# Department of Computing

**CS220: Database Systems**

**Class: BSCS-6C**

**Lab 05: Join Queries of SQL**

**Date: Oct. 19, 2017**

**Time: 0900-1200**

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# Introduction

* SQL DDL (Data Definition Language) commands are used to create and modify the databases. Data Manipulation Language (DML) commands are used to query the databases.

# Objectives

After performing this lab students should be able to:

1. Create tables in SQL using DDL commands.

2. Perform DML operations on created tables.

# Tools/Software Requirement

* MySQL Community Server 5.6
* MySQL Workbench 6.1

# Description

**Join Queries**

Given the following **database schema**:

Student (snum: integer, sname: char(30), major: char(25), level: char(2), age: integer)

Faculty (fid: integer, fname: char(30), deptid: integer)

Class (cname: char(40), meets\_at: char(20), room: char(10), fid: integer | fid REFS Faculty.fid)

Enrolled (snum: integer, cname: char(40) | snum REFS student.snum, cname REFS class.name)

1. Find the names of all juniors (Level = JR) who are enrolled in a class taught by Ivana Teach.

select sname from student s, class c, enrolled e, faculty f

where s.snum = e.snum and e.cname = c.cname

and c.fid = f.fid and s.level = 'JR' and fname = 'Ivana Teach'

select sname

from student s

Join enrolled e on s.snum = e.snum

Join class c on e.cname = c.cname

join faculty f on c.fid = f.fid

where s.level = 'JR' and fname = 'Ivana Teach'

select sname

from student s

Join enrolled e using (snum )

Join class c using (cname)

join faculty f using (fid)

where s.level = 'JR' and fname = 'Ivana Teach'

select sname

from student s

inner Join enrolled e on s.snum = e.snum

inner Join class c on e.cname = c.cname

inner join faculty f on c.fid = f.fid

where s.level = 'JR' and fname = 'Ivana Teach'

# Lab Task

**Write SQL expressions using Join Operator for each of the following queries and execute them:**

1. Find the names of faculty members that has taught classes only in room R128.
2. Find the names of classes taught by ‘Richard Jackson’ and their times when a class meet there.
3. Find the names of classes taught by ‘John Williams’ in dept # 68.
4. For each class taught by ‘John Williams’, retrieve the name and age for students.
5. Find the names of faculty that teach ‘Database Systems’ class in descending deptid-wise.
6. Find distinct student ages in ‘Database Systems’ class in descending order.
7. List the name of ‘Christopher Garcia’s teachers.
8. Find the name and age of student in ‘Database Systems’ class.
9. Find the class names, strength of faculty members for each class.

# Deliverables

1. Complete your lab tasks in SQL workbench and submit a word file in with queries along with the screenshots of the results to all the questions attempted. Upload it on LMS. The marking will be based on viva/lab task submitted.