**Lab Exercise 10**

## Task 1

Using Joins carry out the following tasks.

1. Write SQL to select the student’s name, major and average mark

SELECT stuname, major, AVG(mark)

FROM Student INNER JOIN Enrolled USING (studentid) INNER JOIN Marks USING (subjectid)

GROUP BY stuname;

1. A number of students arrived late for enrolment; they have been entered into the system but have yet to be enrolled on any modules. Write a query to list the names of the students who are in the system but have not been enrolled on any modules yet. (TIP: you may find it easier if you use a sub query combined with an outer join.)

SELECT stuname, subjectid

FROM Student LEFT OUTER JOIN Enrolled USING (studentid)

WHERE subjectid IS NULL;

1. Write SQL to list the subject names and the days and times that they run on, you should include those subjects that do not have any classes scheduled

SELECT sname, day, classtime

FROM Subject LEFT OUTER JOIN Class USING (subjectid);

1. Display the name of ALL members of staff and the days that they teach.

SELECT name, day

FROM StaffMember LEFT OUTER JOIN Class ON (staffid = teacher)

## Task 2

Explain in your own words why an Outer join would be used.

An outer join would be used when we want to select orphan records that could not be selected when querying using any join methods

Is there are role for outer joins in a well design database where RI is in place? Explain and illustrate your answer.

What is the difference between LEFT, RIGHT and FULL outer joins?