

```

MariaDB [lab]> create table employee (ssn int primary key, fname varchar(20),
lname varchar(20), bdate date, address varchar(50), sex char, salary int, supe
r_ssn int, dno int);
Query OK, 0 rows affected (0.043 sec)

MariaDB [lab]> create table department (dnumber int primary key, dname varchar
(30), mgr_ssn int, mgr_start_date date);
Query OK, 0 rows affected (0.045 sec)

MariaDB [lab]> show tables;
+-----+
| Tables_in_lab |
+-----+
| department     |
| employee       |
+-----+
2 rows in set (0.000 sec)

```

Figure 1 create two tables employee and department

```

MariaDB [lab]> insert into employee values (1, "Aashis", "Limbu", "Baneshwor", "
M", 45000, 5, 1), (2, "Barsana", "Nakarmi", "Lalitpur", "F", 50000, 5, 1), (3, "
Avinash", "Thakur", "Janakpur", "M", 55000, 4, 1), (4, "Tasu", "Ghalan", "Dharan
", "M", 55000, 4, 2), (5, "Bishnu", "Nepali", "Pokhara", "M", 50000, 4, 3), (6,
"Bibek", "Kathayat", "Pokhara", "M", 50000, 4, 3);
Query OK, 6 rows affected (0.039 sec)
Records: 6 Duplicates: 0 Warnings: 0

```

Figure 2 insert data into employee table

```

MariaDB [lab]> insert into department values (1, 'Physics', 4, '1952-12-30'), (2
, 'Chemistry', 5, '1952-12-18'), (3, 'Computer', 6, '1952-12-17');
Query OK, 3 rows affected (0.039 sec)
Records: 3 Duplicates: 0 Warnings: 0

```

Figure 3 insert data into department table

```

MariaDB [lab]> select ssn from employee;
+-----+
| ssn |
+-----+
| 1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |
+-----+
6 rows in set (0.001 sec)

```

Figure 4 select ssn of all employees

```

MariaDB [lab]> select ssn, dname from employee, department where dno=dnumber;
+-----+-----+
| ssn | dname |
+-----+-----+
| 1 | Physics |
| 2 | Physics |
| 3 | Physics |
| 4 | Chemistry |
| 5 | Computer |
| 6 | Computer |
+-----+-----+
6 rows in set (0.001 sec)

```

Figure 5 joining two tables using foreign key

```
MariaDB [lab]> select ssn, dname from employee, department;
```

ssn	dname
1	Physics
1	Chemistry
1	Computer
2	Physics
2	Chemistry
2	Computer
3	Physics
3	Chemistry
3	Computer
4	Physics
4	Chemistry
4	Computer
5	Physics
5	Chemistry
5	Computer
6	Physics
6	Chemistry
6	Computer

18 rows in set (0.000 sec)

Figure 6 Cartesian product

```
MariaDB [lab]> select fname, lname, address from employee, department where dno=dnumber and dname='computer';
```

fname	lname	address
Bishnu	Nepali	Pokhara
Bibek	Kathayat	Pokhara

2 rows in set (0.000 sec)

Figure 7 using where clause to retrieve data based on a condition

```
MariaDB [lab]> select dno, count(*) as total_employees, avg(salary) as average_salary from employee group by dno;
```

dno	total_employees	average_salary
1	3	50000.0000
2	1	55000.0000
3	2	50000.0000

3 rows in set (0.000 sec)

Figure 8 using group by clause

```
MariaDB [lab]> select dno, dname, count(ssn) as total_employee from employee, department where dno=dnumber group by dno having total_employee > 2;
```

dno	dname	total_employee
1	Physics	3

1 row in set (0.001 sec)

Figure 9 using having clause

```
MariaDB [lab]> select dname, lname, fname from department, employee where dno=dnumber order by dname, lname;
```

dname	lname	fname
Chemistry	Ghalan	Tasu
Computer	Kathayat	Bibek
Computer	Nepali	Bishnu
Physics	Limbu	Aashis
Physics	Nakarmi	Barsana
Physics	Thakur	Avinash

6 rows in set (0.001 sec)

Figure 10 using order by clause