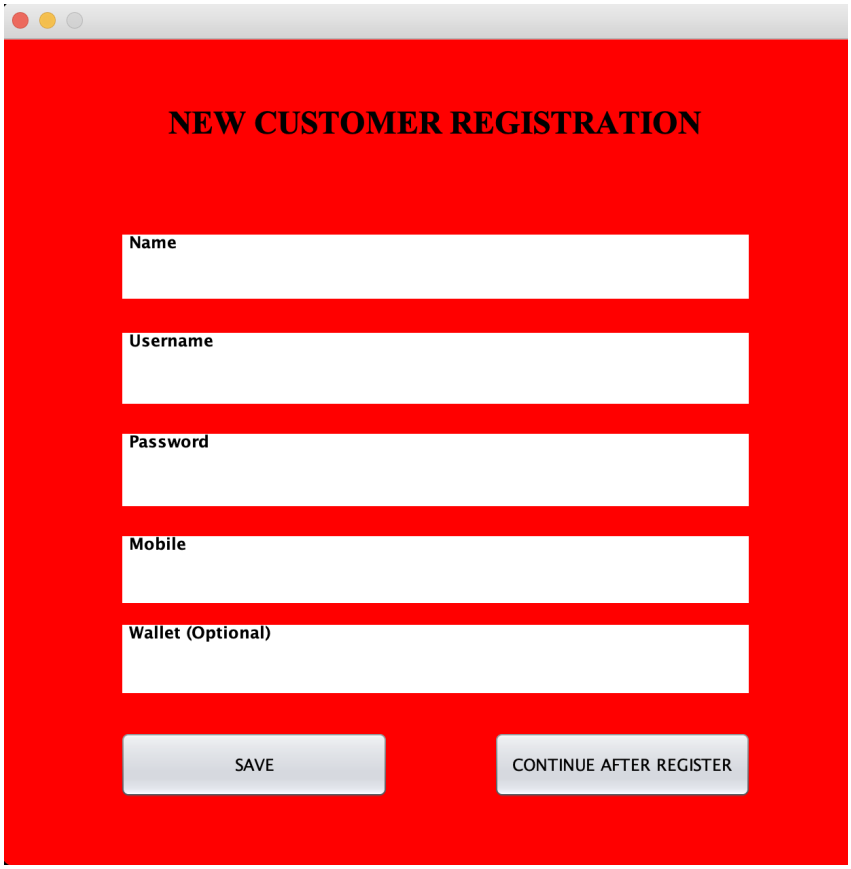
In future, we plan to integrate payment gateways to the project and also make a window to add or remove employees and also a section for employees where they can see all the details of the orders they need to deliver on a particular day. We also plan to integrate a login option for customers for better and faster access to the order details of their orders and also an option to cancel orders within certain time frame after placing the order.

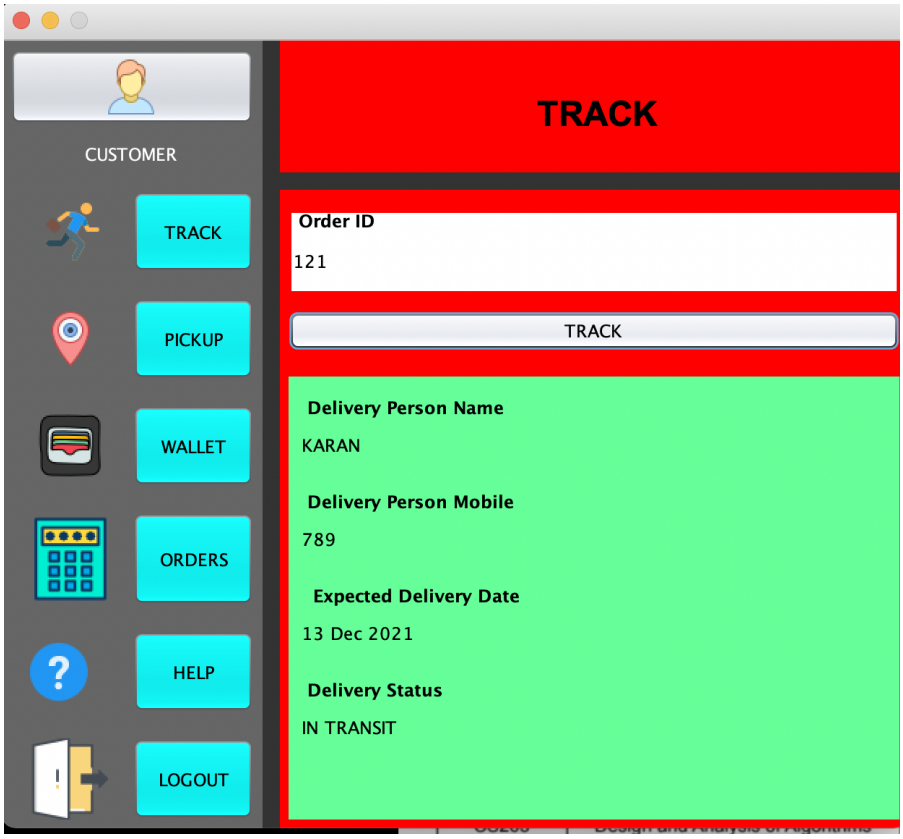
Screenshots:

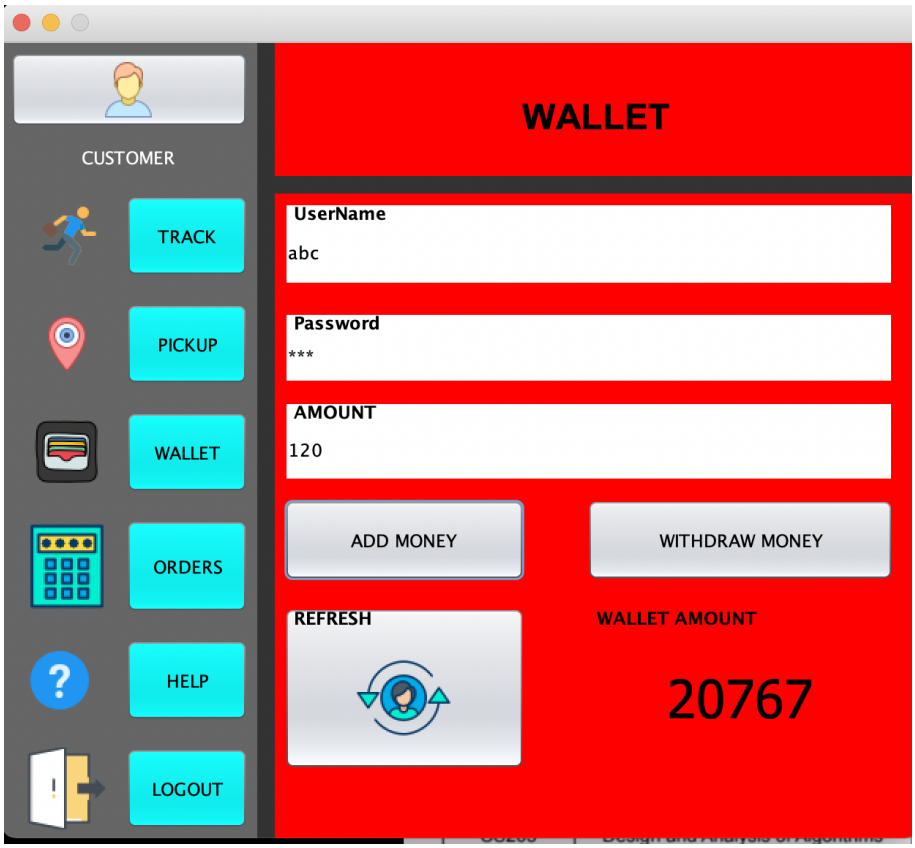




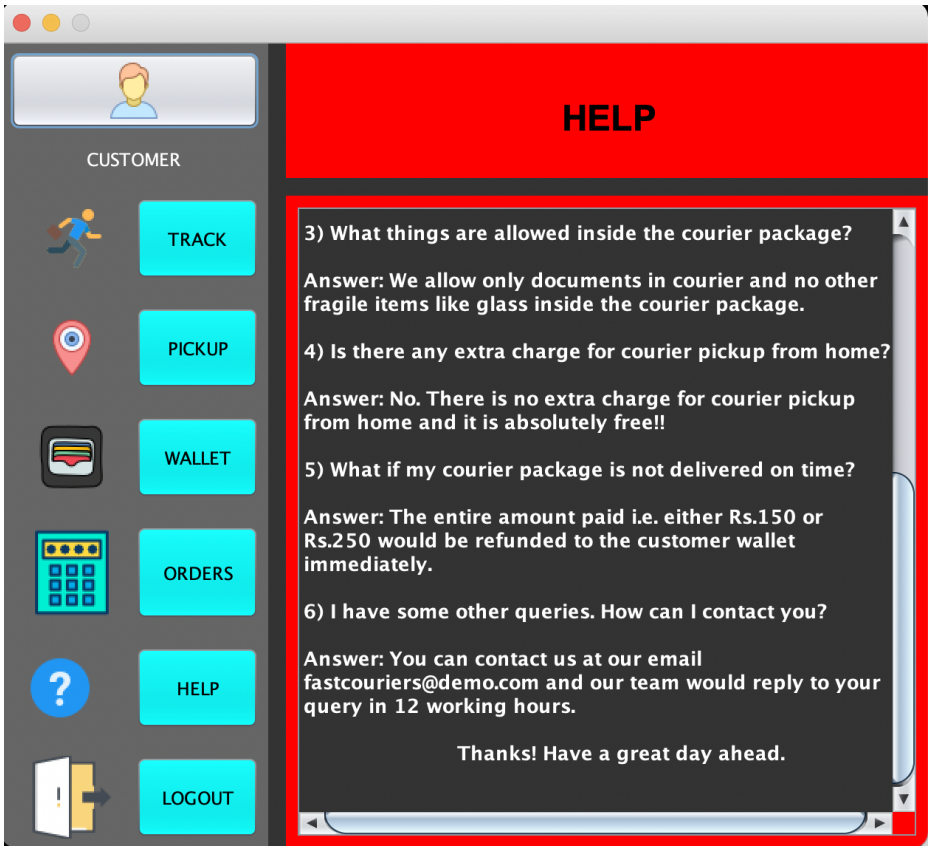

PERSON
ADMIN
ID
NAME
MOBILE
AADHAR NUMB...
11
Lokesh
92351712
324875
12
Karan
92351731
324836
13
Suresh
91351734
224822
14
Vedant
91354731
223836
15
Mukesh
91314731
223736
16
Revant
91312331
228836
PERSON
ADMIN
LOGOUT
EmployeeID
13
SHOW
UPDATE MOBILE NUMBER
91351734
UPDATE MOBILE
UPDATE AADHAR NUMBER
224822
UPDATE AADHAR


NEW CUSTOMER REGISTRATION
Name
Username
Password
Mobile
Wallet (Optional)
SAVE
CONTINUE AFTER REGISTER


CUSTOMER
TRACK
PICKUP
WALLET
ORDERS
HELP
LOGOUT
TRACK
Order ID
121
TRACK
Delivery Person Name
KARAN
Delivery Person Mobile
789
Expected Delivery Date
13 Dec 2021
Delivery Status
IN TRANSIT


CUSTOMER
TRACK
PICKUP
WALLET
ORDERS
HELP
LOGOUT
WALLET
UserName
abc
Password
***
AMOUNT
120
ADD MONEY
WITHDRAW MONEY
REFRESH
WALLET AMOUNT
20767

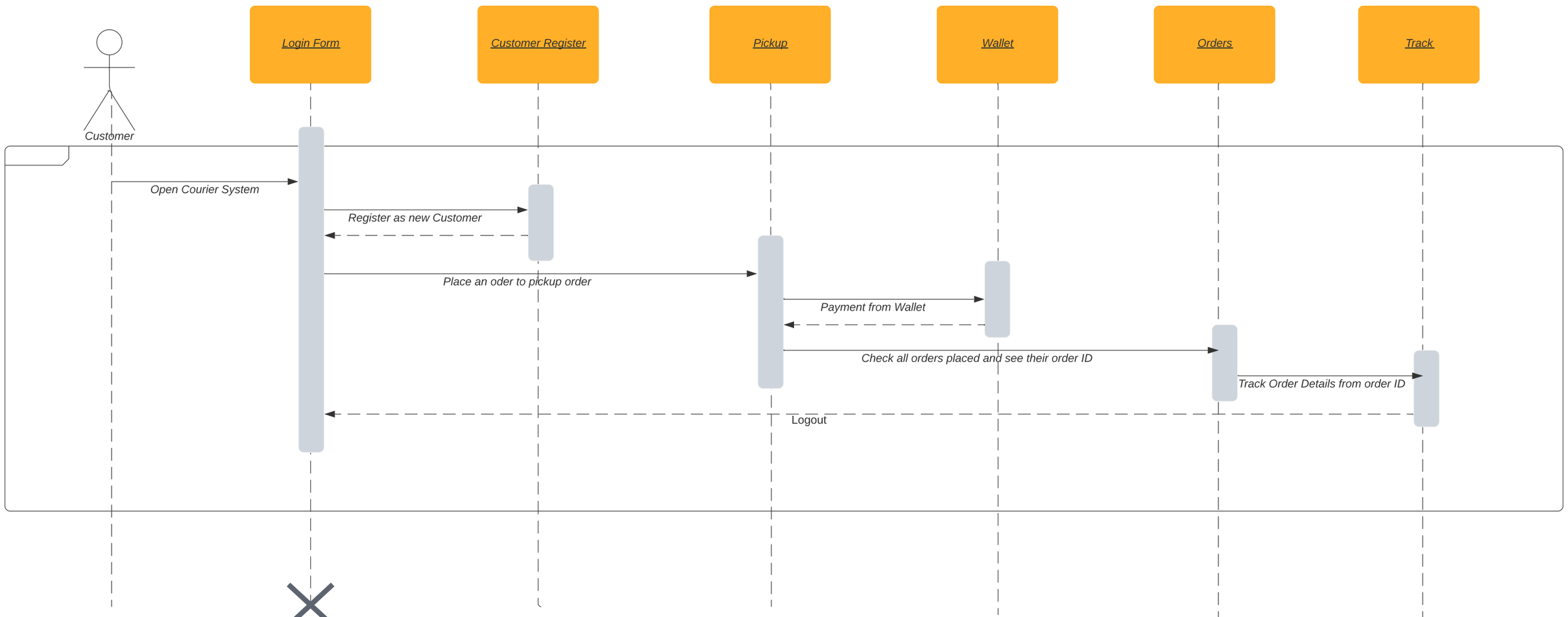

CUSTOMER
TRACK
PICKUP
WALLET
ORDERS
HELP
LOGOUT
MY ORDERS
CustomerName
Deepak
SHOW MY ORDERS
ORDER ID
DEL_PERSON N...
DEL_PERSON M...
EXP_DEL_DATE
132
NOT ASSIGNED
NOT ASSIGNED
NOT ASSIGNED


CUSTOMER
TRACK
PICKUP
WALLET
ORDERS
HELP
LOGOUT
HELP
3) What things are allowed inside the courier package?
Answer: We allow only documents in courier and no other fragile items like glass inside the courier package.
4) Is there any extra charge for courier pickup from home?
Answer: No. There is no extra charge for courier pickup from home and it is absolutely free!!
5) What if my courier package is not delivered on time?
Answer: The entire amount paid i.e. either Rs.150 or Rs.250 would be refunded to the customer wallet immediately.
6) I have some other queries. How can I contact you?
Answer: You can contact us at our email fastcouriers@demo.com and our team would reply to your query in 12 working hours.
Thanks! Have a great day ahead.


CUSTOMER
TRACK
PICKUP
WALLET
ORDERS
HELP
LOGOUT
PICKUP
PICKUP
NAME
Aman
FETCH MOBILE
ADDRESS
Etah
MOBILE
9234567891
DESTINATION
NAME
Ashutosh
ADDRESS
Vadodara
MOBILE (OPTIONAL)
4 DAYS : Rs. 150
2 DAYS : Rs.250

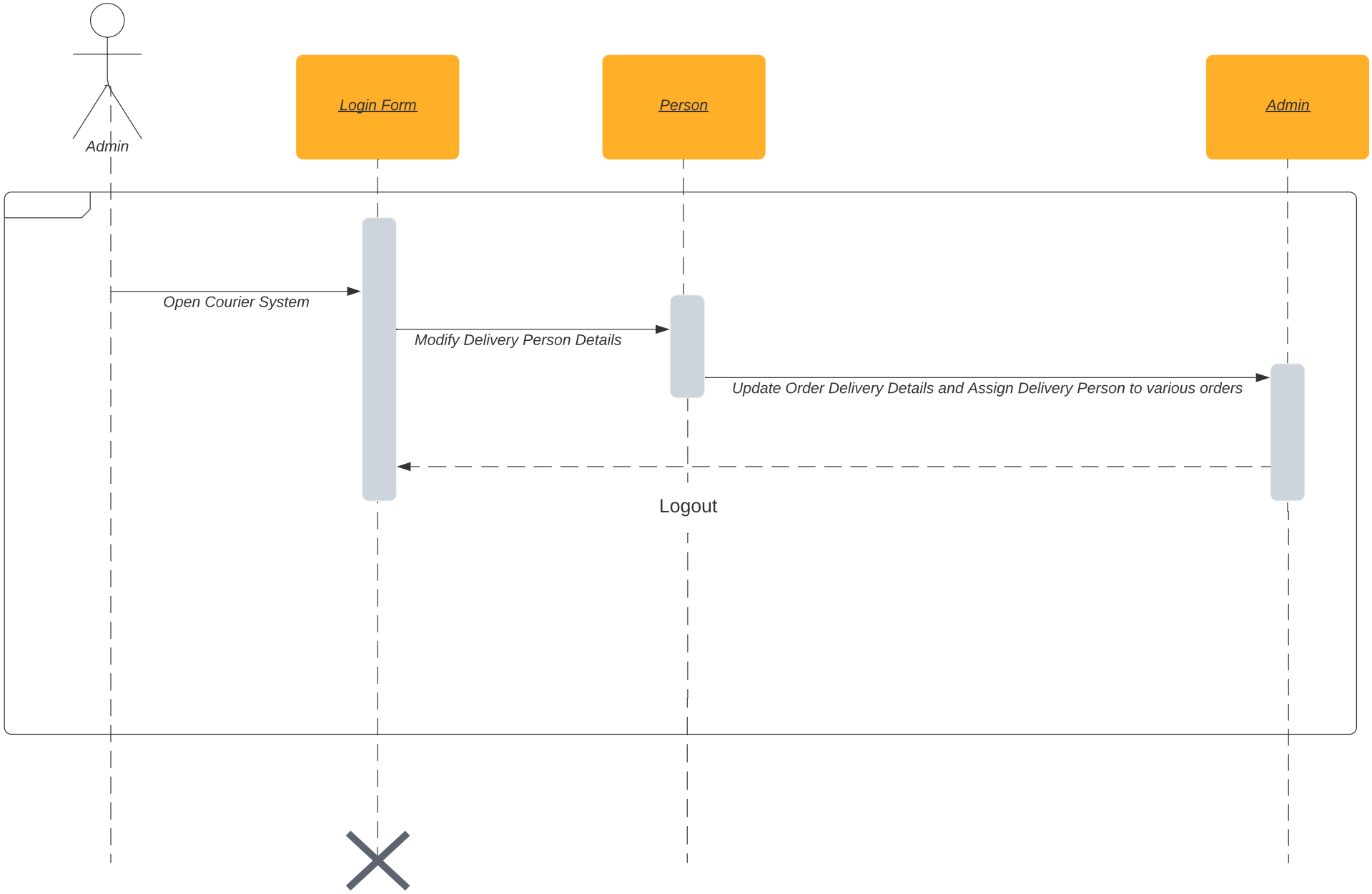
Sequence diagram

Customer Side Panel

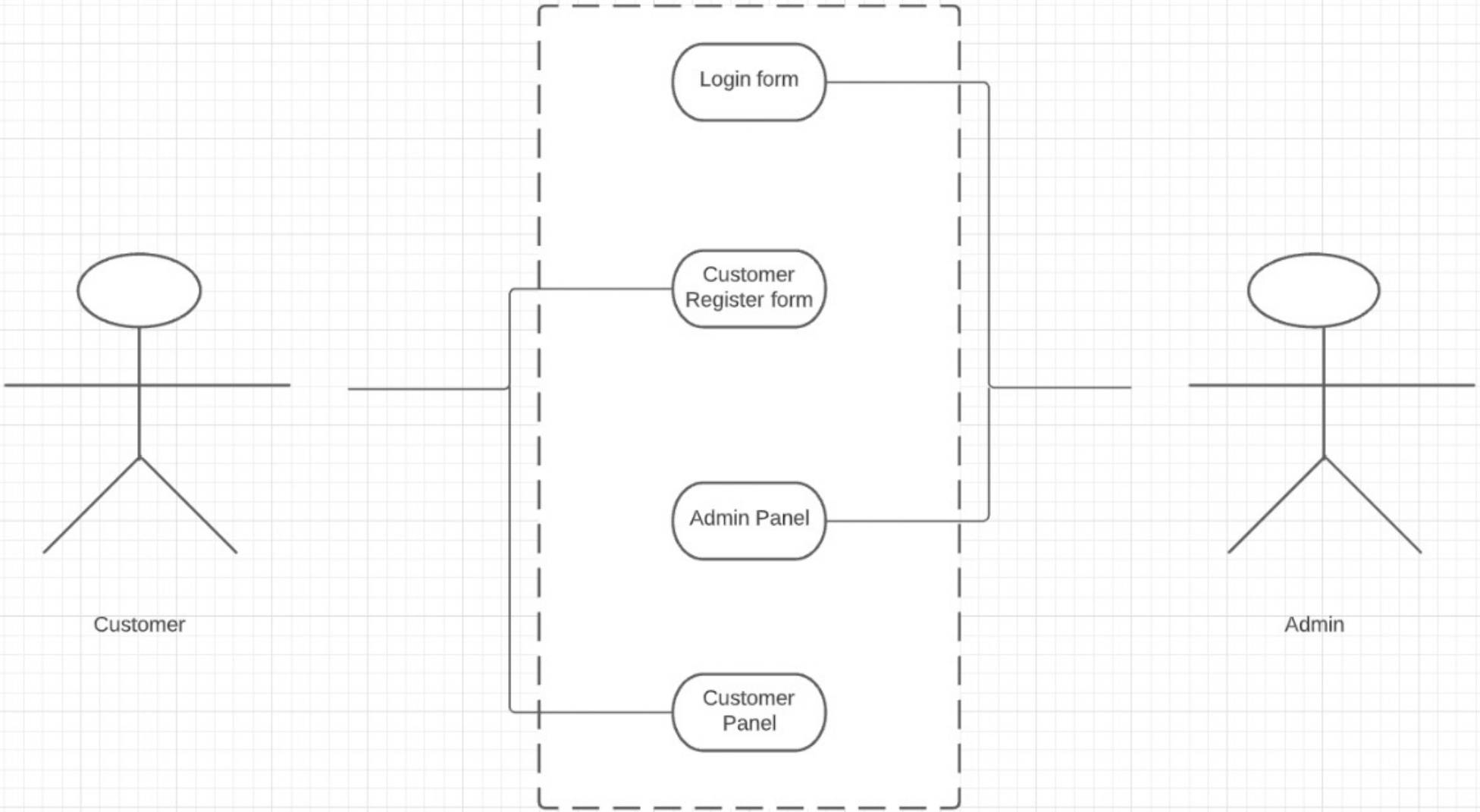


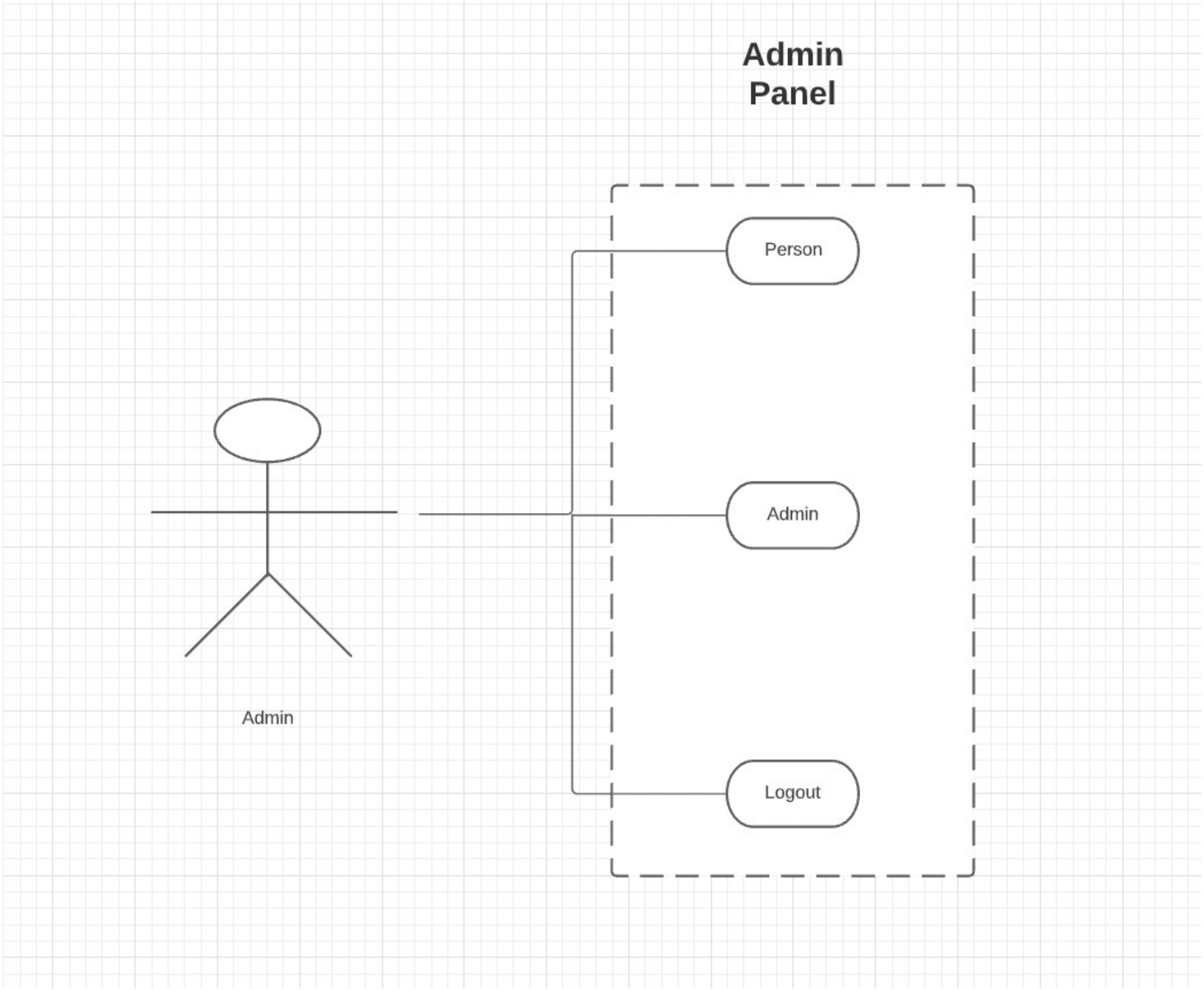
Sequence Diagram

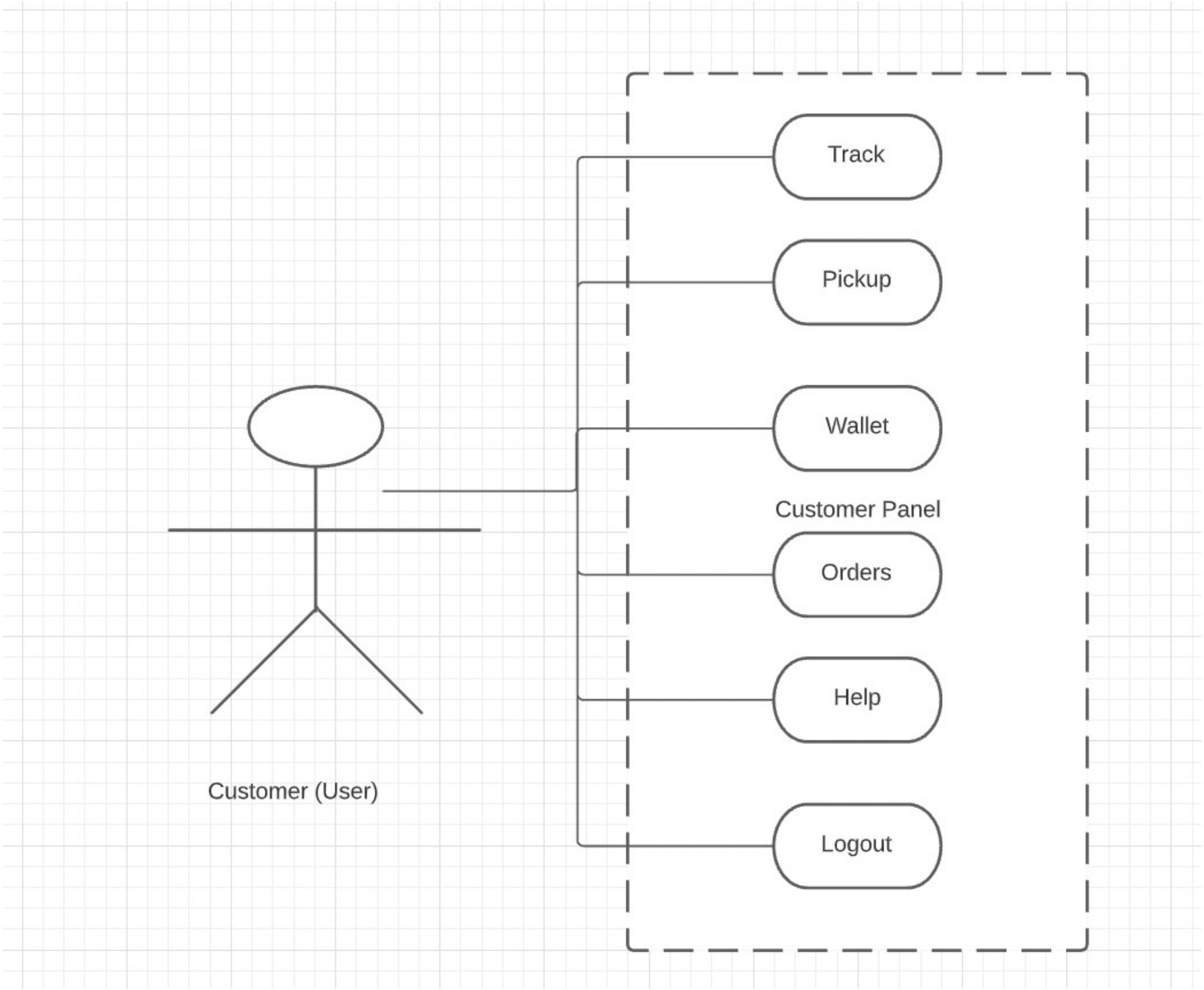
Admin Side Panel



Courier System




Admin
Panel
Person
Admin
Logout
Admin


Track
Pickup
Wallet
Customer Panel
Orders
Help
Logout
Customer (User)