Types of UML Diagrams :

There are two main Categories.

1. Structure Diagrams
2. Behavioral Diagrams

1. Structure Diagrams

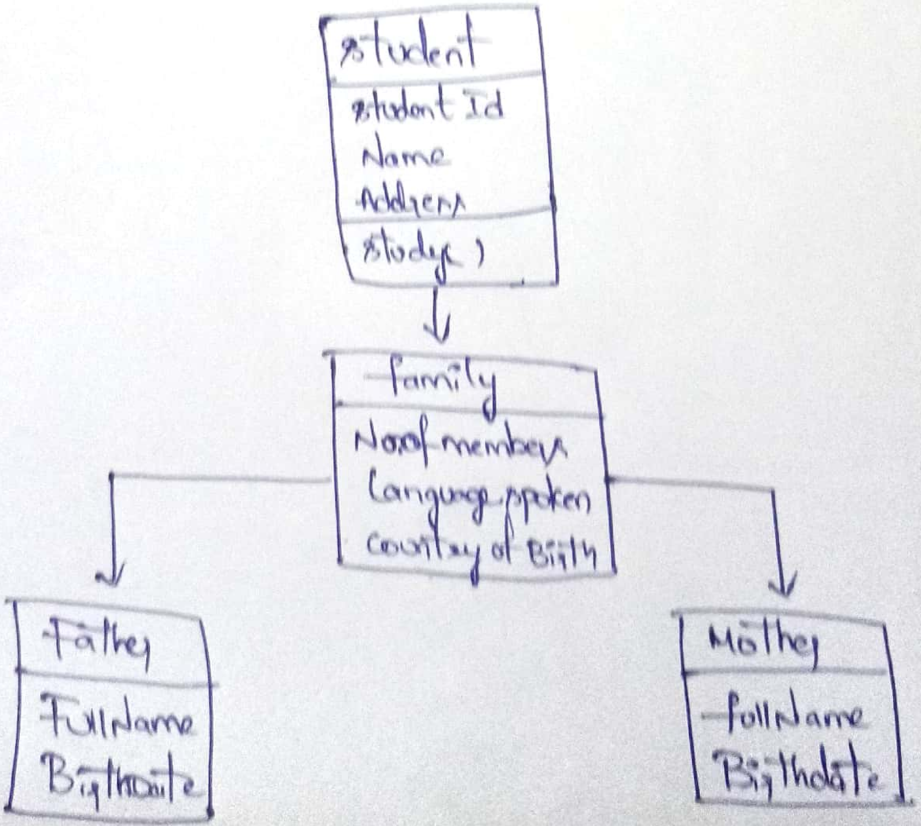
>. Class Diagram
>. Component Diagram
>. Deployment Diagram
>. object Diagram
>. package Diagram
>. profile Diagram
>. Composite Structure Diagram

2. Behavioral Diagrams

>. Use case Diagram
>. Activity Diagram
>. State machine Diagram
>. Sequence Diagram
>. Communication Diagram
>. Interaction Overview Diagram
>. Timing Diagram

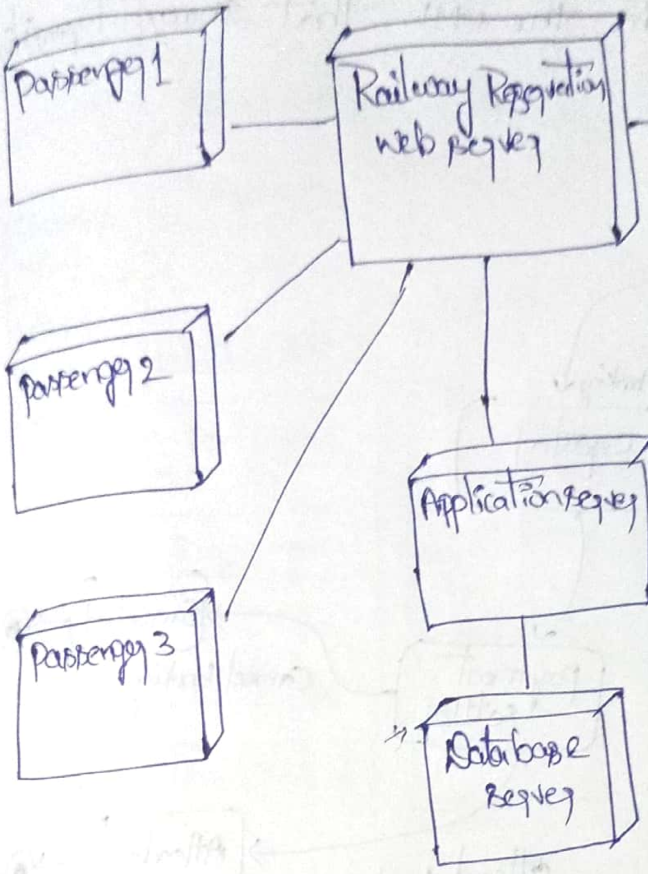
* Class Diagram :-

A class in UML is represented by a rectangle that includes rows with class names, attributes & operations.

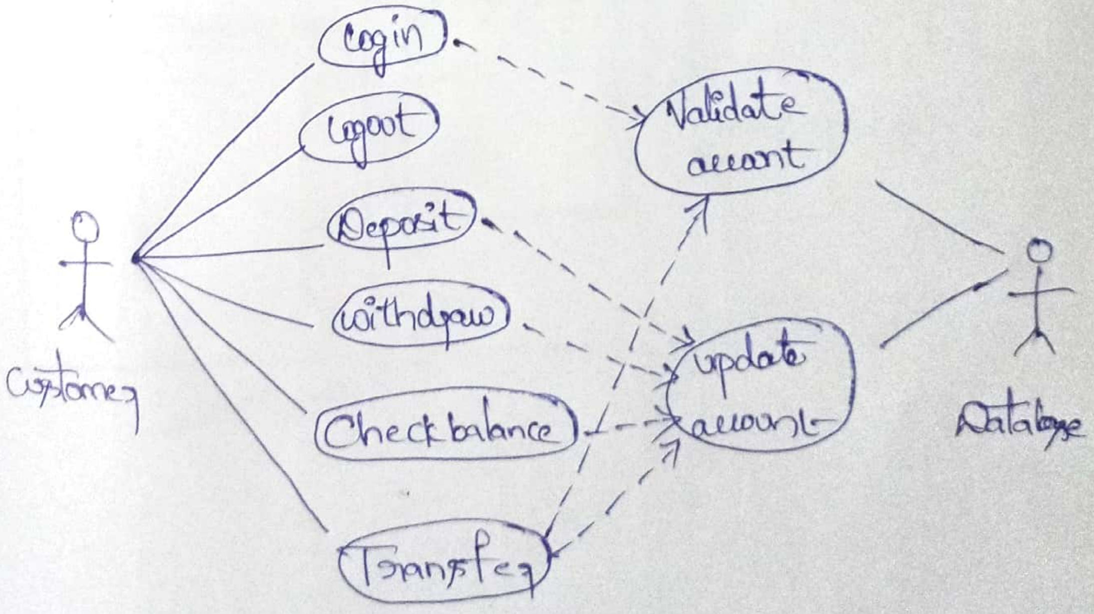


* Deployment Diagram :-

An Example of UML deployment diagram for a web application.

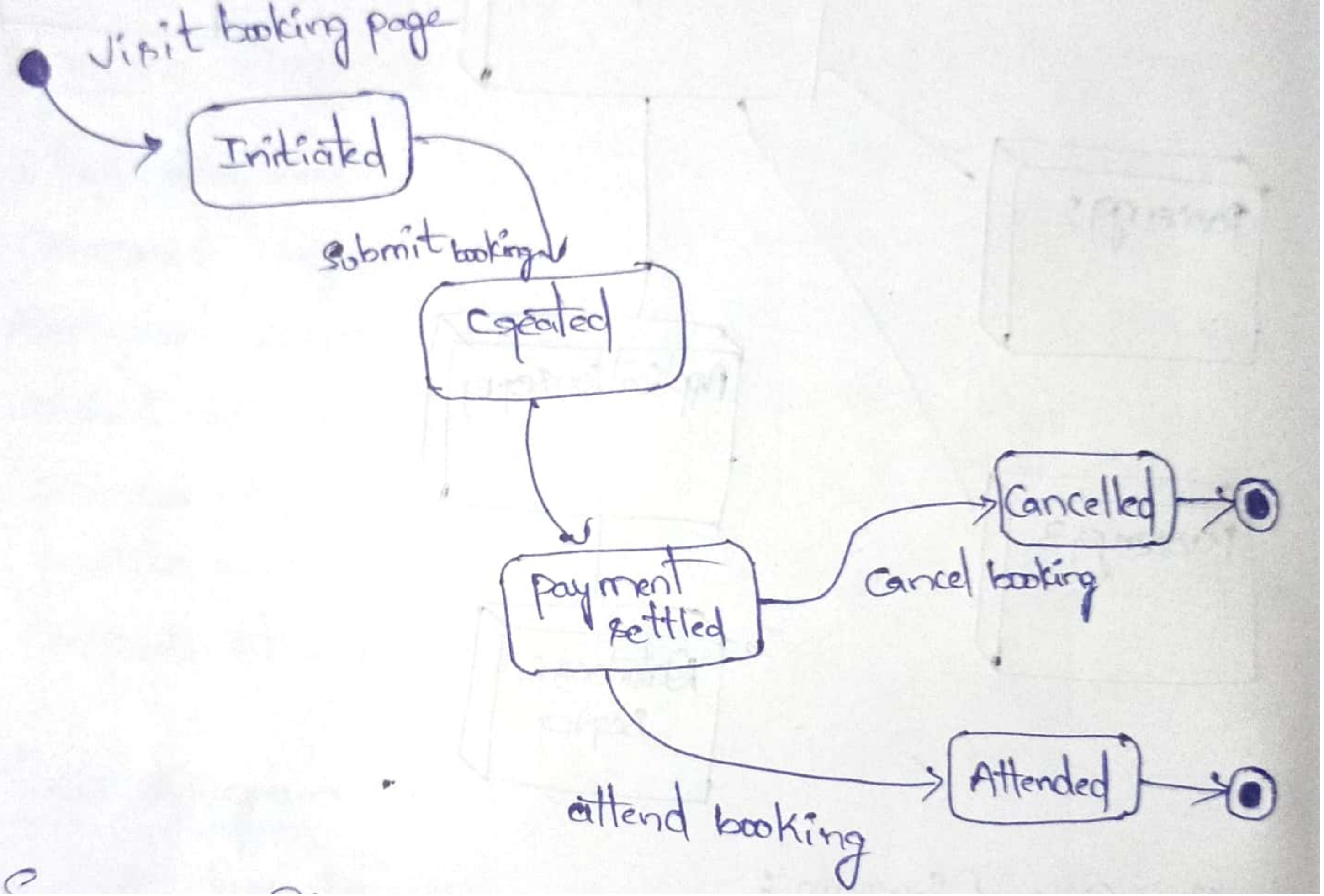


* Use Case Diagram :

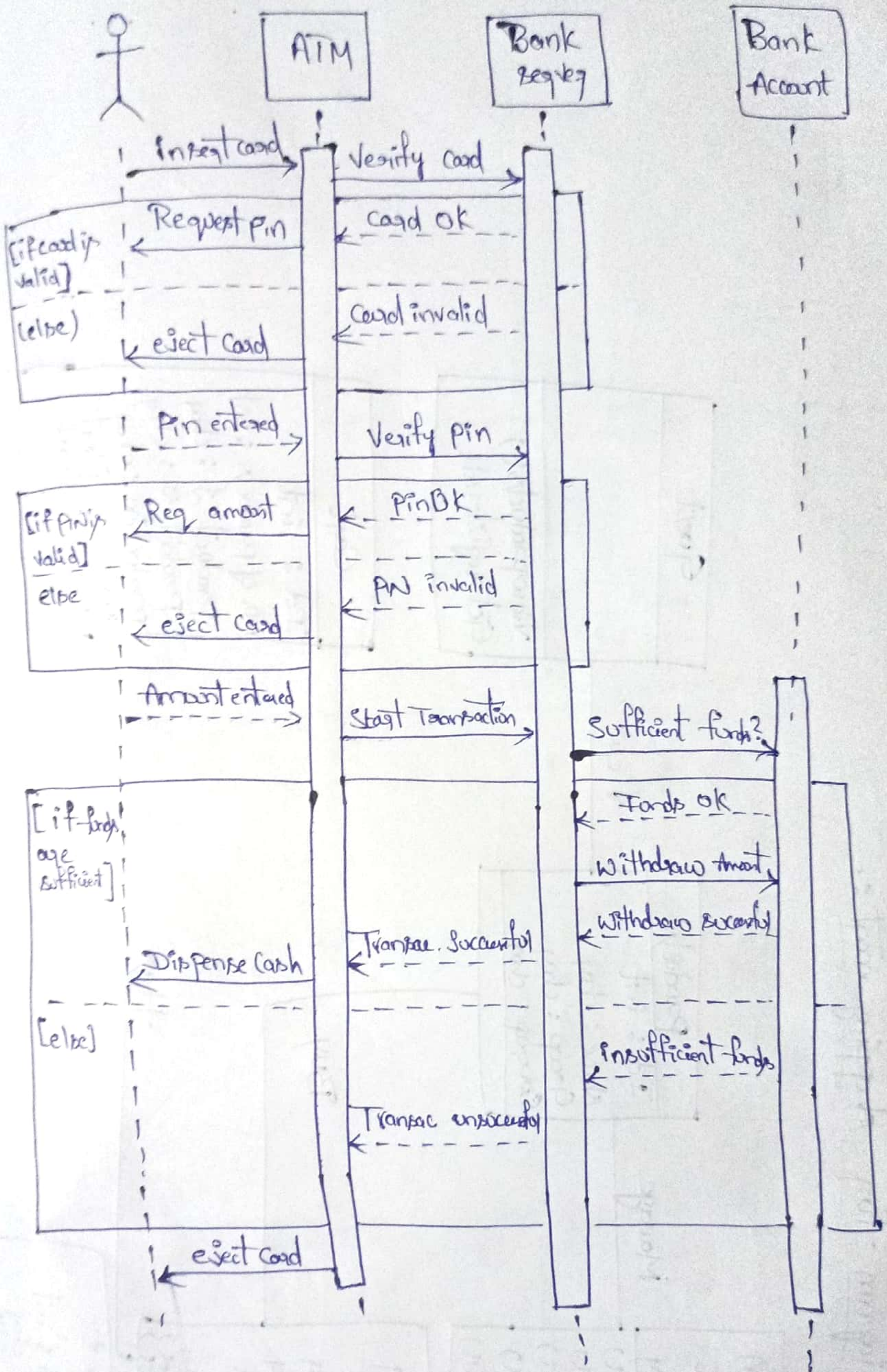


* State Machine Diagram :-

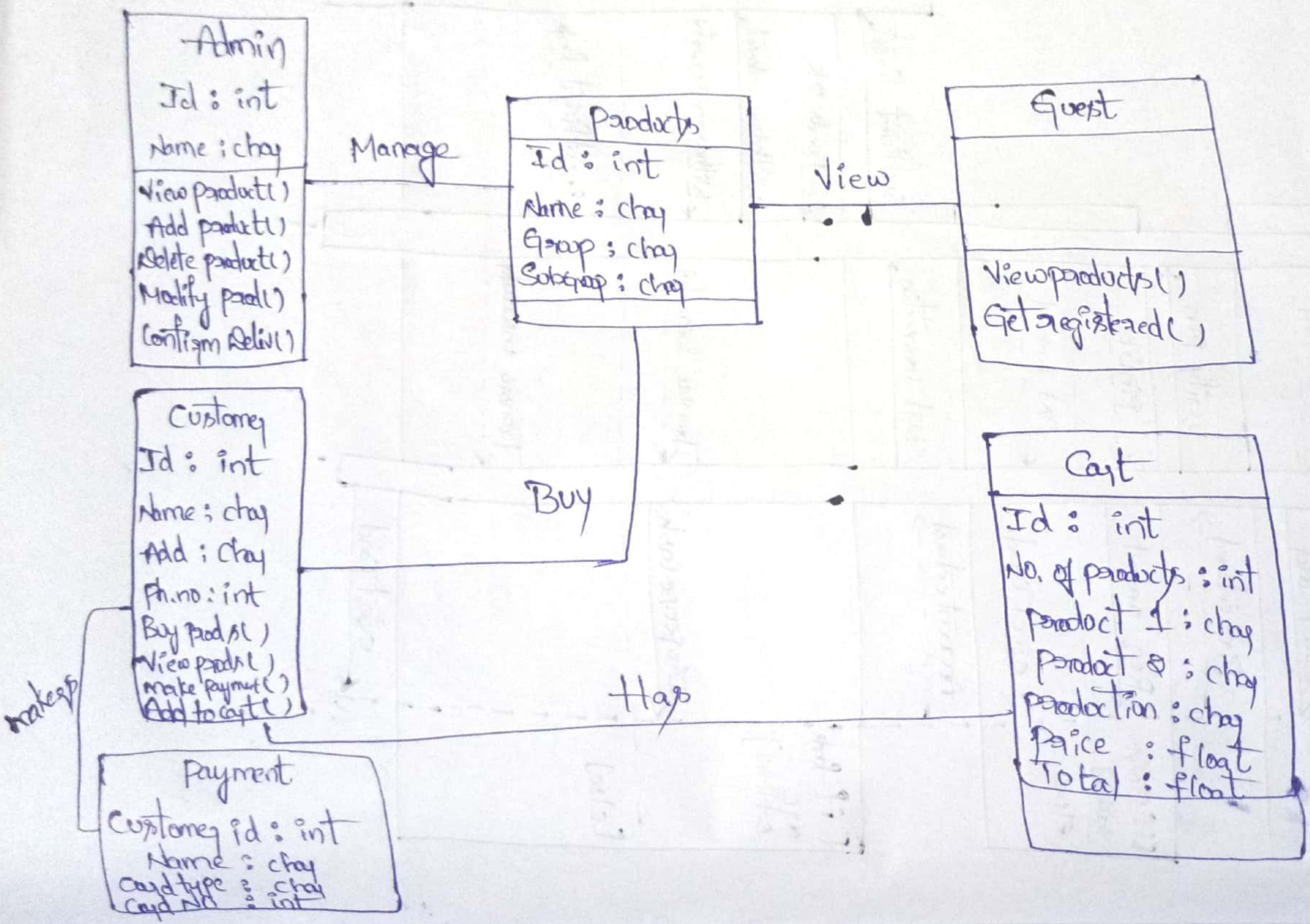
-A state Machine Diagram is a type of behavioral diagram in the UML that shows transitions b/w various objects.



Sequence Diagram:-

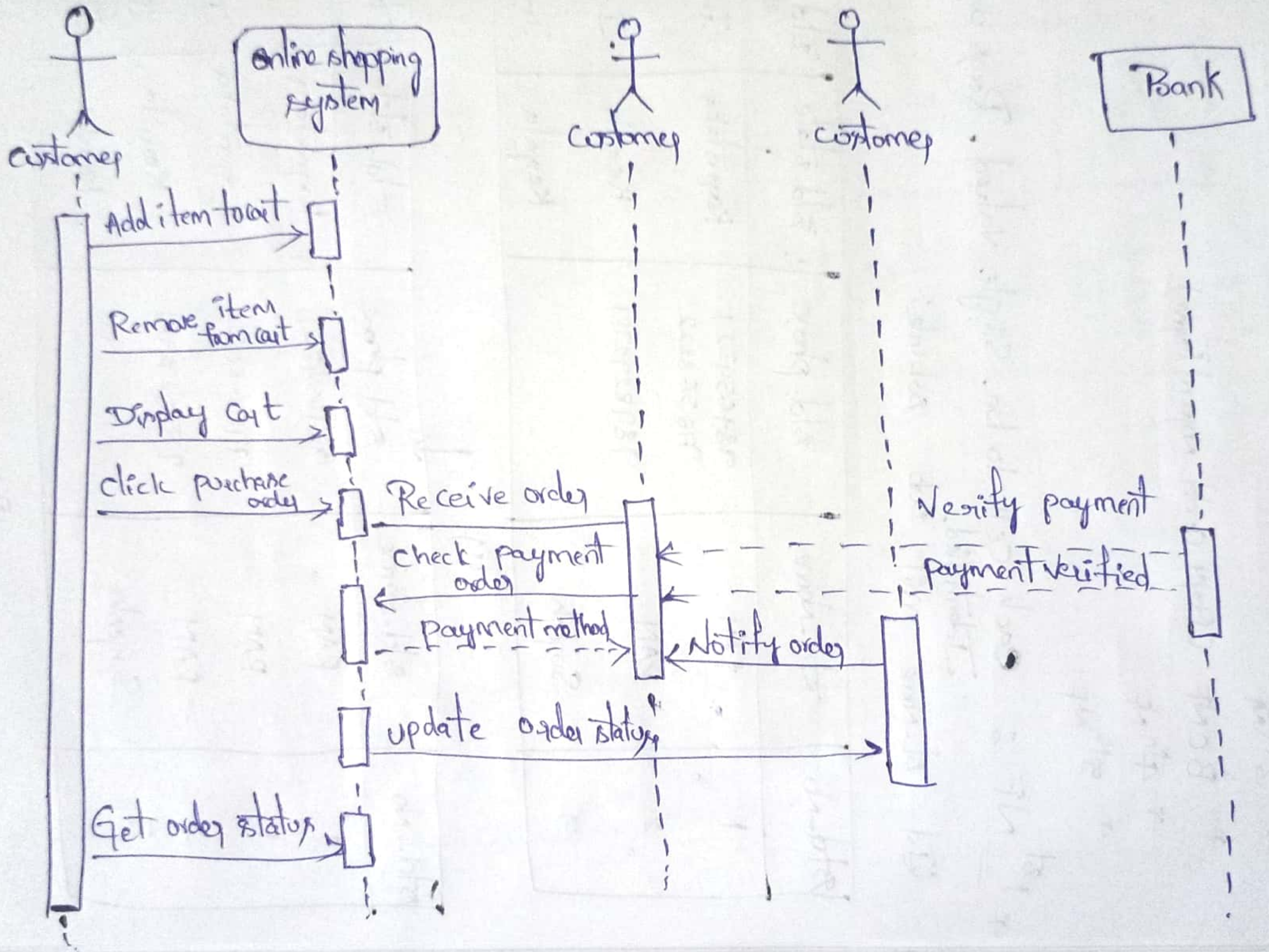


* Class diagram for shopping mall :-

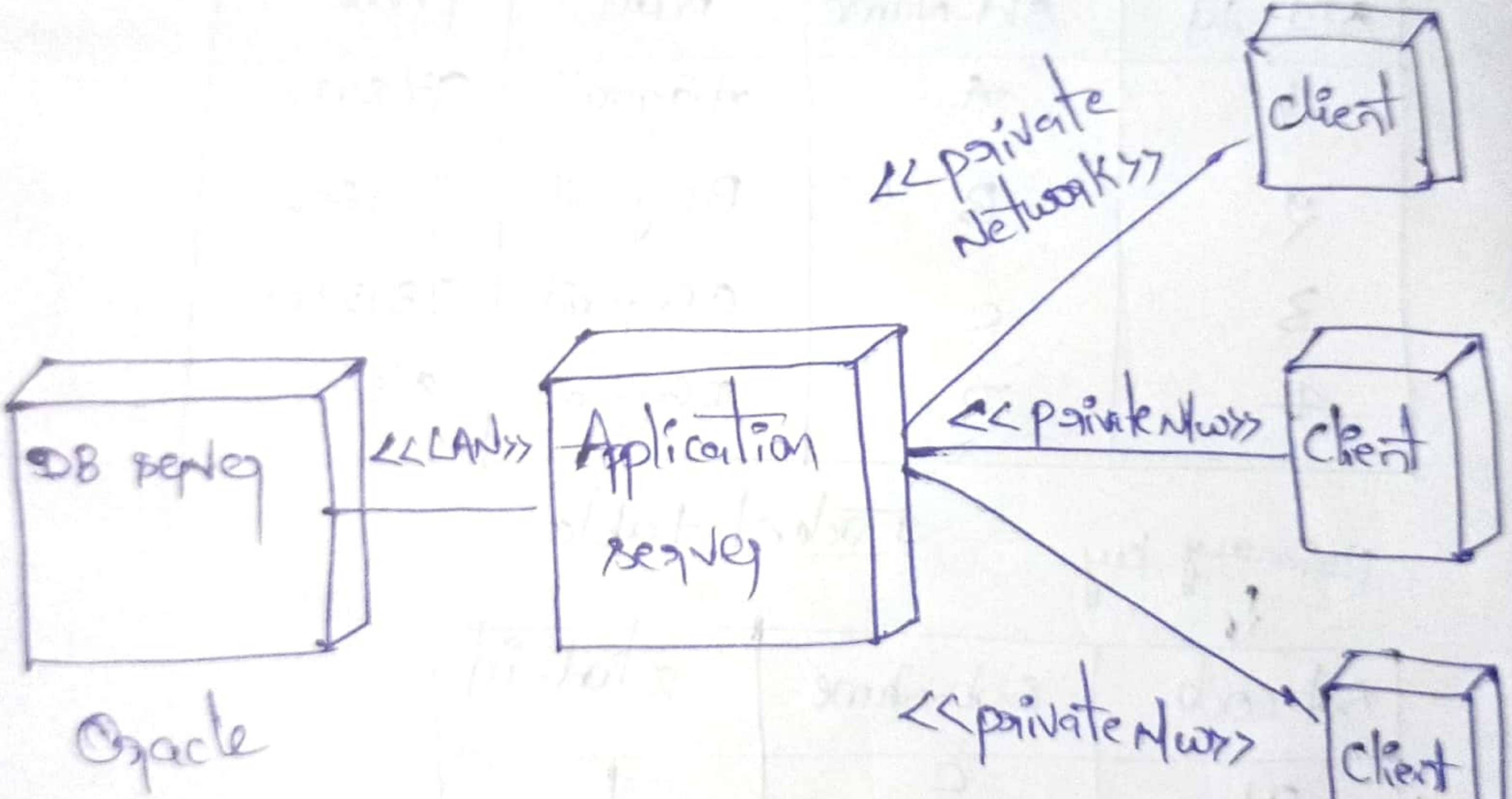


Scanned with CamScanner

* Sequence Diagram for shipping mart :



Deployment diagram for Book store :-



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Package Diagram :

Package Diagram Can be used to simplify complex class diagrams, it can group classes into packages.

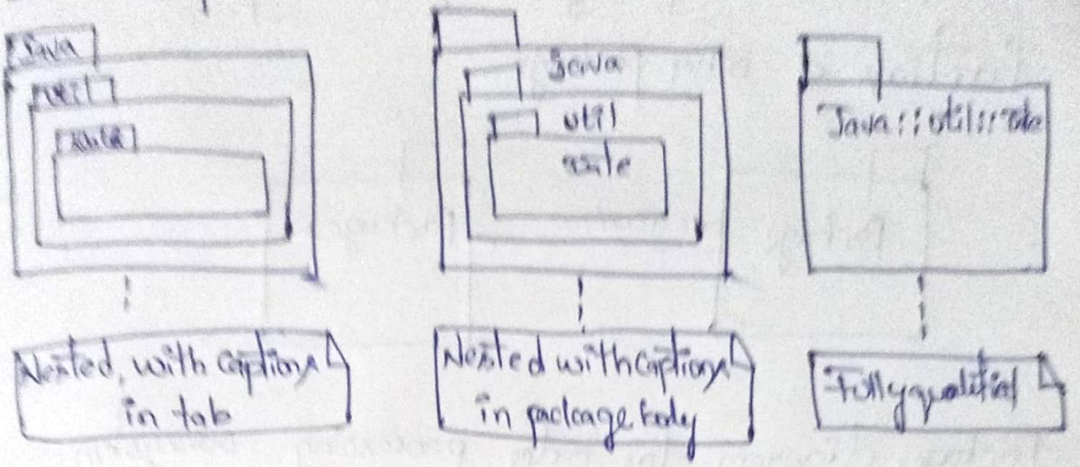
>. package appear as rectangles with small tabs at the top

>. The package name is on the tab or inside the rectangle.

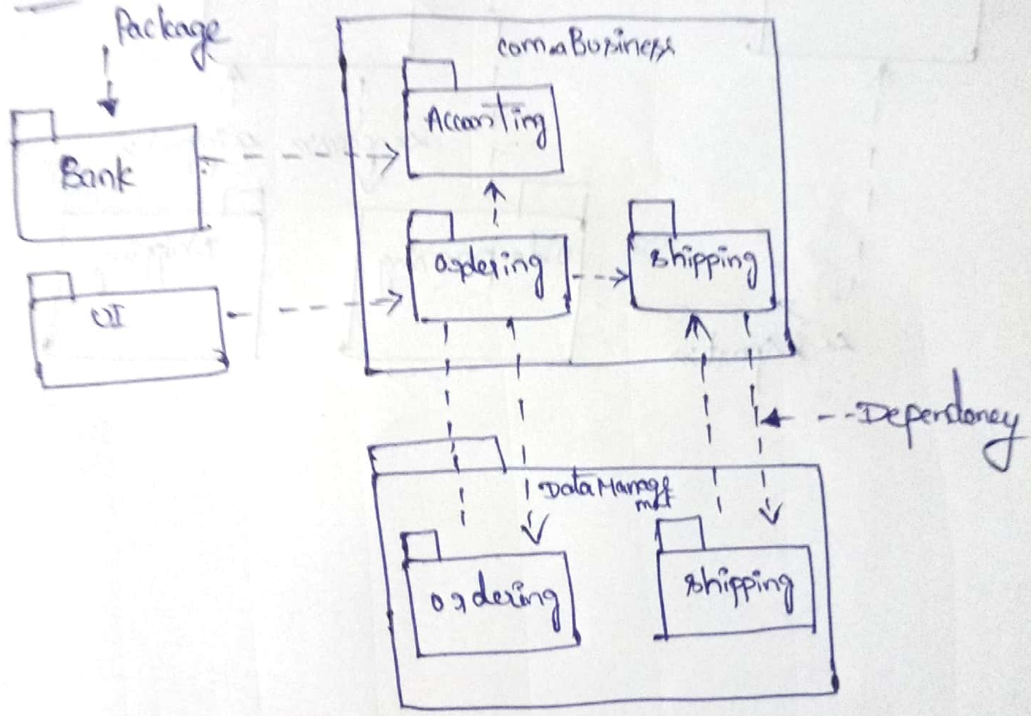
>. The dotted arrows are dependencies

>. One package depends on another if changes in the other could possibly force changes in the first.

Packages Can be represented by the notations with some examples

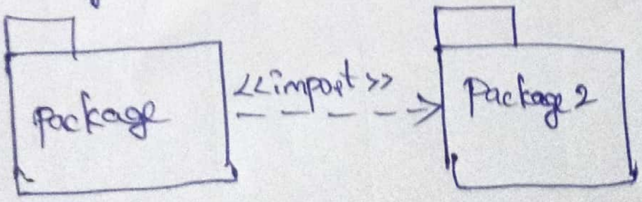

Java
util
Date
Nested, with captions in tab
Java
util
Date
Nested with captions in package body
Java::util::Date
Fully qualified

Business model -



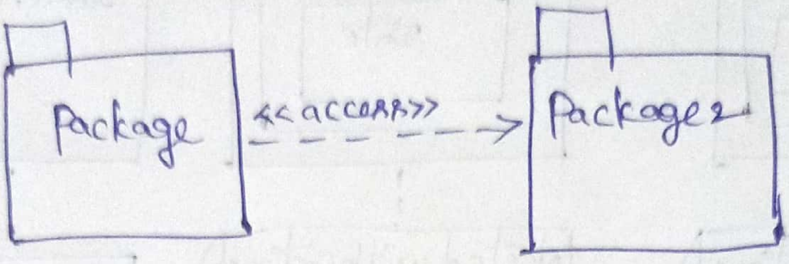
Package Diagram Example - import

<<import>> - one package imports the functionality of other package.

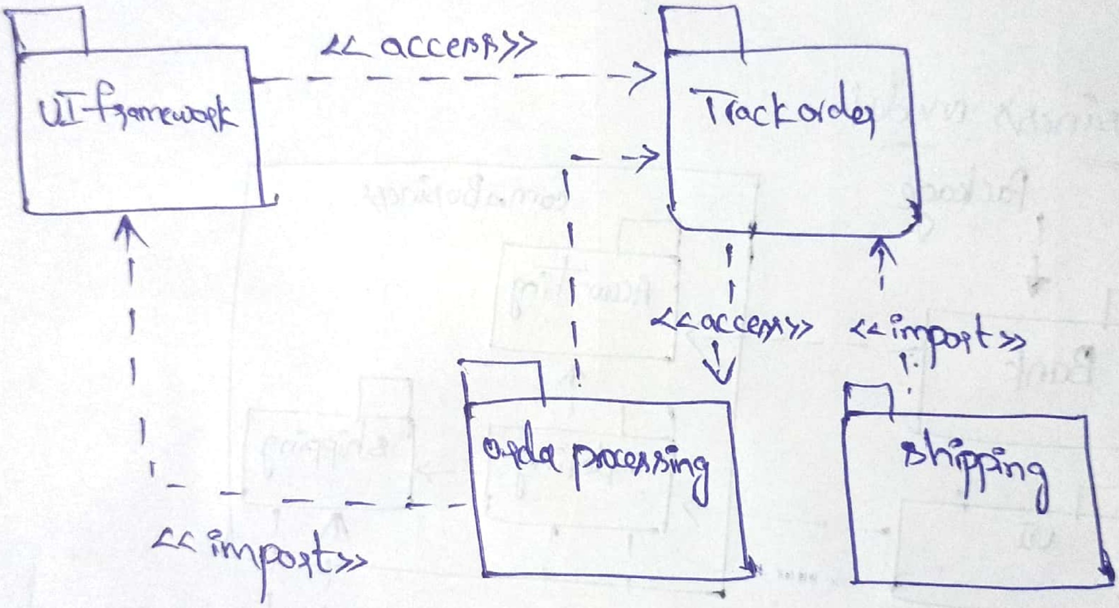


Package Diagram Example - Access

<<access>> - One package requires help from functions of other package.



Package diagram for order processing subsystem.



* Normalization :-

It is the process of organizing the data in dB.

→ It is used to reduce data redundancy. (Insert, update, delete)

Types of NF :

- * 1^{st} NF
- * 2^{nd} NF
- * 3^{rd} NF
- * BCNF (Boyy Codd Normal form)
- * 4^{th} NF
- * 5^{th} NF

* 1^{st} NF : each cell to be single valued. Rows uniquely Identified.

(Id st_Name mail sub subcode)

std_No	std_Name	std_phone	std_state	std_contry
1	RAM	987654321 978568822	Karnataka	India
2	RAM	9898292981	Kerala	India
3	Suresh		Kerala	India

(1)

↓

std_No	std_Name	std_phone	std_state	std_contry
1	RAM	987654321	Karnataka	
1	RAM	978568822	Karnataka	India
2	RAM	9898292981	Kerala	India
3	Suresh		Kerala	India

(2)

2nd NF : All attributes (Non-key columns) dependent on the key.

Foreign key ↓

std-Id	std-Name	mail	phone
1	A	A@gmail	978432
2	B	B@gmail	6281602
3	C	C@gmail	7892301
4	D	D@gmail	812456

Student table

Primary key ↓

Sub code	Sub-Name	std-id
01	C	1
02	C++	2
03	Java	3
04	Python	4
05	SQL	

Subject table

Book ID	Book Name	Book	std id	Sub code	DOI	DOR
01	C	D	1	01	–	–
05	C++	E	2	02	–	–
07	Java	G	3	03		
08	python	H	4	04		
09	SQL	I		05		

3rd NF :

↓Pk ↓Pk ↓Pk

DOI	DOR	std-id	sub-code	Book Id
01-3-19	02-4-19	1	01	01
04-3-19	6-7-19	2	02	05
5-3-19	6-9-20	3	03	07
5-3-20	6-3-21	4	04	08

Library table