Assignment – 1

Question 1:

Create the following tables:

Tablename: EMPLOYEE
Structure :

EMP_CODE	char(16)
EMP_NAME	char(20)
DEPT_CODE	char(16)
DESIG_CODE	char(16)
SEX	char(1)
ADDRESS	char (25)
CITY	char (20)
STATE	char (20)
PIN	char (6)
BASIC	Number
JN_DT	Date

Primary key is EMP_CODE

Tablename : DESIGNATION
Structure :

DESIG_CODE	char(16)
DESIG_DESC	char(20)

Primary key is DESIG_CODE

Tablename : DEPARTMENT
Structure :

DEPT_CODE	char(16)
DEPT_NAME	char(20)

Primary key is DEPT_CODE.

Solution:

```
CREATE TABLE EMPLOYEE
(
      EMP_CODE varchar(16),
      EMP_NAME varchar(20),
      DEPT_CODE varchar(16),
      DESIG_CODE varchar(16),
      SEX varchar(1),
      ADDRESS varchar(25),
      CITY varchar(20),
      STATE varchar(20),
      PIN varchar(6),
      BASIC int(7),
      JN_DT DATE,
      primary key (EMP_CODE)
);

CREATE TABLE DESIGNATION
```

```
(
      DESIG_CODE varchar(16),
      DESIG_DESC varchar(20),
      primary key (DESIG_CODE)
);

CREATE TABLE DEPARTMENT
(
      DEPT_CODE varchar(16),
      DEPT_NAME varchar(20),
      primary key (DEPT_CODE)
);
```

Question 2:

Display the structure of each table

Solution:

```
desc EMPLOYEE;
MariaDB [assignment_1]> desc EMPLOYEE;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| EMP_CODE   | varchar(16) | NO   | PRI | NULL    |       |
| EMP_NAME   | varchar(20) | YES  |     | NULL    |       |
| DEPT_CODE  | varchar(16) | YES  |     | NULL    |       |
| DESIG_CODE | varchar(16) | YES  |     | NULL    |       |
| SEX        | varchar(1)  | YES  |     | NULL    |       |
| ADDRESS    | varchar(25) | YES  |     | NULL    |       |
| CITY       | varchar(20) | YES  |     | NULL    |       |
| STATE      | varchar(20) | YES  |     | NULL    |       |
| PIN        | varchar(6)  | YES  |     | NULL    |       |
| BASIC      | int(7)      | YES  |     | NULL    |       |
| JN_DT      | date        | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+

desc DESIGNATION;
MariaDB [assignment_1]> desc DESIGNATION;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| DESIG_CODE | varchar(16) | NO   | PRI | NULL    |       |
| DESIG_DESC | varchar(20) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+

desc DEPARTMENT;
MariaDB [assignment_1]> desc DEPARTMENT;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| DEPT_CODE | varchar(16) | NO   | PRI | NULL    |       |
| DEPT_NAME | varchar(20) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
```

Question 3:

Insert few rows in each table.
[While entering data in EMP table use DESIG_CODE which exists in DESIGNATION table and DEPT_CODE which is exists in DEPARTMENT table. In DESIGNATION table, assign code for Manager, Executive, officer, clerk and helper. In DEPARTMENT table, assign code for Personnel, Production, Purchase, Finance, Research departments]

Solution:

```
INSERT INTO DESIGNATION (DESIG_CODE, DESIG_DESC)
VALUES ('MGR', 'Manager'),
('EXE', 'Executive'),
('OFF', 'Officer'),
('CLK', 'Clerk'),
('HLP', 'Helper');

INSERT INTO DEPARTMENT (DEPT_CODE, DEPT_NAME)
VALUES ('PER', 'Personnel'),
('PRO', 'Production'),
('PUR', 'Purchase'),
('FIN', 'Finance'),
('RES', 'Research');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('001', 'Adam Smith', 'PUR', 'MGR', 'M', '123 Main St', 'Berkeley', 'CA',
'90001', 50000, '2002-01-01');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('002', 'Maddie Morris', 'PRO', 'EXE', 'F', '456 Elm St', 'Denver', 'CO',
'80001', 30000, '20015-03-10');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('003', 'Edward Johnson', 'PUR', 'OFF', 'M', '789 Oak St', 'Atlanta', 'GA',
'30002', 40000, '2010-06-25');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('004', 'Jenifer Martin', 'MGR', 'OFF', 'F', '245 Perl St', 'Nashville', 'TN',
'80001', 37010, '2008-01-24');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('005', 'Sam Joe', 'FIN', 'CLK', 'M', '245 New St', 'Denver', 'CO', '80001',
35000, '2002-02-24');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('006', 'Jessica Altman', 'PUR', 'HLP', 'F', '245 Old St', 'Atlanta', 'GA',
'80001', 45000, '2003-05-22');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
```

```
VALUES ('007', 'Sarra Jhones', 'PRO', 'CLK', 'F', '160 Saint St', 'Nashville', 'TN',
'20001', 48000, '2001-06-18');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('008', 'Maxine', 'FIN', 'CLK', 'F', '160 Perl St', 'Nashville', 'TN',
'20521', 48000, '2002-06-18');

MariaDB [assignment_1]> select * from employee;
```

EMP_CODE	EMP_NAME	DEPT_CODE	DESIG_CODE	SEX	ADDRESS	CITY	STATE	PIN	BASIC	JN_DT
001	Adam Smith	PUR	MGR	M	123 Main St	Berkeley	CA	90001	50000	2002-01-01
002	Maddie Morris	PRO	EXE	F	456 Elm St	Denver	CO	80001	0	0000-00-00
003	Edward Johnson	PUR	OFF	M	789 Oak St	Atlanta	GA	30002	40000	2010-06-25
004	Jenifer Martin	MGR	OFF	F	245 Perl St	Nashville	TN	80001	37010	2008-01-24
005	Sam Joe	FIN	CLK	M	245 New St	Denver	CO	80001	35000	2002-02-24
006	Jessica Altman	PUR	HLP	F	245 Old St	Atlanta	GA	80001	45000	2003-05-22
007	Sarra Jhones	PRO	CLK	F	160 Saint St	Nashville	TN	20001	48000	2001-06-18
008	Maxine	FIN	CLK	F	160 Perl St	Nashville	TN	20521	48000	2002-06-18

Question 4:

In EMP table insert few rows without DEPT_CODE and BASIC.

Solution:

```
INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN,
JN_DT)
VALUES ('009', 'Sophie Matrin', 'CLK', 'F', '246 Maple St', 'Boston', 'MA', '02101',
'2014-04-28');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN,
JN_DT)
VALUES ('010', 'Thomas Brown', 'HLP', 'M', '369 Pine St', 'San Francisco', 'CA',
'94101', '2016-10-12');
```

Question 5:

Find the rows with unassigned DEPT_CODE

Solution:

```
select * from employee where dept_code is NULL;
MariaDB [assignment_1]> select * from employee where dept_code is NULL;
```

EMP_CODE	EMP_NAME	DEPT_CODE	DESIG_CODE	SEX	ADDRESS	CITY	STATE	PIN	BASIC	JN_DT
009	Sophie Matrin	NULL	CLK	F	246 Maple St	Boston	MA	02101	NULL	2014-04-28
010	Thomas Brown	NULL	HLP	M	369 Pine St	San Francisco	CA	94101	NULL	2016-10-12

Question 6:

Find the rows with BASIC equal to zero

Solution:

```
select * from employee where basic = 0;
MariaDB [assignment_1]> select * from employee where basic = 0;
```

```
+----------+---------------+-----------+------------+------+------------+--------+-------+-------+-------+------------+
| EMP_CODE | EMP_NAME      | DEPT_CODE | DESIG_CODE | SEX  | ADDRESS    | CITY   | STATE | PIN   | BASIC | JN_DT      |
+----------+---------------+-----------+------------+------+------------+--------+-------+-------+-------+------------+
| 002      | Maddie Morris | PRO       | EXE        | F    | 456 Elm St | Denver | CO    | 80001 |     0 | 0000-00-00 |
+----------+---------------+-----------+------------+------+------------+--------+-------+-------+-------+------------+
```

Question 7:

Find the rows with unassigned Basic.

Solution:

```
select * from employee where basic is NULL;
MariaDB [assignment_1]> select * from employee where basic is NULL;
+----------+---------------+-----------+------------+------+--------------+---------------+-------+-------+-------+------------+
| EMP_CODE | EMP_NAME      | DEPT_CODE | DESIG_CODE | SEX  | ADDRESS      | CITY          | STATE | PIN   | BASIC | JN_DT      |
+----------+---------------+-----------+------------+------+--------------+---------------+-------+-------+-------+------------+
| 009      | Sophie Matrin | NULL      | CLK        | F    | 246 Maple St | Boston        | MA    | 02101 |  NULL | 2014-04-28 |
| 010      | Thomas Brown  | NULL      | HLP        | M    | 369 Pine St  | San Francisco | CA    | 94101 |  NULL | 2016-10-12 |
+----------+---------------+-----------+------------+------+--------------+---------------+-------+-------+-------+------------+
```

Question 8:

Find the average basic of the employees.

Solution:

```
select avg(basic) as 'Avg_Basic' from employee;
MariaDB [assignment_1]> select avg(basic) as 'Avg_Basic' from employee;
+-------------+
| Avg_Basic   |
+-------------+
| 37876.2500 |
+-------------+
```

Question 9:

Replace the BASIC with 0 for the rows with unassigned Basic.

Solution:

```
update employee set basic = 0 where basic is NULL;
MariaDB [assignment_1]> update employee set basic = 0 where basic is NULL;
Query OK, 2 rows affected (0.004 sec)
Rows matched: 2  Changed: 2  Warnings: 0
```

Question 10:

Again, find the average Basic. (Note the difference of result obtained in Q.8 & Q.10.)

Solution:

```
select avg(basic) as 'Avg_Basic' from employee;
MariaDB [assignment_1]> select avg(basic) as 'Avg_Basic' from employee;
+-------------+
| Avg_Basic   |
+-------------+
```

```
| 30301.0000 |
+------------+
```

Question 11:

Delete the rows with unassigned DEPT_CODE

Solution:

```
delete from employee where dept_code is NULL;
MariaDB [assignment_1]> delete from employee where dept_code is NULL;
Query OK, 2 rows affected (0.008 sec)
```

Question 12:

Say, Net pay of an employee = Basic + HRA + DA where HRA is 50% of the Basic & DA is 40% of Basic. Show the employee name & Net pay for all employees.

Solution:

```
select emp_name, basic + (basic * 0.4) + (basic * 0.5) as "Net_Pay" from employee;
MariaDB [assignment_1]> select emp_name, basic + (basic * 0.4) + (basic * 0.5) as
"Net_Pay" from employee;
+----------------+---------+
| emp_name       | Net_Pay |
+----------------+---------+
| Adam Smith     | 95000.0 |
| Maddie Morris  |     0.0 |
| Edward Johnson | 76000.0 |
| Jenifer Martin | 70319.0 |
| Sam Joe        | 66500.0 |
| Jessica Altman | 85500.0 |
| Sarra Jhones   | 91200.0 |
| Maxine         | 91200.0 |
+----------------+---------+
```

Question 13:

Show the EMP_NAME & BASIC in the ascending order of DEPT_CODE. The employee name must appear in uppercase.

Solution:

```
select upper(emp_name), basic from employee order by dept_code;
MariaDB [assignment_1]> select upper(emp_name), basic from employee order by
dept_code;
+-----------------+-------+
| upper(emp_name) | basic |
+-----------------+-------+
| SAM JOE         | 35000 |
| Maxine          | 48000 |
| JENIFER MARTIN  | 37010 |
```

```
| MADDIE MORRIS   |     0 |
| SARRA JHONES    | 48000 |
| ADAM SMITH      | 50000 |
| EDWARD JOHNSON  | 40000 |
| JESSICA ALTMAN  | 45000 |
+-----------------+-------+
```

Question 14:

Find the employees who have joined after 1st January 2010.

Solution:

```
select * from employee where jn_dt > '2010-01-01';
MariaDB [assignment_1]> select * from employee where jn_dt > '2010-01-01';
+----------+---------------+-----------+------------+------+------------+---------+-------+-------+-------+------------+
| EMP_CODE | EMP_NAME      | DEPT_CODE | DESIG_CODE | SEX  | ADDRESS    | CITY    | STATE | PIN   | BASIC | JN_DT      |
+----------+---------------+-----------+------------+------+------------+---------+-------+-------+-------+------------+
| 003      | Edward Johnson | PUR       | OFF        | M    | 789 Oak St | Atlanta | GA    | 30002 | 40000 | 2010-06-25 |
+----------+---------------+-----------+------------+------+------------+---------+-------+-------+-------+------------+
```

Question 15:

Find, how many employees have joined in the month of January?

Solution:

```
select count(emp_code) as 'Joiners on January'  from employee where month(jn_dt) =
'01';
MariaDB [assignment_1]> select count(emp_code) as 'Joiners on January'  from employee
where month(jn_dt) = '01';
+--------------------+
| Joiners on January |
+--------------------+
|                  2 |
+--------------------+
```

Question 16:

Find the maximum & minimum Basic.

Solution:

```
select max(basic) as 'Max_Basic', min(basic) as 'Min_Basic' from employee;
MariaDB [assignment_1]> select max(basic) as 'Max_Basic', min(basic) as 'Min_Basic'
from employee;
+-----------+-----------+
| Max_Basic | Min_Basic |
+-----------+-----------+
|     50000 |         0 |
+-----------+-----------+
```

Question 17:

Find how many Female employees are there?

Solution:

```
select * from employee where sex = 'F';
MariaDB [assignment_1]> select * from employee where sex = 'F';
+----------+---------------+-----------+------------+------+--------------+-----------+-------+-------+-------+------------+
| EMP_CODE | EMP_NAME      | DEPT_CODE | DESIG_CODE | SEX  | ADDRESS      | CITY      | STATE | PIN   | BASIC | JN_DT      |
+----------+---------------+-----------+------------+------+--------------+-----------+-------+-------+-------+------------+
| 002      | Maddie Morris | PRO       | EXE        | F    | 456 Elm St   | Denver    | CO    | 80001 |     0 | 0000-00-00 |
| 004      | Jenifer Martin | MGR      | OFF        | F    | 245 Perl St  | Nashville | TN    | 80001 | 37010 | 2008-01-24 |
| 006      | Jessica Altman | PUR      | HLP        | F    | 245 Old St   | Atlanta   | GA    | 80001 | 45000 | 2003-05-22 |
| 007      | Sarra Jhones  | PRO       | CLK        | F    | 160 Saint St | Nashville | TN    | 20001 | 48000 | 2001-06-18 |
| 008      | Maxine        | FIN       | CLK        | F    | 160 Perl St  | Nashville | TN    | 20521 | 48000 | 2002-06-18 |
+----------+---------------+-----------+------------+------+--------------+-----------+-------+-------+-------+------------+
```

Question 18:

Replace CITY with existing value converted into uppercase for all rows.

Solution:

```
update employee set city = upper(city);
MariaDB [assignment_1]> update employee set city = upper(city);
Query OK, 8 rows affected (0.003 sec)
Rows matched: 8  Changed: 8  Warnings: 0

MariaDB [assignment_1]> select * from employee;
+----------+---------------+-----------+------------+------+--------------+-----------+-------+-------+-------+------------+
| EMP_CODE | EMP_NAME      | DEPT_CODE | DESIG_CODE | SEX  | ADDRESS      | CITY      | STATE | PIN   | BASIC | JN_DT      |
+----------+---------------+-----------+------------+------+--------------+-----------+-------+-------+-------+------------+
| 001      | Adam Smith    | PUR       | MGR        | M    | 123 Main St  | BERKELEY  | CA    | 90001 | 50000 | 2002-01-01 |
| 002      | Maddie Morris | PRO       | EXE        | F    | 456 Elm St   | DENVER    | CO    | 80001 |     0 | 0000-00-00 |
| 003      | Edward Johnson | PUR      | OFF        | M    | 789 Oak St   | ATLANTA   | GA    | 30002 | 40000 | 2010-06-25 |
| 004      | Jenifer Martin | MGR      | OFF        | F    | 245 Perl St  | NASHVILLE | TN    | 80001 | 37010 | 2008-01-24 |
| 005      | Sam Joe       | FIN       | CLK        | M    | 245 New St   | DENVER    | CO    | 80001 | 35000 | 2002-02-24 |
| 006      | Jessica Altman | PUR      | HLP        | F    | 245 Old St   | ATLANTA   | GA    | 80001 | 45000 | 2003-05-22 |
| 007      | Sarra Jhones  | PRO       | CLK        | F    | 160 Saint St | NASHVILLE | TN    | 20001 | 48000 | 2001-06-18 |
| 008      | Maxine        | FIN       | CLK        | F    | 160 Perl St  | NASHVILLE | TN    | 20521 | 48000 | 2002-06-18 |
+----------+---------------+-----------+------------+------+--------------+-----------+-------+-------+-------+------------+
```

Question 19:

Find in how many different cities various employees are residing?

Solution:

```
select count(distinct(city)) as 'Unique cities' from employee;
MariaDB [assignment_1]> select count(distinct(city)) as 'Unique cities' from
employee;
+---------------+
| Unique cities |
+---------------+
|             4 |
+---------------+
```

Question 20:

Display the employee information in the ascending order of DEPT_CODE and within a Department, it should be in the descending order of BASIC.

Solution:

```
select * from employee order by dept_code, basic desc;
MariaDB [assignment_1]> select * from employee order by dept_code, basic desc;
```

EMP_CODE	EMP_NAME	DEPT_CODE	DESIG_CODE	SEX	ADDRESS	CITY	STATE	PIN	BASIC	JN_DT
008	Maxine	FIN	CLK	F	160 Perl St	NASHVILLE	TN	20521	48000	2002-06-18
005	Sam Joe	FIN	CLK	M	245 New St	DENVER	CO	80001	35000	2002-02-24
004	Jenifer Martin	MGR	OFF	F	245 Perl St	NASHVILLE	TN	80001	37010	2008-01-24
007	Sarra Jhones	PRO	CLK	F	160 Saint St	NASHVILLE	TN	20001	48000	2001-06-18
002	Maddie Morris	PRO	EXE	F	456 Elm St	DENVER	CO	80001	0	0000-00-00
001	Adam Smith	PUR	MGR	M	123 Main St	BERKELEY	CA	90001	50000	2002-01-01
006	Jessica Altman	PUR	HLP	F	245 Old St	ATLANTA	GA	80001	45000	2003-05-22
003	Edward Johnson	PUR	OFF	M	789 Oak St	ATLANTA	GA	30002	40000	2010-06-25

Assignment – 2

Question 1:

From the EMP table show the minimum, maximum and average basic for each department (show dept. Code).

Solution:

```
select dept_code, max(basic), min(basic), avg(basic) from employee group by
dept_code;
MariaDB [assignment_1]> select dept_code, max(basic), min(basic), avg(basic) from
employee group by dept_code;
+-----------+------------+------------+------------+
| dept_code | max(basic) | min(basic) | avg(basic) |
+-----------+------------+------------+------------+
| FIN       |      48000 |      35000 | 41500.0000 |
| MGR       |      37010 |      37010 | 37010.0000 |
| PRO       |      48000 |      32500 | 40250.0000 |
| PUR       |      50000 |      40000 | 45000.0000 |
+-----------+------------+------------+------------+
```

Question 2:

Find the number of female employees in each department (show dept. Code).

Solution:

```
select dept_code, count(emp_code) as 'Count of Female' from employee where sex = 'F'
group by dept_code;
MariaDB [assignment_1]> select dept_code, count(emp_code) as 'Count of Female' from
employee where sex = 'F' group by dept_code;
+-----------+-----------------+
| dept_code | Count of Female |
+-----------+-----------------+
| FIN       |               1 |
| MGR       |               1 |
| PRO       |               2 |
| PUR       |               1 |
+-----------+-----------------+
```

Question 3:

Find the city wise no. of employees for each department (show dept. Code).

Solution:

```
select distinct(dept_code), city, count(*) from employee group by city;
MariaDB [assignment_1]> select distinct(dept_code), city, count(*) from employee
group by city;
+-----------+-----------+----------+
| dept_code | city      | count(*) |
+-----------+-----------+----------+
| PUR       | ATLANTA   |        2 |
| PUR       | BERKELEY  |        1 |
| PRO       | DENVER    |        2 |
| MGR       | NASHVILLE |        3 |
+-----------+-----------+----------+
```

Question 4:

Show the designation wise no of employees who have joined in the year 2000 in each department. The listing should appear in the ascending order of no. of employees.

Solution:

```
select desig_code, dept_code, count(emp_code) from employee where year(jn_dt) =
'2002' group by desig_code;
MariaDB [assignment_1]> select desig_code, dept_code, count(emp_code) from employee
where year(jn_dt) = '2000' group by desig_code;
+------------+-----------+-----------------+
| desig_code | dept_code | count(emp_code) |
+------------+-----------+-----------------+
| CLK        | FIN       |               2 |
| MGR        | PUR       |               1 |
+------------+-----------+-----------------+
```

Question 5:

Find the department code wise total basic of male employees only for the departments for which such total is more than 50,000 and the listing should appear in the descending order of total basic.

Solution:

```
select dept_code, sum(basic) from employee where sex = 'M' group by dept_code having
sum(basic) > 50000;
MariaDB [assignment_1]> select dept_code, sum(basic) from employee where sex = 'M'
group by dept_code having sum(basic) > 50000;
+-----------+------------+
| dept_code | sum(basic) |
+-----------+------------+
| PUR       |      90000 |
+-----------+------------+
```

Question 6:

Show the employee name, Designation description and basic for all employees.

Solution:

```
select e.emp_name, d.desig_desc from employee e, designation d
where e.desig_code = d.desig_code;
MariaDB [assignment_1]> select e.emp_name, d.desig_desc from employee e,designation d
    -> where e.desig_code = d.desig_code;
+---------------+------------+
| emp_name      | desig_desc |
+---------------+------------+
| Adam Smith    | Manager    |
| Maddie Morris | Executive  |
| Edward Johnson| Officer    |
| Jenifer Martin| Officer    |
| Sam Joe       | Clerk      |
| Jessica Altman| Helper     |
| Sarra Jhones  | Clerk      |
| Maxine        | Clerk      |
+---------------+------------+
```

Question 7:

Show the employee name, Designation description, Department Name & Basic for all employees.

Solution:

```
select e.emp_name, d.desig_code, dp.dept_name, e.basic
from employee e, designation d, department dp
where e.desig_code = d.desig_code and e.dept_code = dp.dept_code;

MariaDB [assignment_1]> select e.emp_name, d.desig_code, dp.dept_name, e.basic
    -> from employee e, designation d, department dp
    -> where e.desig_code = d.desig_code and e.dept_code = dp.dept_code;
+---------------+------------+------------+-------+
| emp_name      | desig_code | dept_name  | basic |
+---------------+------------+------------+-------+
| Sam Joe       | CLK        | Finance    | 35000 |
| Maxine        | CLK        | Finance    | 48000 |
| Maddie Morris | EXE        | Production | 32500 |
| Sarra Jhones  | CLK        | Production | 48000 |
| Adam Smith    | MGR        | Purchase   | 50000 |
| Edward Johnson | OFF       | Purchase   | 40000 |
| Jessica Altman | HLP       | Purchase   | 45000 |
+---------------+------------+------------+-------+
```

Question 8:

Find the department Codes in which no employee works.

Solution:

```
select dept_code from department where dept_code
not in (select dept_code from employee);

MariaDB [assignment_1]> select dept_code from department where dept_code
    -> not in (select dept_code from employee);
+-----------+
| dept_code |
+-----------+
| PER       |
| RES       |
+-----------+
```

Question 9:

Find the department names where at least one employee works.

Solution:

```
select dept_name from department
where dept_code in
(select dept_code from employee);

MariaDB [assignment_1]> select dept_name from department
    -> where dept_code in
    -> (select dept_code from employee);
```

```
+------------+
| dept_name  |
+------------+
| Finance    |
| Production |
| Purchase   |
+------------+
```

Question 10:

Find the department names where at least 10 employees work.

Solution:

```
select d.dept_name from department d
where (select count(*) from employee e where e.dept_code = d.dept_code) > 9;

MariaDB [assignment_1]> select d.dept_name from department d
    -> where (select count(*) from employee e where e.dept_code = d.dept_code) > 9;
Empty set
```

Question 11:

Find the department code in which employee with highest Basic works.

Solution:

```
select dept_code, basic as MAX_BASIC from employee
where basic = (select max(basic) from employee);

MariaDB [assignment_1]> select dept_code, basic as MAX_BASIC from employee
    -> where basic = (select max(basic) from employee);
+-----------+-----------+
| dept_code | MAX_BASIC |
+-----------+-----------+
| PUR       |     50000 |
+-----------+-----------+
```

Question 12:

Find the Designation description of the employee with highest basic.

Solution:

```
select d.desig_desc, e.basic as MAX_BASIC
from employee e, designation d
where e.desig_code = d.desig_code and
e.basic = (select max(basic) from employee);

MariaDB [assignment_1]> select d.desig_desc, e.basic as MAX_BASIC
    -> from employee e, designation d
    -> where e.desig_code = d.desig_code and
    -> e.basic = (select max(basic) from employee);
+------------+-----------+
| desig_desc | MAX_BASIC |
+------------+-----------+
| Manager    |     50000 |
+------------+-----------+
```

Question 13:

Find the no. of managers in each department.

Solution:

```
select d.dept_name, count(*) as NO_OF_MANAGER
from employee e, department d where e.dept_code = d.dept_code
and e.desig_code in (select desig_code from designation
where desig_desc = 'Manager');
```

```
MariaDB [assignment_1]> select d.dept_name, count(*) as NO_OF_MANAGER
    -> from employee e, department d where e.dept_code = d.dept_code
    -> and e.desig_code in (select desig_code from designation
    -> where desig_desc = 'Manager');
+-----------+---------------+
| dept_name | NO_OF_MANAGER |
+-----------+---------------+
| Purchase  |             1 |
+-----------+---------------+
```

Question 14:

Find the maximum basic from EMP table without using MAX().

Solution:

```
select distinct basic as Max_Basic from employee e
where e.basic >= all(select basic from employee);
```

```
MariaDB [assignment_1]> select distinct basic as Max_Basic from employee e
    -> where e.basic >= all(select basic from employee);

+-----------+
| Max_Basic |
+-----------+
|     50000 |
+-----------+
```

Question 15:

Find the minimum basic from EMP table without using MIN().

Solution:

```
select distinct basic as Min_Basic from employee e
where e.basic <= all(select basic from employee);
```

```
MariaDB [assignment_1]> select distinct basic as Min_Basic from employee e
    -> where e.basic <= all(select basic from employee);
+-----------+
| Min_Basic |
+-----------+
|     32500 |
+-----------+
```

Question 16:

Find the name of the department with highest total basic. Do the same for highest average basic and maximum no. of employee.

Solution:

Part – 1

```
select d.dept_name, e.basic from employee e, department d
where e.dept_code = d.dept_code
and e.basic >= all(select basic from employee);
```

```
MariaDB [assignment_1]> select d.dept_name, e.basic from employee e, department d
    -> where e.dept_code = d.dept_code
    -> and e.basic >= all(select basic from employee);
+-----------+-------+
| dept_name | basic |
+-----------+-------+
| Purchase  | 50000 |
+-----------+-------+
```

Part - 2

```
select dept_name, basic as AVERAGE_BASIC from (
      select dept_name, avg(basic) as Basic from employee e, department d
      where e.dept_code = d.dept_code group by dept_name)
where basic = (select max(basic) from (
      select dept_name, avg(basic) as Basic from employee e, department d
      where e.dept_code = d.dept_code group by dept_name)
);
```

```
+-----------+-----------+
| dept_name | avg_basic |
+-----------+-----------+
| Purchase  | 45000     |
+-----------+-----------+
```

Part – 3

```
select dept_name, count(emp_code) as Count_of_Employee from employee, department
where employee.dept_code = department.dept_code
group by employee.dept_code order by count(emp_code) desc limit 1;
```

```
MariaDB [assignment_1]> select dept_name, count(emp_code) as Count_of_Employee from
employee, department
    -> where employee.dept_code = department.dept_code
    -> group by employee.dept_code order by count(emp_code) desc limit 1;
+-----------+-------------------+
| dept_name | Count_of_Employee |
+-----------+-------------------+
| Purchase  |                 3 |
+-----------+-------------------+
```

Question 17:

Insert same rows into EMP table with designation code not existing in DESIGNATION table.

Solution:

```
INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('009', 'Adam Smith', 'PUR', 'Manager', 'M', '123 Main St', 'Berkeley', 'CA',
'90001', 50000, '2002-01-01');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('010', 'Adam Smith', 'PUR', 'Worker', 'M', '123 Main St', 'Berkeley', 'CA',
'90001', 50000, '2002-01-01');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('011', 'Adam Smith', 'PUR', 'Client', 'M', '123 Main St', 'Berkeley', 'CA',
'90001', 50000, '2002-01-01');

INSERT INTO EMPLOYEE (EMP_CODE, EMP_NAME, DEPT_CODE, DESIG_CODE, SEX, ADDRESS, CITY,
STATE, PIN, BASIC, JN_DT)
VALUES ('012', 'Adam Smith', 'PUR', 'Executive', 'M', '123 Main St', 'Berkeley',
'CA', '90001', 50000, '2002-01-01');

MariaDB [assignment_1]> select * from employee;
+----------+---------------+-----------+------------+------+-------------+-----------+-------+-------+-------+------------+
| EMP_CODE | EMP_NAME      | DEPT_CODE | DESIG_CODE | SEX  | ADDRESS     | CITY      | STATE | PIN   | BASIC | JN_DT      |
+----------+---------------+-----------+------------+------+-------------+-----------+-------+-------+-------+------------+
| 001      | Adam Smith    | PUR       | MGR        | M    | 123 Main St | BERKELEY  | CA    | 90001 | 50000 | 2002-01-01 |
| 002      | Maddie Morris | PRO       | EXE        | F    | 456 Elm St  | DENVER    | CO    | 80001 | 32500 | 0000-00-00 |
| 003      | Edward Johnson| PUR       | OFF        | M    | 789 Oak St  | ATLANTA   | GA    | 30002 | 40000 | 2010-06-25 |
| 004      | Jenifer Martin| MGR       | OFF        | F    | 245 Perl St | NASHVILLE | TN    | 80001 | 37010 | 2008-01-24 |
| 005      | Sam Joe       | FIN       | CLK        | M    | 245 New St  | DENVER    | CO    | 80001 | 35000 | 2002-02-24 |
| 006      | Jessica Altman| PUR       | HLP        | F    | 245 Old St  | ATLANTA   | GA    | 80001 | 45000 | 2003-05-22 |
| 007      | Sarra Jhones  | PRO       | CLK        | F    | 160 Saint St| NASHVILLE | TN    | 20001 | 48000 | 2001-06-18 |
| 008      | Maxine        | FIN       | CLK        | F    | 160 Perl St | NASHVILLE | TN    | 20521 | 48000 | 2002-06-18 |
| 009      | Adam Smith    | PUR       | Manager    | M    | 123 Main St | Berkeley  | CA    | 90001 | 50000 | 2002-01-01 |
| 010      | Adam Smith    | PUR       | Worker     | M    | 123 Main St | Berkeley  | CA    | 90001 | 50000 | 2002-01-01 |
| 011      | Adam Smith    | PUR       | Client     | M    | 123 Main St | Berkeley  | CA    | 90001 | 50000 | 2002-01-01 |
| 012      | Adam Smith    | PUR       | Executive  | M    | 123 Main St | Berkeley  | CA    | 90001 | 50000 | 2002-01-01 |
+----------+---------------+-----------+------------+------+-------------+-----------+-------+-------+-------+------------+
```

Question 18:

Delete the rows from EMP table with invalid DESIG_CODE.

Solution:

```
delete from employee where desig_code not in
(select desig_code from designation);

MariaDB [assignment_1]> delete from employee where desig_code not in
    -> (select desig_code from designation);
Query OK, 4 rows affected (0.005 sec)
```

```
MariaDB [assignment_1]> select * from employee;
+----------+---------------+-----------+------------+------+-------------+-----------+-------+-------+-------+------------+
| EMP_CODE | EMP_NAME      | DEPT_CODE | DESIG_CODE | SEX  | ADDRESS     | CITY      | STATE | PIN   | BASIC | JN_DT      |
+----------+---------------+-----------+------------+------+-------------+-----------+-------+-------+-------+------------+
| 001      | Adam Smith    | PUR       | MGR        | M    | 123 Main St | BERKELEY  | CA    | 90001 | 50000 | 2002-01-01 |
| 002      | Maddie Morris | PRO       | EXE        | F    | 456 Elm St  | DENVER    | CO    | 80001 | 32500 | 0000-00-00 |
| 003      | Edward Johnson| PUR       | OFF        | M    | 789 Oak St  | ATLANTA   | GA    | 30002 | 40000 | 2010-06-25 |
| 004      | Jenifer Martin| MGR       | OFF        | F    | 245 Perl St | NASHVILLE | TN    | 80001 | 37010 | 2008-01-24 |
| 005      | Sam Joe       | FIN       | CLK        | M    | 245 New St  | DENVER    | CO    | 80001 | 35000 | 2002-02-24 |
| 006      | Jessica Altman| PUR       | HLP        | F    | 245 Old St  | ATLANTA   | GA    | 80001 | 45000 | 2003-05-22 |
| 007      | Sarra Jhones  | PRO       | CLK        | F    | 160 Saint St| NASHVILLE | TN    | 20001 | 48000 | 2001-06-18 |
| 008      | Maxine        | FIN       | CLK        | F    | 160 Perl St | NASHVILLE | TN    | 20521 | 48000 | 2002-06-18 |
+----------+---------------+-----------+------------+------+-------------+-----------+-------+-------+-------+------------+
```

Question 19:

Find the name of the female employees with basic greater than the average basic of their respective department.

Solution:

```
select e.emp_name, e.basic from employee e, department d where
e.dept_code = d.dept_code and basic > (
      select avg(basic) from employee e, department d where
      e.dept_code = d.dept_code and e.sex = 'F'
) and e.sex = 'F';
```

```
MariaDB [assignment_1]> select e.emp_name, e.basic from employee e, department d
where
    -> e.dept_code = d.dept_code and basic > (
    -> select avg(basic) from employee e, department d where
    -> e.dept_code = d.dept_code and e.sex = 'F'
    -> ) and e.sex = 'F';
+----------------+-------+
| emp_name       | basic |
+----------------+-------+
| Jessica Altman | 45000 |
| Sarra Jhones   | 48000 |
| Maxine         | 48000 |
+----------------+-------+
```

Question 20:

Find the number of female managers.

Solution:

```
select count(*) as NO_OF_FEMALE_MANAGER from employee e, designation d
where e.desig_code = d.desig_code and e.sex = 'F'
and d.desig_code = "MGR";
```

```
MariaDB [assignment_1]> select count(*) as NO_OF_FEMALE_MANAGER from employee e,
designation d
    -> where e.desig_code = d.desig_code and e.sex = 'F'
    -> and d.desig_code = "MGR";
+----------------------+
| NO_OF_FEMALE_MANAGER |
+----------------------+
|                    1 |
+----------------------+
```