Object Oriented Design Of E-Commerce Platform

(Low Level System Design)

To get some idea about fully functional e-commerce platform I see first how some shopping websites like flipkart , amazon works. What are the functionalities they have. I observed that I need following basic requirement to design any e-commerce platform. Here I named my e-commerce platform as Flybuy.

Step1:

Requirements

- Seller will be registering products on Flybuy 's product catalogue.
- Customer will see the list of products on Flybuy 's products catalogue.
- Customer will be able to search for the products.
- Customer will add items to his/her cart.
- Customer will place order (Checkout).
- Flybuy will generate the shipment for the customer.

Beside this I made the following assumption:

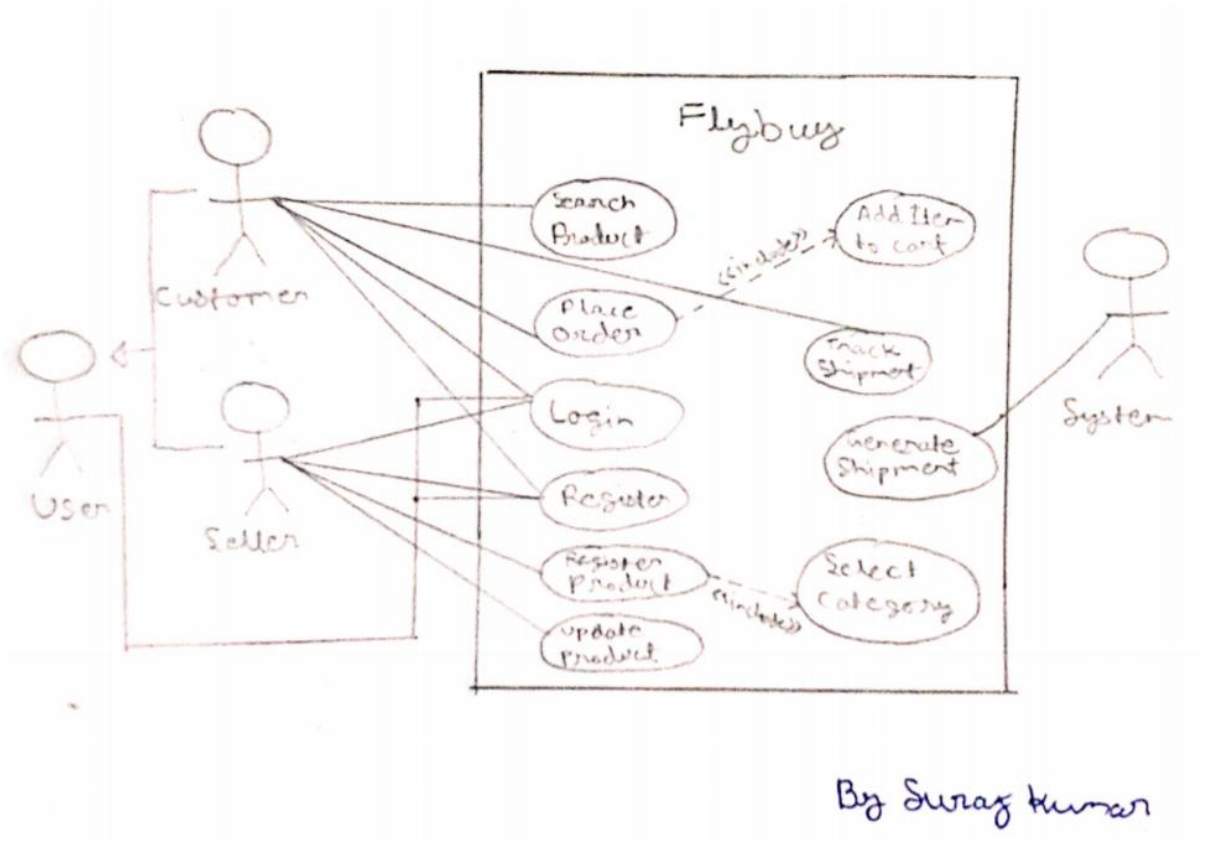
Assumptions

- Seller can add, update product info.
- Flybuy will have different categories of products.
- Customer can track his/her shipment.
- Customer will have the booking History.
- User is either Customer or Seller.
- Every Order will have any of six possible status: Created, Pending, Unshipped, Shipped, Cancelled, Completed.

Step 2:

In this step I draw the use case diagram. To draw this first I identified actors (primary,secondary) then I identified use cases, then I added associations, then I added inclusive use cases and extension use cases, then finaly I added inheritance.

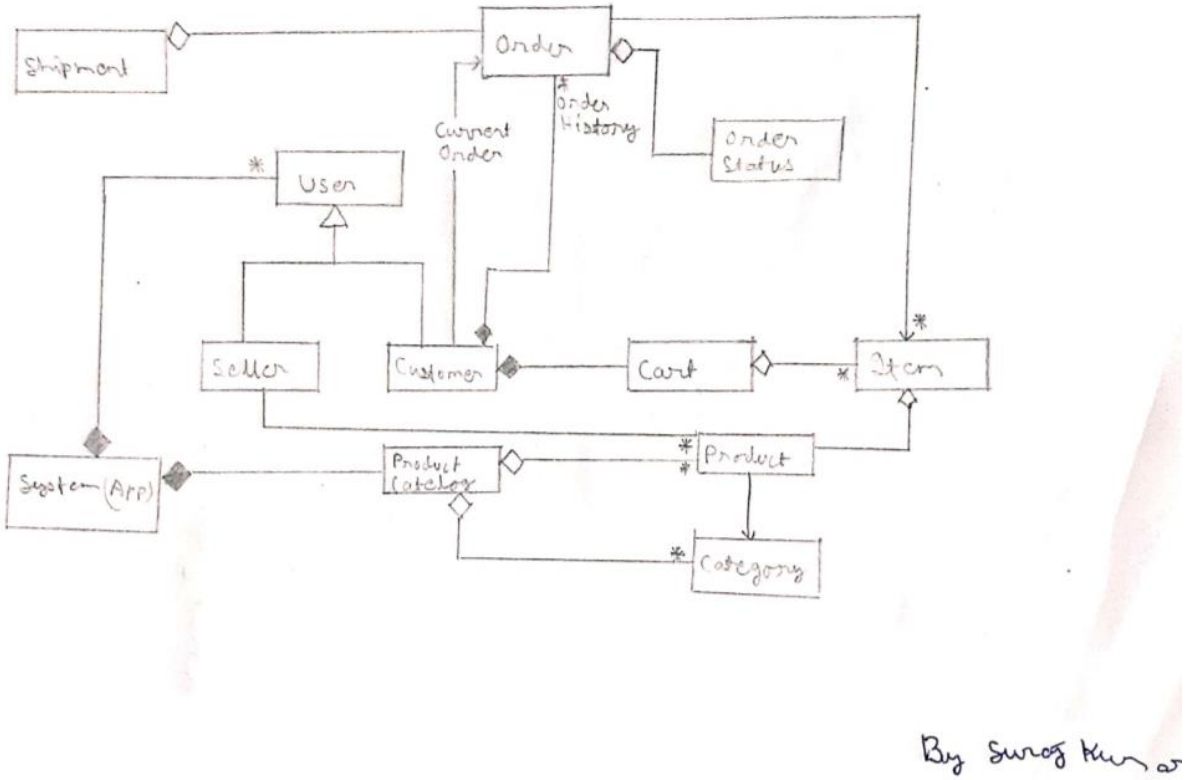
The complete use case diagram is as shown below:



Step 3:

In this step I made class diagram. I extracted nouns from assumptions section.

The complete class diagram is as shown below:



Some of the difficulties I faced after implementing above class diagram are as follows:

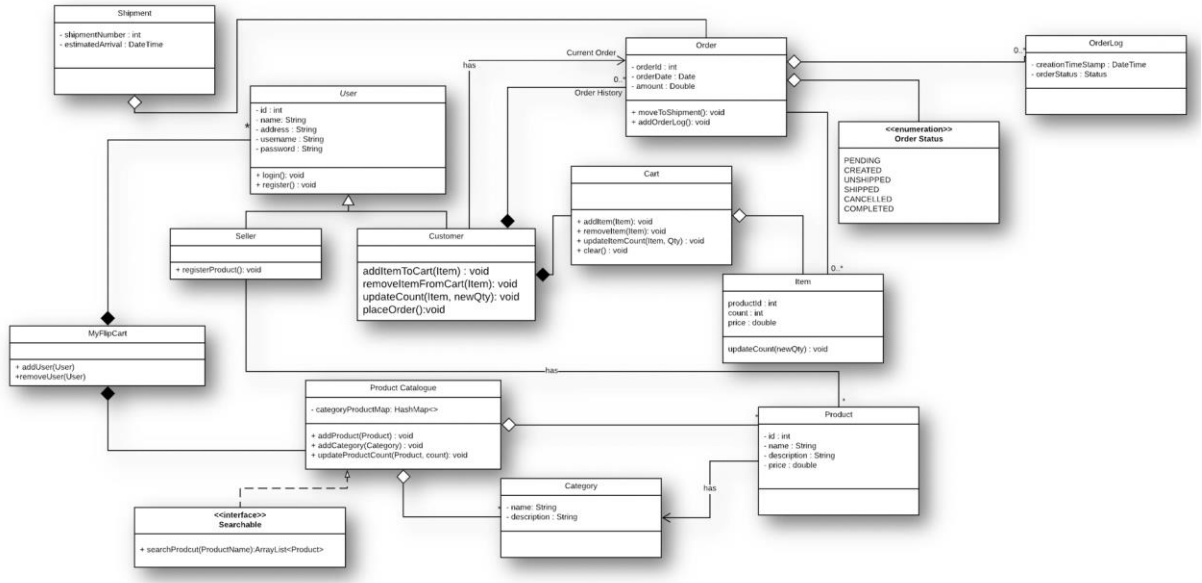
1.) After implementing above class diagram I see the difficulty that after placing order if I want to track my order then while using order status if shipment got updated then I could not backtrack my previous order status details.

Example if my order was going from created to pending state then I could not able to track at what time and date I created my order.

To remove this problem I created a new class that is order log which shows my current status of order details and if my current order status changes then I append previous order status details in order status class and then update order log class.

2.) Second bug I found that I was not able to search items in product catalogue. So I created searchable interface. My product catalogue class implemented this searchable interface.

After removing above bugs my modified class diagram is as shown below—



Step 3:

Finally I implemented above class diagram using Java.