SQL 練習 1

有一資料庫 School，假設它的 relation 分別代表：學生(Student)、課程 (Course)、老師(Teacher)、學生修課資訊 (SC) ，此四個 relation 的 schema 如下所示:

Student(SId, Sname, Sage, Ssex)   Course(CId, Cname, TId)

Teacher(TId, Tname)   SC(SId, CId, Score)

請用 SQL 語言寫出下列之查詢。

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1. 查詢 SC 表格中，學生沒有修"01"課程但有修"02"課程的情況。

SELECT student.Sname , sc.CId FROM student left JOIN sc ON student.SId = sc.Sid WHERE sc.CId = '02'

2. 查詢在 SC 表格存在成績的學生資訊

SELECT student.Sname , sc.score FROM student left JOIN sc ON student.SId = sc.Sid WHERE sc.score != 'NULL'

3 查詢有成績的學生資訊

SELECT student.Sname , sc.score FROM student LEFT JOIN sc ON student.SId = sc.SId WHERE sc.score != 'NULL'

4. 查詢「李」姓老師的人數

SELECT COUNT(teacher.Tname) FROM teacher WHERE LEFT(teacher.Tname , 1) = '李'

5. 查詢修過「張三」老師授課的同學的資訊

SELECT student.Sname , student.SId , sc.CId FROM student JOIN sc ON sc.SId = student.SId WHERE sc.CId = (SELECT course.CId FROM course LEFT JOIN teacher ON course.TId = teacher.TId WHERE teacher.Tname = '張三')

6. 查詢至少有一門課與學號為"01"同學所修課程相同的同學資訊

SELECT student.Sname , student.SId , sc.CId FROM student LEFT JOIN sc ON student.SId = sc.SId WHERE sc.CId in (SELECT sc.CId FROM sc LEFT JOIN student ON sc.SId = student.SId WHERE student.SId = '01')

7. 查詢兩門以上不及格課程的同學的學號，姓名及其平均成績

SELECT student.SId , student.Sname , AVG(sc.score) FROM student LEFT JOIN sc ON student.SId = sc.SId GROUP BY student.SId HAVING COUNT(CASE WHEN sc.score < '60' THEN 1 END) >= 2

8. 查詢"01"課程分數小於 60，按分數降冪排列的學生資訊

SELECT student.Sname , sc.score FROM student LEFT JOIN sc ON student.SId = sc.SId WHERE sc.CId = '01' AND student.SId in (SELECT sc.Sid FROM sc LEFT JOIN course ON course.CId = sc.CId WHERE sc.score < '60') ORDER BY sc.score DESC

9. 查詢每門課程選修的學生人數

SELECT sc.CId, COUNT(student.Sname) FROM sc LEFT JOIN student ON sc.SId = student.SId GROUP BY sc.CId ORDER BY sc.CId;

10. 查詢只選修兩門課程的學生學號和姓名

SELECT student.SId , student.Sname FROM student LEFT JOIN sc ON student.SId = sc.SId GROUP BY student.SId, student.Sname HAVING COUNT(sc.CId) = 2;