```
SQL> select * from student;

ROLLNO NAME    BRAN    MARKS
---------- -------- ---- ----------
   201 riya    CSE       306
   306 siya    IT        422
   234 ravi    ME        323
   145 kiya    CSE       378
   313 diya    IT        455
   330 tiya    CSE       456
   432 jiya    IT        400

7 rows selected.

SQL> drop table student;

Table dropped.

SQL> create table student(rollno number(5),name varchar2(6),branch varchar2(6));

Table created.

SQL> insert into student
  2  values
  3  ('&rollno','&name','&branch');
Enter value for rollno: 11
Enter value for name: riya
Enter value for branch: CSE
old   3: ('&rollno','&name','&branch')
```

new   3: ('11','riya','CSE')

1 row created.

SQL> /

Enter value for rollno: 22

Enter value for name: diya

Enter value for branch: IT

old   3: ('&rollno','&name','&branch')

new   3: ('22','diya','IT')

1 row created.

SQL> /

Enter value for rollno: 33

Enter value for name: mia

Enter value for branch: IT

old   3: ('&rollno','&name','&branch')

new   3: ('33','mia','IT')

1 row created.

SQL> alter table student

  2 add primary key(rollno);

Table altered.

SQL> desc student;

Name	Null?	Type

```
-------------------------------------- -------- -------------------------

 ROLLNO                    NOT NULL NUMBER(5)

 NAME                          VARCHAR2(6)

 BRANCH                         VARCHAR2(6)


SQL> drop table library;


Table dropped.


SQL> create table library(rollno number(5),book varchar(7),foreign key(rollno)
REFERENCES student(rollno));


Table created.


SQL> insert into library
  2  values
  3  ('&rollno','&book')
  4  ;
Enter value for rollno: 22
Enter value for book: DBMS
old   3: ('&rollno','&book')
new   3: ('22','DBMS')


1 row created.


SQL> /
Enter value for rollno: 33
Enter value for book: python
```

```
old   3: ('&rollno','&book')
new   3: ('33','python')
```

1 row created.

SQL> select * from library;

```
   ROLLNO BOOK
---------- -------
       22 DBMS
       33 python
```

SQL> select * from student;

```
   ROLLNO NAME   BRANCH
---------- ------ ------
       11 riya   CSE
       22 diya   IT
       33 mia    IT
```

SQL> commit;

Commit complete.

SQL> select * from student,library;

```
   ROLLNO NAME   BRANCH    ROLLNO BOOK
---------- ------ ------ ---------- -------
       11 riya   CSE         22 DBMS
```

```
    22 diya   IT        22 DBMS

    33 mia    IT        22 DBMS

    11 riya   CSE        33 python

    22 diya   IT        33 python

    33 mia    IT        33 python
```

6 rows selected.

SQL> select * from student,library

  2 where student.rollno=library.rollno;

```
   ROLLNO NAME   BRANCH    ROLLNO BOOK

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

    22 diya   IT        22 DBMS

    33 mia    IT        33 python
```

SQL> select s.*,l.book from student s,library l

  2 where s.rollno=l.rollno;

```
   ROLLNO NAME   BRANCH BOOK

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

    22 diya   IT    DBMS

    33 mia    IT    python
```

SQL> select s.*,l.book from student s INNER JOIN library l

  2 on s.rollno=l.rollno;

```
    ROLLNO NAME   BRANCH BOOK
---------- ------ ------ -------
      22 diya   IT    DBMS
      33 mia    IT    python
```

SQL> connect btech15021/15021;

Connected.

SQL> select * from tab;

```
TNAME                    TABTYPE  CLUSTERID
---------------------------- ------- ----------
EMP                 TABLE
EMPLOYEE                TABLE
LIBRARY                 TABLE
SEC1              TABLE
SEC2              TABLE
STUDENT               TABLE
STUDENT1                TABLE
```

7 rows selected.

SQL> select * from student;

```
   ROLLNO NAME   BRANCH
---------- ------ ------
```

```
    11 riya   CSE
    22 diya   IT
    33 mia    IT


SQL> select * from library;


   ROLLNO BOOK

---------- -------
    22 DBMS
    33 python


SQL> select * from student NATURAL JOIN library;


   ROLLNO NAME   BRANCH BOOK

---------- ------ ------ -------
    22 diya   IT    DBMS
    33 mia    IT    python


SQL> select * from student s INNER JOIN library l
  2  on s.rollno<l.rollno;


   ROLLNO NAME   BRANCH    ROLLNO BOOK

---------- ------ ------ ---------- -------
    11 riya   CSE        22 DBMS
    11 riya   CSE        33 python
    22 diya   IT         33 python


SQL> select * from student s INNER JOIN library l
  2  on s.rollno<>l.rollno;
```

```
    ROLLNO NAME   BRANCH     ROLLNO BOOK

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

       11 riya   CSE          22 DBMS

       33 mia    IT           22 DBMS

       11 riya   CSE           33 python

       22 diya   IT           33 python
```

SQL> select * from student;

```
    ROLLNO NAME   BRANCH

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

       11 riya   CSE

       22 diya   IT

       33 mia    IT
```

SQL> insert into student

  2 values

  3 (44,'tiya','CSE');

1 row created.

SQL> alter table student

  2 add (monitor number(4));

Table altered.

SQL> alter table student

  2 add(foreign key(monitor) references student(rollno));

Table altered.

SQL> desc student;

Name	Null?	Type
ROLLNO	NOT NULL	NUMBER(5)
NAME		VARCHAR2(6)
BRANCH		VARCHAR2(6)
MONITOR		NUMBER(4)

SQL> select * from student;

ROLLNO	NAME	BRANCH	MONITOR
11	riya	CSE	
22	diya	IT	
33	mia	IT	
44	tiya	CSE	

SQL> update student

  2 **set monitor=44**

  3 **where name like 'r%'**

  4 **or**

  5 **name like 't%';**

2 rows updated.

SQL> update student

```
  2  set monitor=22

  3  where name like 'd%'

  4  or

  5  name like 'm%';
```

2 rows updated.

SQL> select * from student;

```
   ROLLNO NAME   BRANCH   MONITOR

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

       11 riya   CSE          44

       22 diya   IT           22

       33 mia    IT           22

       44 tiya   CSE          44
```


SQL> select s.*,t.* from student s,student t;

ROLLNO	NAME	BRANCH	MONITOR	ROLLNO	NAME	BRANCH	MONITOR
11	riya	CSE	44	11	riya	CSE	44
11	riya	CSE	44	22	diya	IT	22
11	riya	CSE	44	33	mia	IT	22
11	riya	CSE	44	44	tiya	CSE	44
22	diya	IT	22	11	riya	CSE	44
22	diya	IT	22	22	diya	IT	22
22	diya	IT	22	33	mia	IT	22
22	diya	IT	22	44	tiya	CSE	44

ROLLNO	NAME	BRANCH	MONITOR	ROLLNO	NAME	BRANCH	MONITOR
33	mia	IT	22	11	riya	CSE	44
33	mia	IT	22	22	diya	IT	22
33	mia	IT	22	33	mia	IT	22

ROLLNO	NAME	BRANCH	MONITOR	ROLLNO	NAME	BRANCH	MONITOR
33	mia	IT	22	44	tiya	CSE	44
44	tiya	CSE	44	11	riya	CSE	44
44	tiya	CSE	44	22	diya	IT	22
44	tiya	CSE	44	33	mia	IT	22
44	tiya	CSE	44	44	tiya	CSE	44

16 rows selected.

we need to extract the names of student who are monitor

SQL> select s.*,t.* from student s,student t

  2 where s.rollno=t.monitor;

ROLLNO	NAME	BRANCH	MONITOR	ROLLNO	NAME	BRANCH	MONITOR
44	tiya	CSE	44	11	riya	CSE	44
22	diya	IT	22	22	diya	IT	22
22	diya	IT	22	33	mia	IT	22
44	tiya	CSE	44	44	tiya	CSE	44

SQL> select * from student s INNER JOIN student t

  2 on

3 s.rollno=t.monitor;

ROLLNO	NAME	BRANCH	MONITOR	ROLLNO	NAME	BRANCH	MONITOR
44	tiya	CSE	44	11	riya	CSE	44
22	diya	IT	22	22	diya	IT	22
22	diya	IT	22	33	mia	IT	22
44	tiya	CSE	44	44	tiya	CSE	44

SQL> select distinct(s.rollno),s.branch,s.monitor,t.* from student s INNER JOIN student t

 2 on

 3 s.rollno=t.monitor;

ROLLNO	BRANCH	MONITOR	ROLLNO	NAME	BRANCH	MONITOR
44	CSE	44	11	riya	CSE	44
22	IT	22	22	diya	IT	22
22	IT	22	33	mia	IT	22
44	CSE	44	44	tiya	CSE	44

SQL> select * from student;

ROLLNO	NAME	BRANCH	MONITOR
11	riya	CSE	44
22	diya	IT	22
33	mia	IT	22
44	tiya	CSE	44

```
SQL> select * from library;


   ROLLNO BOOK

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

       22 DBMS

       33 python



SQL> desc library;

 Name                                    Null?    Type

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

 ROLLNO                                           NUMBER(5)

 BOOK                                             VARCHAR2(7)


SQL> select * from student;


   ROLLNO NAME   BRANCH   MONITOR

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

       11 riya   CSE          44

       22 diya   IT           22

       33 mia    IT           22

       44 tiya   CSE          44


SQL> select * from library;


   ROLLNO BOOK

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

       22 DBMS

       33 python
```

SQL> select * from student s LEFT OUTER JOIN library l

  2 on s.rollno=l.rollno;

ROLLNO	NAME	BRANCH	MONITOR	ROLLNO	BOOK
22	diya	IT	22	22	DBMS
33	mia	IT	22	33	python
11	riya	CSE	44		
44	tiya	CSE	44		

SQL> select * from student s RIGHT OUTER JOIN library l

  2 on s.rollno=l.rollno;

ROLLNO	NAME	BRANCH	MONITOR	ROLLNO	BOOK
22	diya	IT	22	22	DBMS
33	mia	IT	22	33	python

SQL> select * from student s LEFT OUTER JOIN library l

  2 on s.rollno=l.rollno;

ROLLNO	NAME	BRANCH	MONITOR	ROLLNO	BOOK
22	diya	IT	22	22	DBMS
33	mia	IT	22	33	python
11	riya	CSE	44		
44	tiya	CSE	44		

```
SQL> select * from student s FULL OUTER JOIN library l

  2  on s.rollno=l.rollno;


   ROLLNO NAME  BRANCH   MONITOR    ROLLNO BOOK

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

       11 riya  CSE           44

       22 diya  IT        22        22 DBMS

       33 mia   IT        22        33 python

       44 tiya  CSE           44
```