The purpose of a worksheet is to provide a support structure for your study and to provide better coverage of routine introductory exercises prior to completing more challenging homework assignments. Much of the text comes from questions that arise during the course.

Please attempt the worksheet on your own. Answers are provided under the Practice module.

 To receive credit for completing the worksheet, you must write 'Done' in a textbox on D2L submission folder when you have finished the worksheet. Do not paste your work. Just say 'Done'.

The queries below refer to UniversityDB.sql.

Q1. Answer the following questions:

(i). How many tuples will be returned by the following query:

SELECT \* FROM Student

WHERE EXISTS (SELECT CourseID FROM Enrolled

MINUS

SELECT CID FROM Course)

(ii) Is this a correct query i.e. will it return any tuples?

SELECT SID, FirstName FROM Student

UNION

SELECT CID, CourseName from Course;

(iii) Are these two queries equivalent?

(A) SELECT \* FROM Student, Enrolled, Course

WHERE SID = StudentID

AND CourseID = CID;

(B) SELECT \* FROM

Student INNER JOIN Enrolled

ON (SID = StudentID)

INNER JOIN Course ON (CourseID = CID);

(iv) Are these two queries equivalent?

(A) SELECT SID FROM Student

INTERSECT

 SELECT StudentID FROM Enrolled

(B) SELECT SID FROM Student

MINUS

(SELECT SID FROM Student

MINUS

 SELECT StudentID FROM Enrolled)

(v) Which query will result in an empty set?

(A) SELECT \* FROM Student LEFT OUTER JOIN Enrolled ON (SID = StudentID)

(B) SELECT \* FROM Student RIGHT OUTER JOIN Enrolled ON (SID = StudentID)

(vi) Does the query represent unenrolled students?

SELECT \* FROM Enrolled RIGHT OUTER JOIN Course ON (CourseID = CID)

(vii) Find 167\*8-78\*3 using an SQL query.

Q2. The following queries provide alternate ways to write queries discussed during practice session.

(i)  List students who are members of all studentgroups

Note; Similar to a query discussed in class.

For this only the studentgroup is to be listed so think how an existential check can be made and is sufficient.

(ii) List courses that have a unique number.

Note: Write this query using a self join. Then write it using ANY.

(iii) For all departments list the highest course number used by that department

Note: Write this query using a group by. Then write this query using ALL.

(iv) List students who are members of DeFrag but not HerCTI and members of HerCTI but not DeFrag

Note: Identify set operations amongst words. There are 3 set operations. The resulting query is an exclusive-or.