DBMS FIFTH LABSHEET SOLUTIONS

Create table student_5
(
        sid Varchar(20) primary key,
        sname Varchar(20),
        dob date,
        dept_name Varchar(3) references Department_5(dept_name),
        city Varchar(20),
        state Varchar(20),
        cgpa dec(4,2)
);

DETAILS ENTERED MANUALLY INTO TABLE:-

	sid [PK] character varyin	sname character v	dob date	dept_name character var	city character var	state character v	cgpa numeric(4,
1	U4CS12501	Surya	1994-05-	CS	thrissur	kerala	8.48
2	U4CS12015	Darshana	11/28/19	CS	ernakulam	kerala	9.10
3	U4CS12006	Anu	1994-09-	CS	thrissur	kerala	10.00
4	U4CS12005	Anjana	07/13/19	CS	angamaly	kerala	6.75
5	U4CS12046	Tina	1993-08-	CS	kottayam	kerala	5.74
*							

create table course_5
(
        ccode Varchar(6) primary key,
        ctitle Varchar (25),
        credits int,
        dept_name Varchar(3) references Department_5(dept_name),
        semester Varchar(2),
        programme Varchar(5),
        year int
);

DETAILS ENTERED MANUALLY INTO TABLE:-

	ccode [PK] character	ctitle character v	credits integer	dept_name character varying	semester character v	programme character varying(	year integer
1	CSE340	DBMS	4	CS	S5	BTECH	2012
2	CSE100	OOPS	3	CS	S1	BTECH	2014
3	CSE200	COA	2	CS	S4	BTECH	2013
4	CSE210	DS	4	CS	S4	BTECH	2013
5	CSE310	OS	3	CS	S5	BTECH	2014
*							

create table department_5
(
        dept_name Varchar(2) primary key,
        budget Int
);

DETAILS ENTERED MANUALLY INTO TABLE:-

	dept_name [PK] character vary	budget integer
1	CS	300000
2	ME	500000
3	EC	300000
*		

create table register_5
(
        sid Varchar (10) references student_5(sid),
        ccode Varchar(6) references Course_5(ccode),
        primary key(sid,ccode),
        register_date date
);

	sid [PK] character varyi	ccode [PK] character	register_date date
1	U4CS12501	CSE340	04/04/2013
2	U4CS12006	CSE100	2012-05-05
3	U4CS12005	CSE210	2014-08-12
4	U4CS12015	CSE310	2014-09-05
5	U4CS12046	CSE200	2013-10-21

create table instructor_5
(
        Iid int primary key,
        Iname Varchar(20),
        dob date,
        dep_name Varchar(2) references Departments (dept_name),
        salary int,
        designation Varchar(20),
        Qualification Varchar(20),
        city Varchar(20),
        state Varchar(20)
);

	iid integer	iname character varying(20)	dob date	dep_name character varying(2)	salary integer	designation character varying(20)	qualification character varying(20)	city character varying(20)	state character varying(20)
1	1500	Ramya	1977-06-13	CS	20000	lecturer	Mtech	kollam	kerala
2	1501	Vipin	1980-04-17	CS	30000	assistant professor	Masters	ernakulam	kerala
3	1502	Suhas	1974-05-05	CS	40000	professor	Btech	thrissur	kerala
4	1503	Bala	1960-03-31	ME	20000	lecturer	Mtech	kayamkulam	kerala
5	1504	Athira	1981-12-14	ME	12000	professor	Btech	thalassery	kerala

create table teach_5
(
        Iid int references instructor_5(Iid),
        ccode Varchar(6) references course_5(ccode),
        primary key(Iid,ccode)
);

	iid [PK] intege	ccode [PK] charac
1	1500	CSE340
2	1501	CSE210
3	1502	CSE310

QUERIES:-

1. Find the name of all instructors whose salary is greater than at least one instructor in the Computer Department. (Use both self join as well as Sub query)

Solution:-
first type:-

select distinct(i1.Iname) from instructor_5 i1,instructor_5 i2
where i1.salary > i2.salary and i2.dep_name = 'CS' ;

	iname character varying(20)
1	Suhas
2	Vipin

second type:-

select iname from instructor_5
where salary > some(select salary from instructor_5 where dep_name='CS');

	iname character varying(20)
1	Vipin
2	Suhas

2. Find the total number of instructors (only if this is more than 2) in each department who teach a course in the 2nd sem.

solution:-

select dep_name,count(instructor_5.Iid) from instructor_5,teach_5,course_5
where course_5.semester='S5' and course_5.ccode=teach_5.ccode and instructor_5.iid=teach_5.iid
group by dep_name having count(instructor_5.iid) > 1;

	dep_name character varying(2)	count bigint
1	CS	2

UNION, UNION ALL, INTERSECT, INTERSECT ALL, EXCEPT:-

3. Find the distinct cities where either instructors or students belong.
solution:-
(select city from instructor_5)union (select city from student_5);

	city character varying(20)
1	kollam
2	thrissur
3	thalassery
4	kayamkulam
5	ernakulam
6	kottayam
7	angamaly

4. Find the common cities from where both instructors and students belong.
solution:-

(select city from instructor_5)intersect (select city from student_5);

	city character varying(20)
1	thrissur
2	ernakulam

5. Find the cities of students from where we don't have instructors.
solution:-

(select city from student_5)except (select city from instructor_5);

	city character varying(20)
1	kottayam
2	angamaly

Sub-Queries:-

6. Who among the instructors is older than instructor 1500.
solution:-

select iid from instructor_5 where dob < (select dob from instructor_5 where iid=1500);

	iid integer
1	1502
2	1503

7. Find the instructors with the highest salary in the university.
solution:-

select iid,iname,salary from instructor_5 where salary = (select max(salary) from instructor_5);

	iid integer	iname character varying(20)	salary integer
1	1502	Suhas	40000

8. Find the designation of the instructors with the highest salary.
solution:-

select designation from instructor_5 where salary = (select max(salary) from instructor_5);

	designation character varying(20)
1	professor

9. Find the department budget of the departments with the instructors having the highest pay.
solution:-

select budget from department_5 where dept_name =(select dep_name from instructor_5
 where salary=(select max(salary) from instructor_5));

	budget integer
1	300000

10. Find the instructors who earn more than instructor 1500.
solution:-

 select iid,iname from instructor_5 where salary > (select salary from instructor_5 where iid=1500);

	iid integer	iname character varying(20)
1	1501	Vipin
2	1502	Suhas

11. Find the instructors who has the same designation as Instructor 1500 and salary more than
instructor 1500.
solution:-

altered table instructor_5 by adding an extra row to suit the query:-

	iid [PK] integer	iname character var	dob date	dep_name character v	salary integer	designation character varying(20)	qualificatic character v	city character varying	state character v
1	1500	Ramya	1977-06-13	CS	20000	lecturer	Mtech	kollam	kerala
2	1501	Vipin	1980-04-17	CS	30000	assistant professor	Masters	ernakulam	kerala
3	1502	Suhas	1974-05-05	CS	40000	professor	Btech	thrissur	kerala
4	1503	Bala	1960-03-31	ME	20000	lecturer	Mtech	kayamkulam	kerala
5	1504	Athira	1981-12-14	ME	12000	professor	Btech	thalassery	kerala
*	1505	Jothisha	07/23/1994	CS	35000	lecturer	Btech	trivandrum	kerala

select iid,iname from instructor_5 where designation=(select designation from instructor_5
 where iid=1500) and salary > (select salary from instructor_5 where iid=1500);

	iid integer	iname character varying(20)
1	1505	Jothisha

12. Display the course titles taught by Ms Ramya
solution:-

select ctitle from course_5 where ccode =(select ccode from teach_5
 where iid=(select iid from instructor_5 where iname='Ramya'));

	ctitle character varying(25)
1	DBMS

13. Find the designation of instructors who have taught DBMS
solution:-

select designation from instructor_5 where iid =
(select iid from teach_5 where ccode= (select ccode from course_5 where ctitle='DBMS'));

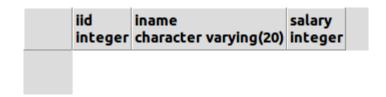|	designation character varying(20)
1	lecturer

14. Remove instructors whose salary is less than the average salary of all instructors.
solution:-

delete from instructor_5 where salary < (select avg(salary) from instructor_5);

15. Make each student of CS department with more than 9.5 CGPA as Teaching Assistants with salary of 12000Rs.
solution:-

create table ta_5 as select iid,iname,salary from instructor_5 where 1=2;

select * from ta_5;

	iid integer	iname character varying(20)	salary integer

//had to change the type of the iid as it was int and the sid was varchar;
alter table ta_5 alter column iid type Varchar(20);

insert into ta_5 select sid,sname,12000 from student_5 where cgpa>9.5;

	iid character varying(20)	iname character varying(20)	salary integer
1	U4CS12006	Anu	12000