Readings:

Multiple Table Processing: JOINS

chapter 7: “Advanced SQL” (Hoffer, Ramesh, & Topi) page 289- 298

chapter 6: “Queries: JOIN Operator” (Petkovic) from page 240 -255

Multiple Table Processing: Subquery

chapter 6: “Queries: Correlated Subqueries” (Petkovic) from page 255 to the end of the chapter

chapter 7: “Advanced SQL” (Hoffer, Ramesh, & Topi) from page 289 -310

Homework assignment:

* Homework part A

Chapter 7 (Hoffer, Ramesh, & Topi)

Problems and Exercises 1,2,3,4,5

1. **Write SQL retrieval commands for each of the following queries:** 
   1. **Display the course ID and course name for all courses with an ISM prefix.**

SELECT CourseID, CourseName

FROM COURSE

WHERE CourseID LIKE `ISM%`;

* 1. **Display all courses for which Professor Berndt has been qualified.**

SELECT COURSE.CourseID, COURSE.CourseName

FROM COURSE, QUALIFIED, FACULTY

WHERE COURSE.CourseID = QUALIFIED.CourseID

AND FACULTY.FacultyID = QUALIFIED.FacultyID

AND FACULTY.FacultyName = ` Berndt `;

* 1. **Display the class roster, including student name, for all students enrolled in section 2714 of ISM 4212.**

SELECT STUDENT.StudentName

FROM STUDENT

WHERE STUDENT.StudentID in

(select StudentID

where REGISTRATION.SectionNO = 2714

AND REGISTRATION.CourseID = `ISM 4212`);

1. **Write an SQL query to answer the following question: Which instructors are qualified to teach ISM 3113?**

SELECT FACULTY.FacultyID, FACULTY.FacultyName

FROM FACULTY, QUALIFIED

Where FACULTY. FacultyID = QUALIFIED.FacultyID

AND QUALIFIED.CourseID = ` ISM 3113`;

1. **Write an SQL query to answer the following question: Is any instructor qualified to teach ISM 3113 and not qualified to teach ISM 4930?**

SELECT FACULTY.FacultyID, FACULTY.FacultyName

FROM FACULTY, QUALIFIED

Where FACULTY. FacultyID IN

(SELECT FacultyID

FROM QUALIFIED

WHERE QUALIFIED.CourseID = ` ISM 3113`)

AND FACULTY. FacultyID NOT IN

(SELECT FacultyID

FROM QUALIFIED

WHERE QUALIFIED.CourseID = ` ISM 4930`);

1. **Write SQL queries to answer the following questions:  
   a. How many students were enrolled in section 2714 during semester I-2008?**

SELECT StudentID, Count(\*)

FROM REGISTRATION

WHERE SectionNo = 2714

AND Semester = `I-2008`;

**b. How many students were enrolled in ISM 3113 during semester I-2008?**

SELECT StudentID, Count(\*)

FROM REGISTRATION

WHERE SectionNo IN

(SELECT SectionNo

FROM SECTION  
WHERE CourseID = `ISM 3113`)

AND Semester = `I-2008`;

1. **Write an SQL query to answer the following question:**

**Which students were not enrolled in any courses during semester I-2008?**

SELECT StudentID, StudentName

FROM STUDENT

WHERE StudentID NOT IN

(SELECT StudentID

FROM REGISTRATION

WHERE Semester = `I-2008`);

* **Homework part B**

**Use the “sample\_DDL\_script.sql” file from the blackboard to create a sample database named “sample”.  Use a second script file named “sample\_insert\_script.sql” to populate the database with sample data.  Both files can be downloaded from the class blackboard.**

**Using the database created, answer write the SQL statements for the following questions:**

1. **Return a list with dept\_no and a count of employees in each department.**

SELECT [emp\_no],[emp\_fname],[emp\_lname],[dept\_no]

FROM [dbo].[employee]

WHERE [dept\_no] IN

(SELECT DISTINCT [dept\_no]

FROM [dbo].[department])

ORDER BY [dept\_no];

A screenshot of a cell phone

Description automatically generated

1. **Return a list with dept\_no and a count of employees in each department. Only show departments with greater than or equal to 2 employees**

SELECT [emp\_no],[emp\_fname],[emp\_lname],[dept\_no]

FROM [dbo].[employee]

WHERE [dept\_no] IN

(SELECT DISTINCT [dept\_no]

FROM [dbo].[employee]

GROUP BY [dept\_no]

HAVING COUNT([dept\_no]) >= 2)

ORDER BY [dept\_no];

A picture containing wall

Description automatically generated

1. **Find the highest employee number.**

SELECT [emp\_no],[emp\_fname],[emp\_lname],[dept\_no]

FROM

(select MAX([emp\_no]) MaxEmpNo from [dbo].[employee]),

[dbo].[employee]

where [emp\_no] = MaxEmpNo;

**A screenshot of a cell phone

Description automatically generated**

1. **What is the difference between COUNT(\*) and COUNT(column)? Write a SQL Example**

COUNT(\*) returns the total number of records, while COUNT(column) returns the total number of Non-NULL records.

**A screenshot of a social media post

Description automatically generated**

1. **Get the project\_no that are done by more than 1 employee.**

select project\_no

from [dbo].[works\_on]

group by [project\_no]

having count([emp\_no]) > 1;

A screenshot of a cell phone

Description automatically generated