

# DBMS LAB EXAM

15/05/2021.  
Branch - CSE

## GROUP-10

### MEMBERS :

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1. SELECT \* FROM Employee E  
WHERE E.Eno IN ( SELECT Eno  
FROM Dependent  
WHERE E.lname = Dep-name  
AND E.Sex = Sex);

2. SELECT Pno, Pname, COUNT(\*)  
FROM Project, Works-no  
WHERE Project.Pno = Works-no.Pno  
GROUP BY Pno, Pname  
HAVING COUNT(\*) > 2;

3. SELECT Dno, COUNT(\*)  
FROM Department, Employee  
WHERE Department.Dno = Employee.Dno  
AND Salary > 50,000 AND  
Employee.Dno IN (SELECT Dno  
FROM Employee  
GROUP BY Dno  
HAVING Count(\*) > 3 )  
GROUP BY Dno

5. SELECT \*  
 FROM Department, Project  
 WHERE Department.Dno = Project.Dnum  
 GROUP BY Pno  
 HAVING COUNT(Pno) > 1 AND  
 COUNT(Plocation) > 1.

4. SELECT \*  
 FROM Employee E  
 WHERE E.Eno IN (SELECT Eno  
 FROM Dependent  
 WHERE Relation = 'Manger'  
 GROUP BY Relation  
 HAVING COUNT(\*) > 1)

GROUP BY Eno  
 HAVING COUNT(\*) > 10;

Given  $Pid \rightarrow CN, P_o, A, P_r, Tax$

$CN, P_o \rightarrow Pid, A, P_r, Tax$

$CN \rightarrow Tax$

$A \rightarrow P_r$

Finding Keys

$Pid^+ = Pid, CN, P_o, A, P_r, Tax$

$CN^+ = CN, Tax$

$P_o^+ = P_o$

$A^+ = P_r, A$

$$Pr^+ = Pr$$

$$Tax^+ = Tax$$

$$\therefore \text{key} = \{Pid\}$$

$$\text{Prime attributes} = \{Pid\}$$

$$\text{non-prime attributes} = \{CN, Po, A, Pr, Tax\}$$

→ Already the table is in 1nf as there are no multivalued attributes

→ The table is also in 2nf as there is no partial dependencies.

But not in 3nf as there are transitive dependencies

$$CN, Po \rightarrow Pid, A, Pr, Tax$$

$$CN \rightarrow Tax$$

$$A \rightarrow Pr$$

To convert into 3nf we divide table as

follows

$$\{Area, Pr\}$$

$$Area^+ \rightarrow Pr, A$$

$$\therefore \text{key} = A$$

So it is 3nf

$$\{CN, tax\}$$

$$CN^+ \rightarrow tax$$

$$\therefore \text{key} = CN$$

So it is 3nf

$$\{CN, Po, Pid, A\}$$

$$Pid^+ \rightarrow Po, CN, A$$

$$Po^+, CN^+ \rightarrow A, Pid$$

$$\therefore \text{key} = \{Pid\} \{Po, CN\}$$

So it is 3nf.