1. select the number of students in each department in the descending order of department name

SELECT DEPT\_ID COUNT(\*)

FROM STUDENT

JOIN DEPARTMENT ON DEPT\_ID = DEPARTMENT\_ID

GROUP BY DEPT\_NAME

ORDER BY DEPT\_NAME DESC;

2.select the names of the department and manager of the department.

SELECT DEPT\_NAME,FACULTY\_NAME AS DEPT\_MANAGER\_NAME

FROM FACULTY

JOIN DEPARTMENT ON MGR\_ID = FACULTY\_ID;

3. select the department that offers highest number of courses

SELECT DEPT\_NAME,COURSE\_COUNT AS MAX\_COURSE\_COUNT

FROM (

SELECT DEPT\_NAME,COUNT(\*) AS COURSE\_COUNT FROM DEPARTMENT AS D,COURSE AS C

WHERE

D.DEPARTMENT\_ID = C.DEPT\_ID GROUP BY DEPT\_NAME)

AS VW

WHERE COURSE\_COUNT IN (

SELECT MAX(COURSE\_COUNT) FROM VW

)

;

4. select the details of the students who doesnot live in hostel

1. Using EXCEPT

SELECT STUDENT.\*

FROM STUDENT

WHERE SRN IN

(

SELECT S.SRN FROM STUDENT AS S

EXCEPT

SELECT SH.SRN FROM STUD\_HOSTEL AS SH

)

;

b.Using left-outer join

SELECT STUDENT.\*

FROM STUDENT

LEFT OUTER JOIN STUD\_HOSTEL ON STUDENT.SRN = STUD\_HOSTEL.SRN

WHERE STUD\_HOSTEL.SRN IS NULL;

5. select the details of the students who failed in a particular course

a. Using Nested Queries

SELECT \*

FROM STUDENT

WHERE SRN IN

(

SELECT SRN FROM EXAM\_STUD WHERE EM\_ID IN

(

SELECT EXAM\_ID FROM EXAM WHERE CRS\_ID IN

(

SELECT COURSE\_ID FROM COURSE WHERE COURSE\_NAME IN ('DATA SCIENCE')

)

) AND GRADE='F'

)

;

b. Using Joins

SELECT STUDENT.\*

FROM EXAM\_STUD,EXAM,COURSE,STUDENT

WHERE EM\_ID = EXAM\_ID AND CRS\_ID = COURSE\_ID AND EXAM\_STUD.SRN = STUDENT.SRN AND COURSE\_NAME = 'DATA SCIENCE' AND GRADE = 'F';

6. select average marks of all sections in a particular subject

SELECT SECTION,AVG(MARKS) AS AVG\_SECTION\_MARKS

FROM EXAM\_STUD AS ES,EXAM,COURSE,STUDENT AS S

WHERE EXAM\_ID = EM\_ID AND S.SRN = ES.SRN AND CRS\_ID = COURSE\_ID AND COURSE\_NAME='DATA SCIENCE'

GROUP BY SECTION;

7. select all the books that a student has borrowed from library

a. Using Inner Joins

SELECT BOOK.\*

FROM

(

(

BOOK\_STUD JOIN BOOK ON BOOK\_STUD.ISBN = BOOK.ISBN AND BOOK\_STUD.COPY\_NO = BOOK.COPY\_NO

)

JOIN

STUDENT ON BOOK\_STUD.SRN = STUDENT.SRN AND STUDENT.SRN = 'ABC4567898'

)

;

b. Using Natural Joins

SELECT BOOK.\* FROM (

(BOOK\_STUD NATURAL JOIN BOOK )

NATURAL JOIN

STUDENT )

WHERE STUDENT.SRN = 'ABC4567898';

c. Using Nested Select Queries

SELECT DISTINCT ISBN,BOOK\_NAME,AUTHOR,PUBLISHER FROM BOOK WHERE ISBN IN (

SELECT ISBN FROM BOOK\_STUD WHERE SRN IN ('ABC4567898')

);

8. get average marks of a particular student

SELECT E.SRN,AVG(E.MARKS)

FROM EXAM\_STUD AS E,STUDENT AS S

WHERE S.SRN=E.SRN AND S.STUD\_NAME='ADARSH'

GROUP BY E.SRN;

9. select students with average greater than 70

a. Using Nested Queries

SELECT \*

FROM STUDENT AS S

WHERE S.SRN IN

(

SELECT E.SRN

FROM STUDENT AS S,EXAM\_STUD AS E

WHERE E.SRN=S.SRN

GROUP BY E.SRN

HAVING AVG(E.MARKS)>70

)

;

b. Using Joins

SELECT SRN

FROM EXAM\_STUD

NATURAL JOIN STUDENT AS S

GROUP BY SRN

HAVING AVG(MARKS) > 70;

10. select the faculty details with a faculty rating < 5 for any particular course

SELECT FACULTY.\*

FROM FACULTY\_COURSE,COURSE,FACULTY

WHERE

COURSE\_ID = CRS\_ID

AND FAC\_RATING < '5'

AND FACULTY\_ID = FAC\_ID

AND COURSE\_NAME ='DATA SCIENCE' ;

b. Using Nested Queries

SELECT FACULTY.\*

FROM FACULTY

WHERE

FACULTY\_ID IN (

SELECT FAC\_ID FROM FACULTY\_COURSE WHERE CRS\_ID IN (

SELECT COURSE\_ID FROM COURSE WHERE COURSE\_NAME IN ('DATA SCIENCE') AND FAC\_RATING < 5 )

)

;