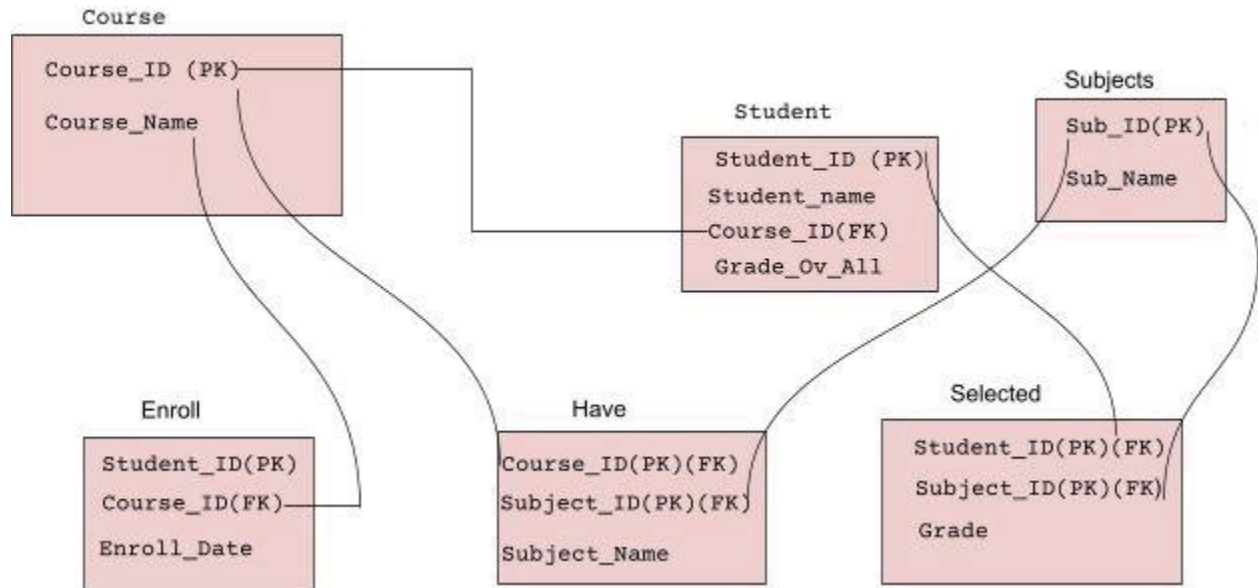
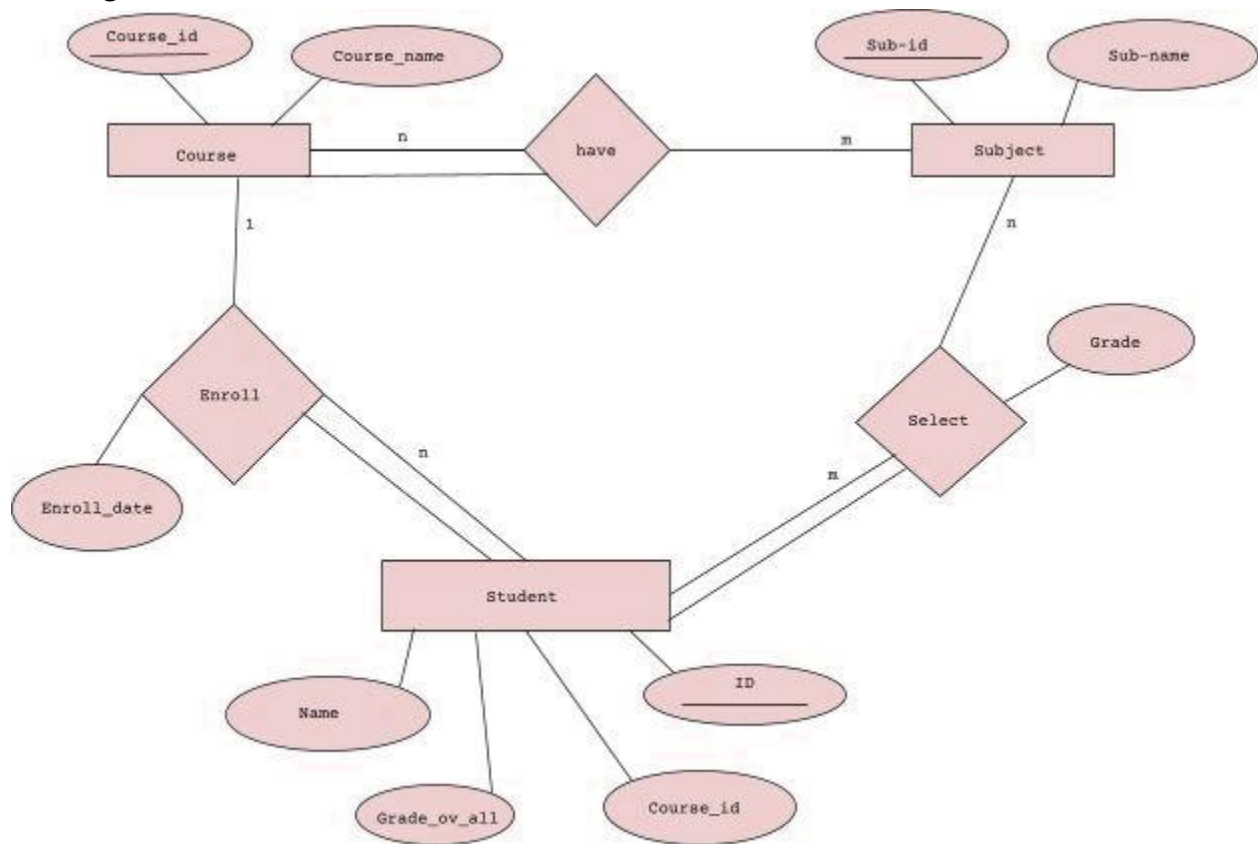


Rounak Saha
IT-A3-1132 DBMS Assignment 3

Database Schema:



ER Diagram:



QUESTION 1.

-- COURSE Table

```
CREATE TABLE COURSE(  
    COURSE_ID NUMBER(2),  
    COURSE_NAME VARCHAR2(10)  
);
```

```
INSERT INTO COURSE VALUES (10, 'CS');  
INSERT INTO COURSE VALUES (20, 'IT');  
INSERT INTO COURSE VALUES (30, 'ECE');  
INSERT INTO COURSE VALUES (40, 'AI');
```

```
INSERT INTO COURSE VALUES (50, 'WEB DEV');
```

```
-- SUBJECT Table
```

```
CREATE TABLE SUBJECT(  
    SUBJECT_ID NUMBER(3),  
    SUBJECT_NAME VARCHAR2(15)  
);
```

```
INSERT INTO SUBJECT VALUES (101, 'DSA');
```

```
INSERT INTO SUBJECT VALUES (102, 'OOP');
```

```
INSERT INTO SUBJECT VALUES (103, 'DBMS');
```

```
INSERT INTO SUBJECT VALUES (104, 'ML');
```

```
INSERT INTO SUBJECT VALUES (105, 'BIG DATA');
```

```
INSERT INTO SUBJECT VALUES (106, 'COA');
```

```
INSERT INTO SUBJECT VALUES (107, 'GRAPH THERORY');
```

```
INSERT INTO SUBJECT VALUES (108, 'NETWORKING');
```

```
-- STUDENT Table
```

```
CREATE TABLE STUDENT(  
    STUDENT_ID NUMBER(5),  
    STUDENT_NAME VARCHAR2(25),  
    COURSE_ID NUMBER(2),  
    GRADE VARCHAR2(1)  
);
```

```
INSERT INTO STUDENT VALUES (18066, 'MANAS', 10, 'B');
```

```
INSERT INTO STUDENT VALUES (18067, 'RAJASI', 20, 'A');  
INSERT INTO STUDENT VALUES (18068, 'SOHAM', 20, 'C');  
INSERT INTO STUDENT VALUES (18069, 'SHRAYAN', 20, 'B');  
INSERT INTO STUDENT VALUES (18070, 'SHREYA', 20, 'A');  
INSERT INTO STUDENT VALUES (18071, 'BITASTA', 40, 'A');  
INSERT INTO STUDENT VALUES (18072, 'KAUSTAV', 50, 'B');
```

-- ENROLLED Table

```
CREATE TABLE ENROLLED(  
    STUDENT_ID NUMBER(5),  
    COURSE_ID NUMBER(2)  
);
```

```
INSERT INTO ENROLLED VALUES (18066, 10);  
INSERT INTO ENROLLED VALUES (18067, 20);  
INSERT INTO ENROLLED VALUES (18068, 20);  
INSERT INTO ENROLLED VALUES (18069, 20);  
INSERT INTO ENROLLED VALUES (18070, 20);
```

-- HAVE Table

```
CREATE TABLE HAVE(  
    COURSE_ID NUMBER(2),  
    STUDENT_ID NUMBER(3),  
    SUBJECT_NAME VARCHAR(15)  
);
```

```
INSERT INTO HAVE VALUES (40, 101, 'DSA');  
INSERT INTO HAVE VALUES (40, 102, 'OOP');  
INSERT INTO HAVE VALUES (40, 103, 'DBMS');  
INSERT INTO HAVE VALUES (40, 104, 'ML');  
INSERT INTO HAVE VALUES (40, 105, 'BIG DATA');  
INSERT INTO HAVE VALUES (40, 107, 'GRAPH THEROY');
```

-- SELECTED Table

```
CREATE TABLE SELECTED(  
    STUDENT_ID NUMBER(5),  
    SUBJECT_ID NUMBER(3),  
    GRADE VARCHAR2(1)  
);
```

```
INSERT INTO SELECTED VALUES (18071, 101, 'A');  
INSERT INTO SELECTED VALUES (18071, 102, 'B');  
INSERT INTO SELECTED VALUES (18071, 103, 'A');  
INSERT INTO SELECTED VALUES (18071, 104, 'C');  
INSERT INTO SELECTED VALUES (18071, 105, 'B');  
INSERT INTO SELECTED VALUES (18071, 107, 'A');
```

QUESTION 2.

```
ALTER TABLE ENROLLED  
ADD (ENROLL_DATE DATE);
```

```
UPDATE ENROLLED SET ENROLL_DATE='19-NOV-19' WHERE STUDENT_ID=18066;  
UPDATE ENROLLED SET ENROLL_DATE='17-JUL-18' WHERE STUDENT_ID=18067;  
UPDATE ENROLLED SET ENROLL_DATE='14-DEC-19' WHERE STUDENT_ID=18068;  
UPDATE ENROLLED SET ENROLL_DATE='21-JUL-19' WHERE STUDENT_ID=18069;  
UPDATE ENROLLED SET ENROLL_DATE='04-JUN-21' WHERE STUDENT_ID=18070;
```

QUESTION 3.

```
ALTER TABLE COURSE  
MODIFY COURSE_NAME VARCHAR(10) NOT NULL;
```

QUESTION 4.

```
SELECT * FROM(  
    SELECT  
        COUNT(COURSE_ID) AS STUDENT_COUNT, COURSE_ID, COURSE_NAME  
    FROM(  
        SELECT ENROLLED.COURSE_ID, COURSE.COURSE_NAME  
        FROM ENROLLED,COURSE  
        WHERE ENROLLED.COURSE_ID=COURSE.COURSE_ID)  
    GROUP BY COURSE_ID,COURSE_NAME)
```

WHERE STUDENT_COUNT>3;

```
1  -- Question 4
2  SELECT * FROM(
3      SELECT
4          COUNT(COURSE_ID) AS STUDENT_COUNT, COURSE_ID, COURSE_NAME
5      FROM(
6          SELECT ENROLLED.COURSE_ID, COURSE.COURSE_NAME
7          FROM ENROLLED, COURSE
8          WHERE ENROLLED.COURSE_ID=COURSE.COURSE_ID)
9      GROUP BY COURSE_ID, COURSE_NAME)
10 WHERE STUDENT_COUNT>3;
```

STUDENT_COUNT	COURSE_ID	COURSE_NAME
4	20	IT

QUESTION 5.

SELECT

STUDENT.STUDENT_ID,

STUDENT.STUDENT_NAME,

SUBJECT.SUBJECT_ID,

SUBJECT.SUBJECT_NAME,

SELECTED.GRADE

FROM student

INNER JOIN SELECTED on STUDENT.STUDENT_ID = SELECTED.STUDENT_ID

INNER JOIN SUBJECT on SELECTED.SUBJECT_ID = SUBJECT.SUBJECT_ID

where STUDENT.STUDENT_ID = 18071;

SQL Worksheet

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```
1  -- Question 5
2  SELECT
3      STUDENT.STUDENT_ID,
4      STUDENT.STUDENT_NAME,
5      SUBJECT.SUBJECT_ID,
6      SUBJECT.SUBJECT_NAME,
7      SELECTED.GRADE
8  FROM student
9  INNER JOIN SELECTED on STUDENT.STUDENT_ID = SELECTED.STUDENT_ID
10 INNER JOIN SUBJECT on SELECTED.SUBJECT_ID = SUBJECT.SUBJECT_ID
11 where STUDENT.STUDENT_ID = 18071;
```

STUDENT_ID	STUDENT_NAME	SUBJECT_ID	SUBJECT_NAME	GRADE
18071	BITASTA	101	DSA	A
18071	BITASTA	102	OOP	B
18071	BITASTA	103	DBMS	A
18071	BITASTA	104	ML	C
18071	BITASTA	105	BIG DATA	B
18071	BITASTA	107	GRAPH THERORY	A

QUESTION 6.

```
SELECT STUDENT_COUNT, COURSE_NAME FROM (
    SELECT COUNT(COURSE_ID) AS STUDENT_COUNT ,COURSE_ID, COURSE_NAME
    FROM (
        SELECT ENROLLED.COURSE_ID , COURSE.COURSE_NAME
        FROM ENROLLED,COURSE
        WHERE ENROLLED.COURSE_ID=COURSE.COURSE_ID)
    GROUP BY COURSE_ID,COURSE_NAME)
WHERE STUDENT_COUNT = (
    SELECT MAX(STUDENT_COUNT) FROM(
        SELECT COUNT(COURSE_ID) AS STUDENT_COUNT ,COURSE_ID, COURSE_NAME
```



```

FROM (

SELECT ENROLLED.COURSE_ID , COURSE.COURSE_NAME

FROM ENROLLED,COURSE

WHERE ENROLLED.COURSE_ID=COURSE.COURSE_ID)

GROUP BY COURSE_ID,COURSE_NAME));

```

SQL Worksheet
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Run ▶

```

1  -- QUESTION 6
2  SELECT STUDENT_COUNT,COURSE_NAME FROM (
3      SELECT COUNT(COURSE_ID) AS STUDENT_COUNT ,COURSE_ID, COURSE_NAME
4      FROM (
5          SELECT ENROLLED.COURSE_ID , COURSE.COURSE_NAME
6          FROM ENROLLED,COURSE
7          WHERE ENROLLED.COURSE_ID=COURSE.COURSE_ID)
8      GROUP BY COURSE_ID,COURSE_NAME)
9  WHERE STUDENT_COUNT = (
10     SELECT MAX(STUDENT_COUNT) FROM(
11         SELECT COUNT(COURSE_ID) AS STUDENT_COUNT ,COURSE_ID, COURSE_NAME
12         FROM (
13             SELECT ENROLLED.COURSE_ID , COURSE.COURSE_NAME
14             FROM ENROLLED,COURSE
15             WHERE ENROLLED.COURSE_ID=COURSE.COURSE_ID)
16     GROUP BY COURSE_ID,COURSE_NAME));

```

STUDENT_COUNT	COURSE_NAME
4	IT

QUESTION 7.

```

SELECT

    COURSE.COURSE_ID,

    COURSE_NAME

FROM COURSE

LEFT JOIN STUDENT ON COURSE.COURSE_ID = STUDENT.COURSE_ID

```

WHERE STUDENT_ID IS NULL;

SQL Worksheet

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```
1  -- Question 7
2  SELECT
3      COURSE.COURSE_ID,
4      COURSE_NAME
5  FROM COURSE
6  LEFT JOIN STUDENT ON COURSE.COURSE_ID = STUDENT.COURSE_ID
7  WHERE STUDENT_ID IS NULL;
```

COURSE_ID	COURSE_NAME
30	ECE

QUESTION 8.

DELETE FROM COURSE

WHERE COURSE_ID = 30;

QUESTION 9.

RENAME COURSE TO DEPARTMENT;

SQL Worksheet

 Clear

 Find

Actions ▾

 Save

Run 

```
1 SELECT * FROM DEPARTMENT;
```

COURSE_ID	COURSE_NAME
10	CS
20	IT
40	AI
50	WEB DEV

QUESTION 10.

UPDATE SELECTED

SET GRADE='B'

WHERE SUBJECT_ID =103 AND GRADE='A';

QUESTION 11.

DELETE FROM STUDENT

WHERE COURSE_ID = 20;

QUESTION 12.

UPDATE ENROLLED

SET ENROLL_DATE = '16-AUG-18'

WHERE STUDENT_ID = 18069;