LABSHEET FOUR

```
create table empty
(
        adm_no int primary key not null,
        name Varchar(20) not null,
        sex Char(1) default 'M',
        course Char(20),
        percent float
);

select * from empty;
```

1. Write an insert command for inserting into a table only specific data i.e. Only data for a specific set of attributes.

```
--solution for question one.
insert into empty
(
        adm_no,
        name,
        sex
)
values
(
        12501,
        'Surya',
        'F'
);
```

	adm_no integer	name character varying(20)	sex character(1)	course character(20)	percent double precision
1	12501	Surya	F		

2. Write a single insert command to insert multiple rows.

--solution for question two.
insert into empty values
(12500,'Savita','F','CSE',95),
(12504,'Prabha','F','MEC',98),
(12503,'Shreedhar','M','EEE',90);

	adm_no integer	name character varying(20)	sex character(1)	course character(20)	percent double precision
1	12501	Surya	F		
2	12500	Savita	F	CSE	95
3	12504	Prabha	F	MEC	98
4	12503	Shreedhar	M	EEE	90

3. For the instructor relation, modify the column called salary to type numeric(8,2).
What does this datatype signify?

The instructor table has:-

	iid [PK] integer	iname character varying	dep_name character v	salary integer	join_date date
1	3000	Remya Rajesh	CS	50000	2010-03-21
2	3001	Suhas Kurup	CS	60000	2013-05-05
3	3002	Bala K	ME	40000	2000-08-30
4	3003	Hari Prasad	ME	20000	1999-09-24
*					

--solution to question three.
alter table instructors alter column salary type numeric(8,2);

	iid integer	iname character varying(20)	dep_name character varying(2)	salary numeric(8,2)	join_date date
1	3001	Suhas Kurup	CS	60000.00	2013-05
2	3000	Remya Rajesh	CS	50000.00	2010-03
3	3002	Bala K	ME	40000.00	2000-08
4	3003	Hari Prasad	ME	20000.00	1999-09

Signification of this data type is :-
numeric(8,2) means a precision of 8 and a scale of 2 ,that is it can have 6 digits before the decimal point and 2 digits after the decimal point.

4. Write an Insert into instructor table with salary field value as NULL.

--solution for question four:-
insert into instructors values(3004,'Surya','CS',NULL,'05/05/2014');

	iid integer	iname character varying(20)	dep_name character varying(2)	salary numeric(8,2)	join_date date
1	3001	Suhas Kurup	CS	60000.00	2013-05
2	3000	Remya Rajesh	CS	50000.00	2010-03
3	3002	Bala K	ME	40000.00	2000-08
4	3003	Hari Prasad	ME	20000.00	1999-09
5	3004	Surya	CS		2014-05

5. Perform an average operation on the salary field. Find out if its inclusive of the NULL value. What's your finding?

--solution for question five:-
select avg(salary) from instructors;

	avg numeric
1	42500.000000000000

This is same with the null entry as well as without it.
avg function does'nt include columns with a null value.But instead if we have used sum(salary)/count(*) it would have counted the null values and given a different output.

6. Write a query of your choice to depict the purpose of the keyword 'distinct'

This is the registrations table which has the student id getting repeated. Suppose we want to

know how many students are registered they we can use the keyword distinct to do this.
--solution for question six
select distinct sid from registrations;
which gives us the below result.

	sid character varying(15)
1	u4cse12004
2	u4cse12007
3	u4cse12006
4	u4cse12008
5	u4cse12010
6	u4cse12005
7	u4cse12002
8	u4cse12003

7. Write a single update command for updating multiple attributes.

--solution for question seven.
update empty set adm_no=12505,percent =99 where name='Savita';

	adm_no integer	name character varying(20)	sex character(1)	course character(20)	percent double precision
1	12501	Surya	F		
2	12504	Prabha	F	MEC	98
3	12503	Shreedhar	M	EEE	90
4	12505	Savita	F	CSE	99

8. Create a table called result with the attributes
(sid, cid, sem, year, int_marks_obtained,ext_marks_obtained, max_marks). Max_marks is the max. marks a student can obtain in that course. Sid – Student_id, Cid – Course_id. Write a check constraint which ensures that total_marks_obtained is less than max_marks.

Solution:-

```
Create table result(
                    sid int,cid varchar(5),
                    year int,
                    int_marks_obtained int,
                    ext_marks_obtained int,
                  max_marks int,
                check((int_marks_obtained
                  +ext_marks_obtained)<max_marks));
```

9. What's the answer to this query:
select * from instructor order by 2;

	adm_no integer	name character varying(20)	sex character(1)	course character(20)	percent double precision
1	12504	Prabha	F	MEC	98
2	12505	Savita	F	CSE	99
3	12503	Shreedhar	M	EEE	90
4	12501	Surya	F		

It displays the table arranged in the ascending order of column 2.

10.What's the difference between char and varchar?
CHAR<SIZE>
This data type helps us create a sequence of characters/strings of size <SIZE>.
--The values inserted into this data type should be included in quotes.
--is size is not mentioned the default size is taken as one.
VARCHAR<SIZE>
--This is also used to declare strings .
--The difference of this from CHAR<SIZE> is that , a field of CHAR type always allocates ,memory storage for the maximum number of characters that can be stored in the field while, a VARCHAR field will alocate only enough memory to store the actual size of VARCHAR field which is implementor defined and can vary between 254 to 2048 characters.

11.Create tables called as instructors_doing_research(faculty_id, research_area)
instructors_managing_projects(Iid, project_title)
Write a query to find out the instructors who are not doing research (Hint: Use Minus)

Create table indr

```
(
        faculty_id int primary key,
        research_area Varchar(20)
);

create table  inmp
(
        lid int  primary key,
        project_title Varchar(20)
);
```

select lid from emptyminus select faculty_id from instructors_doing_research;

12.Write a query using the above tables to find out the instructors who are doing research or those who are managing projects.

select distinct name from empty ,indr,inmp where empty.adm_no=indr.faculty_id or empty.adm_no=inmp.lid;

13.Write a query to find out only those instructors who are doing both research as well as managing projects.

select name from empty,indr,inmp where empty.adm_no=indr.faculty_id and empty.adm_no=inmp.lid;