Part 1 SQL

Program 1 : Customer Table

AIM

Create a table customer (cust_no varchar (5), cust_name varchar (15), age number, phone varchar (10))

A. insert 5 records and display it
B. add new field d_birth with date datatype
C. create another table cust_phone with fields cust_name and phone from customer table D. remove the field age
E. change the size of the cust_name to 25
F. delete all the records from the table
G. rename the table cutomer to cust
H. drop the table

TABLE DESIGN

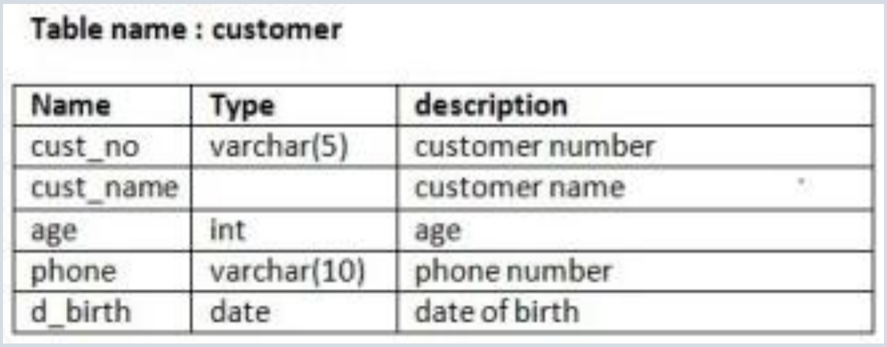


Table name : customer

Name	Type	description
cust_no	varchar(5)	customer number
cust_name		customer name
age	int	age
phone	varchar(10)	phone number
d_birth	date	date of birth

QUERIES

create table customer(cust_no varchar(5),cust_name varchar(15),age

numeric,phone varchar(10)); /d customer;

```
Table "public.customer"
Column | Type | Collation |
-----------+-----------------------+-----------+
cust_no | character varying(5) | |
cust_name | character varying(15) | |
age | numeric | |
phone | character varying(10) | |
```

a)

insert into customer values(1,'Raju',23,9495823456);
insert into customer values(2,'Zara',23,9447132324);

insert into customer
values(3,'Adam',34,8089123456);   insert
into customer
values(4,'Sheena',23,7259123456);   insert
into customer
values(5,'Lisa',23,8891223344);

select *from customer;

```
cust_no | cust_name | age | phone
---------+-----------+-----+------------
 1 | Raju | 23 | 9495823456
 2 | Zara | 23 | 9447132324
 3 | Adam | 34 | 8089123456
 4 | Sheena | 23 | 7259123456
 5 | Lisa | 23 | 8891223344
(5 rows)
```

b)
alter table customer add d_birth date;
\d customer;

```
 Table "public.customer"   Column | Type | Collation
|  -----------+----------------------+-----------+-   cust_no |
character varying(5) | |   cust_name | character
varying(15) | |   age | numeric | |   phone | character
varying(10) | |   d_birth | date | |
```

c)
create table cust_phone as select
cust_name,phone from customer; select *from
cust_phone;

```
 cust_name | phone
-----------+------------
 Raju | 9495823456
 Zara | 9447132324
 Adam | 8089123456
 Sheena | 7259123456
 Lisa | 8891223344
(5 rows)
```

d)
alter table customer drop age;
\d customer;

```
 Table "public.customer"   Column | Type | Collation
|  -----------+----------------------+-----------+-   cust_no |
character varying(5) | |   cust_name | character
varying(15) | |   phone | character varying(10) |
|   d_birth | date | |
```

e)
ALTER TABLE customer ALTER COLUMN cust_name TYPE varchar(25);

\d customer;

```
 Table "public.customer"
 Column | Type | Collation |
-----------+----------------------+-----------+-
 cust_no | character varying(5) | |
 cust_name | character varying(25) | |
 phone | character varying(10) | |
 d_birth | date | |
```

f)

TRUNCATE customer;
select *from customer;

```
 cust_no | cust_name | phone | d_birth
---------+-----------+-------+---------
(0 rows)
```

g)

ALTER TABLE customer RENAME TO cust;
\d cust;

```
 Table "public.cust"
 Column | Type | Collation |
-----------+----------------------+-----------+-
 cust_no | character varying(5) | |
 cust_name | character varying(25) | |
 phone | character varying(10) | |
 d_birth | date | |
```

h)

drop table cust;

```
DROP TABLE
```

Program 2 : Constraints

AIM

Create a table sales_man (salesman_no primary key, s_name not null, place, phone unique).

Create table sales_order(order_no primary key, order_date not null, salesman_no foreign key references salesman_no in sales_man, del_type values should be either P or F (check constraints), order_status val ues should be 'Inprocess','Fullfilled','Backorder', or 'Cancelled' (check constraints)).

A. Insert few records in both tables
B. Delete primary key from sales_man table

C. Delete Foreign key and Check constraints from sales_order table
D. Add primary key in sales_man using ALTER TABLE
E. Add foreign key and CHECK constraints in sales_order table using ALTER TABLE

TABLE DESIGN

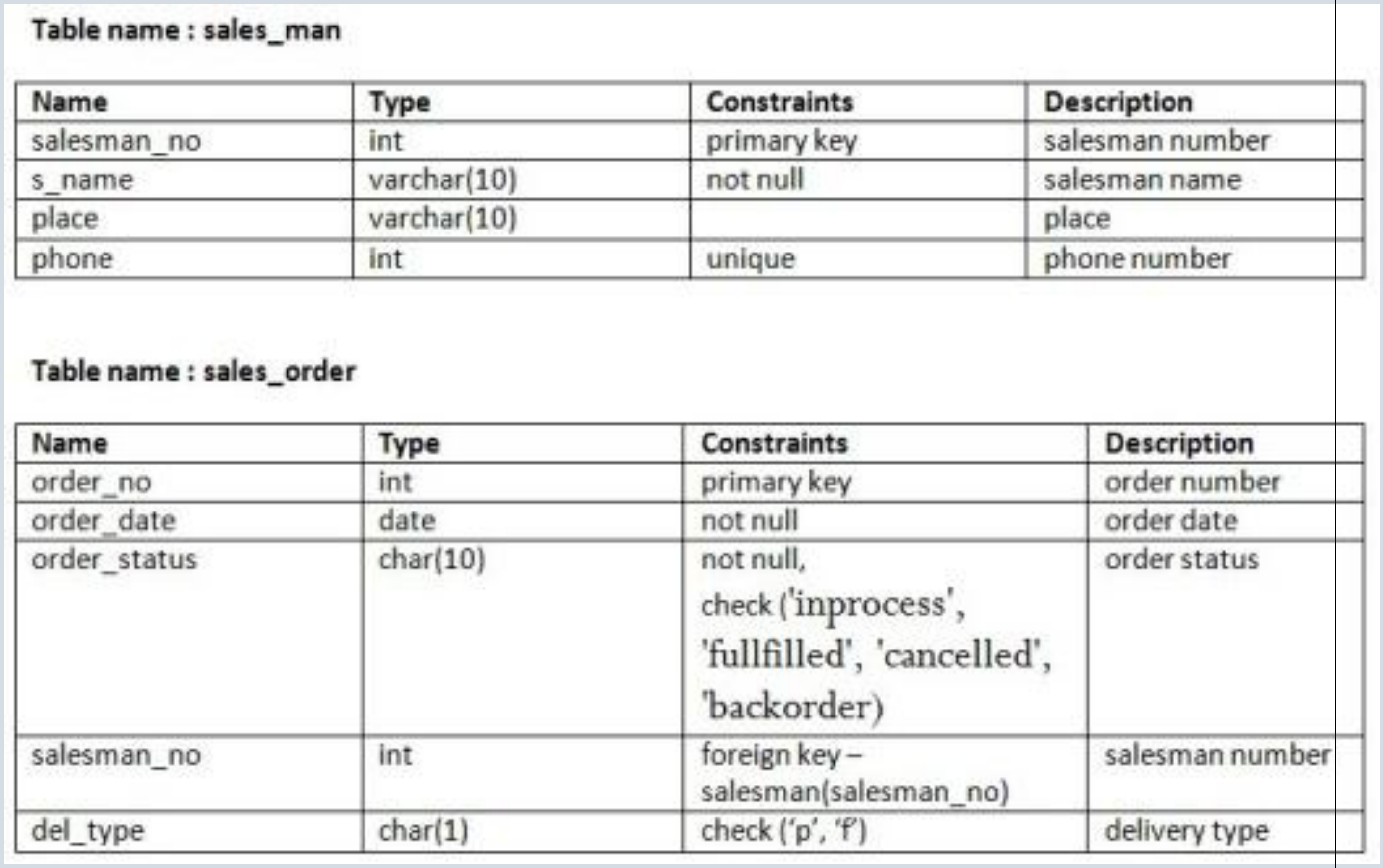


Table name : sales_man

Name	Type	Constraints	Description
salesman_no	int	primary key	salesman number
s_name	varchar(10)	not null	salesman name
place	varchar(10)		place
phone	int	unique	phone number

Table name : sales_order

Name	Type	Constraints	Description
order_no	int	primary key	order number
order_date	date	not null	order date
order_status	char(10)	not null, check ('inprocess', 'fullfilled', 'cancelled', 'backorder)	order status
salesman_no	int	foreign key – salesman(salesman_no)	salesman number
del_type	char(1)	check ('p', 'f')	delivery type

QUERIES

create table sales_man(salesman_no int primary key,s_name varchar(10) not null,place var char(10),phone numeric(10) unique);
\d sales_man;

```
Table "public.sales_man"
Column | Type | Collation | Nullable | Default  -------------+----------------------+---------
--+----------+---------   salesman_no | integer | | not null |
s_name | character varying(10) | | not null |
place | character varying(10) | | |
phone | numeric(10,0) | | |
Indexes:
"sales_man_pkey" PRIMARY KEY, btree (salesman_no)
"sales_man_phone_key" UNIQUE CONSTRAINT, btree (phone)
```

create table sales_order(order_no int primary key,order_date date NOT NULL,order_status char(10) NOT NULL check(order_status IN('Inprocess', 'Fullfilled', 'Cancelled', 'Backorder')), salesman_no int references sales_man (salesman_no), del_type char(1) check (del_type='F' or del_type='P')); \d sales_order;

```
Table "public.sales_order"
Column | Type | Collation | Nullable | Default
-------------+---------------+-----------+----------+---------
order_no | integer | | not null |
order_date | date | | not null |
order_status | character(10) | | not null |
salesman_no | integer | | |
del_type | character(1) | | |
Indexes:
"sales_order_pkey" PRIMARY KEY, btree (order_no)
Check constraints:
"sales_order_del_type_check" CHECK (del_type = 'F'::bpchar OR del_type =
'P'::bpchar) "sales_order_order_status_check" CHECK (order_status = ANY
(ARRAY['Inprocess'::bpchar, 'Fullfilled'::bpchar, 'Cancelled'::bpchar, 'Backorder'::bpchar]))
Foreign-key constraints:
"sales_order_salesman_no_fkey" FOREIGN KEY (salesman_no)
REFERENCES sales_man(salesman_no)
```

a)

```
insert into sales_man values (101, 'ananthu', 'feroke', 8137036211);
insert into sales_man values (102, 'fariz', 'chungam', 8137036231);
insert into sales_man values( 103, 'sheena', 'chelari', 9997036231);
insert into sales_man values(104, 'asla', 'chelari', 9687036231);
insert into sales_man values(105, 'jithin', 'tanur', 9687035671);

select*from sales_man;
```

```
salesman_no | s_name | place | phone
-------------+---------+---------+------------
101 | ananthu | feroke | 8137036211
102 | fariz | chungam | 8137036231
103 | sheena | chelari | 9997036231
104 | asla | chelari | 9687036231
105 | jithin | tanur | 9687035671
(5 rows)
```

```
insert into sales_order values(1,'01-01-17', 'Inprocess',101,'F'),(2,'03-02-17', 'Fullfilled',
102, 'F'), (3,  '03-03-17', 'Fullfilled', 103, 'P'), (4, '03-03-17', 'Cancelled',104, 'F'), (5,'05-
03-17', 'Backorder', 105, 'P');

select * from sales_order;
```

```
order_no | order_date | order_status | salesman_no | del_type
----------+------------+--------------+-------------+----------
1 | 2017-01-01 | Inprocess | 101 | F
2 | 2017-03-02 | Fullfilled | 102 | F
3 | 2017-03-03 | Fullfilled | 103 | P
4 | 2017-03-03 | Cancelled | 104 | F
5 | 2017-05-03 | Backorder | 105 | P
(5 rows)
```

b)

```
ALTER TABLE sales_man DROP constraint sales_man_pkey cascade;
```

\d sales_man;

```
Table "public.sales_man"
Column | Type | Collation | Nullable | Default
-------------+----------------------+-----------+----------+---------   salesman_no | integer | |
not null |
s_name | character varying(10) | | not null |
place | character varying(10) | | |
phone | numeric(10,0) | | |
Indexes:
"sales_man_phone_key" UNIQUE CONSTRAINT, btree (phone)
```

\d sales_order;

```
Table "public.sales_order"
Column | Type | Collation | Nullable | Default
--------------+---------------+-----------+----------+---------
order_no | integer | | not null |
order_date | date | | not null |
order_status | character(10) | | not null |
salesman_no | integer | | |
del_type | character(1) | | |
Indexes:
"sales_order_pkey" PRIMARY KEY, btree (order_no)
Check constraints:
"sales_order_del_type_check" CHECK (del_type = 'F'::bpchar OR del_type =
'P'::bpchar) "sales_order_order_status_check" CHECK (order_status = ANY
(ARRAY['Inprocess'::bpchar, 'Fullfilled'::bpchar, 'Cancelled'::bpchar, 'Backorder'::bpchar]))
```

c)

ALTER TABLE sales_order DROP constraint sales_order_del_type_check;
ALTER TABLE sales_order DROP constraint sales_order_order_status_check;
\d sales_order;

```
Table "public.sales_order"
Column | Type | Collation | Nullable | Default
--------------+---------------+-----------+----------+---------
order_no | integer | | not null |
order_date | date | | not null |
order_status | character(10) | | not null |
salesman_no | integer | | |
del_type | character(1) | | |
Indexes:
"sales_order_pkey" PRIMARY KEY, btree (order_no)
```

d)
ALTER TABLE sales_man ADD primary key(salesman_no);
\d sales_man;

```
Table "public.sales_man"
Column | Type | Collation | Nullable | Default  -------------+----------------------+---------
--+----------+---------   salesman_no | integer | | not null |
 s_name | character varying(10) | | not null |
 place | character varying(10) | | |
 phone | numeric(10,0) | | |
Indexes:
 "sales_man_pkey" PRIMARY KEY, btree (salesman_no)
 "sales_man_phone_key" UNIQUE CONSTRAINT, btree (phone)
```

e)

ALTER TABLE sales_order ADD FOREIGN KEY (salesman_no) REFERENCES sales_man(salesman_no); ALTER TABLE sales_order ADD CHECK (del_type = 'F' OR del_type = 'P');
ALTER TABLE sales_order ADD check(order_status IN('Inprocess', 'Fullfilled', 'Cancelled', 'Backorder')); \d sales_order;

```
 Table "public.sales_order"
 Column | Type | Collation | Nullable | Default
--------------+---------------+-----------+----------+---------
 order_no | integer | | not null |
 order_date | date | | not null |
 order_status | character(10) | | not null |
 salesman_no | integer | | |
 del_type | character(1) | | |
Indexes:
 "sales_order_pkey" PRIMARY KEY, btree (order_no)
Check constraints:
 "sales_order_del_type_check" CHECK (del_type = 'F'::bpchar OR del_type =
'P'::bpchar) "sales_order_order_status_check" CHECK (order_status = ANY
(ARRAY['Inprocess'::bpchar, 'Fullfilled'::bpchar, 'Cancelled'::bpchar, 'Backorder'::bpchar]))
 Foreign-key constraints:
 "sales_order_salesman_no_fkey" FOREIGN KEY (salesman_no)
REFERENCE  sales_man(salesman_no)
```

Program 3 : Hospital Table

AIM

Create a table Hospital with the fields (doctorid, doctorname, department,

qualification, experience). Write the queries to perform the following.

A. Insert 5 records
B. Display the details of Doctors
C. Display the details of doctors who have the qualification ‘MD’
D. Display all doctors who have more than 5 years experience but do not have the qualification ‘MD’ E. Display the doctors in ‘Skin’ department
F. update the experience of doctor with doctored=’D003’ to 5
G. Delete the doctor with DoctorID=’D005’

TABLE DESIGN

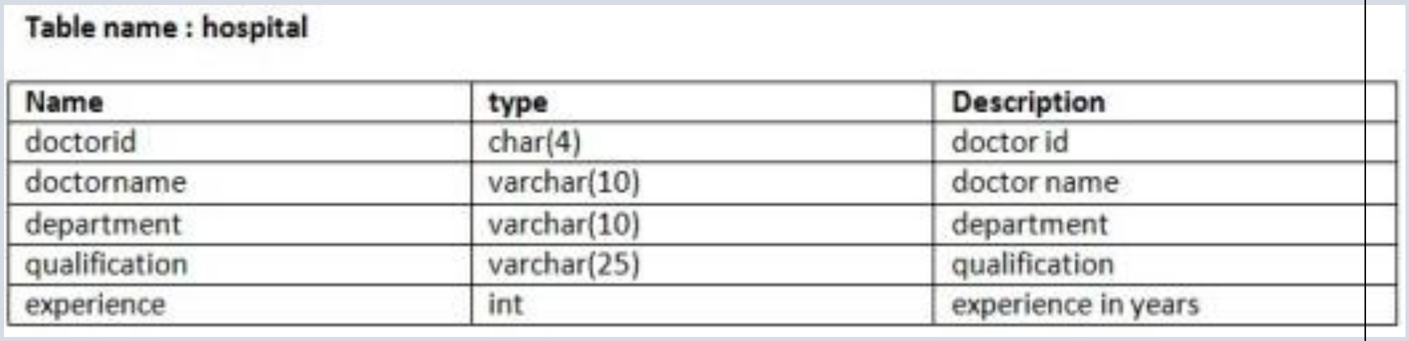


Table name : hospital

Name	type	Description
doctorid	char(4)	doctor id
doctorname	varchar(10)	doctor name
department	varchar(10)	department
qualification	varchar(25)	qualification
experience	int	experience in years

QUERIES

create table hospital(doctorid char(4),doctorname varchar(10),department varchar(25),qualification varchar(25),experience int);
\d hospital;

```
table "public.hospital"
column | type | collation | nullable | default  ---------------+----------------------+-----------+-
---------+---------   doctorid | character(4) | | |
doctorname | character varying(10) | | |
department | character varying(25) | | |
qualification | character varying(25) | | |
experience | integer | | |
```

a)
insert into hospital values('d001','miya','cardiologist','mbbs',5);
insert into hospital values('d002','john','orthologist','md',4);
insert into hospital values('d003','ramesh','skin','mbbs',3);
insert into hospital values('d004','madona','dentist','bds',6);
insert into hospital values('d005','manoj','optometry','md',1);

b)
select * from hospital;

```
doctorid | doctorname | department | qualification | experience  ----------+-------
-----+-------------+--------------+-----------   d001 | miya | cardiologist | mbbs |
5   d002 | john | orthologist | md | 4   d003 | ramesh | skin | mbbs | 3   d004 |
madona | dentist | bds | 6   d005 | manoj | optometry | md | 1  (5 rows)
```

c)
select doctorname from hospital where qualification='md';

```
doctorname
------------
john
manoj
(2 rows)
```

d)
select doctorname from hospital where experience>5 and qualification!='md';

```
doctorname
------------
 madona
 (1 row)
```

e)

select doctorname from hospital where department='skin';

```
doctorname
------------
 ramesh
 (1 row)
```

f)

update hospital set experience=5 where doctorid='d003';

select * from hospital;

```
 doctorid | doctorname | department | qualification | experience  ----------+-------
-----+--------------+---------------+------------   d001 | miya | cardiologist | mbbs |
5   d002 | john | orthologist | md | 4   d004 | madona | dentist | bds | 6   d005 |
manoj | optometry | md | 1   d003 | ramesh | skin | mbbs | 5  (5 rows)
```

g)

delete from hospital where doctorid='d005';

select * from hospital;

```
 doctorid | doctorname | department | qualification | experience  ----------+-------
-----+--------------+---------------+------------   d001 | miya | cardiologist | mbbs |
5   d002 | john | orthologist | md | 4   d004 | madona | dentist | bds | 6   d003 |
ramesh | skin | mbbs | 5  (4 rows)
```

Program 4 : implementing sql join and set operations

AIM

Create the following tables

Bank_customer (accno primary key, cust_name, place)

Deposit (accno foreign key, deposit_no, damount)

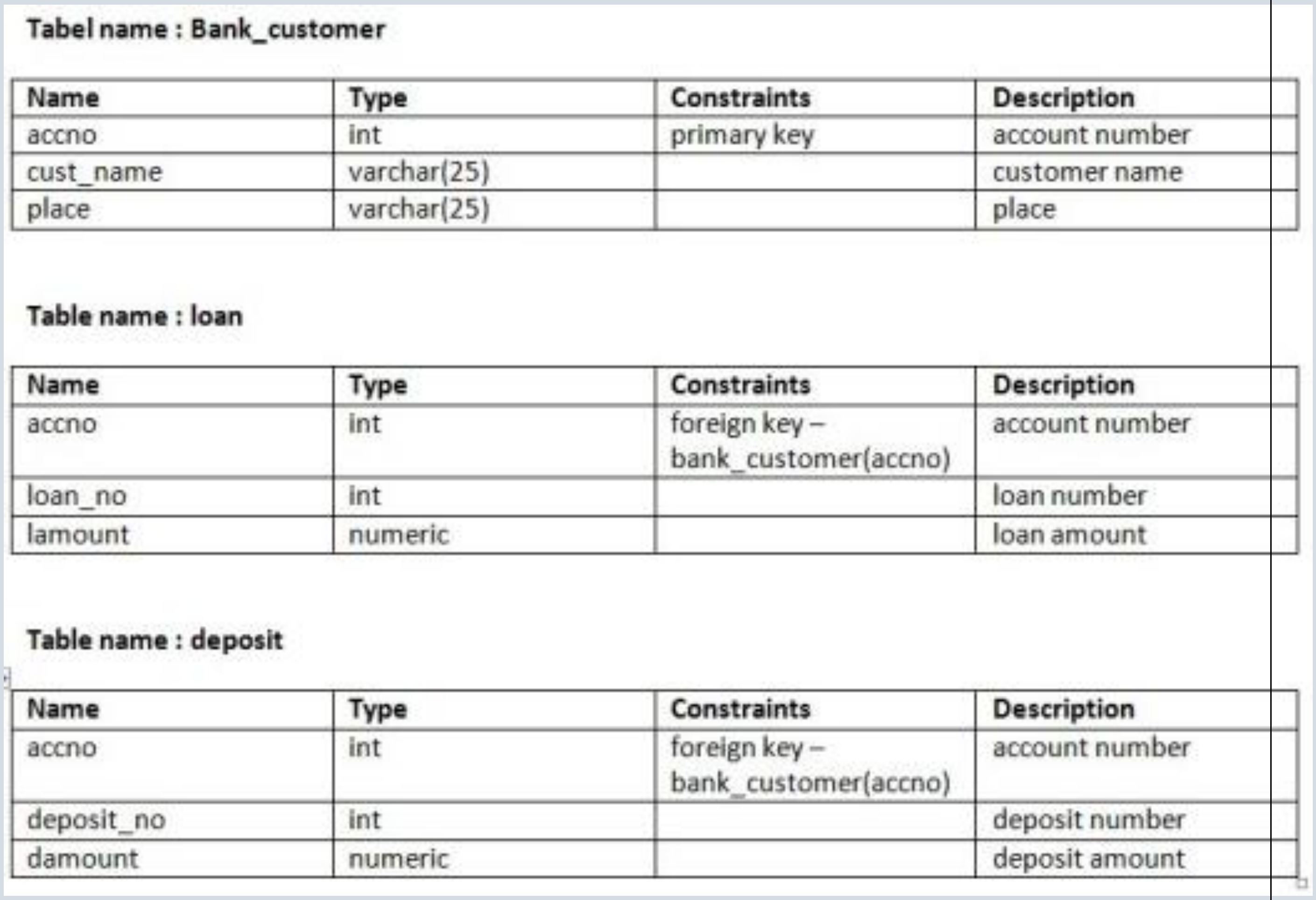
Loan (accno foreign key loan_no, Lamount)

Write the following queries

A. Display the details of the customers

B. Display the customers along with deposit amount who have only deposit with the bank C. Display the customers along with loan amount who have only loan with the bank D. Display the customers they have both loan and deposit with the bank E. Display the customer who have neither a loan nor a deposit with the bank

TABLE DESIGN



Tabel name : Bank_customer

Name	Type	Constraints	Description
accno	int	primary key	account number
cust_name	varchar(25)		customer name
place	varchar(25)		place

Table name : loan

Name	Type	Constraints	Description
accno	int	foreign key – bank_customer(accno)	account number
loan_no	int		loan number
lamount	numeric		loan amount

Table name : deposit

Name	Type	Constraints	Description
accno	int	foreign key – bank_customer(accno)	account number
deposit_no	int		deposit number
damount	numeric		deposit amount

QUERIES

create table Bank_customer(accno int primary key,cust_name varchar(25),place varchar(25)); create table Deposit(accno int references Bank_customer(accno),deposit_no int, damount numeric); create table loan(accno int references bank_customer(accno), loan_no int,lamount numeric);

```
insert into bank_customer values(101,'Ravi','clt');
insert into bank_customer values(102,'Adam','tvm');
insert into bank_customer values(103,'Aysha','mlprm');
insert into bank_customer values(104,'Lisa','knr');
insert into bank_customer values(105,'Shaju','klm');
insert into bank_customer values(106, 'Razeen','kch');
insert into bank_customer values(107,'Radha','tvm');
insert into bank_customer values(108,’Jose','knr');

insert into deposit values(101,15,400000);
insert into deposit values(102,13,75000);
insert into deposit values(105,12,55000);
insert into deposit values(108,16,750000);
insert into loan values(103,4,500000);
insert into loan values(104,2,200000);
insert into loan values(106,6,300000);
insert into loan values(108,8,600000);

select * from loan;
```

```
 accno | loan_no | lamount
-------+---------+---------
 103 | 4 | 500000
 104 | 2 | 200000
 106 | 6 | 300000
 108 | 8 | 600000
(4 rows)
```

```
select * from deposit;
```

```
 accno | deposit_no | damount
-------+------------+---------
 101 | 15 | 400000
 102 | 13 | 75000
 105 | 12 | 55000
 108 | 16 | 750000
(4 rows)
```

a)

```
select * from bank_customer;
```

```
 accno | cust_name | place
-------+-----------+-------
 101 | Ravi | clt
 102 | Adam | tvm
 103 | Aysha | mlprm
 104 | Lisa | knr
 105 | Shaju | klm
 106 | Razeen | kch
 107 | Radha | tvm
 108 | Jose | knr
(8 rows)
```

b)

```
select b.accno,cust_name,damount from bank_customer b join deposit d on
b.accno=d.accno where  b.accno not in(select accno from loan);
```

```
 accno | cust_name | damount
```

```
-------+-----------+---------
101 | Ravi | 400000
105 | Shaju | 55000
(3 rows)
```

c)

```
select b.accno,cust_name,lamount from bank_customer b join loan l on b.accno=l.accno
where b.accno not  in(select accno from deposit);
```

```
 accno | cust_name | lamount
-------+-----------+---------
 103 | Aysha | 500000
 104 | Lisa | 200000
 106 | Razeen | 300000
(3 rows)
```

d)

```
select cust_name from bank_customer where accno in((select accno from
loan)intersect(select accno  from deposit));
```

```
cust_name
-----------
 Jose
(1 row)
```

e)

```
select cust_name from bank_customer where accno not in((select accno from
loan)union(select accno  from deposit));
```

```
cust_name
-----------
 Radha
(1 row)
```

Program 5 : Aggregate Functions

AIM

Create a table employee with fields (EmpID, EName, Salary, Department, and Age). Insert some records. Write SQL queries using aggregate functions and group by clause

A. Display the total number of employees.
B. Display the name and age of the oldest employee of each department.
C. Display the average age of employees of each department
D. Display departments and the average salaries
E. Display the lowest salary in employee table
F. Display the number of employees working in purchase department

G. Display the highest salary in sales department;

H. Display the difference between highest and lowest salary

TABLE DESIGN

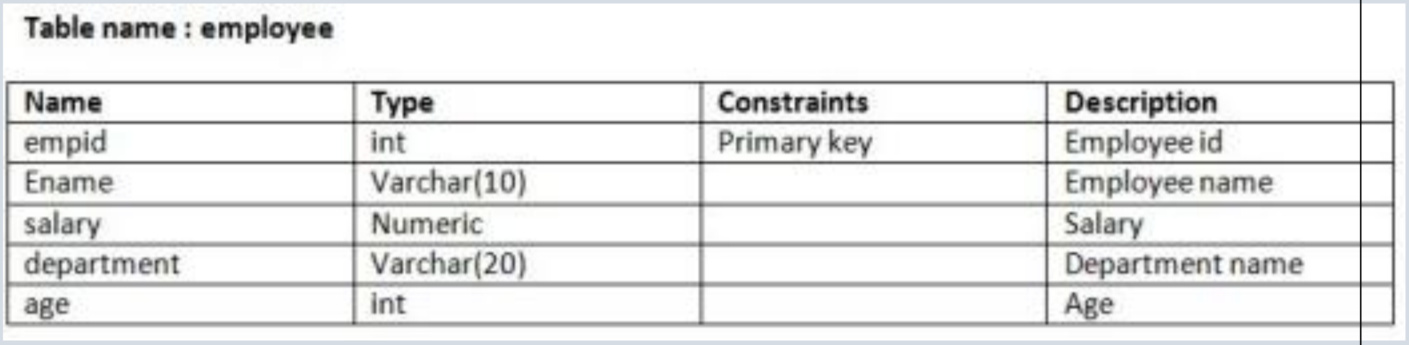


Table name : employee

Name	Type	Constraints	Description
empid	int	Primary key	Employee id
Ename	Varchar(10)		Employee name
salary	Numeric		Salary
department	Varchar(20)		Department name
age	int		Age

QUERIES

create table employee(empid int PRIMARY KEY,ename varchar(10),salary numeric, department var char(20) , age int);

Insert into employee values(101, 'Adam', 20000, 'Purchase', 25), (102, 'Lisa', 15000, 'Sales', 45), (103, 'Arun', 18000, 'Sales', 34), (104, 'Aysha', 25000, 'Purchase', 25), (105, 'Sheeja', 30000, 'Finance', 36), (106, 'Sagar', 28000, 'Finance', 42);

select * from employee;

```
empid | ename | salary | department | age
-------+--------+--------+------------+-----
101 | Adam | 20000 | Purchase | 25
102 | Lisa | 15000 | Sales | 45
103 | Arun | 18000 | Sales | 34
104 | Aysha | 25000 | Purchase | 25
105 | Sheeja | 30000 | Finance | 36
106 | Sagar | 28000 | Finance | 42
(6 rows)
```

a)

select count(empid)from employee;

```
count
-------
6
(1 row)
```

b)

select ename,department from employee a where age in(select max(age) from employee b group by department having a.department=b.department);

```
ename | department
```

```
-------+------------
Adam | Purchase

Lisa | Sales
Aysha | Purchase
Sagar | Finance
(4 rows)
```

c)

select department,avg(age)from employee group by department;

```
department | avg
------------+--------------------
Purchase | 25.0000000000000000
Finance | 39.0000000000000000
Sales | 39.5000000000000000
(3 rows)
```

d)

select department,avg (salary)from employee group by department;

```
department | avg
------------+--------------------
Purchase | 22500.000000000000
Finance | 29000.000000000000
Sales | 16500.000000000000
(3 rows)
```

e)

select min(salary) as min_salary from employee;

```
min_salary
------------
15000
(1 row)
```

f)

select count(ename) from employee where department='Purchase';

```
count
-------
2
(1 row)
```

g)

select max(salary)from employee where department='Sales';

```
max
-------
18000
(1 row)
```

h)

```
select max(salary) - min(salary) as sal_difference from employee;
sal_difference
----------------
15000
(1 row)
```

Program 6 : Logical Operators

AIM

Create a table product with the fields (Product_code primary key, Product_Name, Category, Quantity, Price).

Insert some records Write the queries to perform the following.

A. Display the records in the descending order of Product_Name
B. Display Product_Code, Product_Name with price between 20 and 50
C. Display the details of products which belongs to the categories of ‘bath soap’, ‘paste’, or ‘washing powder’
D. Display the products whose Quantity less than 100 or greater than 500
E. Display the products whose names starts with 's'
F. Display the products which not belongs to the category 'paste'
G. Display the products whose second letter is 'u' and belongs to the Category

'washing powder' TABLE DESIGN

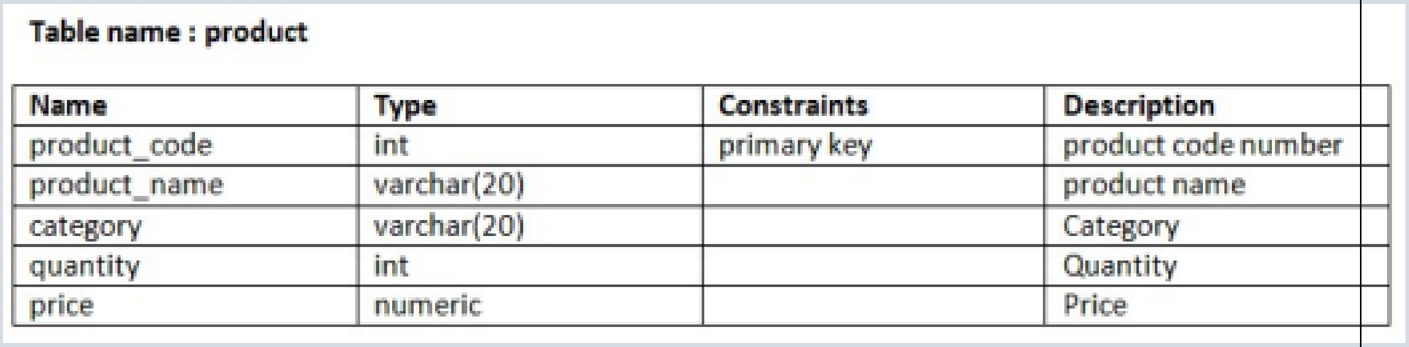


Table name : product

Name	Type	Constraints	Description
product_code	int	primary key	product code number
product_name	varchar(20)		product name
category	varchar(20)		Category
quantity	int		Quantity
price	numeric		Price

QUERIES

```
create table product(product_code int primary key, product_name
varchar(20),category varchar(20),  quantity int,price numeric(10,2));


insert into product values(1,'colgate','paste',10,100);
insert into product values(2,'close up','paste',9,90);
insert into product values(3,'nirma','bath soap',10,600);
insert into product values(4,'sunlight','washing powder',10,700);
insert into product values(5,'toy','car',1,200);
insert into product values(6,'toy','bike',3,300);
insert into product values(7,'lux','bath soap',1,20);
insert into product values(8,'lux','bath liquid',600,2000);
insert into product values(9,'nirma','bath liquid',300,1000);
```

```
select * from product;
```

```
product_code | product_name | category | quantity | price --------------+----------
----+----------------+----------+--------- 1 | colgate | paste | 10 | 100.00 2 | close
up | paste | 9 | 90.00 3 | nirma | bath soap | 10 | 600.00 4 | sunlight |
washing powder | 10 | 700.00 5 | toy | car | 1 | 200.00 6 | toy | bike | 3 |
300.00 7 | lux | bath soap | 1 | 20.00 8 | lux | bath liquid | 600 | 2000.00 9 |
nirma | bath liquid | 300 | 1000.00 (9 rows)
```

a)

```
select * from product order by product_name desc;
```

```
product_code | product_name | category | quantity | price --------------+----------
----+----------------+----------+--------- 5 | toy | car | 1 | 200.00 6 | toy | bike | 3 |
300.00 4 | sunlight | washing powder | 10 | 700.00 9 | nirma | bath liquid |
300 | 1000.00 3 | nirma | bath soap | 10 | 600.00 7 | lux | bath soap | 1 |
20.00 8 | lux | bath liquid | 600 | 2000.00 1 | colgate | paste | 10 | 100.00 2 |
close up | paste | 9 | 90.00 (9 rows)
```

b)

```
select product_code,product_name from product where price
between 20 and 50;  product_code | product_name
--------------+--------------
7 | lux
(1 row)
```

C)

```
select product_name,price from product where category in ('bath
soap','paste','washing powder');  product_name | price
--------------+--------
colgate | 100.00
close up | 90.00
nirma | 600.00
sunlight | 700.00
lux | 20.00
(5 rows)
```

d)

```
select * from product where quantity<100 or quantity>500;
```

```
product_code | product_name | category | quantity | price --------------+----------
----+----------------+----------+--------- 1 | colgate | paste | 10 | 100.00 2 | close
up | paste | 9 | 90.00 3 | nirma | bath soap | 10 | 600.00 4 | sunlight |
washing powder | 10 | 700.00 5 | toy | car | 1 | 200.00 6 | toy | bike | 3 |
300.00  7 | lux | bath soap | 1 | 20.00  8 | lux | bath liquid | 600 | 2000.00  (8
rows)
```

e)

select product_name from product where product_name like 's%';

```
product_name
--------------
 sunlight
 (1 row)
```

f)

select product_name from product where category != 'paste';

```
product_name
--------------
 nirma
 sunlight
 toy
 toy
 lux
 lux
 nirma
 (7 rows)
```

g)

select product_name from product where product_name like '_u%' and category='washing powder';

```
product_name
--------------
 sunlight
 (1 row)
```

Program 7 : Employee Table

AIM

Consider the employee database given below. Give an expression in SQL for each of the following queries: EMPLOYEE (Employee-Name, City)

WORKS (Employee-Name, Company-Name, Salary)

COMPANY (Company-Name, City)

MANAGES (Employee-Name, Manager-Name)

A. Find the names of all employees who work in Infosys

B. Find the names and cities of residence of all employees who works in Wipro C. Find the names, and cities of all employees who work in Infosys and earn more than Rs. 10,000. D. Find the employees who live in the same cities as the companies for which they work. E. Find all employees who do not work in Wipro Corporation.

F. Find the company that has the most employees.

TABLE DESIGN

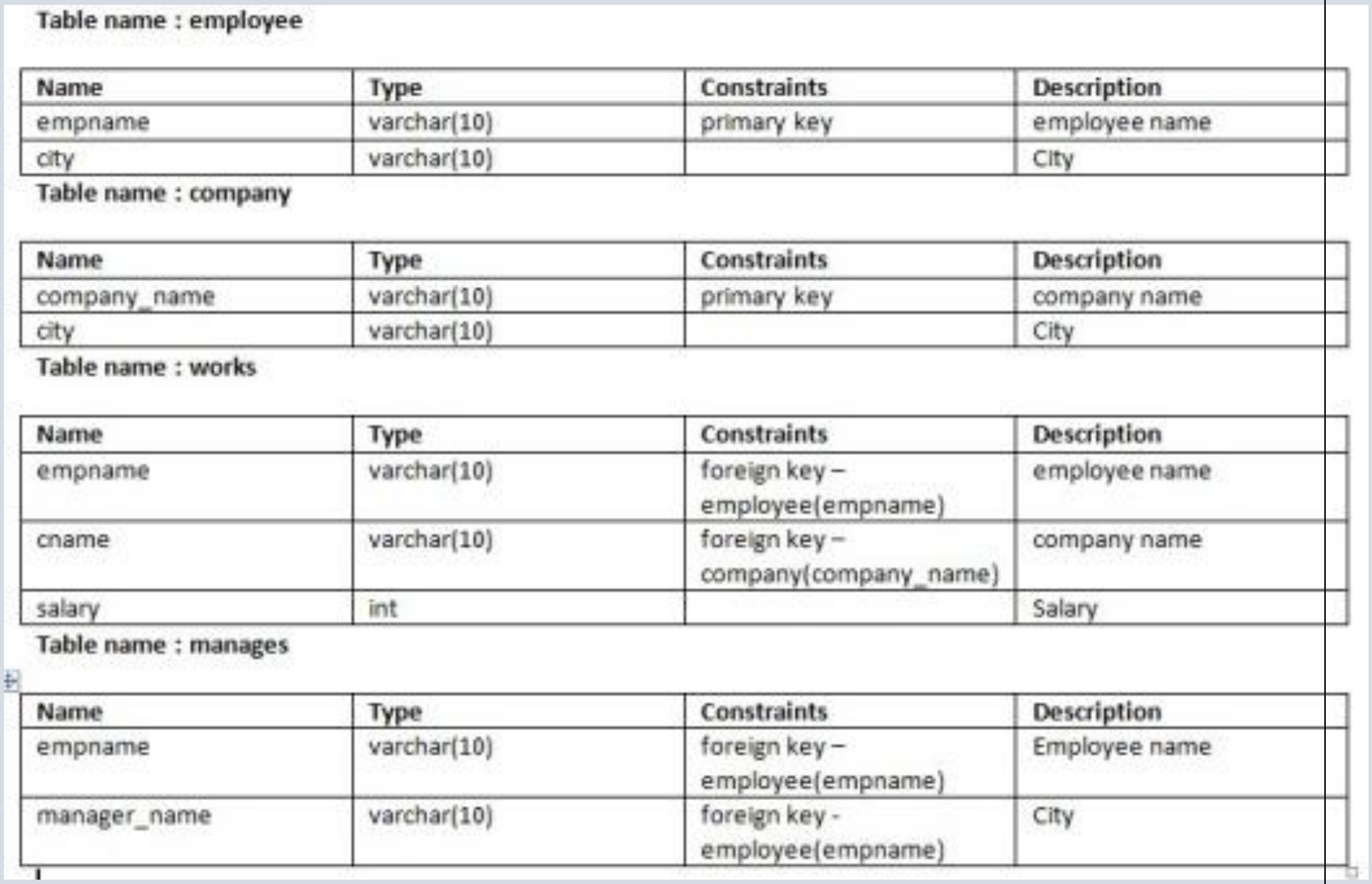


Table name : employee

Name	Type	Constraints	Description
empname	varchar(10)	primary key	employee name
city	varchar(10)		City

Table name : company

Name	Type	Constraints	Description
company_name	varchar(10)	primary key	company name
city	varchar(10)		City

Table name : works

Name	Type	Constraints	Description
empname	varchar(10)	foreign key – employee(empname)	employee name
cname	varchar(10)	foreign key – company(company_name)	company name
salary	int		Salary

Table name : manages

Name	Type	Constraints	Description
empname	varchar(10)	foreign key – employee(empname)	Employee name
manager_name	varchar(10)	foreign key - employee(empname)	City

QUERIES

```
create table employee(empname varchar(10) primary key,city varchar(10));


create table company(company_name varchar(10) primary key ,city varchar(10));
create table works(empname varchar(10) primary key references
employee(empname),cname var char(10) references
company(company_name),salary int);


create table manages(empname varchar(10) references
employee(empname),manager_name var char(10) references
employee(empname),primary key(empname,manager_name));


 insert into employee values('swathi','kzkd');
 insert into employee values('vishnu','tvm');
 insert into employee values('shreya','usa');
 insert into employee values('adam','dubai');
 insert into employee values('sajid','malappuram');


 insert into company values('infosys','tvm');
 insert into company values('chandrika','trissur');
 insert into company values('wipro','kochi');
 insert into company values('tata','mumbai');
 insert into company values('bajaj','delhi');

 insert into works values('swathi','infosys',10000);
 insert into works values('vishnu','infosys',15000);
 insert into works values('shreya','wipro',71502);
 insert into works values('adam','infosys',8000);
 insert into works values('sajid','wipro',18000);

 insert into manages values('swathi','adam');
 insert into manages values('vishnu','adam');
 insert into manages values('sajid','shreya');
```

```
select * from employee;
 empname | city
---------+------------
swathi | kzkd
vishnu | tvm
shreya | usa
adam | dubai
sajid | malappuram
(5 rows)
select * from company;
 company_name | city
--------------+---------
infosys | tvm
chandrika | trissur
wipro | kochi
tata | mumbai
bajaj | delhi
(5 rows)
select * from manages;

 empname | manager_name
---------+--------------
swathi | adam
vishnu | adam
sajid | shreya
(3 rows)
select * from works;
```

```
empname | cname | salary
---------+---------+--------
swathi | infosys | 10000
vishnu | infosys | 15000
shreya | wipro | 71502
adam | infosys | 8000
sajid | wipro | 18000
(5 rows)
```

a)

```
select empname from works where cname='infosys';
empname
---------
swathi
vishnu
adam
(3 rows)
```

b)

```
select employee.empname,employee.city from employee,works where
employee.empname =  works.empname and works.cname = 'wipro';
empname | city
---------+------------
shreya | usa
sajid | malappuram
(2 rows)
```

c)

```
select employee.empname,city from employee,works where employee.empname=
works.empname and  cname='infosys' and salary>10000;
empname | city
---------+------
vishnu | tvm
(1 row)
```

d)

```
select employee.empname from employee,works,company where employee.empname =
works.empname  and employee.city = company.city and works.cname = company.
company_name;  empname
---------
vishnu
(1 row)
```

e)

select empname from works where cname!='wipro';

```
empname
---------
 swathi
 vishnu
 adam
(3 rows)
```

f)

select cname from works group by cname order by count(*) desc limit 1;

```
 cname
---------
 infosys
(1 row)
```

Program 8 :

AIM

Create table supplier(supcode,sname,city)

Create table product (pcode,pname)

Create table supl_product(supcode,pcode,qty)

A. Get all pairs of supplier numbers such that the two suppliers are located in the same city. B. Get supplier names for suppliers who supply product P2.

C. Get product numbers supplied by more than one supplier.

D. Get supplier numbers for suppliers who are located in the same city as supplier S1. E. Get supplier names for suppliers who supply part P1.

F. Get the number of Suppliers, who are supplying at least one product.

G. For each product supplied, get the pcode. and the total quantity supplied for that part.

TABLE DESIGN

Table Name : Supplier

Name Type Constraints Description

supcode Char(3) Primary key Supplier number

sname varchar(10) Supplier name

city	Varchar(10)		City

Table Name : Product

Name Type Constraints Description

pcode Char(3) Primary key product number

pname	varchar(10)		product name

Table Name : Supl_product

Name Type Constraints Description

supcode Char(3) Foreign key – supplier (supcode) Supplier number

pcode char(3) Foreign key – product(pcode) Product number

qty	int		Quantity

QUERIES

create table supplier(supcode char(3) primary key,sname varchar(10),

city varchar(10)); create table product(pcode char(3) primary key, pname

varchar(10));

Create table supl_product(supcode char(3) references supplier(supcode),pcode char(3) references product(pcode),qty int);

insert into supplier values ('s1','raju','calicut'), ('s2','sheela','thrissur'), ('s3','aysha','kochi'), ('s4','anees','tirur'), ('s5','lisa','calicut'),('s6','zara','tirur');

select * from supplier;

```
supcode | sname | city
---------+--------+----------
s1 | raju | calicut
s2 | sheela | thrissur
```

```
s3 | aysha | kochi
s4 | anees | tirur
s5 | lisa | calicut
s6 | zara | tirur
(6 rows)
```

insert into product values('p1','soap'), ('p2','rice'), ('p3','salt'), ('p4','sugar'), ('p5','wheat'), ('p6','colgate'), ('p7','chilly');

select * from product;

```
pcode | pname
-------+---------
p1 | soap
p2 | rice
p3 | salt
p4 | sugar
p5 | wheat
p6 | colgate
p7 | chilly
(7 rows)
```

insert into supl_product values('s1','p1',34), ('s1','p2',20), ('s2','p2',20), ('s6','p4',5), ('s3','p3',10), ('s2','p7',10), ('s3','p1',12);

select * from supl_product;

```
supcode | pcode | qty
---------+-------+-----
s1 | p1 | 34
s1 | p2 | 20
s2 | p2 | 20
s6 | p4 | 5
s3 | p3 | 10
s2 | p7 | 10
s3 | p1 | 12
(7 rows)
```

a)

select a.supcode,b.supcode,b.city from supplier a,supplier b where a.city=b.city and a.supcode<b.supcode;

```
supcode | supcode | city
---------+---------+---------
s1 | s5 | calicut
s4 | s6 | tirur
(2 rows)
```

b)

select sname from supplier where supcode in(select supcode from supl_product where pcode='p2');

```
sname
--------
raju
```

```
sheela
(2 rows)
```

c)

select pcode from supl_product group by pcode having count(pcode)>1;

```
pcode
-------
p2
p1
(2 rows)
```

d)

select supcode from supplier where city=(select city from supplier where supcode='s1');

```
supcode
---------
s1
s5
(2 rows)
```

e)

select sname from supplier where supcode in(select supcode from supl_product where pcode='p1');

```
sname
-------
raju
aysha
(1 row)
```

f)

select count(distinct supcode) from supl_product;

```
count
-------
4
(1 row)
```

g)

select pcode,sum(qty) from supl_product group by pcode;

```
pcode | sum
-------+-----
p3 | 10
p4 | 5
p7 | 10
p2 | 40
p1 | 46
(5 rows)
```

Part 2 PostgreSql

Program 9 : Salary Report of Employees

AIM

Prepare a salary report of the employees showing the details such as:

EmpNo, Name, Basic Pay, DA, Gross Salary, PF, Net Salary, Annual Salary and Tax For this purpose, create a table named SALARIES having the following structure. Field Name Type Width

EmpNo Character 10

Name Character 20

Basic	Numeric	6

Enter the records of at least 10 employees. Use the following information for calculating the details for the report:

- ♣ DA is fixed as the 40% of the basic pay.
- ♣ PF is fixed as 10% of the basic pay.
- ♣ Gross Salary is (Basic Pay + DA).
- ♣ Net Salary is (Gross Salary – PF)
- ♣ Annual Salary is (12 * Net Salary)

Tax is calculated using the following rules:

- ♣ If annual salary is less than 100000, No Tax
- ♣ If annual salary is greater than 100000 but less than or equal to 150000, then the tax is 10% of the excess over 100000.
- ♣ If annual salary is greater than 150000 but less than or equal to 250000, then the tax is 20% of the excess over 150000.
- ♣ If annual salary is greater than 250000, then the tax is 30% of the

excess over 250000. TABLE DESIGN

Table Name : salaries

Name Type Description

EmpNo char(10) Employee number

Name char(20) Name

Basic	numeric(6)	Basic pay

QUERIES

create table salaries(EmpNo char(3), Name char(10), Basic numeric(6));
Insert into salaries values('101', 'Adam', 20000), ('102', 'Lisa', 15000), ('103', 'Arun', 18000), ('104', 'Aysha', 25000), ('105', 'Sheeja', 30000), ('106', 'Sagar', 28000);
Insert into salaries values('111', 'Muthu', 10000), ('109', 'Hari', 2500), ('108', 'Raju', 5000), ('107', 'Sabi', 8000);
select * from salaries;

```
empno | name | basic
-------+------------+-------
101 | Adam | 20000
102 | Lisa | 15000
103 | Arun | 18000
104 | Aysha | 25000
105 | Sheeja | 30000
106 | Sagar | 28000
111 | Muthu | 10000
109 | Hari | 2500
108 | Raju | 5000
107 | Sabi | 8000
(10 rows)
```

```
do $$
declare
dav numeric(10,2);
pfv numeric(10,2);
grossv numeric(10,2);
anv numeric(10,2);
netv numeric(10,2);
taxv numeric(10,2);
rec record;
begin
alter table salaries add column da numeric(10,2),add column pf
numeric(10,2),add column gross  numeric(10,2),add column net
numeric(10,2),add column annual numeric(10,2),add column
tax  numeric(10,2);
for rec in select * from salaries
loop
dav:=rec.basic*0.4;
pfv:=rec.basic*0.1;
grossv:=rec.basic+dav;
netv:=grossv-pfv;
anv:=12*netv;
```

```
          if anv>250000 then
          taxv:=(anv-250000)*0.3+ (250000-150000)*0.2 + (150000-100000)*0.1;
          elsif anv>150000 then
          taxv:=(anv-150000)*0.2 + (150000-100000)*0.1;
          elsif anv>100000 then
          taxv:=(anv-100000)*0.1;
          else
          taxv:=0;
          end if;
          update salaries set da=dav, pf=pfv, gross=grossv, net=netv,
          annual=anv, tax=taxv where  empno=rec.empno;
          end loop;
          end $$;
select * from salaries;
```

```
 empno | name | basic | da | pf | gross | net | annual | tax  -------+------------+-------+----------+---------+--------
--+----------+-----------+----------   101 | Adam | 20000 | 8000.00 | 2000.00 | 28000.00 | 26000.00 |
312000.00 | 43600.00   102 | Lisa | 15000 | 6000.00 | 1500.00 | 21000.00 | 19500.00 | 234000.00 |
21800.00   103 | Arun | 18000 | 7200.00 | 1800.00 | 25200.00 | 23400.00 | 280800.00 | 34240.00   104 |
Aysha | 25000 | 10000.00 | 2500.00 | 35000.00 | 32500.00 | 390000.00 | 67000.00   105 | Sheeja |
30000 | 12000.00 | 3000.00 | 42000.00 | 39000.00 | 468000.00 | 90400.00   106 | Sagar | 28000 |
11200.00 | 2800.00 | 39200.00 | 36400.00 | 436800.00 | 81040.00   111 | Muthu | 10000 | 4000.00 |
1000.00 | 14000.00 | 13000.00 | 156000.00 | 6200.00   109 | Hari | 2500 | 1000.00 | 250.00 | 3500.00 |
3250.00 | 39000.00 | 0.00   108 | Raju | 5000 | 2000.00 | 500.00 | 7000.00 | 6500.00 | 78000.00 |
0.00   107 | Sabi | 8000 | 3200.00 | 800.00 | 11200.00 | 10400.00 | 124800.00 | 2480.00
```

Program 10 : Calculating Grade From Average Score

AIM

Create table exam_result(rollno, avg_score, Grade) insert 10 records. Assign null values to the field grade. Write Program block to update the grade field by using the following condition.

avg_score between 90 and 100 - A

avg_score 75 -89 - B

avg_score 60- 74 - C

avg_score 50 -59 - D

avg_score below 50 – E

TABLE DESIGN

Table Name : exam_result

Name	Type	Description
Rollno	Integer	Roll Number
avg_score	numeric(5,2)	Average Mark

Grade	char(1)	Grade

QUERIES

```
Create table exam_result(rollno integer,avg_score numeric(5,2), grade char(1));
insert into exam_result values (4, 67), (3, 35), (2, 91), (6, 45), (11, 86),(7,95), (8, 75), (9,
68), (5, 55), (12,  97), (13, 30);

select * from exam_result;
 rollno | avg_score | grade
--------+-----------+------
 4 | 67.00 |
 3 | 35.00 |
 2 | 91.00 |
 6 | 45.00 |
 11 | 86.00 |
 7 | 95.00 |
 8 | 75.00 |
 9 | 68.00 |
 5 | 55.00 |
 12 | 97.00 |
 13 | 30.00 |
(11 rows)

do $$
declare
rec record;
grd char(1);
begin
for rec in select * from exam_result
loop
if rec.avg_score between 90 and 100 then
grd:= 'A';
elsif rec.avg_score between 75 and 89 then
grd= 'B';
elsif rec.avg_score between 60 and 74 then
grd:= 'C';
elsif rec.avg_score between 50 and 59 then
grd:= 'D';
```

```
else
grd:= 'E';
end if;
update exam_result set grade=grd where rollno=rec.rollno;
end loop;
end;
$$ language plpgsql;
```

```
Select * from exam_result;
rollno | avg_score | grade
--------+-----------+-------
4 | 67.00 | C
3 | 35.00 | E
2 | 91.00 | A
6 | 45.00 | E
11 | 86.00 | B
7 | 95.00 | A
8 | 75.00 | B
9 | 68.00 | C
5 | 55.00 | D
12 | 97.00 | A
13 | 30.00 | E
(11 rows)
```

Program 11 : Area of a Circle

AIM

Write a program code to calculate the area of a circle for a value of radius varying from 3 to 7. Store the radius and the corresponding value of calculated area in an empty table named areas with field's radius and area.

TABLE DESIGN

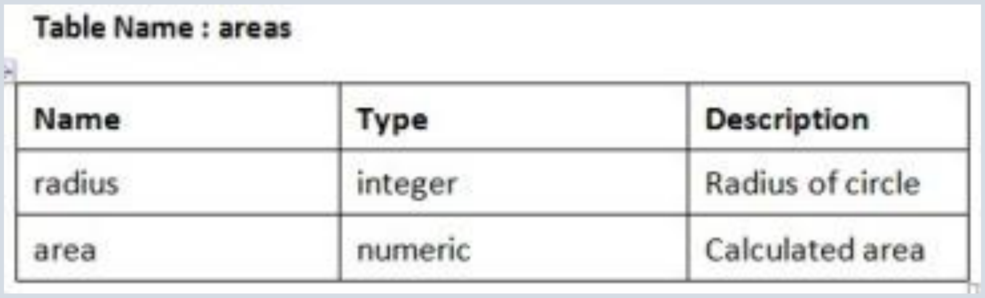


Table Name : areas

Name	Type	Description
radius	integer	Radius of circle
area	numeric	Calculated area

QUERIES

```
do $$
declare
```

```
r integer;
ar numeric(10,2);
begin
create table areas(radius integer,area numeric(5,2));
r:=3;
for r in 3..7 loop
ar:=3.14*r*r;
insert into areas values(r,ar);
end loop;
end $$;

select * from areas;
radius | area
--------+--------
 3 | 28.26
 4 | 50.24
 5 | 78.50
 6 | 113.04
 7 | 153.86
(5 rows)
```

Program 12 : Electricity Bill Calculation

AIM

Write a program block to calculate the electricity bill by accepting cust_no and

units_consumed. ALGORITHM

```
Function electricity_bill(custno as int, unit as int)
    Step 1. Start
    Step 2. Check if unit<=100 then rate=3 and go to step 5
    Step 3. Check if unit<=250 then rate=4 and go to step 5
    Step 4. Check if unit<=500 then rate=5, else rate=6
    Step 5. Calculate bill_amount=rate*unit.
    Step 6. Print bill_amount
    Step 7. Stop
```

PROGRAM CODE

```
create or replace function electricity_bill(c int, u int) returns text as $$
declare
```

```
rate int;
amt int;
begin
if u<=100 then
rate:=3;
elsif u<=250 then
rate:=4;
elsif units_consumed<=500 then
rate:=5;
else
rate:=6;
end if;
amt:=rate*u;
return 'Customer No : ' || c || E'\nUnits Consumed : ' || u || E'\nBill Amount : ' ||
amt;  end;
$$ language plpgsql;


select electricity_bill(121,200);
```

```
 electricity_bill
---------------------
 Customer No : 121+
 Units Consumed : 200+
 Bill Amount : 800
(1 row)
```

Program 13 : Fibonacci Numbers upto a Limit

AIM

Create a procedure to print Fibonacci number up to a limit, limit is passed

as an argument ALGORITHM

The function fibonacci(n as int)

```
Step 1. Start

Step 2. Declare a, b anc c as integer.

Step 3. Initialize a=1, b=0 and c=0

Step 4. Repeat steps 5 through 8 until n<c
```

Step 5. Print c

Step 6. Calculate c=a+b

Step 7. a=b

Step 8. b=c

Step 9. Stop

PROGRAM CODE

```
create or replace function fibonacci(n int) returns setof int as $$
declare
a int:=1;
b int:=0;
c int:=0;
begin
loop
exit when n < c;
return next c;
c:=a+b;
a:=b;
b:=c;
end loop;
end;
$$ language plpgsql;

select fibonacci(8);
```

```
 fibonacci
-----------
0
1
1
2
3
5
8
(7 rows)
```

Program 14 : Check Prime or Not

AIM

Create a function to check whether a given number

is prime or not ALGORITHM

```
Function checkprime(n as int)

Step 1. Start

Step 2. Declare i as int

Step 3. Check if n<2 then, print “not prime”

and go to step 9  Step 4. i=2

Step 5. Repeat steps 6 & 7 while i<=n/2

Step 6. If n mod i=0 then print “not prime” and

go to step 9  Step 7. i=i+1

Step 8. Print “Prime”. Go to step 9

Step 9. Stop
```

PROGRAM CODE

```
CREATE FUNCTION check_prime(n int) returns
varchar(25) AS $$  DECLARE
i int;
BEGIN
if n<2 then
return n || ' is not a prime number ';
end if;
for i in 2..n/2
loop
if mod(n,i)=0 then
return n || ' is not a prime number ';
end if;
end loop;
return n || ' is a prime number ';
end;
$$ language plpgsql;

Select check_prime(1);
```

Select check_prime(7);

```
lbsmdc=# Select check_prime(1);
 check_prime
--------------------------
 1 is not a prime number
(1 row)

lbsmdc=# Select check_prime(7);
 check_prime
----------------------
 7 is a prime number
(1 row)
```

Program 15 : Student Mark List

AIM

Create a table stud_mark(regno, sname ,avg_mark)

Insert few records

Write a procedure to display number of students got Distinction, first-class, second class, third class or failed (90-100 distinction, 75-89 firstclass 60-74 second class 50-59 Third class below 50 failed)

TABLE DESIGN

Table Name : stud_mark

[redacted]

avg_mark	numeric(5,2)	Average mark

QUERIES

```
Create table stud_mark(regno char(5), sname varchar(20), avg_mark numeric(5,2));
```

```
insert into stud_mark values ('S01', 'Viji', 35), ('S02', 'Adam', 91), ('S03', 'Zara', 45),
('S04', 'Lisa',  86),('S05', 'Ishan',95), ('S06', 'Hari', 75), ('S07', 'Haya', 68), ('S08',
'Jisha', 55), ('S09', 'Jasi', 97), ('S10',  'Pranav', 30), ('S11', 'Neeraj', 67);
```

```
select * from stud_mark;
```

```
 regno | sname | avg_mark
-------+--------+----------
 S01 | Viji | 35.00
 S02 | Adam | 91.00
```

```
S03 | Zara | 45.00
S04 | Lisa | 86.00
S05 | Ishan | 95.00
S06 | Hari | 75.00
S07 | Haya | 68.00
S08 | Jisha | 55.00
S09 | Jasi | 97.00
S10 | Pranav | 30.00
S11 | Neeraj | 67.00
(11 rows)
```

```
do $$
declare
dist int;
first int;
second int;
third int;
fail int;
begin
select count(*) into dist from stud_mark where avg_mark between 90 and 100;
select count(*) into first from stud_mark where avg_mark between 75 and 89;
select count(*) into second from stud_mark where avg_mark
between 60 and 74;  select count(*) into third from stud_mark
where avg_mark between 50 and 59;
select count(*) into fail from stud_mark where avg_mark < 50;
raise notice '
No of Distintions : %
No of First Classes : %
No of Second Classes : %
No of Third Classes : %
No of Failures : %',dist,first,second,third,fail;
end $$;
```

```
NOTICE:
No of Distintions : 3
No of First Classes : 2
No of Second Classes : 2
No of Third Classes : 1
No of Failures : 3
DO
```

Program 16 Display Average Salary of a Department

AIM

Create a table emp_salary(empno,ename,dept,salary)

Write a function to return the average salary of a particular department by accepting departmentname as argument.

TABLE DESIGN

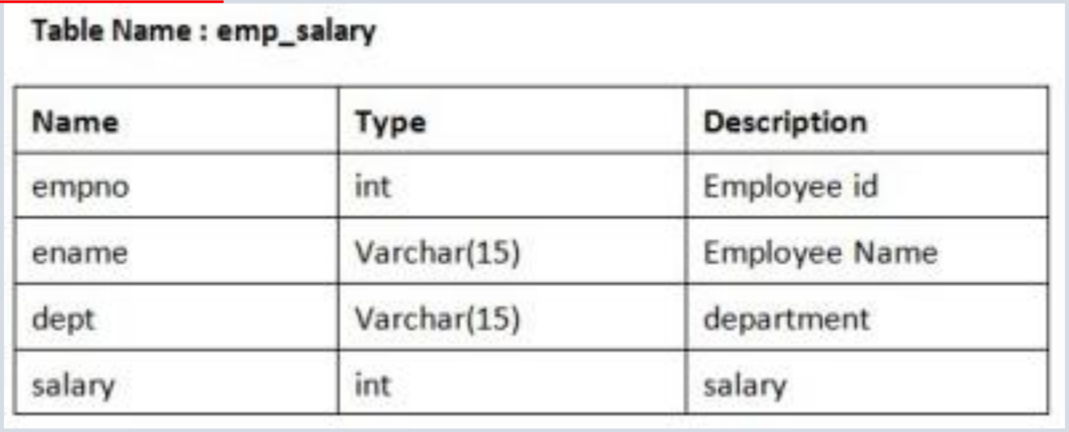


Table Name : emp_salary

Name	Type	Description
empno	int	Employee id
ename	Varchar(15)	Employee Name
dept	Varchar(15)	department
salary	int	salary

QUERIES

Create table emp_salary(empno int, ename varchar(15), dept varchar(15), salary int); Insert into emp_salary values(101, 'Adam', 'Production', 20000), (102, 'Lisa', 'Marketing', 15000), (103, 'Arun', 'Marketing', 18000), (104, 'Aysha', 'Production', 25000), (105, 'Sheeja', 'Finance', 30000), (106, 'Sagar', 'Finance', 28000);

Select * from emp_salary;

```
empno | ename | dept | salary
-------+--------+------------+--------
101 | Adam | Production | 20000
102 | Lisa | Marketing | 15000
103 | Arun | Marketing | 18000
104 | Aysha | Production | 25000
105 | Sheeja | Finance | 30000
106 | Sagar | Finance | 28000
(6 rows)
```

```
create function avg_salary(dept_name varchar(10)) returns
numeric(10,2) as $$  declare
avg_sal numeric(10,2);
begin
select avg(salary) into avg_sal from emp_salary group by dept having
dept=dept_name;  return avg_sal;
end;
$$ language plpgsql;
```

Select avg_salary('Production');

```
avg_salary

------------
 22500.00
(1 row)
```

Select avg_salary('Finance');

```
avg_salary
------------
 29000.00
(1 row)
```

Progam 17. Implementation of Trigger Before Insert

AIM

Create a table Student (regno, sname, sub1, sub2, sub3, sub4, sub5, mark_total,avg_mark) Create a BEFORE INSERT trigger to calculate total mark and average mark and update the corresponding columns.

TABLE DESIGN

Table Name : student

Name Type Description

Regno char(5) Register number

Sname varchar(15) Name of the student

sub1 numeric(3) Subject 1

sub2 numeric(3) Subject 2

sub3 numeric(3) Subject 3

sub4 numeric(3) Subject 4

sub5 numeric(3) Subject 5

mark_total numeric(3) Total mark

avg_mark	numeric(5,2)	Average mark

QUERIES

```
Create table student(regno char(5), sname varchar(15), sub1 numeric(3), sub2
numeric(3), sub3 numer ic(3), sub4 numeric(3), sub5 numeric(3), mark_total numeric(3),
avg_mark numeric(5,2));

create or replace function fun() returns trigger as $$
declare
begin
new.mark_total=new.sub1+new.sub2+new.sub3+new.sub4+new.sub5;
new.avg_mark=new.mark_total/5.0;
return new;
end;
$$ language plpgsql;

create trigger trig before insert on student for each row execute procedure fun();

insert into student values ('s101','adam',23,45,67,23,45), ('s102', ' sheena',
96,97,89,95,67), ('s103',  'bobby', 67,52,83,91,34), ('s104', 'radha', 34,54,23,12,25),
('s105', 'zara', 86,76,82,85,34);

select * from student;
```

```
 regno | sname | sub1 | sub2 | sub3 | sub4 | sub5 | mark_total | avg_mark -------+---------+--
----+------+------+------+------+------------+---------- s101 | adam | 23 | 45 | 67 | 23 | 45 | 203 |
40.60 s102 | sheena | 96 | 97 | 89 | 95 | 67 | 444 | 88.80 s103 | bobby | 67 | 52 | 83 | 91 |
34 | 327 | 65.40 s104 | radha | 34 | 54 | 23 | 12 | 25 | 148 | 29.60 s105 | zara | 86 | 76 | 82
| 85 | 34 | 363 | 72.60 (5 rows)
```

Program 18. Implementation of Trigger After Delete or Update

AIM

Create table phonebook (pname, mobno)

Create a Trigger to insert the old records from the table phonebook to del_phonebook (pname, mobno, modfy_date) whenever a record is deleted or updated in the phonebook table.

TABLE DESIGN

Table Name : phonebook

Name Type description

Pname varchar(20) Name of the Person

Mobno	char(10)	Mobile Number

Table Name : del_phonebook

Name Type description

Pname	varchar(20)	Name of the Person

Mobno char(10) Mobile Number

modify_date	timestamp	modified date time

QUERIES

```
create table phonebook(pname varchar(20), mobno char(10));
create table del_phonebook(pname varchar(20), mobno char(10), modify_date
timestamp);

insert into phonebook values('Raju','9895324212');
insert into phonebook values('Aravind', '9435111222');
insert into phonebook values('Sheeja','9277123435');
insert into phonebook values('Arunthadi', '9867111333');
insert into phonebook values('Fida', '9234555777');

select * from phonebook;
```

```
 pname | mobno
-----------+------------
 Raju | 9895324212
 Aravind | 9435111222
 Sheeja | 9277123435
 Arunthadi | 9867111333
 Fida | 9234555777
(5 rows)
```

```
create or replace function fun() returns trigger as $$
begin
 insert into del_phonebook values (old.pname, old.mobno, now());
return new;
```

```
end;
$$ language plpgsql;

create trigger trig after delete or update on phonebook for each row execute procedure
fun();

delete from phonebook where pname='Sheeja';
update phonebook set mobno='9292777888' where pname='Raju';

select * from del_phonebook;
 pname | mobno | modify_date
--------+------------+----------------------------
 Sheeja | 9277123435 | 2024-05-28 13:28:21.409086
 Raju | 9895324212 | 2024-05-28 13:28:21.454148

(2 rows)
```