UML diagrams

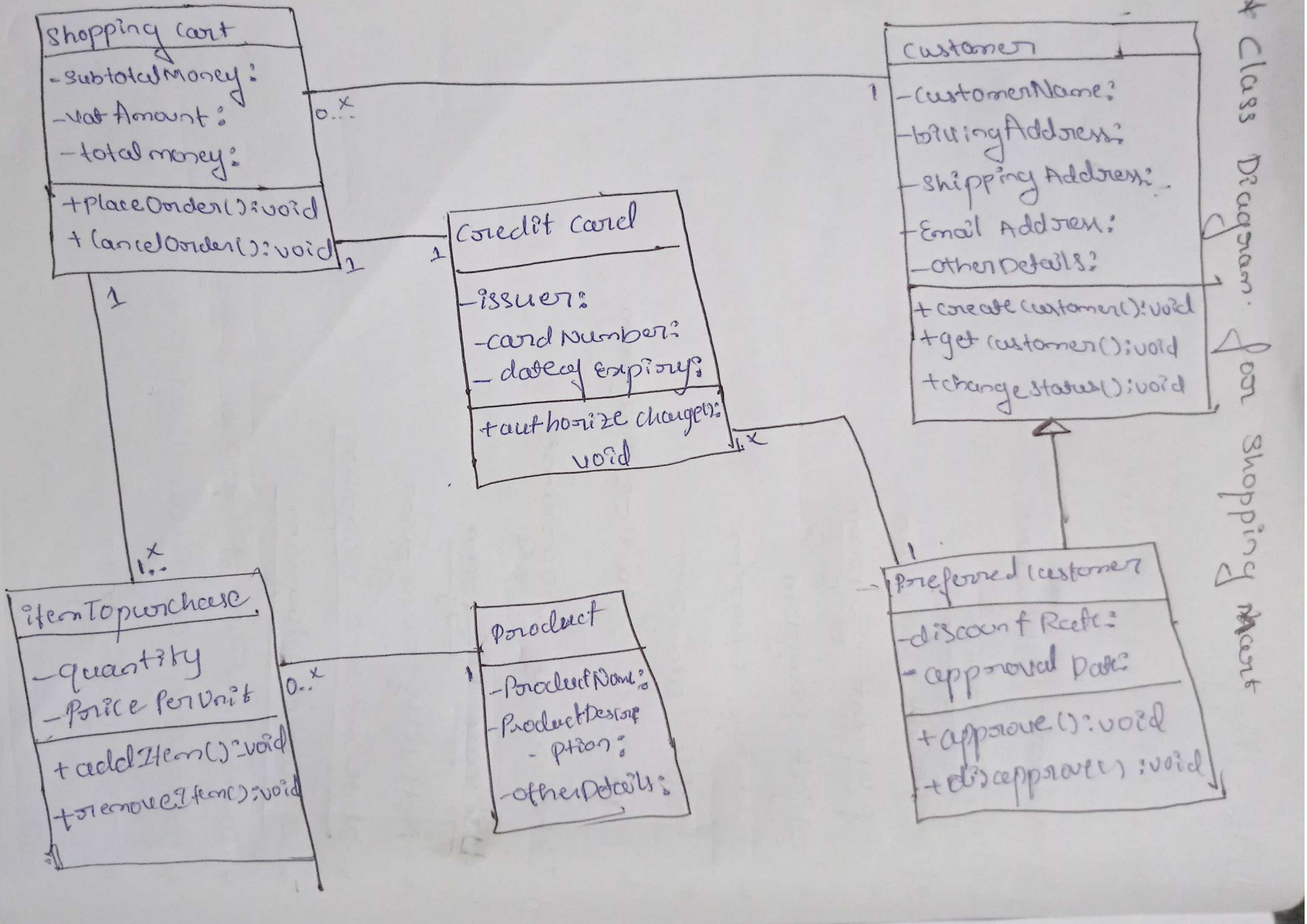
Types In Uml diagrams.

1] Structure Diagrams.

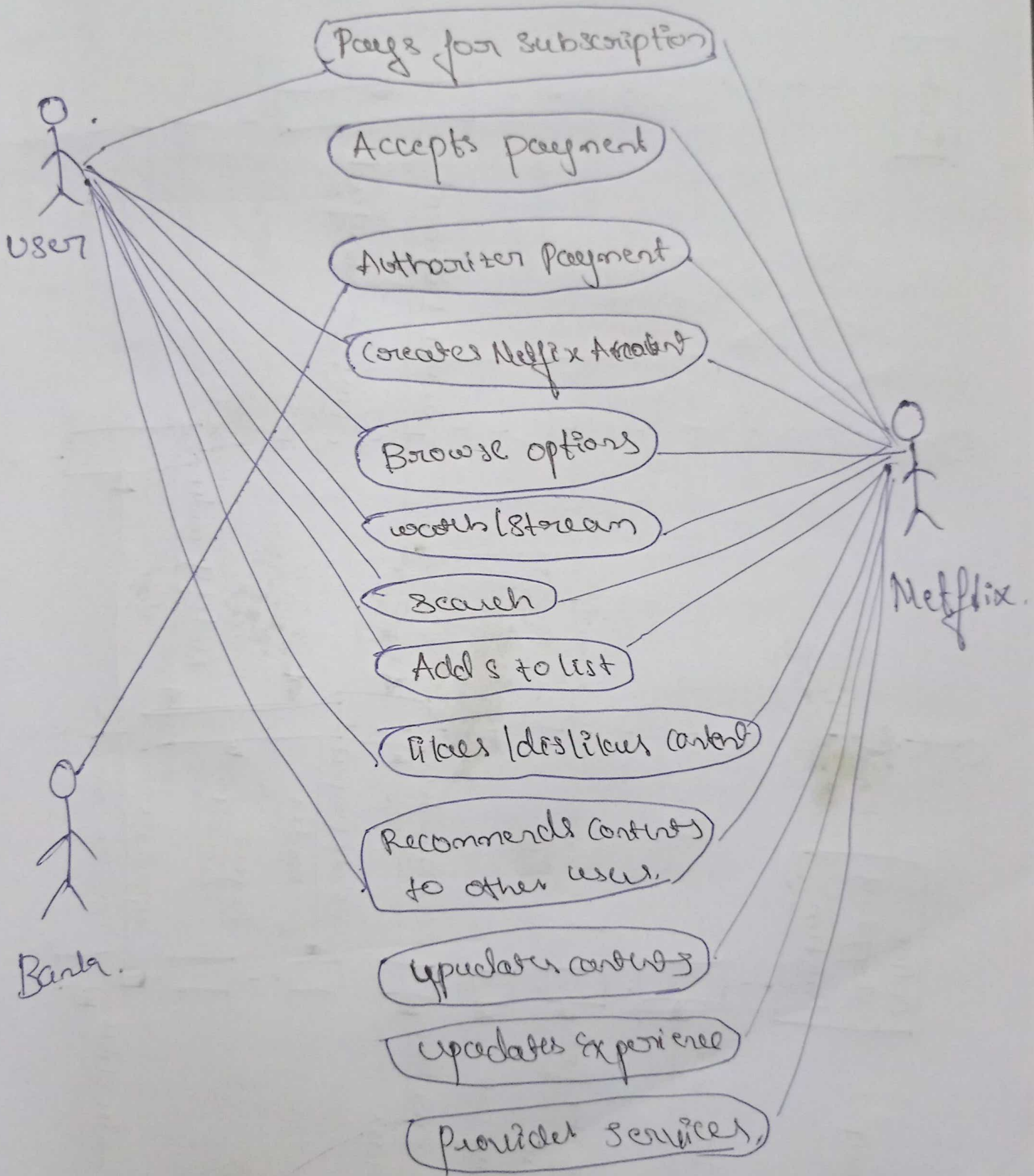
* Class Diagram
* Component Diagram
* Deployment Diagram
* Object Diagram
* Package Diagram
* Profile Diagram
* composite structure Diagram

2] Behavioral Diagrams

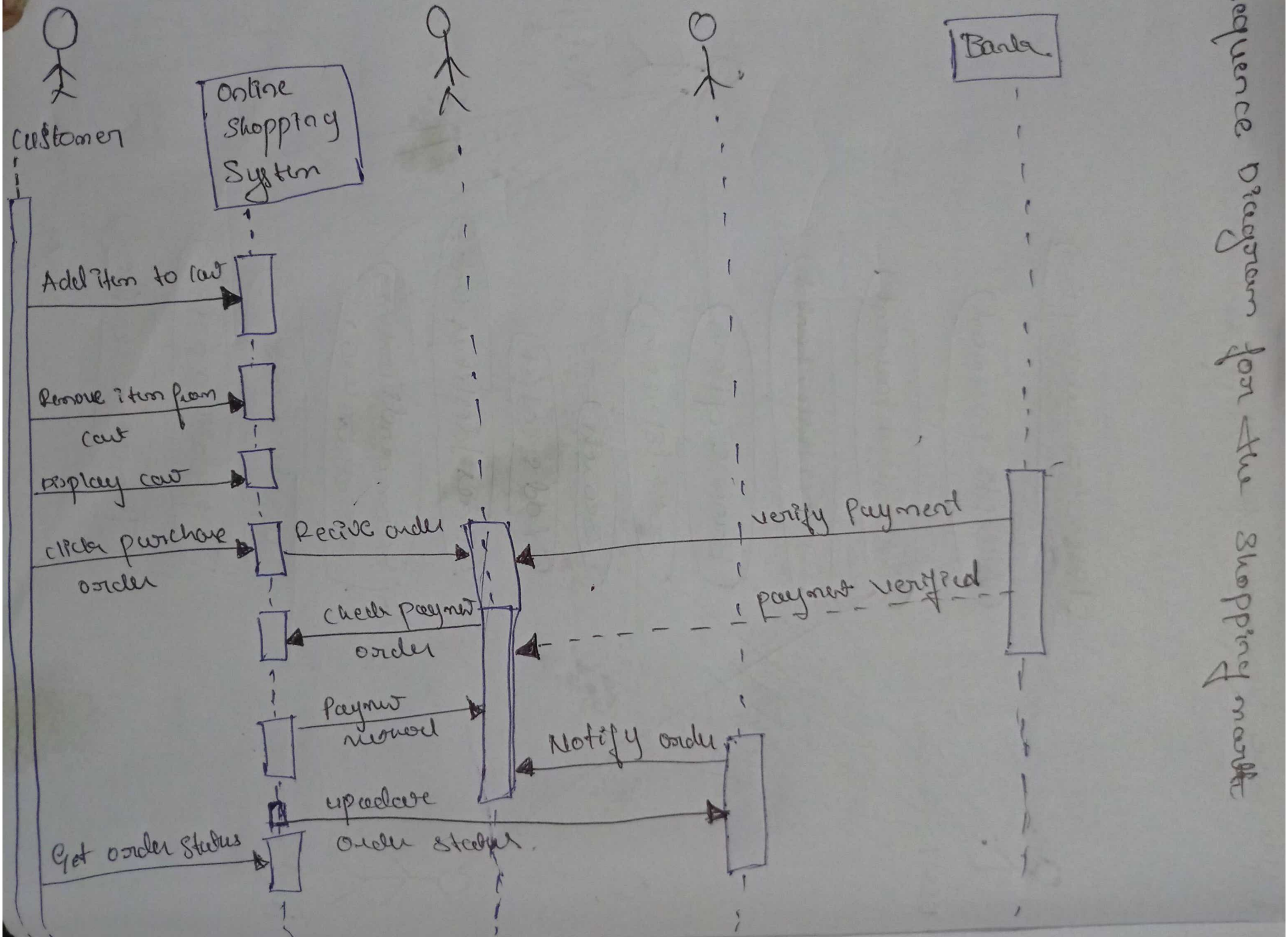
* Use case Diagram
* Activity Diagram
* State machine diagram
* Sequence Diagram
* Communication Diagram
* Interaction Overview Diagram
* Timing Diagram


Shopping cart
-subtotalMoney:
-vat Amount:
-total money:
+placeOrder():void
+cancelOrder():void
Credit Card
-issuer:
-card Number:
-dateof expiry:
+authorize charge():void
Customer
-CustomerName:
-billingAddress:
-Shipping Address:
-Email Address:
-otherDetails:
+create customer():void
+get customer():void
+change status():void
itemTopurchase
-quantity
-Price PerUnit
+addItem():void
+removeItem():void
Product
-ProductName:
-ProductDesrip
-ption:
-otherDetails:
Preferred Customer
-discount Rate:
-approval Date:
+approve():void
+disapprove():void
1
0..x
1..x
* Class Diagram for Shopping Mart

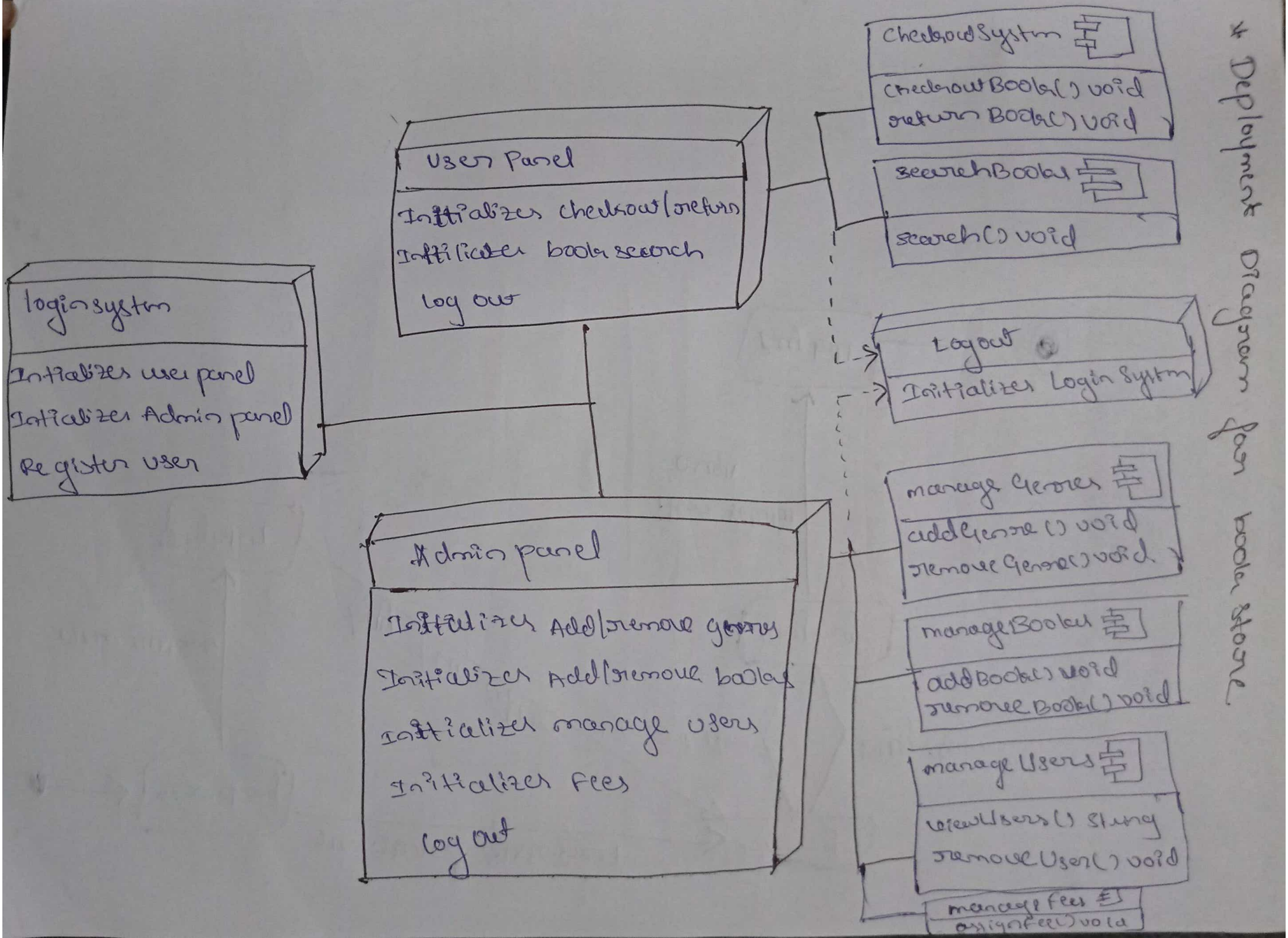
* Use case Diagram for Netflix

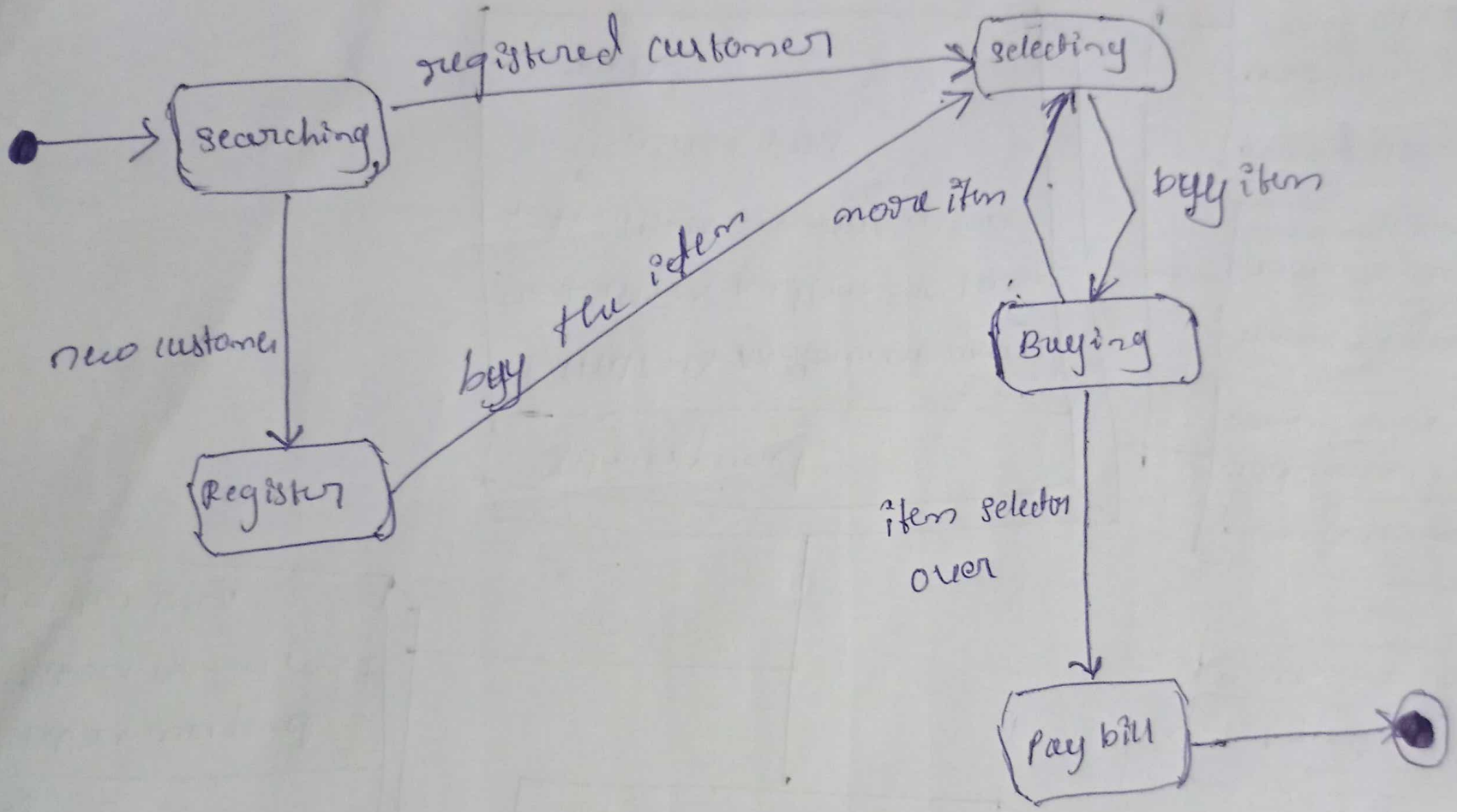


* Sequence Diagram for the Shopping mart



4 Deployment Diagram for book store





Activity Diagram for online shopping mart

Normalization

⇒ Normalization divides the larger table into the smaller table and links them using relationship.

Types in Normalization

1] 1NF
2] 2NF
3] 3NF
4] BCNF

1) 1NF

Employee table:

Emp_ID	EMP_Name	Emp-Phno.	Emp-State
14	John	7277282635 9064738238	UP
20	Harry	8579783832	Bihar

The decomposition of the EMPLOYEE table into 1NF has been shown below

Emp-ID	Emp-Name	Emp-Phno	Emp-State
14	John	7272826385	UP
14	John	9067738238	UP
20	Harry	8574783832	Bihar

*Second Normal form (2NF)

Teacher Table

Teacher_id	Sub	Teacher_age
25	Chemistry	30
25	Biology	30
47	English	35

To convert the given table into 2NF, we decompose it into two tables.

Teacher-ID	Teacher-age
25	30
47	35
83	38

} Teacher-Detail Table

Teacher_Sub table

Teacher_id	Subject
25	Chemistry
25	Biology
47	English

Third Normal Form (3NF)

=> A relation will be 3NF if it is in 2NF and not contain any transitive partial dependency

=> 3NF is used to reduce the data duplication. It is also used to achieve the data integrity.

Employee-Detail table:

Emp-ID	Emp-Name	Emp-zip	Emp-State	Emp-city
222	Harry	201010	UP	Noida
333	Stephan	02228	US	Boston
999	Lan	60007	US	Chicago
555	katharine	06389	VA	Norwich
666	John	462007	MP	Bhopal

Employee table

Emp-id	Emp-Name	Emp-zip
222	Harry	201010
333	Stephan	02228
999	Lan	60007
555	katherine	06389
666	John	462007

Employee_zip table:

Emp-zip	Emp-State	Emp-city
201010	UP	Noida
02228	US	Boston
60007	US	Chicago
06389	UK	Norwich
462007	MP	Bhopal

Boyce codd normal form (BCNF)

=> BCNF is the advance version of 3NF. It is stricter than 3NF

=> For BCNF, the table should be in 3NF, and for every FD, LHS is superkey

Employee table

Emp-id	Emp-country	Emp-dept	Dept-type	Emp-deptno
269	India	Designing	D394	283
269	India	Testing	D394	300
367	Uk	Stores	D283	232
369	Uk	Developing	D283	549

Emp-country table:

Emp-Dept	Dept-type	Emp-Deptno
Designing	D394	283
Testing	D394	300
stores	D283	232
Developing	D283	549

Emp-Dept-mapping table

Emp-id	Emp-dept
D394	213
D394	300
D283	232
D283	549