1. **Employee Table**

create table employee(

test(# empid int primary key,

test(# empname varchar(100),

test(# department varchar(50),

test(# contactno varchar(100),

test(# emailId varchar(100),

test(# empheadid int);

CREATE TABLE

test=# insert into employee values(101,'Isha','E-101',1234567890,'isha@gmail.com',105);

INSERT 0 1

test=# insert into employee values(102,'Priya','E-104',1234567890,'priya@yahoo.com',103);

INSERT 0 1

test=# insert into employee values(103,'Neha','E-101',1234567890,'neha@gmail.com',101);

INSERT 0 1

test=# insert into employee values(104,'Rahul','E-102',1234567890,'rahul@yahoo.com',105);

INSERT 0 1

test=# insert into employee values(105,'Abhishek','E-101',1234567890,'abhishek@gmail.com',102);

INSERT 0 1

test=# select \* from employee;

empid | empname | department | contactno | emailid | empheadid

-------+----------+------------+------------+--------------------+-----------

101 | Isha | E-101 | 1234567890 | isha@gmail.com | 105

102 | Priya | E-104 | 1234567890 | priya@yahoo.com | 103

103 | Neha | E-101 | 1234567890 | neha@gmail.com | 101

104 | Rahul | E-102 | 1234567890 | rahul@yahoo.com | 105

105 | Abhishek | E-101 | 1234567890 | abhishek@gmail.com | 102

1. rows)
2. **Empdept Table**

test=# create table empdept (

test(# deptid varchar(50) primary key,

test(# deptname varchar(100),

test(# dept\_off varchar(100),

test(# depthead int references employee(empid));

CREATE TABLE

insert into empdept values('E=103','House Keeping','Tuesday',101);

INSERT 0 1

insert into empdept values('E=103','House Keeping','Saturday',103);

INSERT 0 1

test=# insert into empdept values('E=104','Sales','Sunday',104);

INSERT 0 1

test=# insert into empdept values('E-105','Purchage','Tuesday',104);

INSERT 0 1

test=# select \* from empdept;

deptid | deptname | dept\_off | depthead

--------+---------------+----------+----------

E-101 | HR | Monday | 105

E-102 | Development | Tuseday | 101

E=103 | House Keeping | Saturday | 103

E=104 | Sales | Sunday | 104

E-105 | Purchage | Tuesday | 104

(5 rows)

1. **EmpSalary Table**

create table empsalary(

test(# empid int references employee(empid),

test(# salary bigint,

test(# ispermanent varchar(20));

CREATE TABLE

test=# insert into empsalary values(101,2000,'Yes');

INSERT 0 1

test=# insert into empsalary values(102,10000,'Yes');

test=# insert into empsalary values (103,5000,'No');

INSERT 0 1

test=# insert into empsalary values (104,1900,'Yes');

INSERT 0 1

test=# insert into empsalary values (105,2300,'Yes');

INSERT 0 1

test=# select \* from empsalary;

empid | salary | ispermanent

-------+--------+-------------

101 | 2000 | Yes

102 | 10000 | Yes

103 | 5000 | No

104 | 1900 | Yes

105 | 2300 | Yes

(5 rows)

1. **Project Table**

test=# create table project(

test(# projectid varchar(20) primary key,

test(# duration int);

CREATE TABLE

test=# insert into project values ('p-1',23);

INSERT 0 1

test=# insert into project values ('p-2',15);

INSERT 0 1

test=# insert into project values ('p-3',45);

INSERT 0 1

test=# insert into project values ('p-4',2);

INSERT 0 1

test=# insert into project values ('p-5',30);

INSERT 0 1

test=# select \* from project;

projectid | duration

-----------+----------

p-1 | 23

p-2 | 15

p-3 | 45

p-4 | 2

p-5 | 30

(5 rows)

1. **Country Table**

test=# create table country(

test(# cid varchar(50) primary key,

test(# cname varchar(100));

CREATE TABLE

test=# insert into country values ('c-1','INDIA');

INSERT 0 1

test=# insert into country values ('c-2','USA');

INSERT 0 1

test=# insert into country values ('c-3','CHINA');

INSERT 0 1

test=# insert into country values ('c-4','PAKISTAN');

INSERT 0 1

test=# insert into country values ('c-5','RUSSIA');

INSERT 0 1

test=# select \* from country;

cid | cname

-----+----------

c-1 | INDIA

c-2 | USA

c-3 | CHINA

c-4 | PAKISTAN

c-5 | RUSSIA

(5 rows)

1. **ClientTable**

create table clienttable(

test(# clientid varchar(50) primary key,

test(# clientname varchar(100),

test(# cid varchar(50));

CREATE TABLE

test=# insert into clienttable values('cl-1','ABC Group','c-1');

INSERT 0 1

test=# insert into clienttable values('cl-2','PQR','c-1');

INSERT 0 1

test=# insert into clienttable values('cl-3','XYZ','c-2');

INSERT 0 1

test=# insert into clienttable values('cl-4','tech altum','c-3');

INSERT 0 1

test=# insert into clienttable values('cl-5','mnp','c-5');

INSERT 0 1

test=# select \* from clienttable;

clientid | clientname | cid

----------+------------+-----

cl-1 | ABC Group | c-1

cl-2 | PQR | c-1

cl-3 | XYZ | c-2

cl-4 | tech altum | c-3

cl-5 | mnp | c-5

(5 rows)

1. **EmpProject Table**

test=# create table empproject(

test(# empid int references employee (empid),

test(# projectid varchar(50) references project(projectid),

test(# clientid varchar(50) references clienttable(clientid),

test(# startyear int,

test(# endyear int);

CREATE TABLE

test=# insert into empproject values(101,'p-1','cl-1',2010,2010);

INSERT 0 1

test=# insert into empproject values(102,'p-2','cl-2',2010,2012);

INSERT 0 1

test=# insert into empproject(empid,projectid,clientid,startyear) values(103,'p-1','cl-3',2013);

INSERT 0 1

test=# insert into empproject values(104,'p-4','cl-1',2014,2015);

INSERT 0 1

test=# insert into empproject(empid,projectid,clientid,startyear) values(105,'p-4','cl-3',2015);

INSERT 0 1

test=# select \* from empproject;

empid | projectid | clientid | startyear | endyear

-------+-----------+----------+-----------+---------

101 | p-1 | cl-1 | 2010 | 2010

102 | p-2 | cl-2 | 2010 | 2012

103 | p-1 | cl-3 | 2013 |

104 | p-4 | cl-1 | 2014 | 2015

105 | p-4 | cl-3 | 2015 |

(5 rows)



test=# select \* from employee where empname like 'P%';

empid | empname | department | contactno | emailid | empheadid

-------+---------+------------+------------+-----------------+-----------

102 | Priya | E-104 | 1234567890 | priya@yahoo.com | 103



test=# select count(salary) from empsalary where ispermanent='Yes' and salary>5000;

count

-------

1

(1 row)



test=# select \* from employee where emailid like '%@gmail.com';

empid | empname | department | contactno | emailid | empheadid

-------+----------+------------+------------+--------------------+-----------

101 | Isha | E-101 | 1234567890 | isha@gmail.com | 105

103 | Neha | E-101 | 1234567890 | neha@gmail.com | 101

105 | Abhishek | E-101 | 1234567890 | abhishek@gmail.com | 102

(3 rows)

4.   Select the details of the employee who work either for department E-104 or E-102.

test=# select \* from employee where department='E-102' or department='E-104';

empid | empname | department | contactno | emailid | empheadid

-------+---------+------------+------------+-----------------+-----------

102 | Priya | E-104 | 1234567890 | priya@yahoo.com | 103

104 | Rahul | E-102 | 1234567890 | rahul@yahoo.com | 105

(2 rows)

### 5.   What is the department name for DeptID E-102?

test=# select deptname from empdept where deptid ='E-102';

deptname

-------------

Development

(1 row)

### 6.  What is total salarythat is paid to permanent employees?

test=# select sum(salary) as salary from empsalary where ispermanent='Yes';

salary

--------

16200

(1 row)

### 7.  List name of all employees whose name ends with a.

test=# select \* from employee where empname like '%a';

empid | empname | department | contactno | emailid | empheadid

-------+---------+------------+------------+-----------------+-----------

101 | Isha | E-101 | 1234567890 | isha@gmail.com | 105

102 | Priya | E-104 | 1234567890 | priya@yahoo.com | 103

103 | Neha | E-101 | 1234567890 | neha@gmail.com | 101

(3 rows)

### 8.  List the number of department of employees in each project.

test=# select count(empid) as employee, projectid from empproject group by projectid;

employee | projectid

----------+-----------

2 | p-1

1 | p-2

2 | p-4

(3 rows)

### 9.  How many project started in year 2010.

test=# select count(projectid) as project from empproject where startyear=2010;

project

---------

2

(1 row)

### 10.  How many project started and finished in the same year.

test=# select count(projectid) as project from empproject where startyear=endyear;

project

---------

1

(1 row)

### 11.  select the name of the employee whose name's 3rd character is 'h'.

test=# select \* from employee where empname like '\_\_h%';

empid | empname | department | contactno | emailid | empheadid

-------+----------+------------+------------+--------------------+-----------

101 | Isha | E-101 | 1234567890 | isha@gmail.com | 105

103 | Neha | E-101 | 1234567890 | neha@gmail.com | 101

104 | Rahul | E-102 | 1234567890 | rahul@yahoo.com | 105

105 | Abhishek | E-101 | 1234567890 | abhishek@gmail.com | 102

(4 rows)

### Nested Queries

### 1.   Select the department name of the company which is assigned to the employee whose employee id is grater 103.

test=# select deptname from empdept where deptid in (select department from employee where empid>103);

deptname

-------------

HR

Development

(2 rows)

### 2.   Select the name of the employee who is working under Abhishek.

test=# select empname from employee where empheadid =(select empid from employee where empname='Abhishek') ;

empname

---------

Isha

Rahul

(2 rows)

### 3.   Select the name of the employee who is department head of HR.

test=# select empname from employee where empid =(select depthead from empdept where deptname='HR');

empname

----------

Abhishek

(1 row)

### 4.   Select the name of the employee head who is permanent.

test=# select empname from employee where empid in(select empheadid from employee) and empid in(select empid from empsalary where ispermanent='Yes');

empname

----------

Isha

Priya

Abhishek

(3 rows)

### 5.   Select the name and email of the Dept Head who is not Permanent.

test=# select empname, emailid from employee where empid in(select depthead from empdept ) and empid in(select empid from empsalary where ispermanent='No');

empname | emailid

---------+----------------

Neha | neha@gmail.com

(1 row)

### 6.   Select the employee whose department off is monday

test=# select \* from employee where department in(select deptid from empdept where dept\_off='Monday');

empid | empname | department | contactno | emailid | empheadid

-------+----------+------------+------------+--------------------+-----------

101 | Isha | E-101 | 1234567890 | isha@gmail.com | 105

103 | Neha | E-101 | 1234567890 | neha@gmail.com | 101

105 | Abhishek | E-101 | 1234567890 | abhishek@gmail.com | 102

(3 rows)

### 7.   select the indian clinets details.

test=# select \* from clienttable where cid in(select cid from country where cname='INDIA');

clientid | clientname | cid

----------+------------+-----

cl-1 | ABC Group | c-1

cl-2 | PQR | c-1

(2 rows)

### 8.   select the details of all employee working in development department.

test=# select \* from employee where department in(select deptid from empdept where deptname='Development');

empid | empname | department | contactno | emailid | empheadid

-------+---------+------------+------------+-----------------+-----------

104 | Rahul | E-102 | 1234567890 | rahul@yahoo.com | 105

(1 row)