AIM:

Create a table **student** with following fields roll no int (primary key), Name char (20) not null (first letter as either B, S, E, P), sex char (1) accept only m or f, dob date not null, course (values must be MCA, CSE ME), sem(values must be S3, S4), Date_of_Join.

Create second table **marks** with following data Mid in (primary key), roll no int (foreign key) referencing student tables). Sub_code char (5) not null and marks int not null (>=0 &<=100). Insert the data into these tables.

```
SQL> CREATE TABLE student(rollno INT PRIMARY KEY, name CHAR(20) NOT NULL CHECK (name LI
KE 'B%' OR name LIKE 'S%' OR name LIKE 'E%' OR name LIKE 'P%'), sex CHAR(1) CHECK (sex
IN ('M', 'F')), dob DATE NOT NULL, course VARCHAR(3) CHECK (course IN ('MCA', 'CSE', 'M
E')), sem VARCHAR(2) CHECK (sem IN ('S3', 'S4')), doj DATE);

Table created.

SQL> CREATE TABLE marks(mid INT PRIMARY KEY, rollno INT REFERENCES student, sub_code CH
AR(5) NOT NULL, marks INT NOT NULL CHECK (marks>=0 AND marks<=100));

Table created.
```


a. List the name of students joined in mca after 10-10-1990.

b. List the name of students who are not in CS department.

c. List the names of students whose names start with ‘E’ and ‘P as 3rd character

d. List all marks of the student Sourav from MCA.

e. List all roll no from two table (avoid duplicate roll no).

f. List all roll no which is common in both tables.

g. List name from student table and all marks from marks of roll no 23 in student table.

h. List the roll no and total marks of each roll no from mark table.

i. Display name and roll no of students, where marks are entered in marks table.

j. Display the name, roll no, sex, dob, sub_code and mark of highest subject mark.

k. List the student name and Date of Join in format dd/mm/yy

l. List all students joined during the year 1998

m. List the minimum mark of various students in various department having minimum mark greater than 60.

n. List all the students in the college other than CS Department

o. Count the number of students in each department whose mark in greater than 60

Answers:

a)

```
SQL> SELECT name FROM student WHERE course='MCA' AND doj>'10-OCT-1990';

NAME
--------------------
Basil
Emily
Espilon
Sourav
Pranav
```

b)

```
SQL> SELECT name FROM student WHERE course NOT IN 'CSE';

NAME
--------------------
Basil
Emily
Espilon
Sourav
Pranav
```

c)

```
SQL> SELECT name FROM student WHERE name LIKE 'E_p%';

NAME
--------------------
Espilon
```

d)

```
SQL> SELECT marks FROM marks JOIN student ON student.rollno = marks.rollno WHERE name='
Sourav';

     MARKS
----------
        63
        69
        69
```

e)

```
SQL> SELECT rollno FROM marks UNION SELECT rollno FROM student;

    ROLLNO
----------
         4
         5
        23
        29
        39
        61
        70

7 rows selected.
```

f)

```
SQL> SELECT rollno FROM marks INTERSECT SELECT rollno FROM student;

    ROLLNO
----------
        29
```


g)

```
SQL> SELECT name, marks FROM marks JOIN student ON marks.rollno = student.rollno WHERE
student.rollno=23;

NAME                    MARKS
-------------------- ----------
Espilon                     70
Espilon                     90
```


h)

```
SQL> SELECT rollno, SUM(marks) FROM marks GROUP BY rollno;

    ROLLNO SUM(MARKS)
---------- ----------
        29        201
        23        160
```

i)

```
SQL> SELECT DISTINCT(student.name), student.rollno FROM marks JOIN student ON marks.rol
lno = student.rollno;

NAME                    ROLLNO
-------------------- ----------
Sourav                      29
Espilon                     23
```

j)

```
SQL> SELECT student.name, student.rollno, student.sex, student.dob, marks.sub_code, mar
ks.marks FROM student JOIN marks ON student.rollno=marks.rollno WHERE (marks.marks,mark
s.sub_code) IN (SELECT MAX(marks), sub_code FROM marks GROUP BY sub_code);

NAME                 ROLLNO S DOB       SUB_C      MARKS
-------------------- ---------- - --------- ----- ----------
Sourav                       29 M 27-DEC-03 CS203         63
Sourav                       29 M 27-DEC-03 CS204         69
Espilon                      23 F 27-DEC-02 CS215         70
Espilon                      23 F 27-DEC-02 CS205         90
```

k)

```
SQL> SELECT name, doj FROM student;

NAME                 DOJ
-------------------- ---------
Basil                01-MAY-18
Emily                01-MAY-18
Sumayya              01-MAY-20
Sameel               01-MAY-20
Espilon              01-MAY-20
Sourav               01-MAY-20
Pranav               01-MAY-98

7 rows selected.
```

l)

```
SQL> SELECT * FROM student WHERE doj LIKE '%-%-98';

    ROLLNO NAME                 S DOB       COU SE DOJ
---------- -------------------- - --------- --- -- ---------
        39 Pranav               M 27-JAN-03 MCA S4 01-MAY-98
```

m)

```
SQL> SELECT MIN(marks) FROM marks WHERE marks>60 GROUP BY rollno;

MIN(MARKS)
----------
        63
        70
```

n)

```
SQL> SELECT * FROM student WHERE course NOT IN 'CS';

    ROLLNO NAME                 S DOB       COU SE DOJ
---------- -------------------- - --------- --- -- ---------
         4 Basil                M 02-FEB-00 MCA S4 01-MAY-18
         5 Emily                F 02-FEB-01 MCA S3 01-MAY-18
        61 Sumayya              F 16-JUL-02 CSE S4 01-MAY-20
        70 Sameel               M 27-DEC-01 CSE S4 01-MAY-20
        23 Espilon              F 27-DEC-02 MCA S3 01-MAY-20
        29 Sourav               M 27-DEC-03 MCA S3 01-MAY-20
        39 Pranav               M 27-JAN-03 MCA S4 01-MAY-98

7 rows selected.
```


o)

```
SQL> SELECT student.course, COUNT(student.rollno) FROM student JOIN marks ON marks.roll
no = student.rollno WHERE marks.marks>60 GROUP BY student.course;

COU COUNT(STUDENT.ROLLNO)
--- --------------------
CSE                    1
MCA                    5
```


ER Diagram: