9. List of professors that work for departments with more than 20 faculty members and that offer

more large sections than small and medium sections combined.(use one of the following)

Solution1

CREATE PROCEDURE MyProc

BEGIN

--Stored Procedure variables

Declare @largeSec int;

Declare @smallSec int;

Declare @countSsn int;

Declare @MediumSec int;

Declare @compare boolean;

--Getting query result in the variable (first variant of syntax)

SET @largeSec = (SELECT count(section) FROM teaches where section ='medium');

--Another variant of seting variable from query

SELECT @smallSec=(SELECT count(section) FROM teaches where section ='small');

--Another variant of seting variable from query

SELECT @countSsn=(SELECT count(ssn) FROM professors);

--Another variant of seting variable from query

SELECT @smallSec=(SELECT count(section) FROM teaches where section ='medium');

--return a select answer

SELECT

ssn, name, address, phone from professors join teaches on() where countSsn >

20 and largeSec > (smallSec + MediumSec)

END

GO

EXEC MyProc

10. Assume grades are A, B, C, D, F where D and F are failing grades. For each course (section)

find the percentage of students that failed the course.

select t1.section, t1.grade , (Count(t1.grade)\* 100 / (Select Count(\*) From enrollment where t1.grade in ('D','F')) as

Score from enrollment t1,cources t2 where t1.cid = t2.cid group by t1.section,t1.grade

11. Find the name of the professor with the maximum percentage of students that failed his course.

Declare @FailedStudentCount INT

Select @FailedStudentCount = count(distinct sid) From enrollment Where grade = 'F'

Print @FailedStudentCount

Select top 1

prof.name As ProfessorName,

Count(enroll.sid) AS FailedStudentCount,

@FailedStudentCount AS TotalFailedStudent,

(CAST(Count(enroll.sid) AS Float)/@FailedStudentCount)\*100 AS FailedStudentPercentage

From enrollment enroll

inner join courses course on enroll.cid = course.cid

inner join professors prof on prof.deptid = course.deptId

Where enroll.grade = 'F'

Group By course.deptId

Order By (CAST(Count(enroll.sid) AS Float)/@FailedStudentCount)\*100 DESC

12. On average what percentage of students fail a course? (total number of students that failed a

course / total number of enrolled students).

Declare @TotalEnrolledStudentCount INT

Select @TotalEnrolledStudentCount = count(distinct sid) From enrollment

Print @TotalEnrolledStudentCount

Select

enroll.cid As CourseId,

(CAST(count(enroll.sid) AS Float)/@TotalEnrolledStudentCount)\*100 AS AveragePercentageOfFailedStudent

From enrollment enroll

Where enroll.grade = 'F'

group by enroll.cid

13. Find a list of courses (sections) where the percentage of students with D or F is greater than

average.

Declare @TotalEnrolledStudentCount INT

Select @TotalEnrolledStudentCount = count(distinct sid) From enrollment

Print @TotalEnrolledStudentCount

DECLARE TABLE #CalCourseMetrics

(

courseId INT NOT NULL,

AveragePercentageOfFailedStudent INT 0,

AveragePercentageOfStudent INT 0,

)

--- to insert average student percentage by course id

Insert into #CalCourseMetrics

(

courseId,

AveragePercentageOfStudent

)

Select

enroll.cid As CourseId,

(CAST(count(enroll.sid) AS Float)/@TotalEnrolledStudentCount)\*100 AS AveragePercentageOfStudent

From enrollment enroll

group by enroll.cid

order by enroll.cid

--- Update table to insert the Average Percentage Of FailedStudent

Update table #CalCourseMetrics Metrics

SET AveragePercentageOfFailedStudent = (select (CAST(count(enroll.sid) AS Float)/@TotalEnrolledStudentCount)\*100

From enrollment enroll

Where enroll.grade IN ('F','D') and Metrics.courseId = enroll.cid)

--- to retrieve required course ids

Select courseId From #CalCourseMetrics

Where AveragePercentageOfFailedStudent > AveragePercentageOfStudent

Write a query that produces the following table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Deptid | Sps | %A | %B | %C | %D | %F |
| cs |  |  |  |  |  |  |
| math |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Where SPS is the average number of students in each section and column %A has the percentage of students that got an A, and so on, over all the courses offered by each department. Assume a **small** section have less than 30 students, **medium** sections have at least 30 but less than 80, and **large** sections have at least 80 students.

DECLARE @TotalStudent INT

Select @TotalStudent = Select count(sid) From students

Select

DeptId As Deptid,

(Sum(ACount)/@TotalStudent)\*100 AS A%,

(Sum(BCount)/@TotalStudent)\*100 AS B%,

(Sum(CCount)/@TotalStudent)\*100 AS C%,

(Sum(DCount)/@TotalStudent)\*100 AS D%,

(Sum(ECount)/@TotalStudent)\*100 AS E%,

(Sum(FCount)/@TotalStudent)\*100 AS F%

From

Select distinct

enroll.sid AS StudentId,

course.did AS DeptId,

enroll.section AS Section,

CASE WHEN(enroll.grade = 'A') THEN 1 ELSE 0 END AS ACount,

CASE WHEN(enroll.grade = 'B') THEN 1 ELSE 0 END AS BCount,

CASE WHEN(enroll.grade = 'C') THEN 1 ELSE 0 END AS CCount,

CASE WHEN(enroll.grade = 'D') THEN 1 ELSE 0 END AS DCount,

CASE WHEN(enroll.grade = 'E') THEN 1 ELSE 0 END AS ECount,

From enrollment enroll

inner join courses course ON course.cid = enroll.cid