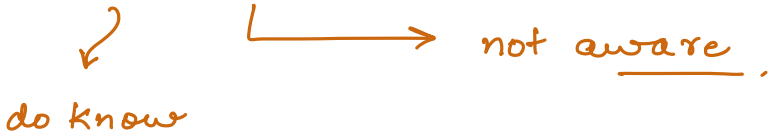
Design Parking Lot

Agenda

- Req gathering
- class diagram

HW: 1) Schema design
2) Code Models.

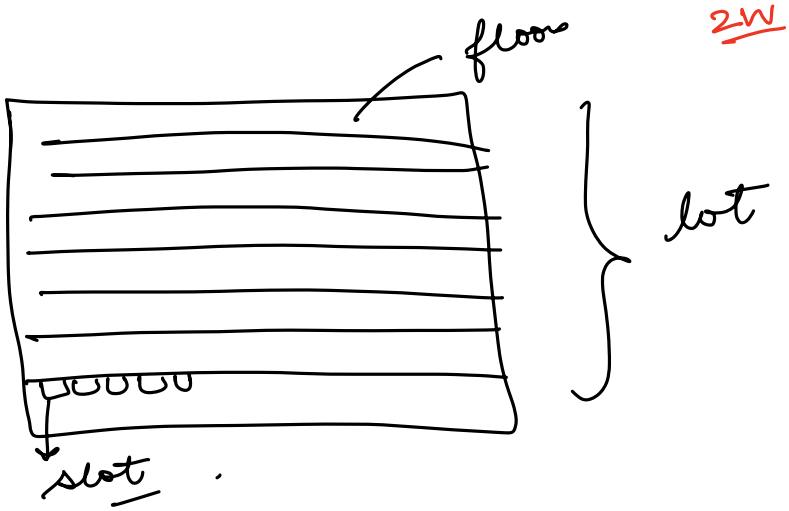
Step 0 : Overview



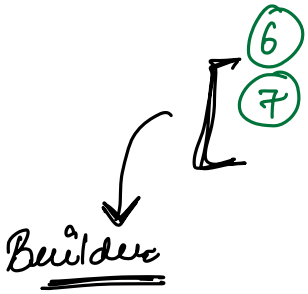
1. parking lot management system.
2. persist data ? No
3. input : Hardcode.

Req Gathering — Structure + User Journey

1. multiple levels / floors
2. different entry & exit gates
3. different parking slots on floors. for diff types of vehicles
   - Vehicle Type
   - Vehicle Type 2W.



4. A ticket is going to be generated at the entry gate.
5. slot is assigned at the time of entry.
   - a configurable → nearest slot / farthest slot
   - random slot allocation



Payment will happen at the exit gate

Fee calculation : dynamic.

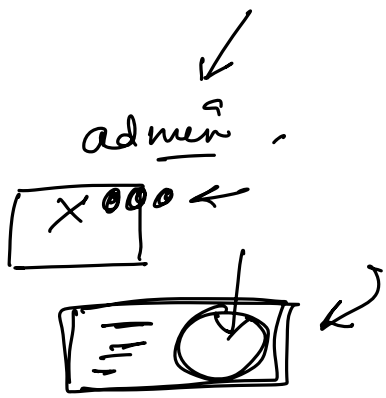
- Weekend Fee
- Week Day Fee
- Festival Fee.

(8) different modes of payment:
cash / card / online

↓

Assume that a 3P vendor will be used, just need to store the ref number.

Additional Features



Admin

(1) Frontend ← Operator

↓

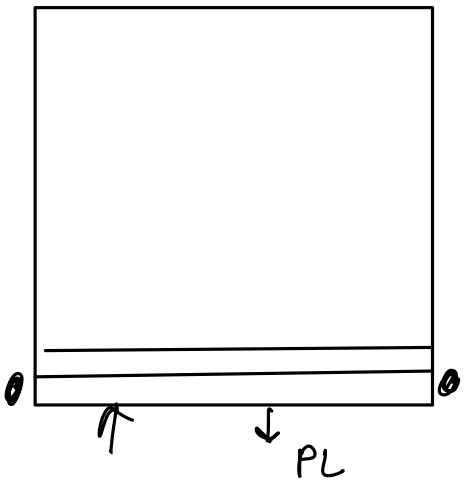
(2) pre-booking
(3) Real db
(4) Rest API
(5) weekly / monthly plans : subscription
(6) Reserved parking.
(7) Car Service -
(8) Advertisment
(9) Discount Coupon
(10) Support features.

Amazon
Microsoft
}

class diagram → 15 mins (10:11)

visualise

- Structure
- User Journey



ParkingLot

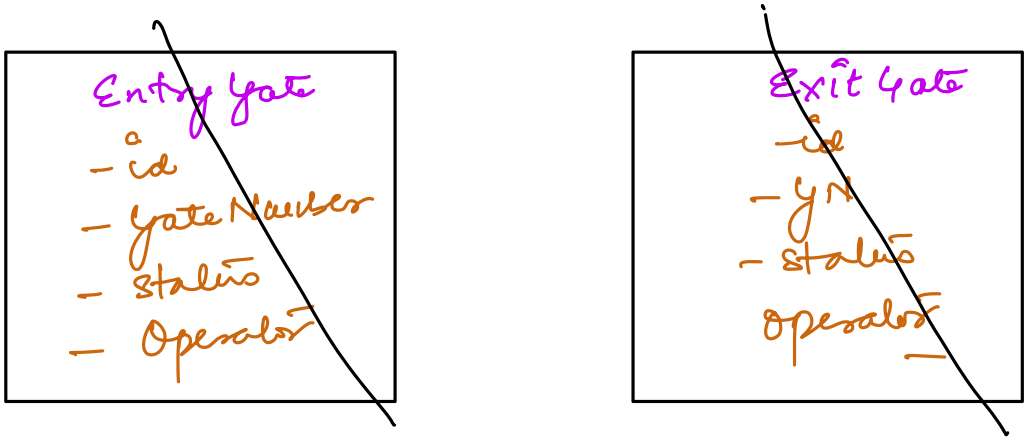
- id
- floors → typevehicap
- capacity
- EntryGates : List
- ExitGates "
- address
- allowedVehicleTypes

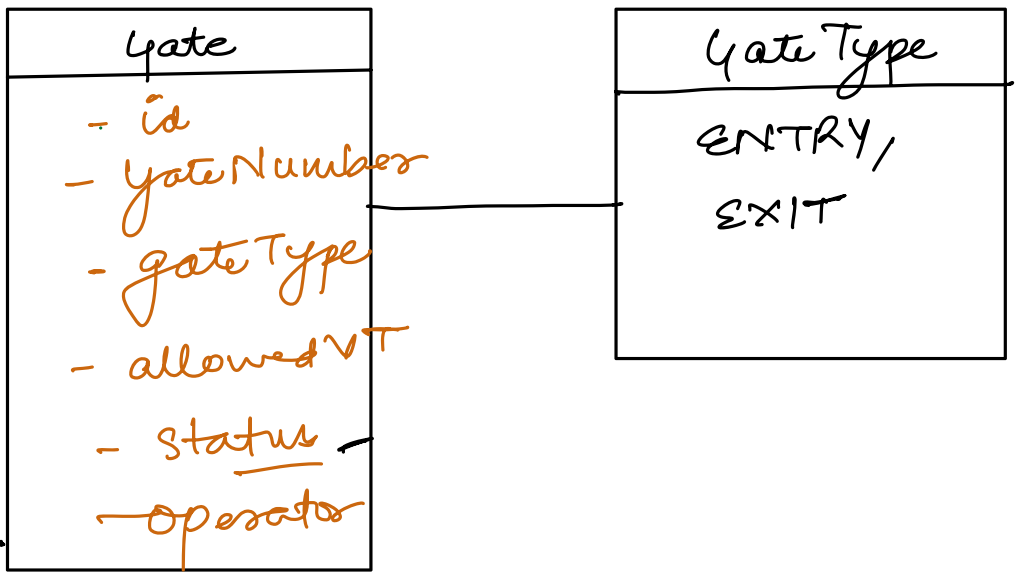
VechicleType

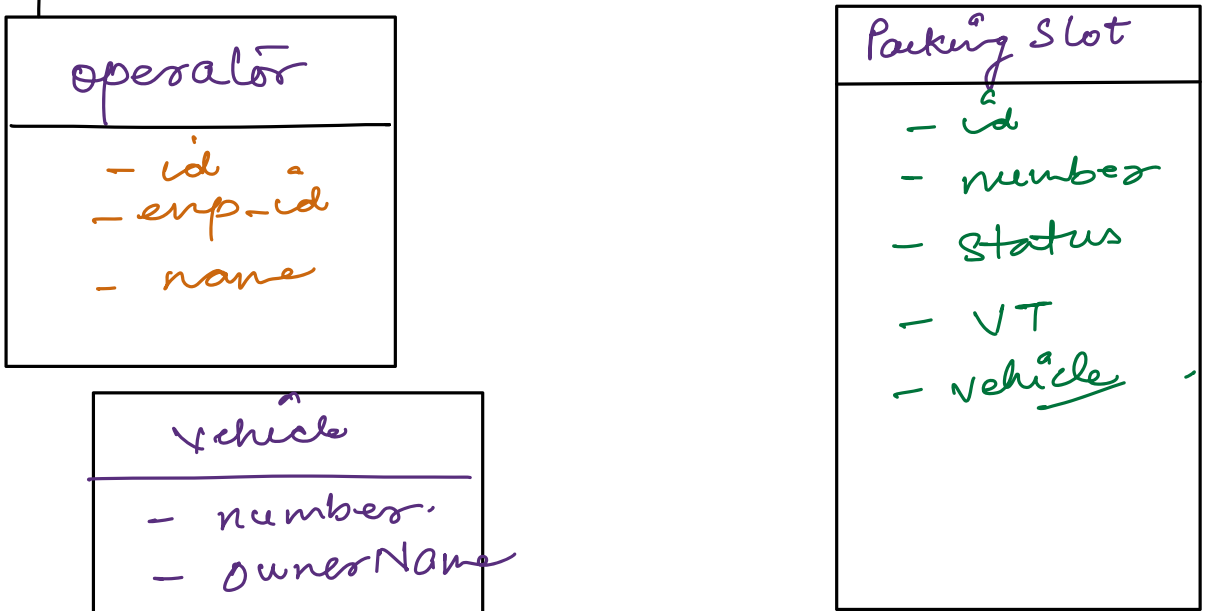
BIKE,
CAR,
BUS,
...

ParkingFloor

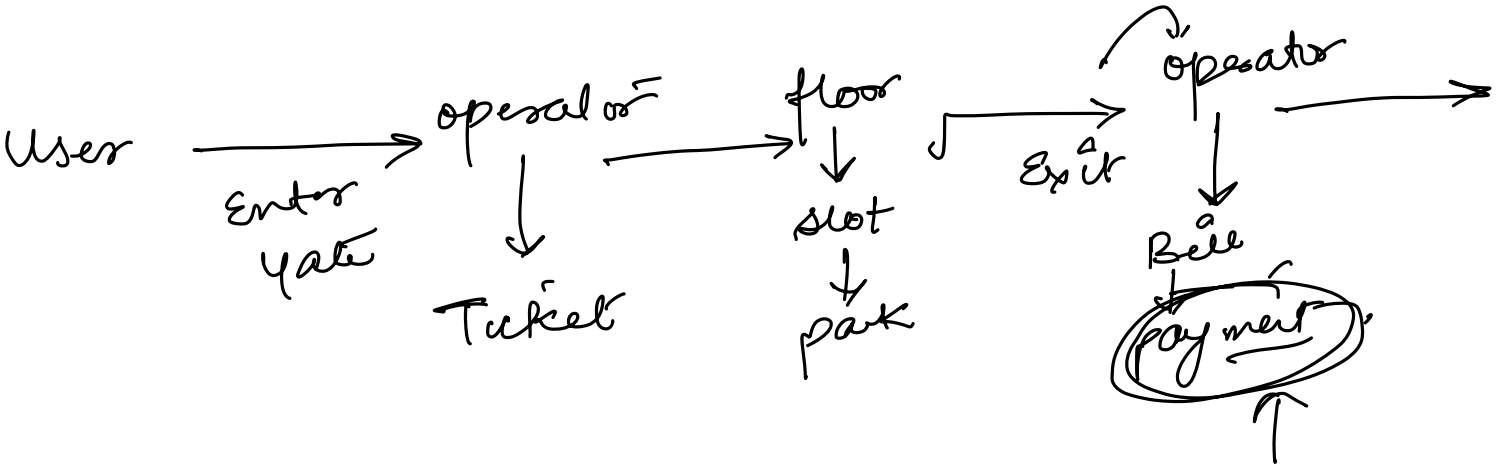
- id → db.
- floorNumber 1A, 1B
- capacity
- allowedVechicleTypes : List<VechicleType>
- parkingSlots : List


Entry Gate
- id
- gateNumber
- status
- Operator
Exit Gate
- id
- gN
- status
operator


Gate
- id
- gateNumber
- gateType
- allowedVT
- status
- operator
Gate Type
ENTRY/
EXIT


operator
- id
- emp_id
- name
Parking Slot
- id
- number
- status
- VT
- vehicle

vehicle
- number
- ownerName
- type

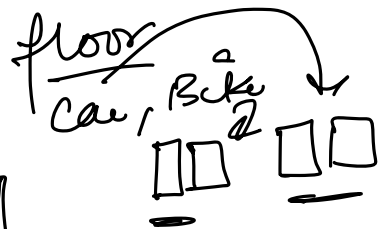


Ticket
- id - EntryTime - gate - Operator - ParkingSlot - Vehicle - Floor

Bill
- id - Ticket - ExitTime - gate - Operator - amt - payment

Payment
- mode - amt - time - status - refNumber

Parking lot
Parking floor
Gate
Parking slot
Vehicle
Token
Bill
Payment
Operator



HW: ① schema design
② code Models.

LLD 2 : Mock ⟶ LLD 1

8-10
OOPS
MT
Stream

1) Parking lot class dia ✓
schema design ✓
2) restraunt - class diagr
3)