```
DATABASE MANAGEMENT SYSTEMS-NAVATHE QUERIES TABLES
+-------------------+

|Name:V.LAXMANA VYAAS|

|Class\Sec:CSE\2C    |

|Roll.No:20R11A05B6  |

+-------------------+
==============================================================================================
==============================================================================
 create table Employee
      (
       First_Name varchar(10),
       Minit char(1),
       Last_Name varchar(10),
       Ssn bigint,
       Bdate char(10),
       Address char(25),
       Sex char(1),
       Salary bigint,
       Super_ssn bigint,
       Dno tinyint
);

 insert into
Employee(First_Name,Minit,Last_Name,Ssn,Bdate,Address,Sex,Salary,Super_ssn,Dno) values
      ('John','B','Cruise',123456789,'1965-01-09','731
Fondren,Houston,TX','M',30000,333445555,5),
      ('Franklin','T','Wrung',333445555,'1955-12-08','638
Voss,Houston,TX','M',40000,888665555,5),
      ('Alicia','J','Zebri',999887777,'1968-01-19','3321
Castle,Spring,TX','F',25000,987654321,4),
      ('Jennifier','S','Wallian',987654321,'1941-06-20','291
Berry,Bellaire,TX','F',43000,888665555,4),
      ('Ramesh','K','Yadav',666884444,'1962-09-15','975 Fire
Oak,Humble,TX','M',38000,333445555,5),
      ('Joyce','A','Edwin',453453453,'1972-07-31','5631
Rice,Houston,TX','F',25000,333445555,5),
      ('Ahmad','V','Zeeshan',987987987,'1969-03-29','980
Dallas,Houston,TX','M',25000,987654321,4),
      ('James','E','Bond',888665555,'1937-11-10','450 Stone,Houseton,TX','M',55000,NULL,1);

 select * from Employee;
+-----------+-------+-----------+-----------+------------+-----------------------+------
+--------+-----------+------+
| First_Name | Minit | Last_Name | Ssn       | Bdate      | Address               | Sex
| Salary | Super_ssn | Dno  |
+-----------+-------+-----------+-----------+------------+-----------------------+------
+--------+-----------+------+
| John       | B     | Cruise    | 123456789 | 1965-01-09 | 731 Fondren,Houston,TX | M
|  30000 | 333445555 |    5 |
| Franklin   | T     | Wrung     | 333445555 | 1955-12-08 | 638 Voss,Houston,TX    | M
|  40000 | 888665555 |    5 |
| Alicia     | J     | Zebri     | 999887777 | 1968-01-19 | 3321 Castle,Spring,TX  | F
|  25000 | 987654321 |    4 |
| Jennifier  | S     | Wallian   | 987654321 | 1941-06-20 | 291 Berry,Bellaire,TX  | F
|  43000 | 888665555 |    4 |
| Ramesh     | K     | Yadav     | 666884444 | 1962-09-15 | 975 Fire Oak,Humble,TX | M
|  38000 | 333445555 |    5 |
| Joyce      | A     | Edwin     | 453453453 | 1972-07-31 | 5631 Rice,Houston,TX   | F
|  25000 | 333445555 |    5 |
| Ahmad      | V     | Zeeshan   | 987987987 | 1969-03-29 | 980 Dallas,Houston,TX  | M
|  25000 | 987654321 |    4 |
| James      | E     | Bond      | 888665555 | 1937-11-10 | 450 Stone,Houseton,TX  | M
|  55000 |      NULL |    1 |
+-----------+-------+-----------+-----------+------------+-----------------------+------
+--------+-----------+------+
--------------------------------------------------------------------------------------
--------------------------------------
 create table Department
      (
```

```
     Dname varchar(25),
     Dnumber tinyint,
     Mgr_ssn bigint,
     Mgr_start_date char(10),
     PRIMARY KEY(Dnumber)
    );

insert into Department(Dname,Dnumber,Mgr_ssn,Mgr_start_date) values
    ('Research',5,333445555,'1988-05-22'),
    ('Administration',4,987654321,'1995-01-01'),
    ('Headquarters',1,888665555,'1981-06-19');

select * from Department;
+----------------+---------+-----------+----------------+
| Dname          | Dnumber | Mgr_ssn   | Mgr_start_date |
+----------------+---------+-----------+----------------+
| Headquarters   |       1 | 888665555 | 1981-06-19     |
| Administration |       4 | 987654321 | 1995-01-01     |
| Research       |       5 | 333445555 | 1988-05-22     |
+----------------+---------+-----------+----------------+
-------------------------------------------------------------------------------------------
----------------
create table Dept_Locations
    (
     Dnumber bigint,
     Dlocation char(10),
     PRIMARY KEY(Dnumber)
    );

insert into Dept_Locations(Dnumber,Dlocation) values
    (1,'Houston'),
    (4,'Stafford'),
    (5,'Bellaire'),
    (6,'Sugarland'),
    (7,'Houston');

select * from Dept_Locations;
+---------+-----------+
| Dnumber | Dlocation |
+---------+-----------+
|       1 | Houston   |
|       4 | Stafford  |
|       5 | Bellaire  |
|       6 | Sugarland |
|       7 | Houston   |
+---------+-----------+
--------------------------------------------------------------------------
create table Project
    (
     Pname varchar(20),
     Pnumber smallint,
     Plocation varchar(20),
     Dnum tinyint,
     PRIMARY KEY(Pnumber)
    );

insert into Project(Pname,Pnumber,Plocation,Dnum) values
    ('ProductA',1,'Sugarland',5),
    ('ProductB',2,'Bellaire',5),
    ('ProductC',3,'Houston',5),
    ('Computerization',10,'Houston',4),
    ('Reorganization',20,'Stafford',1),
    ('Newbenefits',30,'Stafford',4);

select * from Project;
+-----------------+---------+-----------+------+
| Pname           | Pnumber | Plocation | Dnum |
+-----------------+---------+-----------+------+
| ProductA        |       1 | Sugarland |    5 |
| ProductB        |       2 | Bellaire  |    5 |
| ProductC        |       3 | Houston   |    5 |
| Computerization |      10 | Houston   |    4 |
| Reorganization  |      20 | Stafford  |    1 |
```

```
| Newbenefits      |       30 | Stafford   |    4 |
+----------------+----------+-----------+------+
--------------------------------------------------------------------------------
 create table Works_On
      (
       Essn bigint,
       Pno tinyint,
       Hours float(5),
       PRIMARY KEY(Essn)
      );

 insert into Works_On(Essn,Pno,Hours) values
      (123456789,1,32.5),
      (123456798,2,7.5),
      (666884444,3,40.0),
      (453453453,1,20.0),
      (453453435,2,20.0),
      (333445555,2,10.0),
      (333445566,3,10.0),
      (333445556,10,10.0),
      (333446555,20,10.0),
      (999887777,30,30.0),
      (999887747,10,10.0),
      (987987957,10,35.0),
      (987987387,30,5.0),
      (987654321,30,20.0),
      (987654311,20,15.0),
      (888665555,20,NULL);

 select * from Works_On;
+-----------+------+-------+
| Essn      | Pno  | Hours |
+-----------+------+-------+
| 123456789 |    1 |  32.5 |
| 123456798 |    2 |   7.5 |
| 333445555 |    2 |    10 |
| 333445556 |   10 |    10 |
| 333445566 |    3 |    10 |
| 333446555 |   20 |    10 |
| 453453435 |    2 |    20 |
| 453453453 |    1 |    20 |
| 666884444 |    3 |    40 |
| 888665555 |   20 |  NULL |
| 987654311 |   20 |    15 |
| 987654321 |   30 |    20 |
| 987987387 |   30 |     5 |
| 987987957 |   10 |    35 |
| 999887747 |   10 |    10 |
| 999887777 |   30 |    30 |
+-----------+------+-------+
--------------------------------------------------------------------------------
 create table Dependent
      (
       Essn bigint,
       Dependent_Name varchar(15),
       Sex char(1),
       Bdate char(10),
       Relationship varchar(10),
       PRIMARY KEY(Dependent_Name)
      );

 insert into Dependent(Essn,Dependent_Name,Sex,Bdate,Relationship) values
      (333445555,'Alice','F','1986-04-05','Daughter'),
      (333445555,'Theodore','M','1983-10-25','Son'),
      (333445555,'Joy','F','1958-05-03','Spouse'),
      (987654321,'Abner','M','1942-02-28','Spouse'),
      (123456789,'Michael','M','1988-01-04','Son'),
      (123456789,'Slice','F','1988-12-30','Daughter'),
      (123456789,'Elizabeth','F','1967-05-05','Spouse');

 select * from Dependent;
+-----------+----------------+------+------------+--------------+
| Essn      | Dependent_Name | Sex  | Bdate      | Relationship |
```

```
+-----------+----------------+------+------------+-------------+
| 987654321 | Abner          | M    | 1942-02-28 | Spouse      |
| 333445555 | Alice          | F    | 1986-04-05 | Daughter    |
| 123456789 | Elizabeth      | F    | 1967-05-05 | Spouse      |
| 333445555 | Joy            | F    | 1958-05-03 | Spouse      |
| 123456789 | Michael        | M    | 1988-01-04 | Son         |
| 123456789 | Slice          | F    | 1988-12-30 | Daughter    |
| 333445555 | Theodore       | M    | 1983-10-25 | Son         |
+-----------+----------------+------+------------+-------------+
```


1.select Bdate,Address from Employee where First_Name='John';
```
+------------+-----------------------+
| Bdate      | Address               |
+------------+-----------------------+
| 1965-01-09 | 731 Fondren,Houston,TX |
+------------+-----------------------+
```

2.select First_Name,Minit,Last_Name,Address,Dname
  from Employee,Department
  where Dname='Research' AND Dnumber=Dno;
```
+------------+-------+-----------+-----------------------+----------+
| First_Name | Minit | Last_Name | Address               | Dname    |
+------------+-------+-----------+-----------------------+----------+
| John       | B     | Cruise    | 731 Fondren,Houston,TX | Research |
| Franklin   | T     | Wrung     | 638 Voss,Houston,TX   | Research |
| Ramesh     | K     | Yadav     | 975 Fire Oak,Humble,TX | Research |
| Joyce      | A     | Edwin     | 5631 Rice,Houston,TX  | Research |
+------------+-------+-----------+-----------------------+----------+
```

3.select Pnumber,Dnum,Last_Name,Address,Bdate
  from Project,Department,Employee
  where Dnum=Dnumber AND Mgr_ssn=Ssn AND Plocation='Stafford';
```
+---------+------+-----------+-----------------------+------------+
| Pnumber | Dnum | Last_Name | Address               | Bdate      |
+---------+------+-----------+-----------------------+------------+
|      30 |    4 | Wallian   | 291 Berry,Bellaire,TX | 1941-06-20 |
|      20 |    1 | Bond      | 450 Stone,Houseton,TX | 1937-11-10 |
+---------+------+-----------+-----------------------+------------+
```

4.select E.First_Name,E.Last_Name,S.Ssn,S.Super_ssn
  from Employee as E,Employee as S
  where S.Ssn=E.Super_ssn;
```
+------------+-----------+-----------+-----------+
| First_Name | Last_Name | Ssn       | Super_ssn |
+------------+-----------+-----------+-----------+
| Joyce      | Edwin     | 333445555 | 888665555 |
| Ramesh     | Yadav     | 333445555 | 888665555 |
| John       | Cruise    | 333445555 | 888665555 |
| Ahmad      | Zeeshan   | 987654321 | 888665555 |
| Alicia     | Zebri     | 987654321 | 888665555 |
| Jennifier  | Wallian   | 888665555 |      NULL |
| Franklin   | Wrung     | 888665555 |      NULL |
+------------+-----------+-----------+-----------+
```

5.select Ssn,Dname from Employee,Department;
```
+-----------+----------------+
| Ssn       | Dname          |
+-----------+----------------+
| 123456789 | Research       |
| 123456789 | Administration |
| 123456789 | Headquarters   |
| 333445555 | Research       |
| 333445555 | Administration |
| 333445555 | Headquarters   |
| 999887777 | Research       |
| 999887777 | Administration |
| 999887777 | Headquarters   |
| 987654321 | Research       |
| 987654321 | Administration |
| 987654321 | Headquarters   |
| 666884444 | Research       |
| 666884444 | Administration |
```

```
| 666884444 | Headquarters  |
| 453453453 | Research      |
| 453453453 | Administration |
| 453453453 | Headquarters  |
| 987987987 | Research      |
| 987987987 | Administration |
| 987987987 | Headquarters  |
| 888665555 | Research      |
| 888665555 | Administration |
| 888665555 | Headquarters  |
+----------+---------------+
------------------------------------------------------------------------
6.select DISTINCT Salary from Employee;
+--------+
| Salary |
+--------+
|  30000 |
|  40000 |
|  25000 |
|  43000 |
|  38000 |
|  55000 |
+--------+
------------------------------------------------------------------------
7.(select DISTINCT Pnumber
   from Project, Department, Employee
   where Dnum = Dnumber AND Mgr_ssn = ssn AND Last_Name = 'Cruise')
   UNION
  (select DISTINCT Pnumber
   from Project, Works_on, Employee
   where Pnumber = Pno AND Essn = Ssn AND Last_Name = 'Cruise');
+---------+
| Pnumber |
+---------+
|       1 |
+---------+

(select DISTINCT Pnumber
   from Project, Department, Employee
   where Dnum = Dnumber AND Mgr_ssn = ssn AND Last_Name = 'Smith')
   UNION
  (select DISTINCT Pnumber
   from Project, Works_on, Employee
   where Pnumber = Pno AND Essn = Ssn AND Last_Name = 'Smith');
Empty set
------------------------------------------------------------------------
8.select First_Name,Last_Name,Minit,Address
  from Employee where Address like '%Houston,TX%';
+------------+-----------+-------+-----------------------+
| First_Name | Last_Name | Minit | Address               |
+------------+-----------+-------+-----------------------+
| John       | Cruise    | B     | 731 Fondren,Houston,TX |
| Franklin   | Wrung     | T     | 638 Voss,Houston,TX   |
| Joyce      | Edwin     | A     | 5631 Rice,Houston,TX  |
| Ahmad      | Zeeshan   | V     | 980 Dallas,Houston,TX |
+------------+-----------+-------+-----------------------+
------------------------------------------------------------------------
9.select First_Name,Last_Name from Employee where Bdate like '___70';
Empty set
select First_Name,Last_Name from Employee where Bdate like '___50';
Empty set
------------------------------------------------------------------------
10.select First_Name,Last_Name,1.1*Salary
  from Employee,Works_On,Project
  where Ssn = Essn AND Pno = Pnumber AND Pname = 'ProductA';
+------------+-----------+------------+
| First_Name | Last_Name | 1.1*Salary |
+------------+-----------+------------+
| John       | Cruise    |    33000.0 |
| Joyce      | Edwin     |    27500.0 |
+------------+-----------+------------+
----------------------------------------------------------------------------------
---------------------------------
```

```
11.select * from Employee
   where (Salary BETWEEN 30000 AND 40000) and Dno=5;
```

First_Name	Minit	Last_Name	Ssn	Bdate	Address	Sex	Salary	Super_ssn	Dno
John	B	Cruise	123456789	1965-01-09	731 Fondren,Houston,TX	M	30000	333445555	5
Franklin	T	Wrung	333445555	1955-12-08	638 Voss,Houston,TX	M	40000	888665555	5
Ramesh	K	Yadav	666884444	1962-09-15	975 Fire Oak,Humble,TX	M	38000	333445555	5

```
12.select First_Name,Last_Name,Dname,Pname
   from Employee,Department,Project,Works_On
   where Dno=Dnumber AND Ssn=Essn AND Pno=Pnumber
   ORDER BY Dname DESC,First_Name ASC,Last_Name ASC;
```

First_Name	Last_Name	Dname	Pname
Franklin	Wrung	Research	ProductB
John	Cruise	Research	ProductA
Joyce	Edwin	Research	ProductA
Ramesh	Yadav	Research	ProductC
James	Bond	Headquarters	Reorganization
Alicia	Zebri	Administration	Newbenefits
Jennifier	Wallian	Administration	Newbenefits

```
13.select First_Name,Last_Name,Pname,Dname
   from Employee,Works_On,Project,Department
   where (Ssn=Essn AND Dno=Dnumber AND Pno=Pnumber AND
          Pname='ProductA') and Hours>10;
```

First_Name	Last_Name	Pname	Dname
John	Cruise	ProductA	Research
Joyce	Edwin	ProductA	Research

```
14.select First_Name,Last_Name,Dependent_Name
   from Employee,Dependent
   where Ssn=Essn AND First_Name=Dependent_Name;
Empty set
```

```
15.select E.First_Name,E.Last_Name
   from Employee E,Employee S
   where S.First_Name='Franklin' AND S.Last_Name='Wrung' AND E.Super_ssn=S.Ssn;
```

First_Name	Last_Name
John	Cruise
Ramesh	Yadav
Joyce	Edwin

```
16.select First_Name,Last_Name
   from Employee
   where Super_ssn is NULL;
```

First_Name	Last_Name
James	Bond

```
17.select E.First_Name,E.Last_Name,D.Sex
   from Employee as E,Dependent as D
```

```
        where E.Ssn=D.Essn AND E.First_Name=D.Dependent_Name AND E.Sex=D.Sex;
Empty set
----------------------------------------------------------------------------------------
18.select First_Name,Last_Name
   from Employee
   where NOT EXISTS (select *
                     from Dependent
                     where Ssn=Essn);
+------------+-----------+
| First_Name | Last_Name |
+------------+-----------+
| Alicia     | Zebri     |
| Ramesh     | Yadav     |
| Joyce      | Edwin     |
| Ahmad      | Zeeshan   |
| James      | Bond      |
+------------+-----------+
----------------------------------------------------------------------
19.select First_Name,Last_Name
   from Employee
   where EXISTS (SELECT *
                from Dependent
                where Ssn = Essn);
+------------+-----------+
| First_Name | Last_Name |
+------------+-----------+
| John       | Cruise    |
| Franklin   | Wrung     |
| Jennifier  | Wallian   |
+------------+-----------+
----------------------------------------------------------------
20.select DISTINCT Essn
   from Works_On
   where Pno in(1,2,3);
+-----------+
| Essn      |
+-----------+
| 123456789 |
| 123456798 |
| 333445555 |
| 333445566 |
| 453453435 |
| 453453453 |
| 666884444 |
+-----------+
---------------------------------------------------------------------------------------
21.select sum(Salary),Avg(Salary),Max(Salary),Min(Salary) from Employee;
+-------------+-------------+-------------+-------------+
| sum(Salary) | Avg(Salary) | Max(Salary) | Min(Salary) |
+-------------+-------------+-------------+-------------+
|      281000 |  35125.0000 |       55000 |       25000 |
+-------------+-------------+-------------+-------------+
---------------------------------------------------------------------------------------
22.select sum(Salary),Avg(Salary),Max(Salary),Min(Salary)
   from Employee,Department
   where Ssn=Mgr_ssn AND Dname='Research';
+-------------+-------------+-------------+-------------+
| sum(Salary) | Avg(Salary) | Max(Salary) | Min(Salary) |
+-------------+-------------+-------------+-------------+
|       40000 |  40000.0000 |       40000 |       40000 |
+-------------+-------------+-------------+-------------+
---------------------------------------------------------------------------------------
23.select count(*) as count
   from Employee,Department
   where Ssn=Mgr_ssn AND  Dname='Research';
+-------+
| count |
+-------+
|     1 |
+-------+
select count(*) as Total_Employees
from Employee;
+-----------------+
```

```
| Total_Employees |
+-----------------+
|               8 |
+-----------------+
----------------------------------------------------------------------
24.select count(DISTINCT Salary) from Employee;
+-----------------------+
| count(DISTINCT Salary) |
+-----------------------+
|                     6 |
+-----------------------+
----------------------------------------------------------------
25.select Dno,count(*) as count,avg(Salary)
    from Employee;
+------+-------+-------------+
| Dno  | count | avg(Salary) |
+------+-------+-------------+
|    5 |     8 | 35125.0000  |
+------+-------+-------------+
----------------------------------------------------------------
26.select Pnumber,Pname,count(*) as count
    from Employee,Project
    where Dno=Dnum
    group by Pnumber,Pname;
+---------+-----------------+-------+
| Pnumber | Pname           | count |
+---------+-----------------+-------+
|       3 | ProductC        |     4 |
|       2 | ProductB        |     4 |
|       1 | ProductA        |     4 |
|      30 | Newbenefits     |     3 |
|      10 | Computerization |     3 |
|      20 | Reorganization  |     1 |
+---------+-----------------+-------+
----------------------------------------------------------------
27.select Pnumber,Pname,count(*) as count
    from Employee,Project
    where Dno=Dnum
    group by Pnumber,Pname
    having (count)>2;
+---------+-----------------+-------+
| Pnumber | Pname           | count |
+---------+-----------------+-------+
|       3 | ProductC        |     4 |
|       2 | ProductB        |     4 |
|       1 | ProductA        |     4 |
|      30 | Newbenefits     |     3 |
|      10 | Computerization |     3 |
+---------+-----------------+-------+
----------------------------------------------------------------
28.select Pnumber,Pname,count(*) as count
    from Employee,Project,Department
    where Dno=Dnumber AND Ssn=Mgr_ssn AND Dnumber=5
    group by Pnumber,Pname;
+---------+-----------------+-------+
| Pnumber | Pname           | count |
+---------+-----------------+-------+
|       1 | ProductA        |     1 |
|       2 | ProductB        |     1 |
|       3 | ProductC        |     1 |
|      10 | Computerization |     1 |
|      20 | Reorganization  |     1 |
|      30 | Newbenefits     |     1 |
+---------+-----------------+-------+
----------------------------------------------------------------
29.select Dname,COUNT(*)
    from Department, Employee
    where Dnumber = Dno
    AND salary > 40000
    GROUP BY Dname
    HAVING COUNT(*) > 5;
Empty set
----------------------------------------------------------------
```

```
30.select Dname,count(*) from Department,Employee
   where Department.Dnumber=Employee.Dno
   group by Dname
   having avg(salary)>30000;
+----------------+----------+
| Dname          | count(*) |
+----------------+----------+
| Research       |        4 |
| Administration |        3 |
| Headquarters   |        1 |
+----------------+----------+
---------------------------------------------------------------------------
31.select Dname,COUNT(*)
   from Department,Employee
   where Dno=Dnumber AND Sex='M' AND Dno in (select Dno
                                             from Employee
                                             GROUP BY Dno
                                             HAVING avg(Salary)>30000)
   GROUP BY Dname;
+----------------+----------+
| Dname          | COUNT(*) |
+----------------+----------+
| Research       |        3 |
| Administration |        1 |
| Headquarters   |        1 |
+----------------+----------+
---------------------------------------------------------------------------
```