-------to list all faculties and rooms which are not allocated as well as which are allocated

select f.fid, fname, cname, rname from faculty f left join course c on f.fid=c.fid left join room r on c.rid=r.rid union select f.fid, fname, cname, rname from faculty f right join course c on f.fid=c.fid right join room r on c.rid=r.rid

----list all faculties and rooms which are not allocated to any course

select fname, cname,'' rname”,cname -> from faculty f left join course c on c.fid=f.fid -> where cname is null -> union ->

-> select '' fname'', cname, rname, cname -> from room r left join course c on r.rid=c.rid -> where cname is null;

--------to list all the view in mysql

select Table\_name from information\_schema.Tables where table\_type like ‘view’ and table\_schema=’iacsdedacmay21’

create view myview

as

select deptno,max(sal),min(sal),avg(sal),count(\*)

from emp

where job=’analyst’

group by deptno

having count(\*) >=2;

select \* from myview

create view managerview as

select \*

from emp

where job=’Manager’

with read only;

---------materialized

budgeting purpose

data analytics decision

bournvita--- order

bournvita 9000

create materialized view myview

as

select \*

from product

where type=’consumable’

select \* from myview

--------- how to find first 12 record in mysql

uses limit clause

select \*

from emp

limit 12;

--------- how to find 12th record in mysql

select \*

from emp

limit 11,1;

--------to display employee which are highly paid

select \*

from emp

order by sal desc

limit 1;

--------to display employee which is 3rd highest

select \*

from emp

order by sal desc

limit 2,1

select \*

from emp

where sal=(select max(sal)

from emp)

select deptno,max(sal)

from emp

group by deptno

order by max(sal)

select max(sal)

from emp;

---------- to find nth highest in oracle

**Select sal**

**From emp e1**

**Where n-1=(select count(distinct(sal))**

**from emp e2**

**where e1.sal>e2.sal)**

**DCL---data control language**

**------to assign previleges**

**grant <previleges> on <tablename> to <username>@<server ip>**

**all------- all previleges**

**\* ------- all employee**

**grant all on noticetab to ‘\*’@’localhost’**

**---to remove previleges**

**revoke <previleges> on <tablename> from ‘user’@’localhost’**

|  |  |
| --- | --- |
| **Select** | **Delete** |
| **Insert** | **Update** |
| **Index** | **Create** |
| **Alter** | **Drop** |
| **All** | **Grant option** |

grant select,insert on category to 'u1'@'localhost' with grant option

DQL,DML,TCL,DCL,DDL,views,indexes,temporary table,limit---- top n analysis --- SQL

PL-SQL -----procedural language

if statement, loops, variable declaration,cursors, exception handling, procedures,functions,triggers

Normalization

1NF,2NF,3NF,BCNF (Boyce code NF)

to divide the data into multiple tables to reduce redundancy is called as nomaliztion

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Custid | Cname | address | Accno | Balance | Type | relmgr |
| 1 | Kishori | Aundh | 1 | 12345 | Saving | AA |
| 1 | Kishori | Baner | 2 | 123451 | Current | AA |
| 1 | Kishori | Baner | 3 | 12345 | demat | AA |
| 2 | Rajan | Aundh | 4 | 1111111 | Saving | BB |
| 3 | Revati | Aundh | 11 | 444444 | Saving | BB |
| 4 | Sachin | Deccan |  |  |  |  |

insertion anamoly ------

updation anamoly

deletion anamoly

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Custid | Accno | Balance | Type | relmgr |
| 1 | 1 | 12345 | Saving | AA |
| 1 | 2 | 123451 | Current | AA |
| 1 | 3 | 12345 | demat | AA |
| 2 | 4 | 1111111 | Saving | BB |
| 3 | 11 | 444444 | Saving | BB |
|  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| Custid | Cname | address |
| 1 | Kishori | Baner |
| 2 | Rajan | Aundh |
| 3 | Revati | Aundh |
| 4 | Sachin | Deccan |
| 5 | Sonali | deccan |
|  |  |  |

insertion anamoly , updation anamoly,deletion anamoly these drawbacks will be removed

and redundancy will be also removed.

Normalization------Data modelling, E-R diagram

1. 1NF --- if every row and column in the table contains atomic value

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Studentid | Sname | subid | Subject name | marks | Phone number |
| 1 | Aditya | 15 | Java | 99 | 1234,345,678 |
| 1 | Aditya | 12 | Dbms | 98 | 1234,345,678 |
| 1 | Aditya | 13 | Web | 97 | 1234,345,678 |
| 2 | Akash | 15 | Java | 95 | 111,222 |
| 2 | Akash | 12 | dbms | 94 | 111,222 |
| 2 | Akash | 13 | web | 91 | 111,222 |
| 3 | Ajit | 14 | Java | 99 | 1234,345,678 |
|  |  |  |  |  |  |

in the table column phone number contains more than one value, so the table is not in 1 NF.

phone number

|  |  |  |
| --- | --- | --- |
| Studentid | Phone number | |
| 1 | 1234 | |
| 1 | 345 | |
| 1 | 678 | |
| 2 | 111 | |
| 2 | 222 | |
| 3 | 1234 | |
| 3 | 345 | |
| 3 | 678 | |
| Studentid | Sname | subid | | Subject name | marks |
| 1 | Aditya | 15 | | Java | 99 |
| 1 | Aditya | 12 | | Dbms | 98 |
| 1 | Aditya | 13 | | Web | 97 |
| 2 | Akash | 15 | | Java | 95 |
| 2 | Akash | 12 | | dbms | 94 |
| 2 | Akash | 13 | | web | 91 |
| 3 | Ajit | 14 | | Java | 99 |

To check the table is in 2 NF or Not

1. The tables should be in 1 NF
2. The table should not have any partial dependency.

What is partial dependency

if any non prime attribute(the attribute which is not part of candidate key) is dependent on portion of the candidate key

candicate key---minimal set of attributes that identify the row uniquely and which may become a primary key

non prime attribute --🡪 subject name, marks, student name

prime attributes--🡪 studenid,subjectid

studenid+subjectid---🡪marks

studentid--🡪sname

subjectid-🡪 subject name

|  |  |  |
| --- | --- | --- |
| Studentid | subid | marks |
| 1 | 15 | 99 |
| 1 | 12 | 98 |
| 1 | 13 | 97 |
| 2 | 15 | 95 |
| 2 | 12 | 94 |
| 2 | 13 | 91 |
| 3 | 14 | 99 |

|  |  |
| --- | --- |
| subid | Subject name |
| 15 | Java |
| 12 | Dbms |
| 13 | Web |
| 14 | Java |

|  |  |
| --- | --- |
| Studentid | Sname |
| 1 | Aditya |
| 2 | Akash |
| 3 | Ajit |

is it in 1 NF, is it in 2NF if not then convert it into 2 NF

Proj Proj Proj Empno Ename Grade Sal Proj Alloc

Code Type Desc scale Join Date Time

001 APP LNG 46 JONES A1 5 12/1/1998 24

001 APP LNG 92 SMITH A2 4 2/1/1999 24

001 APP LNG 96 BLACK B1 9 2/1/1999 18

004 MAI SHO 72 JACK A2 4 2/4/1999 6

004 MAI SHO 92 SMITH A2 4 5/5/1999 6

002 APP LNG 72 JACK A2 4 12/1/1998 12

example 2 --- is the given table in 2 NF if not convert it

* **Orderno**
* **Orderdate**
* **Itemno**
* **Qty**
* **Price**
* **Cname**
* **Custno**
* **Email**
* **Orderamt**
* **Salespersonno**
* **Salespersonname**
* **Locationid ----------location from where item dispatched**
* **Location name**

**One customer can place many order**

**One order contains many items**

**One order will be managed by many salesperson**

**One order belong to one customer**

**One order can be dispatched from different location**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Order no** | **orderdate** | **Item no** | **qty** | **price** | **cname** | **custno** | **email** | **amt** | **Salesperson no** | **sname** | **locid** | **lname** |
| **1** | **8 jun** | **1** | **1** | **1000** | **gayatri** | **1** | **g.cv** | **2050** | **100** | **x** | **11** | **delhi** |
| **1** | **8 jun** | **2** | **2** | **500** | **gayatri** | **1** | **g.cv** | **2050** | **101** | **y** | **11** | **delhi** |
| **1** | **8 jun** | **3** | **1** | **50** | **gayatri** | **1** | **g.cv** | **2050** | **100** | **y** | **12** | **mumbai** |
| **2** | **9 jun** | **1** | **2** | **900** | **yogesh** | **2** | **y.v** | **1060** | **102** | **z** | **14** | **Gujarath** |
| **2** | **9 jun** | **5** | **1** | **60** | **yogesh** | **2** | **y.v** | **1060** | **102** | **z** | **14** | **Gujarath** |
| **3** | **9jun** | **5** | **1** | **60** | **sagar** | **3** | **s.v** | **4200** | **100** | **x** | **100** | **x** |
| **3** | **9jun** | **10** | **2** | **70** | **sagar** | **3** | **s.v** | **4200** | **102** | **z** | **14** | **Gujarath** |
| **3** | **9jun** | **2** | **4** | **1000** | **sagar** | **3** | **s.v** | **4200** | **100** | **x** | **100** | **x** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

student

one student can have multiple emails, one student can take admission for only one course

(studid name adresss emails coursid cname cdescription)

since email contains multiple emails in one column and one row so it not in 1NF

(studid name adresss coursid cname cdescription)

(studid email)

Is this table in 2 NF

1. is it 1NF------ yes
2. there should not be any partial dependency

no prime attribute should be dependent on portion of the candidate key

studentid----- candicate key

since there is only one column in the primary key

so all non prime attributes are fully dependent on candidate key then the table is in 2NF

To check whether it is in 3 NF

1. the table should be in 2NF
2. there should not be any transitive dependency

x---🡪 y-----🡪z

studid-----🡪courseid-------🡪cname

studid-----🡪courseid-------🡪cdescription

sid name adresss courseid

1 sanjay aaaa

2 ashu bbb

3 sanjay xxxxx

(courseid, cname,cdesc)

student data

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Studentid | Sname | State | cid | cname | cdesc | City | Email | Phone |
| 1 | Rajesh | Bihar | 100 | java | fjhj | Patna | abc@dfg | 1111,2222,333 |
| 1 | Rajesh | Bihar | 200 | C++ | fjhj | Patna | abc@dfg | 1111,2222,333 |
| 1 | Rajesh | Bihar | 300 | python | fjhj | Patna | abc@dfg | 1111,2222,333 |
| 2 | Amit | Maharashtra | 100 | java | fjhj | Pune | abc@dfg | 1111,2222,333 |
| 2 | Amit | Bihar | 200 | C++ | fjhj | Pune | abc@dfg | 1111,2222,333 |
| 2 | Amit | Bihar | 300 | python | fjhj | Pune | abc@dfg | 1111,2222,333 |
| 3 | Deepak | Maharashtra | 100 | java | fjhj | Mumbai | abc@dfg | 1111,2222,333 |
| 3 | Deepak | Maharashtra | 200 | C++ | fjhj | Mumbai | abc@dfg | 1111,2222,333 |
|  |  |  |  |  |  |  |  |  |

my table is not in 1NF

|  |  |
| --- | --- |
| Studentid | Phone |
| 1 | 1111 |
| 1 | 2222 |
| 1 | 333 |
| 2 | 11111 |
| 2 | 22221 |
| 2 | 3331 |
| 3 | 11112 |
| 3 | 2223 |
| 3 | 3456 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Studentid | Sname | State | cid | cname | cdesc | City | Email |
| 1 | Rajesh | Bihar | 100 | java | fjhj | Patna | abc@dfg |
| 1 | Rajesh | Bihar | 200 | C++ | fjhj | Patna | abc@dfg |
| 1 | Rajesh | Bihar | 300 | python | fjhj | Patna | abc@dfg |
| 2 | Amit | Maharashtra | 100 | java | fjhj | Pune | abc@dfg |
| 2 | Amit | Bihar | 200 | C++ | fjhj | Pune | abc@dfg |
| 2 | Amit | Bihar | 300 | python | fjhj | Pune | abc@dfg |
| 3 | Deepak | Maharashtra | 100 | java | fjhj | Mumbai | abc@dfg |
| 3 | Deepak | Maharashtra | 200 | C++ | fjhj | Mumbai | abc@dfg |
|  |  |  |  |  |  |  |  |

are they in 2NF

candidate key ----------studid+cid

1. is it in 1NF -------yes
2. is partial dependency there

prime attributes------sid,, cid

nonprime ------ sname,state,cname,cdesc,city,email

studid+cid-------🡪

studid------🡪 sname, state, city, email

cid-----🡪 cname, cdesc

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Studentid | Sname | State | City | Email |
| 1 | Rajesh | Bihar | Patna | abc@dfg |
| 2 | Amit | Maharashtra | Pune | abc@dfg |
| 3 | Deepak | Maharashtra | Mumbai | abc@dfg |
| 4 | Rashmi | Bihar | Patna | abc@dfg |

|  |  |  |
| --- | --- | --- |
| cid | cname | cdesc |
| 100 | java | fjhj |
| 200 | C++ | fjhj |
| 300 | python | fjhj |
|  |  |  |

|  |  |
| --- | --- |
| Studentid | cid |
| 1 | 100 |
| 1 | 200 |
| 1 | 300 |
| 2 | 100 |
| 2 | 200 |
| 2 | 300 |
| 3 | 100 |
| 3 | 200 |
|  |  |

check for 3 NF

1. are they in 2NF------yes
2. transitive dependency ------ x----🡪y----🡪z

studid---🡪city-🡪state

|  |  |  |  |
| --- | --- | --- | --- |
| Studentid | Sname | city | Email |
| 1 | Rajesh | Patna | abc@dfg |
| 2 | Amit | Pune | XXX@dfg |
| 3 | Deepak | Pune | YYY@dfg |
| 4 | Rashmi | Mumbai | ZZZZ@dfg |
|  | Rajesh | Mumbai | AAAA@DHF |

|  |  |
| --- | --- |
| State | City |
| Bihar | Patna |
| Maharashtra | Pune |
| Bihar | bvcvcvxczvxc |
| Maharashtra | Mumbai |

check the table in 4 NF (BCNF)

1. table should be in 3NF
2. for dependency x->y then x should be super key

x cannot be non prime attribute if y is prime attribute

one student can take many courses

one faculty can teach only one course

|  |  |  |
| --- | --- | --- |
| Studid | Subject | faculty |
| 1 | Java | Rashmi |
| 1 | C++ | Deepa |
| 2 | Java | Rajan |
| 2 | DBMS | Tejas |
| 3 | java | Rashmi |

fname--🡪subject

|  |  |  |
| --- | --- | --- |
| fid | Subject | faculty |
| 1 | Java | Rashmi |
| 2 | C++ | Deepa |
| 3 | Java | Rajan |
| 4 | DBMS | Tejas |

|  |  |
| --- | --- |
| Studid | fid |
| 1 | 1 |
| 1 | 2 |
| 2 | 3 |
| 2 | 4 |
| 3 | 1 |

many doctors in the hospital

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| patientid | pname | Address | date | time | drid | dname | speciality | receptionist |
| 1 | Rishabh | Aundh | 12 july | 9:00am | 100 | Sanjay | Orthopedic | Ashu |
| 1 | Rishabh | Aundh | 12 july | 2:00pm | 200 | Archana | neuro | Ashu |
| 1 | Rishabh | Aundh | 13 july | 2:00pm | 200 | Archana | neuro | Deepa |
| 1 | Rishabh | Aundh | 13 july | 4:00pm | 200 | Archana | neuro | Deepa |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

candidate -----patiid+drid+date+time

functional dependencies

table is in 1NF------yes

we want to find is it in 2NF

prime attribute----🡪 patiid,drid,date,time

non prime attribute---🡪 pname,dname,address,speciality, receptionist

patiid+drid+date+time-------🡪 receptionist

patid🡪 pname, address

drid---🡪 dname, speciality

date-🡪

time----🡪

patid+drid--🡪

|  |  |  |
| --- | --- | --- |
| patientid | pname | Address |
| 1 | Rishabh | Aundh |
|  |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| drid | dname | speciality |
| 100 | Sanjay | Orthopedic |
| 200 | Archana | neuro |
|  |  |  |
|  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| patientid | date | time | drid | receptionist |
| 1 | 12 july | 9:00am | 100 | Ashu |
| 1 | 12 july | 2:00pm | 200 | Ashu |
| 1 | 13 july | 2:00pm | 200 | Deepa |
| 1 | 13 july | 4:00pm | 200 | Deepa |
|  |  |  |  |  |

is it in 1 NF, is it in 2NF if not then convert it into 2 NF

one employee works on many projects

Proj Proj Proj Empno Ename Grade Sal Proj Alloc

Code Type Desc scale Join Date Time

001 APP LNG 46 JONES A1 5 12/1/1998 24

001 APP LNG 92 SMITH A2 4 2/1/1999 24

001 APP LNG 96 BLACK B1 9 2/1/1999 18

004 MAI SHO 72 JACK A2 4 2/4/1999 6

004 MAI SHO 92 SMITH A2 4 5/5/1999 6

002 App LNG 72 JACK A2 4 12/1/1998 12

is the table in 1NF ----🡪yes

is the table in 2NF --🡪

proj code+empno--🡪proj joining date,alloc time

proj code--🡪proj type,proj desc

empno->ename,grade,sal scale

Proj Proj Proj

Code Type Desc

001 APP LNG

004 MAI SHO

002 App LNG

Empno Ename Grade Sal

scale

46 JONES A1 5

92 SMITH A2 4

96 BLACK B1 9

72 JACK A2 4

empono-🡪grade-🡪sal scale

Grade Sal

scale

A1 5

A2 4

B1 9

Empno Ename Grade

46 JONES A1

92 SMITH A2

96 BLACK B1

72 JACK A2

Proj empno Proj Alloc

Code Join Date Time

001 46 12/1/1998 24

001 92 2/1/1999 24

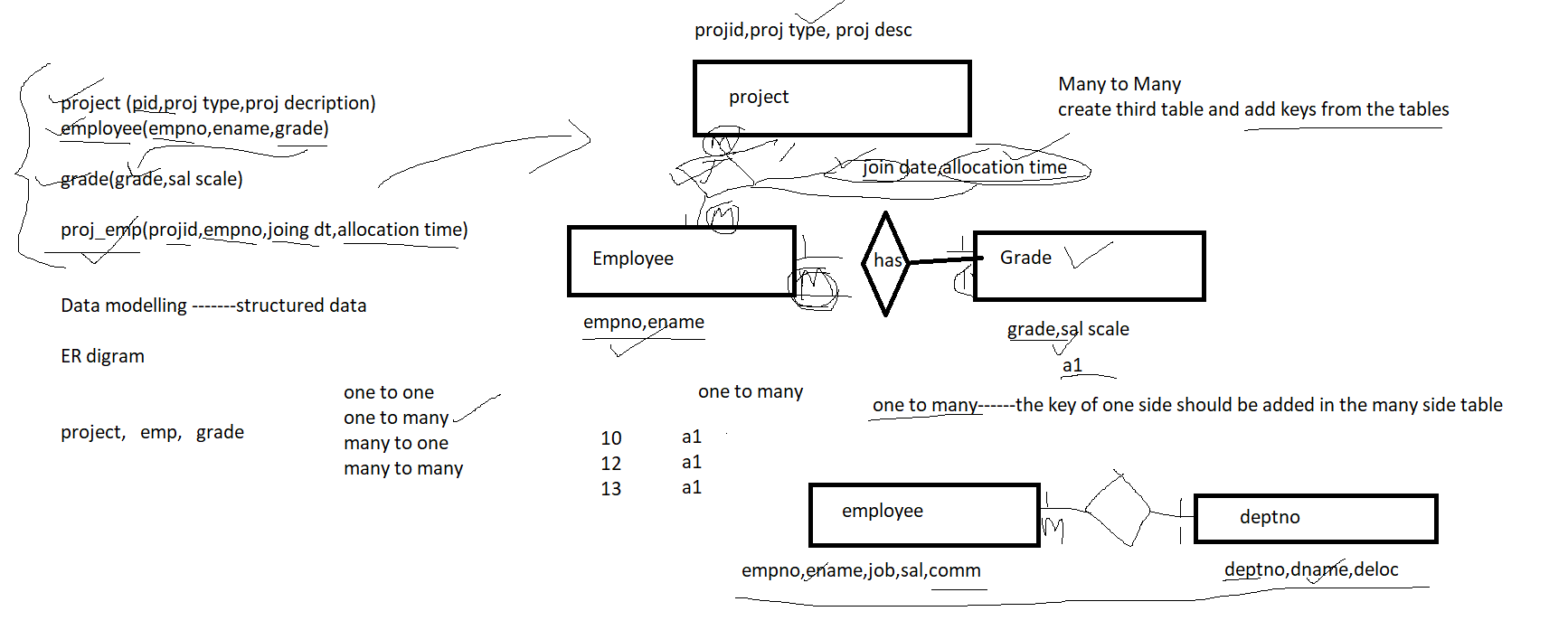
001 96 2/1/1999 18

004 72 2/4/1999 6

004 92 5/5/1999 6

002 72 12/1/1998 12

check for 3NF



is It in 1NF ----------atomic value

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Order no** | **orderdate** | **Item no** | **qty** | **Buying \_price** | **cname** | **custno** | **email** | **amt** | **Salesperson no** | **sname** | **locid** | **lname** |
| **1** | **8 jun** | **1** | **3** | **1000** | **gayatri** | **1** | **g.cv** | **2050** | **100** | **x** | **11** | **delhi** |
| **1** | **8 jun** | **2** | **2** | **500** | **gayatri** | **1** | **g.cv** | **2050** | **101** | **y** | **11** | **delhi** |
| **1** | **8 jun** | **3** | **1** | **50** | **gayatri** | **1** | **g.cv** | **2050** | **100** | **y** | **12** | **mumbai** |
| **2** | **9 jun** | **1** | **2** | **900** | **yogesh** | **2** | **y.v** | **1060** | **102** | **z** | **14** | **Gujarath** |
| **2** | **9 jun** | **5** | **1** | **60** | **yogesh** | **2** | **y.v** | **1060** | **102** | **z** | **14** | **Gujarath** |
| **3** | **9jun** | **5** | **1** | **60** | **sagar** | **3** | **s.v** | **4200** | **100** | **x** | **100** | **x** |
| **3** | **9jun** | **10** | **2** | **70** | **sagar** | **3** | **s.v** | **4200** | **102** | **z** | **14** | **Gujarath** |
| **3** | **9jun** | **2** | **4** | **1000** | **sagar** | **3** | **s.v** | **4200** | **100** | **x** | **100** | **x** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

item table

1 tshirt 1100 10%

**One customer can place many order**

**One order contains many items**

**One order will be managed by many salesperson**

**One order belong to one customer**

**One order can be dispatched from different location**

The table is in 1 NF

check ---🡪 is it in 2 NF

candidate key (order no+ itemno)

prime attribute---order no, item no

non prime

orderno+itemno---🡪qty,buying price,salemanno,sname,lname,locid

itemno----🡪

orderno ----🡪orderdate,custname,custno,email,amt

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Order no** | **orderdate** | **Item no** | **qty** | **Buying \_price** | **cname** | **custno** | **email** | **amt** | **Salesperson no** | **sname** | **locid** | **lname** |
| **1** | **8 jun** | **1** | **3** | **1000** | **gayatri** | **1** | **g.cv** | **2050** | **100** | **x** | **11** | **delhi** |
| **1** | **8 jun** | **2** | **2** | **500** | **gayatri** | **1** | **g.cv** | **2050** | **101** | **y** | **11** | **delhi** |
| **1** | **8 jun** | **3** | **1** | **50** | **gayatri** | **1** | **g.cv** | **2050** | **100** | **y** | **12** | **mumbai** |
| **2** | **9 jun** | **1** | **2** | **900** | **yogesh** | **2** | **y.v** | **1060** | **102** | **z** | **14** | **Gujarath** |
| **2** | **9 jun** | **5** | **1** | **60** | **yogesh** | **2** | **y.v** | **1060** | **102** | **z** | **14** | **Gujarath** |
| **3** | **9jun** | **5** | **1** | **60** | **sagar** | **3** | **s.v** | **4200** | **100** | **x** | **100** | **x** |
| **3** | **9jun** | **10** | **2** | **70** | **sagar** | **3** | **s.v** | **4200** | **102** | **z** | **14** | **Gujarath** |
| **3** | **9jun** | **2** | **4** | **1000** | **sagar** | **3** | **s.v** | **4200** | **100** | **x** | **100** | **x** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

order

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Order no** | **orderdate** | **cname** | **custno** | **email** | **amt** |
| **1** | **8 jun** | **gayatri** | **1** | **g.cv** | **2050** |
| **1** | **8 jun** | **gayatri** | **1** | **g.cv** | **2050** |
| **1** | **8 jun** | **gayatri** | **1** | **g.cv** | **2050** |
| **2** | **9 jun** | **yogesh** | **2** | **y.v** | **1060** |
| **2** | **9 jun** | **yogesh** | **2** | **y.v** | **1060** |
| **3** | **9jun** | **sagar** | **3** | **s.v** | **4200** |
| **3** | **9jun** | **sagar** | **3** | **s.v** | **4200** |
| **3** | **9jun** | **sagar** | **3** | **s.v** | **4200** |
|  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Order no** | **Item no** | **qty** | **Buying \_price** | **Salesperson no** | **sname** | **locid** | **lname** |
| **1** | **1** | **3** | **1000** | **100** | **x** | **11** | **delhi** |
| **1** | **2** | **2** | **500** | **101** | **y** | **11** | **delhi** |
| **1** | **3** | **1** | **50** | **100** | **y** | **12** | **mumbai** |
| **2** | **1** | **2** | **900** | **102** | **z** | **14** | **Gujarath** |
| **2** | **5** | **1** | **60** | **102** | **z** | **14** | **Gujarath** |
| **3** | **5** | **1** | **60** | **100** | **x** | **100** | **x** |
| **3** | **10** | **2** | **70** | **102** | **z** | **14** | **Gujarath** |
| **3** | **2** | **4** | **1000** | **100** | **x** | **100** | **x** |
|  |  |  |  |  |  |  |  |

are they in 3NF

check for transitive dependency

order table is not in 3NF

orderno->custno->cname

orderno->custno->email

|  |  |  |
| --- | --- | --- |
| **cname** | **custno** | **email** |
| **gayatri** | **1** | **g.cv** |
| **gayatri** | **1** | **g.cv** |
| **gayatri** | **1** | **g.cv** |
| **yogesh** | **2** | **y.v** |
| **yogesh** | **2** | **y.v** |
| **sagar** | **3** | **s.v** |
| **sagar** | **3** | **s.v** |
| **sagar** | **3** | **s.v** |
|  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Order no** | **orderdate** | **custno** | **amt** |
| **1** | **8 jun** | **1** | **2050** |
| **1** | **8 jun** | **1** | **2050** |
| **1** | **8 jun** | **1** | **2050** |
| **2** | **9 jun** | **2** | **1060** |
| **2** | **9 jun** | **2** | **1060** |
| **3** | **9jun** | **3** | **4200** |
| **3** | **9jun** | **3** | **4200** |
| **3** | **9jun** | **3** | **4200** |
|  |  |  |  |

in order item table

orderid+itemid--🡪 salamanid->sname

orderid+itemid-🡪locid--🡪lname

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Order no** | **Item no** | **qty** | **Buying \_price** | **Salesperson no** | **locid** |
| **1** | **1** | **3** | **1000** | **100** | **11** |
| **1** | **2** | **2** | **500** | **101** | **11** |
| **1** | **3** | **1** | **50** | **100** | **12** |
| **2** | **1** | **2** | **900** | **102** | **14** |
| **2** | **5** | **1** | **60** | **102** | **14** |
| **3** | **5** | **1** | **60** | **100** | **100** |
| **3** | **10** | **2** | **70** | **102** | **14** |
| **3** | **2** | **4** | **1000** | **100** | **100** |
|  |  |  |  |  |  |

|  |  |
| --- | --- |
| **Salesperson no** | **sname** |
| **100** | **x** |
| **101** | **y** |
| **102** | **z** |
|  |  |

|  |  |
| --- | --- |
| **locid** | **lname** |
| **11** | **delhi** |
| **11** | **delhi** |
| **12** | **mumbai** |
| **14** | **Gujarath** |
| **14** | **Gujarath** |
| **100** | **x** |
| **14** | **Gujarath** |
| **100** | **x** |
|  |  |

Normalization ----- 1NF,2NF,3Nf,4NF(BCNF)

Sometimes to improve performance of the data you may need to keep deformalize

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| productid | pname | categoryid | cname | price |
|  |  |  |  |  |
|  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| Catid | Cname | Desc |
|  |  |  |

PL – SQL

Procedural Language----🡪(if,loops,exceptions,cursors,procedures,functions,triggers)

