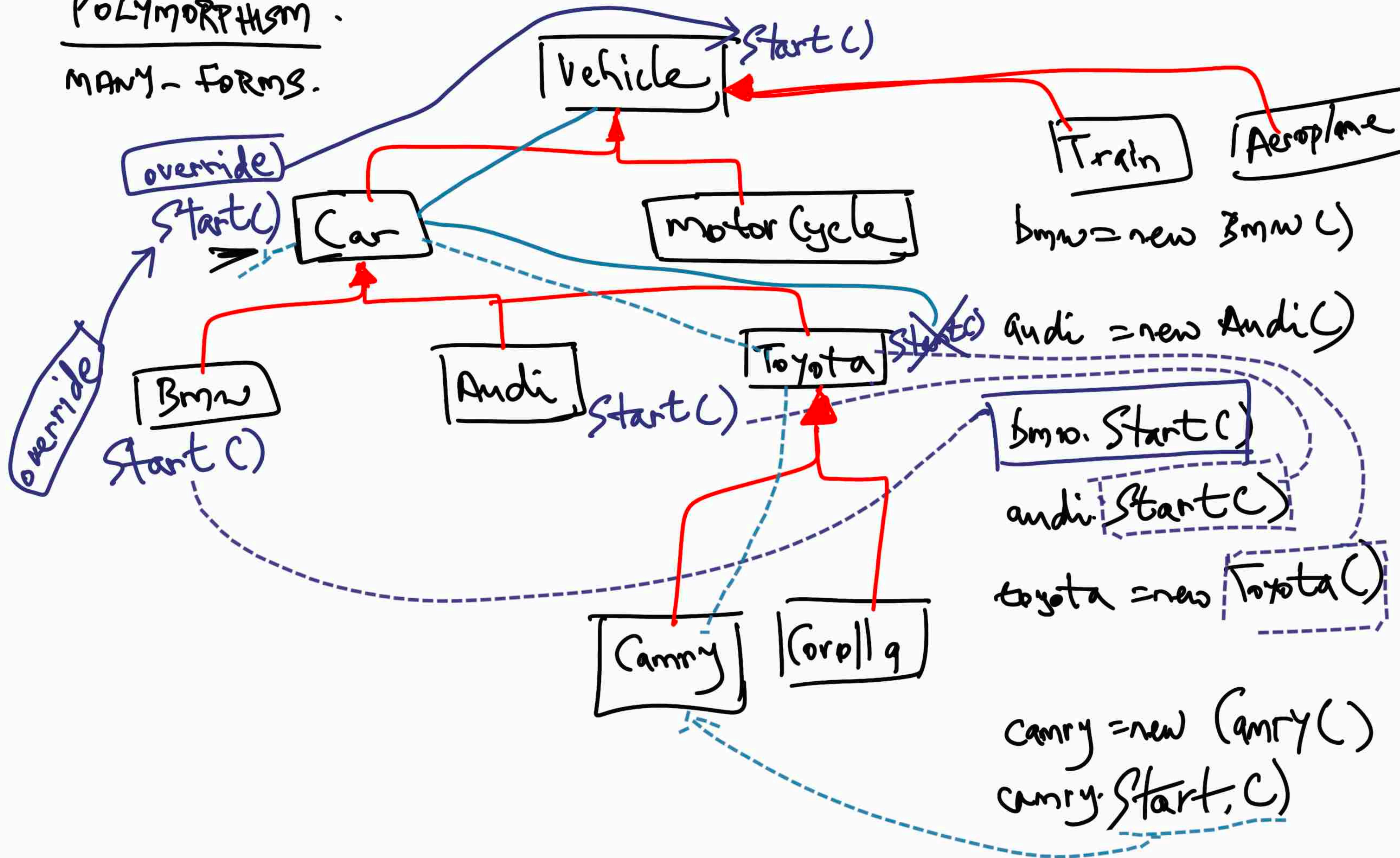
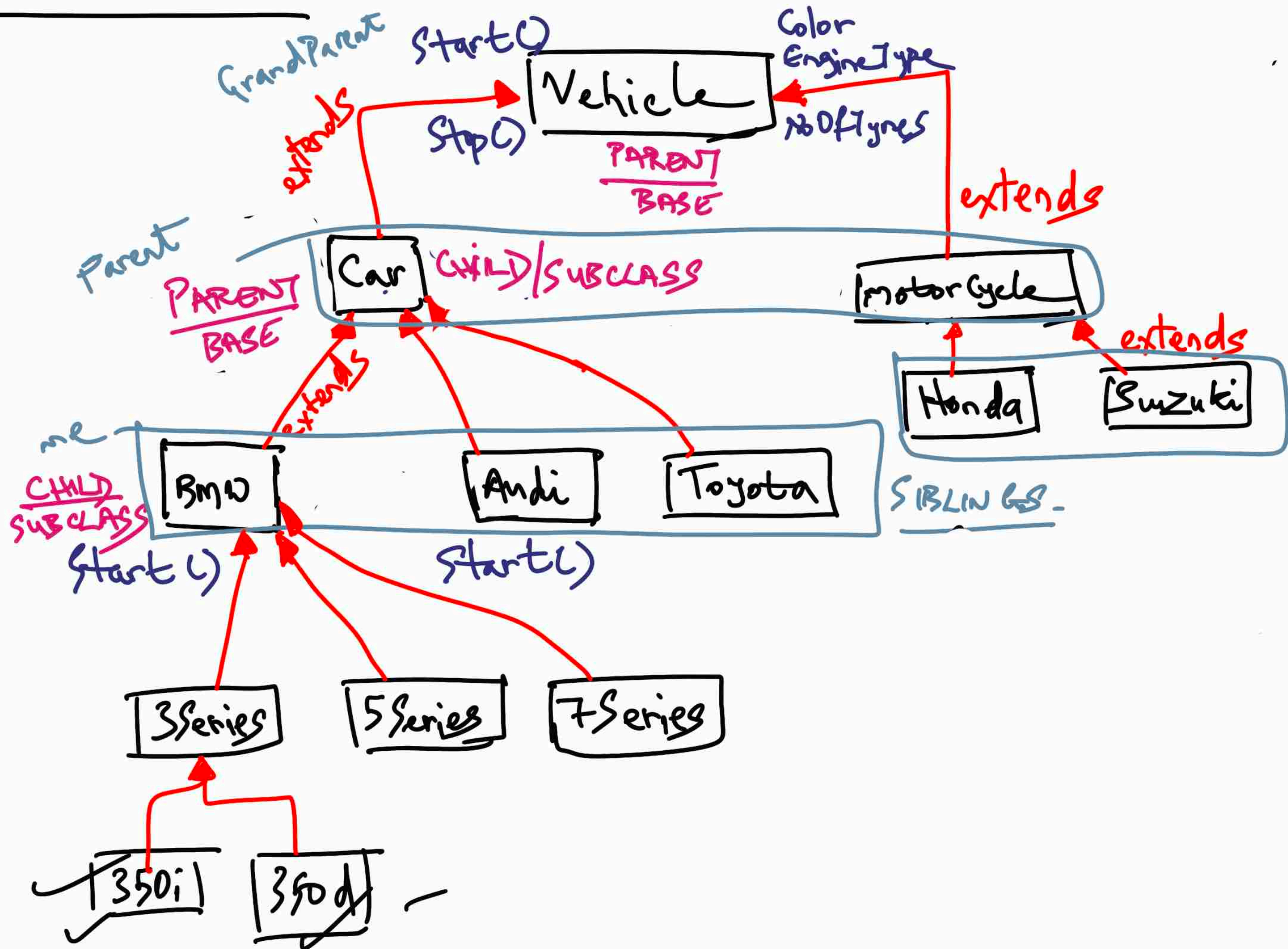


POLYMORPHISM.
MANY - FORMS.



INHERITANCE



Start Car()
Stop Car()

Bmw

Color
Engine Type
Tyres

Start Audi()
Stop Audi()

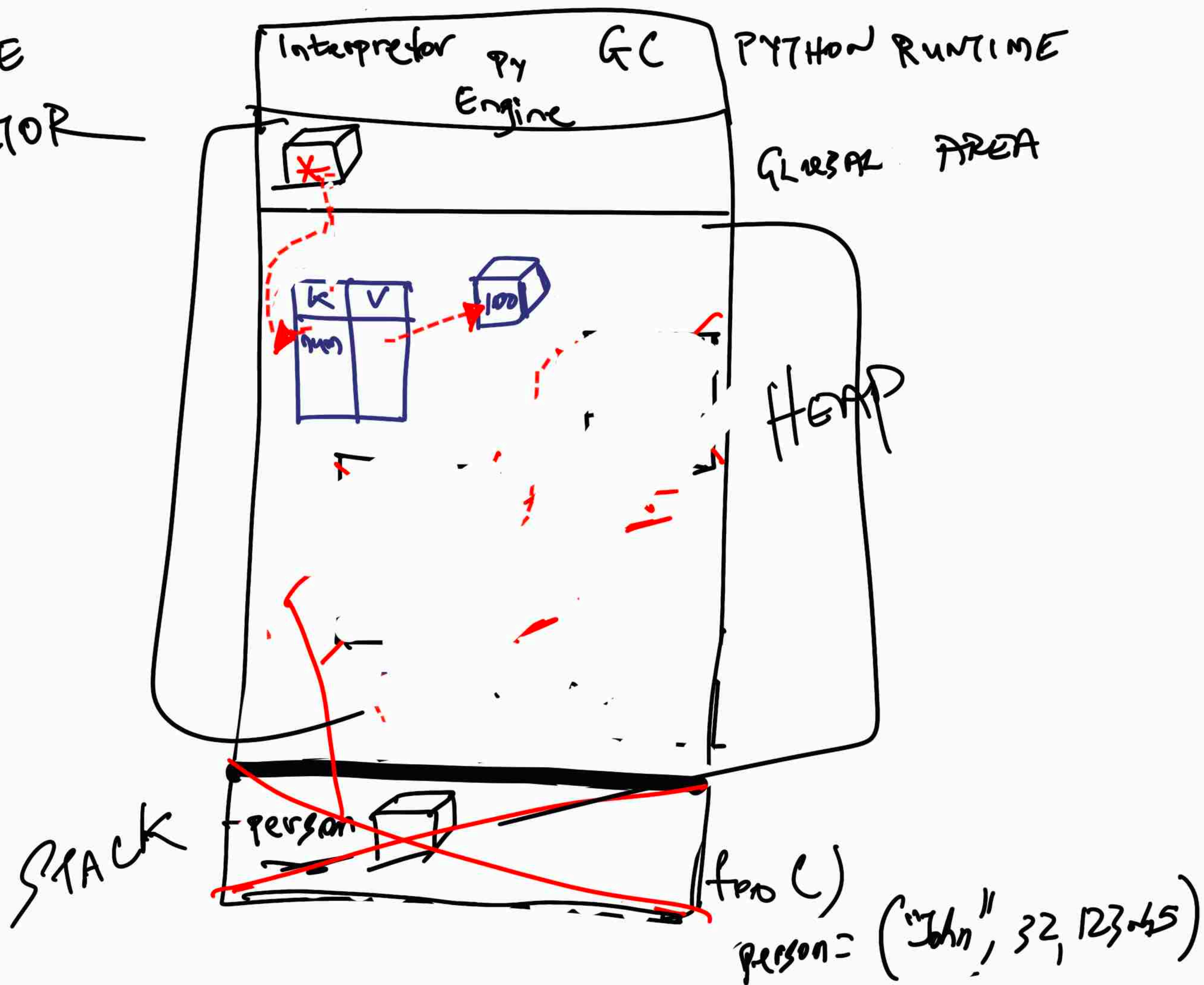
Audi

Color
Engine
No of Tyres

```
if ("audi")  
    var car = new Audi();  
else if ("Bmw")  
    car = new BMW();
```

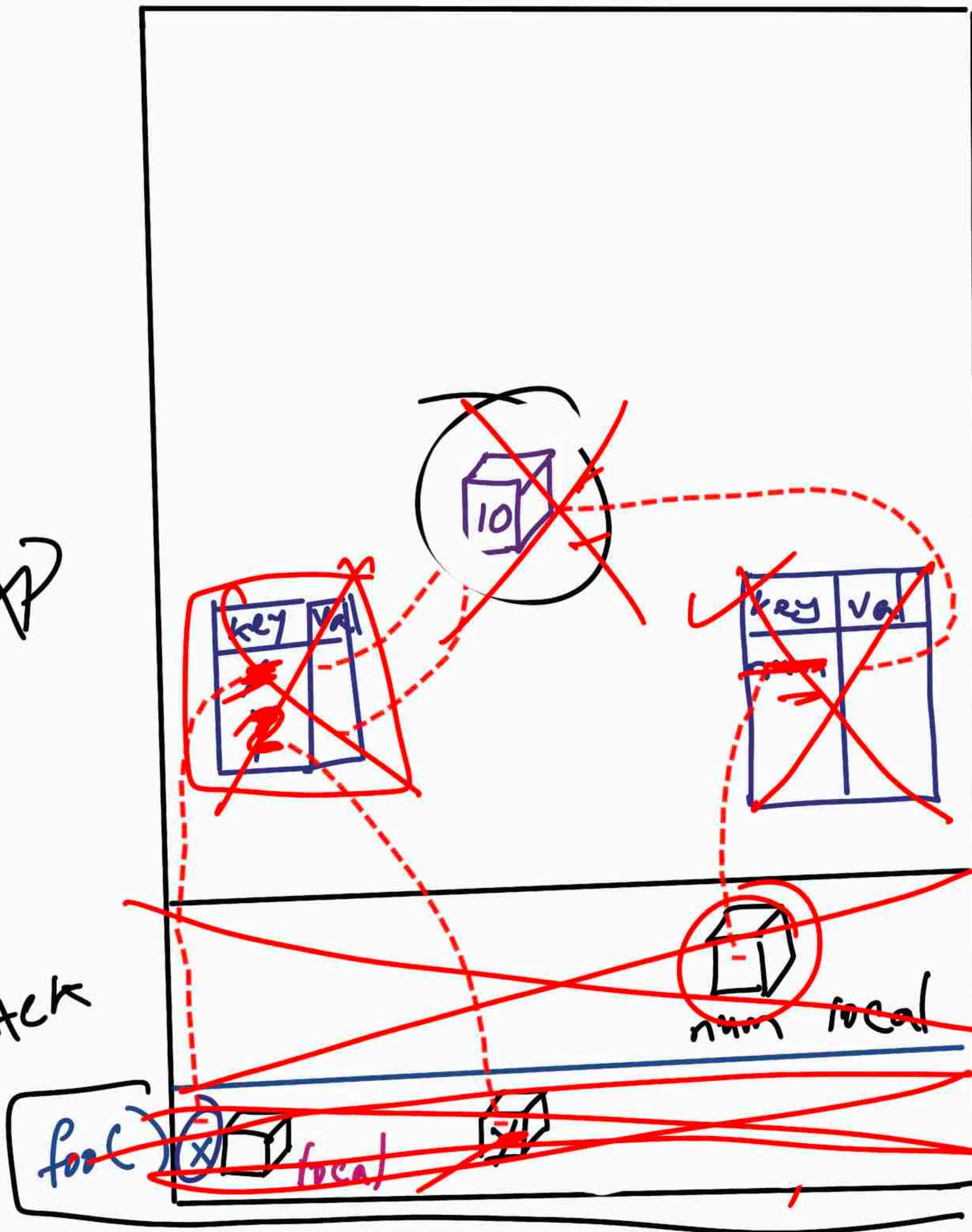
```
if ("audi")  
    car.startAudi();  
else if ("Bmw")  
    car.startCar();
```

GC = GARBAGE
COLLECTOR



HEAP

STACK



Ø

foobar()
num = 10

X = 10
Y = 10

PRODUCTS.

PK Id	Description
101	Pen
102	Pencil
103	Eraser

UNIQUE

NORMALIZATION

REFERENTIAL INTEGRITY

Orders

PK order Id	order Date	Customer Id	Product Id
2001	----	501	101
			102
			103

Order Details

PK Id	FK Order Id	FK Product Id
1	2001	101
2	2001	102
3	2001	103

Banking Txn.

ASMS-

(1234)

\$5000 → Balance
\$250

JOHN-

8654

\$6000 → Balance
\$250

① WITHDRAW ✓

② DEPOSIT ✗

New Balance

✓ \$4750

✓ ~~\$6250~~ \$6,000

✗ RECONCILIATION

TXN

UPDATE
INSERT
DELETE

END

STATE

1) ALL TXNS SHOULD SUCCEED.

2) ALL TXNS SHOULD FAIL

SQL SERVER

BEGIN TRANSACTION

UPDATE (W)

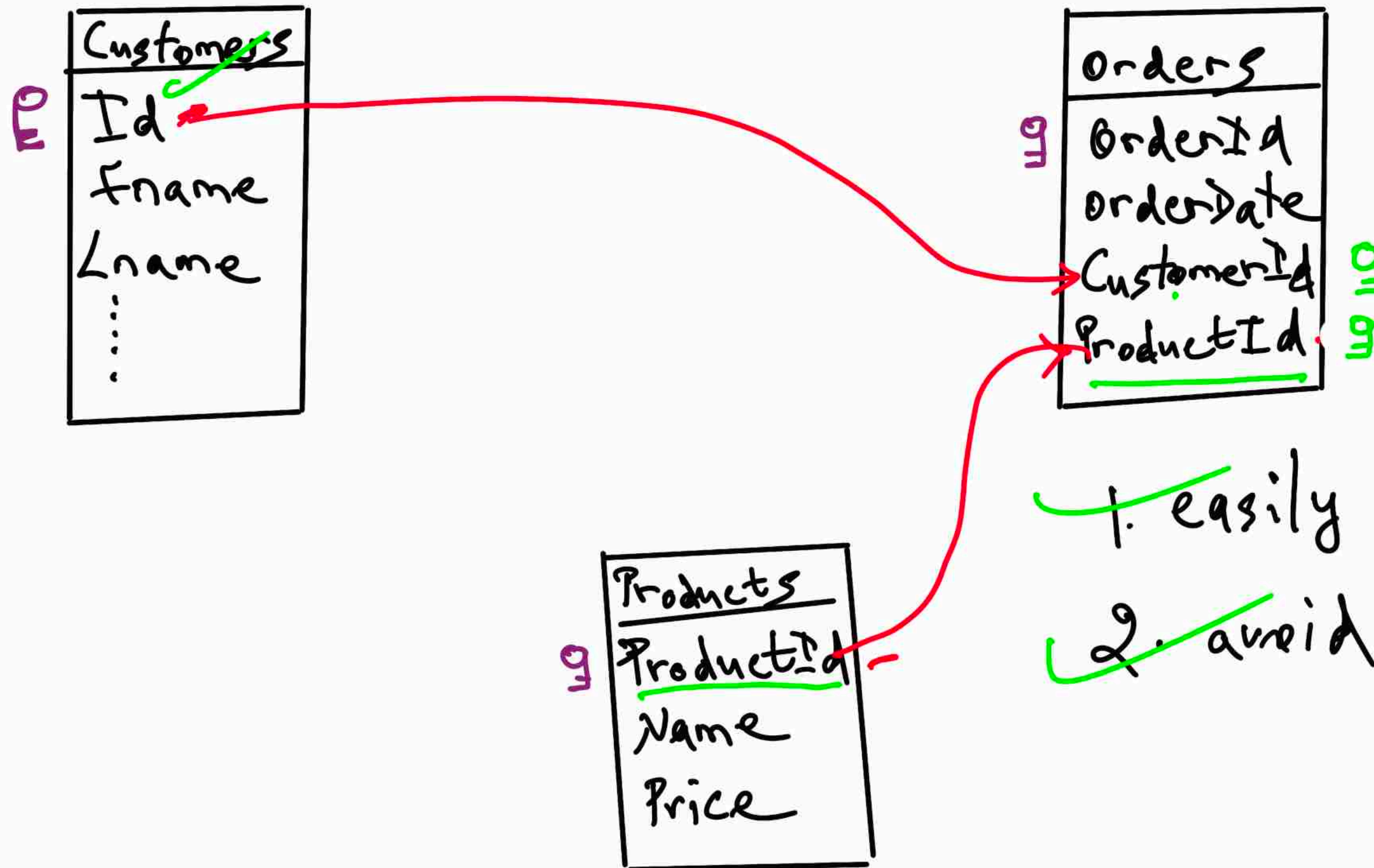
UPDATE (D)

COMMIT
IF ERROR THEN
ROLLBACK

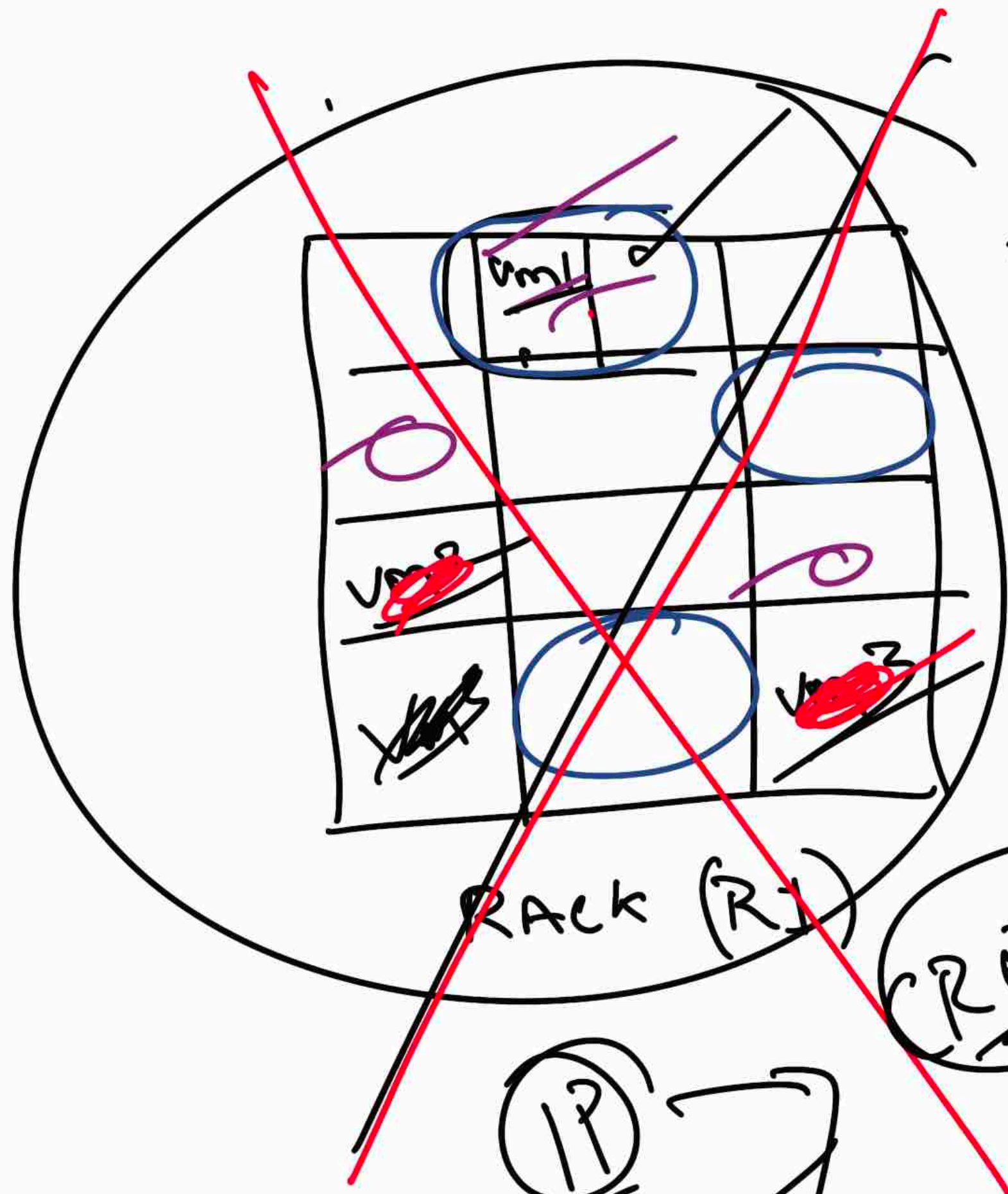
END

PRIMARY KEY 9
FOREIGN KEY.

REFERENTIAL
INTEGRITY.

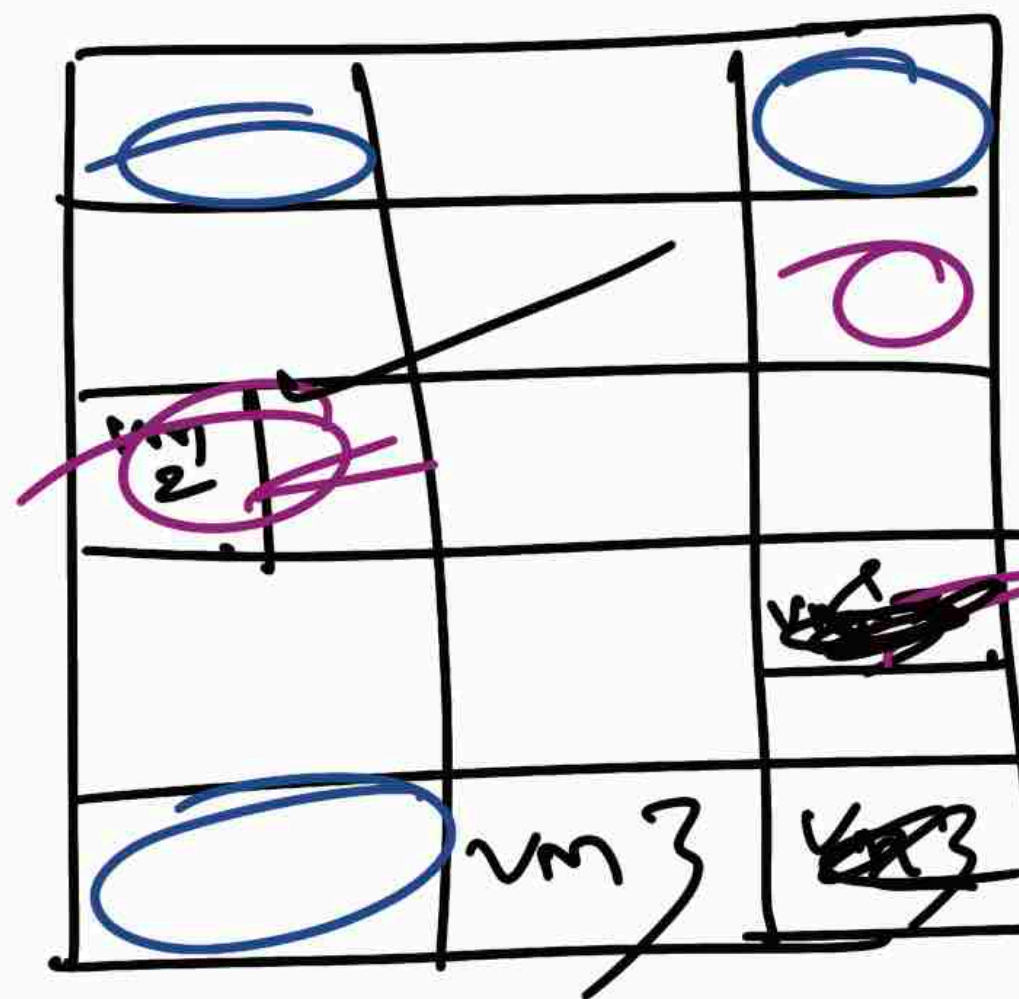
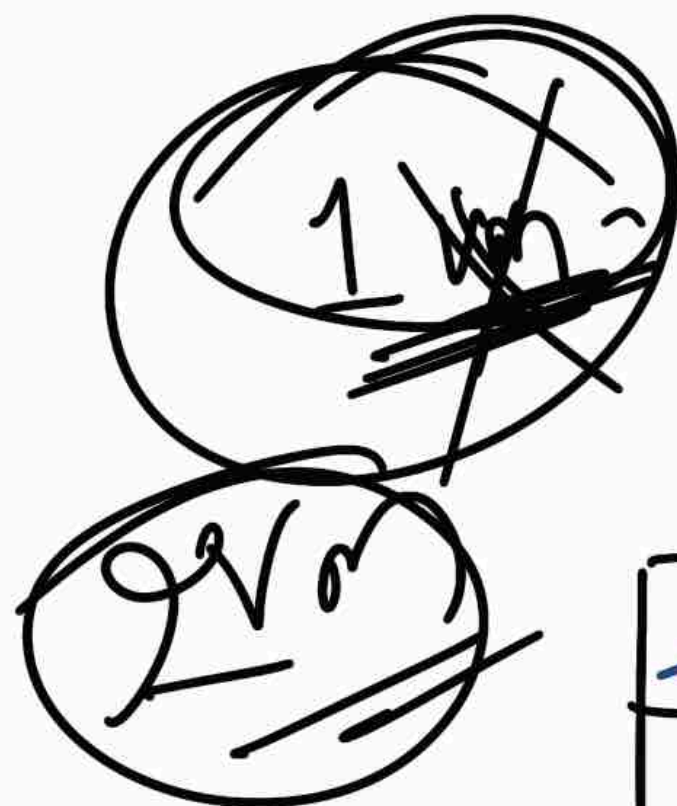


1. easily query data
2. avoid invalid

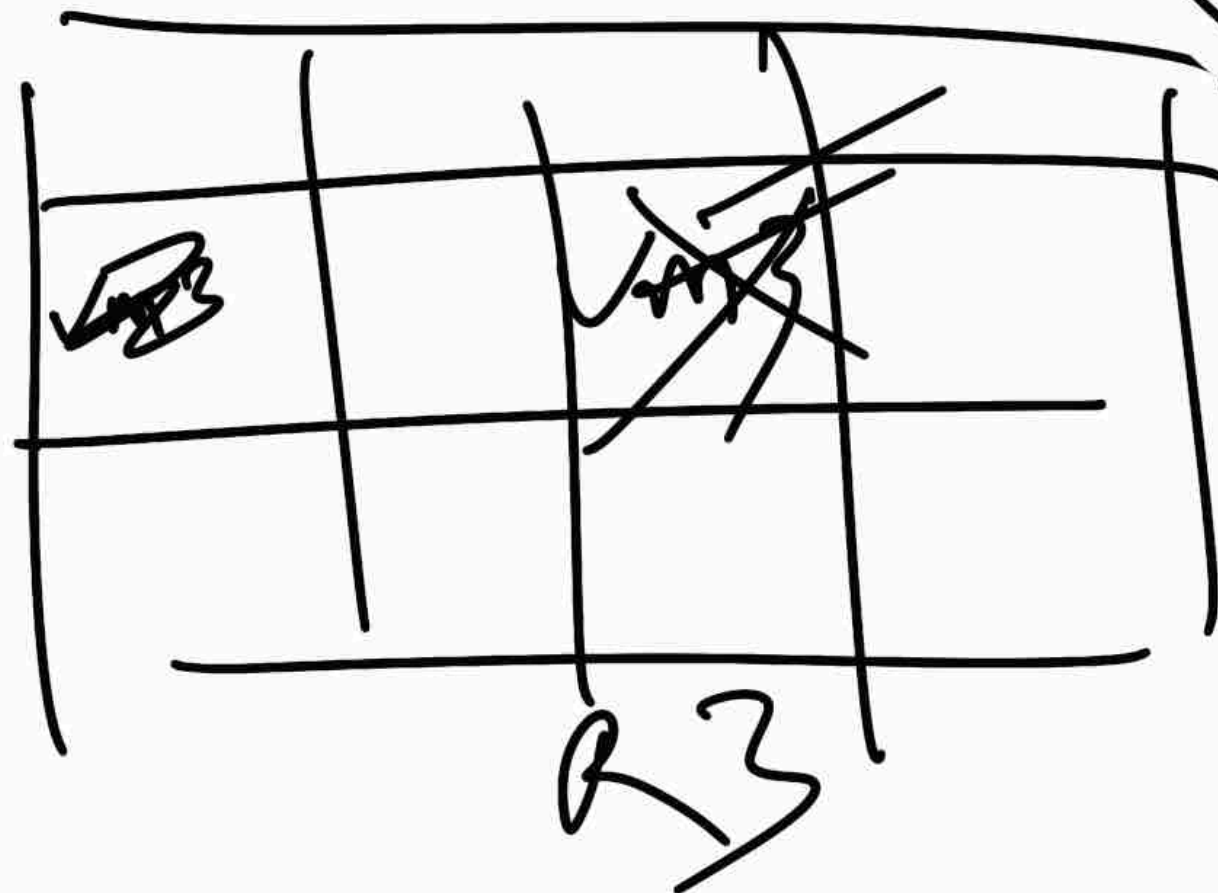


RACK (R1)

CREDS



R2



R3

REGION

3 VMs

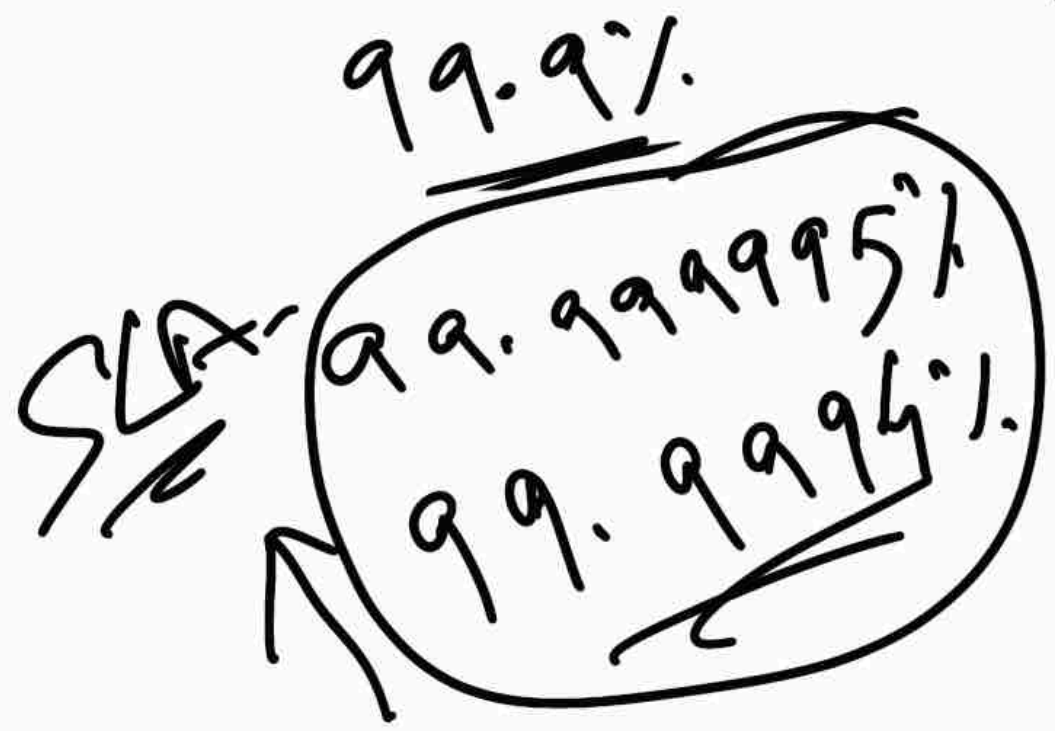
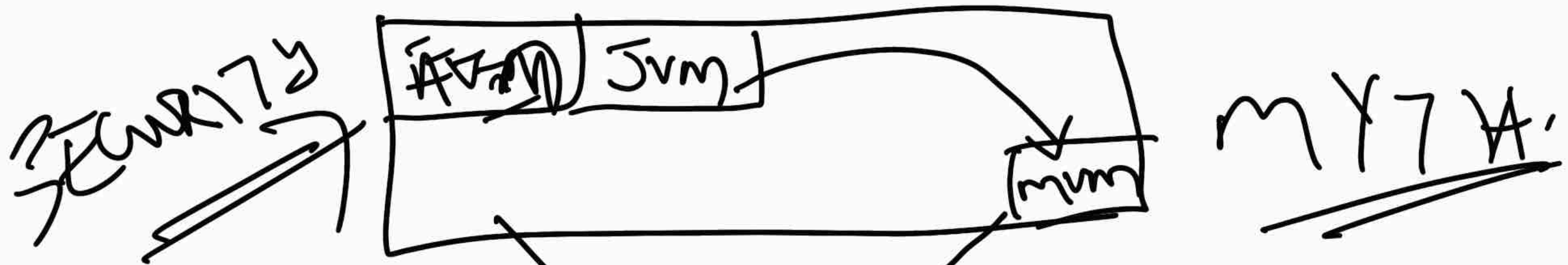
UPDATES
PATCHES

~~SLA~~

DR

DISASTER
RECOVERY

FAULT
TOLERANCE.



DATA CENTERS

CapEx vs OpEx

AWS EMR

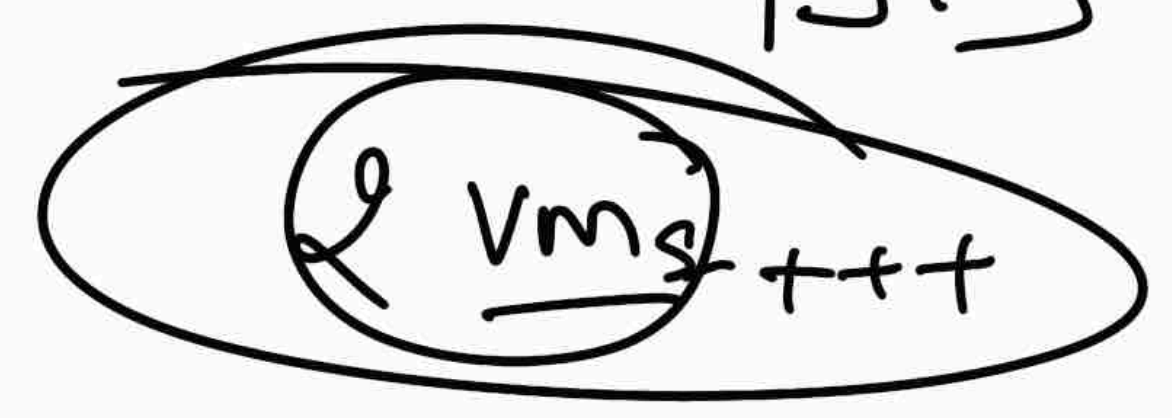
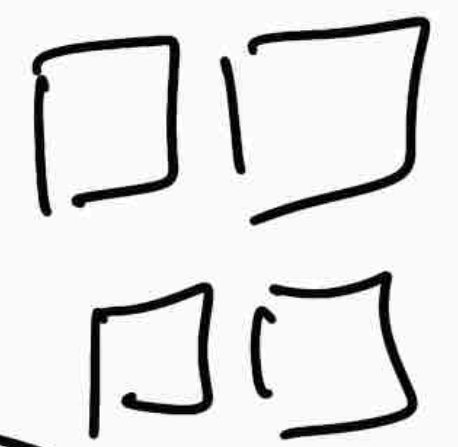
RACKS

PAY FOR WHAT YOU USE

INTERNET.

SHARING

STANDARDS

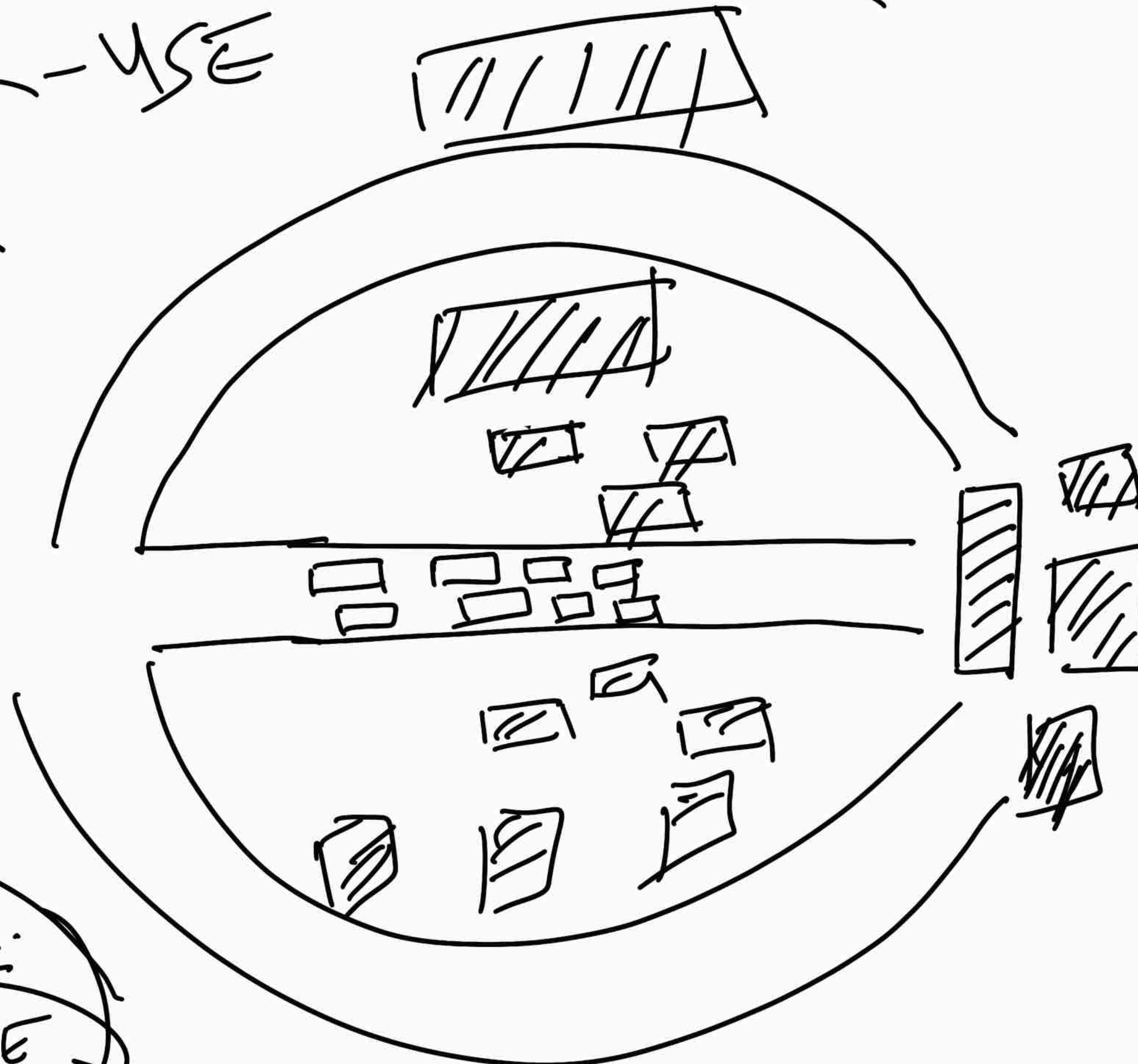


1 min.

Pay Per - Use

Cap Ex

Op Ex



5k 10k

ALT. INFRA.

PUBLIC TRANSPORT.

CAR POOLING

ENTERPRISE.
ON-PREMISE

INTERNET.
(ROUT)

SCALING
STAR WARS