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**190905522 CSE D 62**

**DBS LAB 2 (Week 2) – Integrity Constraints**

**Q1) Create Employee table with following constraints:•Make EmpNo as Primary key.•Do not allow EmpName, Gender, Salary and Address to have null values.•Allow Genderto have one of the two values: ‘M’, ‘F’.**

create table EMPLOYEE(

emp\_no number(10) PRIMARY KEY,

emp\_name varchar(20) NOT NULL,

gender varchar(1) NOT NULL,

salary number(10) NOT NULL,

address varchar(20) NOT NULL);

alter table EMPLOYEE add check(gender in ('M','F'));

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**Q2)Create Department table with following:•Make DeptNo as Primary key•Make DeptName as candidate key**

create table DEPARTMENT(

dept\_no number(10) PRIMARY KEY,

dept\_name varchar(20) NOT NULL UNIQUE,

location varchar(20));

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**Q3) Make DNo of Employee as foreign key which refers to DeptNo of Department**

alter table EMPLOYEE add(dept\_no number(10));

alter table EMPLOYEE add FOREIGN KEY(dept\_no) references DEPARTMENT(dept\_no);

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**Q4) Insert few tuples into Employee and Department which satisfies the above constraints.**

insert into DEPARTMENT(dept\_no,dept\_name,location) values(101,'Worker','Hyderabad');

insert into DEPARTMENT(dept\_no,dept\_name,location) values(102,'Ayush','Kolkata');

insert into EMPLOYEE(emp\_no,emp\_name,gender,salary,address,dept\_no) values(1101,'Dipesh','M',1000,'Hyderabad',101);

insert into EMPLOYEE(emp\_no,emp\_name,gender,salary,address,dept\_no) values(1102,'AG','M',2000,'Manipal',102);

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**Q5) Try to insert few tuples intoEmployee and Department which violates some of the above constraints.**

insert into DEPARTMENT(dept\_no,dept\_name,location) values(101,'Woek','Hyderabad');

insert into DEPARTMENT(dept\_no,dept\_name,location) values(102,'Polu','Manipal');

insert into EMPLOYEE(emp\_no,emp\_name,gender,salary,address,dept\_no) values(001,'DipeshSingh','M',500,'Hyderabad',101);

insert into EMPLOYEE(emp\_no,emp\_name,gender,salary,address,dept\_no) values(002,'AG','M',1000,'Manipal',102);

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**Q6) Try to modify/delete a tuple which violates a constraint.**

alter table EMPLOYEE drop constraint abc;

delete from DEPARTMENT where dept\_no=’101’;

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**Q7) Modify the foreign key constraint of Employee table such that whenever a department tuple is deleted, the employees belonging to that department will also be deleted.**

alter table EMPLOYEE drop constraint abc;

alter table Employee drop constraint SYS\_C007031;

select constraint\_name, table\_name, constraint\_type from user\_constraints;

alter table Employee add constraint FK foreign key(Dno) references Department(DeptNo) on delete cascade;

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**Q8) Create a named constraint to set the default salary to 10000 and test the constraint by inserting a new record.**

alter table EMPLOYEE modify(salary default 10000);

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**UNIVERSITY DATA BASE ADDED**

@”D:\CSE\DBS Lab\DDL+drop”

@"D:\CSE\DBS Lab\smallRelationsInsertFile"

This imports all tables and populates them.

**Q9) List all Students with names and their department names.**

Select name,dept\_name from student;

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**Q10) List all instructors in CSE department.**

Select name,dept\_name from instructor where dept\_name='Comp. Sci.';

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**Q11) Find the names of courses in CSE department which have 3 credits.**

Select title,credits from course where dept\_name='Comp. Sci.' and credits=3;

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**Q12) For the student with ID 12345 (or any other value), show all course-id and title of all courses registered for by the student.**

Select title,course\_id from course natural join takes where ID=12345;

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**Q13) List all the instructors whose salary is in between 40000 and 90000.**

Select name from instructor where salary between 40000 and 90000;

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**Q14) Display the IDs of all instructors who have never taught a course.**

Select instructor.id from instructor where id not in (select distinct teaches.id from teaches);

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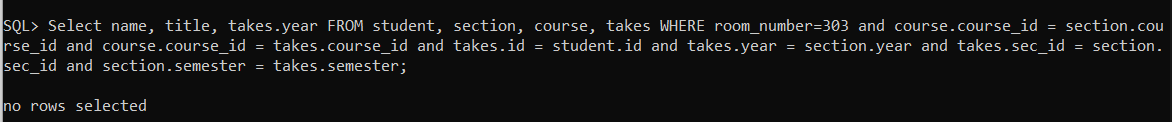
**Q15) Find the student names, course names, and the year, for all students those who have attended classes in room-number 303.**

Select name, title, takes.year FROM student, section, course, takes WHERE room\_number=3128 and course.course\_id = section.course\_id and course.course\_id = takes.course\_id and takes.id = student.id and takes.year = section.year and takes.sec\_id = section.sec\_id and section.semester = takes.semester;

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Room 303 has no students:



**16) For all students who have opted courses in 2015, find their names and course id’s with the attribute course title replaced by c-name.**

select name, course\_id as c\_name from student natural join takes where takes.year=2015;

(As we can see, 2009 has no rows)

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**17) Find the names of all instructors whose salary is greater than the salary of at least one instructor of CSE department and salary replaced by inst-salary.**

select distinct a.name, a.salary as inst\_salary from instructor a, instructor b where b.dept\_name='Comp. Sci.' and a.salary>b.salary;

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**18) Find the names of all instructors whose department name includes the substring ‘ch’.**

Select name from instructors where dept\_name like '%ch%';

(As we can see no dept name has ch as substring)

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**19) List the student names along with the length of the student names.**

Select name,LENGTH(name) from student;

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**20) List the department names and 3 characters from 3rdposition of each department name**

select dept\_name,substr(dept\_name,3,3) from department;

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**21) List the instructor names in upper case.**

Select UPPER(name) from instructor;

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**22) Replace NULL with value1(say 0) for a column in any of the table**

Select NVL(grade,'F') from takes;

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**23) Display the salary and salary/3 rounded to nearest hundred from Instructor.**

Select salary,ROUND(salary/3,-2) from instructor;

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THE END