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1.
SELECT firstname, lastname, to_char(admissiondate, 'Mon DD YYYY HH:MI') AS
dateadmitted, city, street AS st, zip
FROM students
WHERE admissiondate =
    (SELECT MAX(admissiondate)
     FROM students)
ORDER BY lastname, firstname;

2.
SELECT coursedescription, coursenumbers as cours, subjectcode as subj,
capacity, sectionID
FROM courses c
INNER JOIN sections s
ON s.courseID = c.courseID
WHERE sectionStartDate =
    (SELECT MAX(sectionStartDate)
     FROM sections)
ORDER BY subjectcode, coursenumbers;

3.
SELECT DISTINCT subjectdescription, subjectcode as sub, coursenumbers as
cours, SUM(Capacity) as totalcapacity
FROM courses c
INNER JOIN sections s
ON s.courseID = c.courseID
WHERE subjectcode = 'NET'
HAVING SUM(Capacity) >
    (SELECT AVG(Capacity)
     FROM courses c
     INNER JOIN sections s
     ON s.courseID = c.courseID
     WHERE subjectcode = 'NET')
GROUP BY subjectdescription, subjectcode, coursenumbers
ORDER BY subjectcode, coursenumbers;

4.
SELECT DISTINCT s.studentID, firstname, lastname, count(*) as
numberofcourses
FROM students s
INNER JOIN Registration r
ON s.studentID = r.studentID
INNER JOIN Sections s
ON r.sectionID = s.sectionID
INNER JOIN Courses c
ON s.courseID = c.courseID
WHERE subjectcode = 'CS'
HAVING count(*) =
    (SELECT MAX(NC)
     FROM
        (SELECT DISTINCT s.studentID, firstname, lastname, count(*) as NC
         FROM students s
         INNER JOIN Registration r
         ON s.studentID = r.studentID
         INNER JOIN Sections s
         ON r.sectionID = s.sectionID
         INNER JOIN Courses c

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        ON s.courseID = c.courseID
        WHERE subjectcode = 'CS'
        GROUP BY s.studentID, firstname, lastname, subjectcode)
    )
GROUP BY s.studentID, firstname, lastname, subjectcode
ORDER BY s.studentID;
5.
SELECT DISTINCT city, state as st, count(*) AS numprofessors
FROM professor p
INNER JOIN sections s
ON s.professorID = p.professorID
INNER JOIN courses c
ON s.courseID = c.courseID
WHERE subjectcode = 'NET'
HAVING count(*) =
    (SELECT MAX(numprofessors)
     FROM
        (SELECT DISTINCT city, state as st, count(*) AS numprofessors
         FROM professor p
         INNER JOIN sections s
         ON s.professorID = p.professorID
         INNER JOIN courses c
         ON s.courseID = c.courseID
         WHERE subjectcode = 'NET'
         GROUP BY city, state)
    )
GROUP BY city, state
ORDER BY city, state;
6.
SELECT DISTINCT firstname, lastname, city, state as st, s.zip, ENROLLED
FROM students s
INNER JOIN registration r
ON s.studentID = r.studentID
INNER JOIN
    (SELECT zip, COUNT(*) AS ENROLLED
     FROM
        (SELECT DISTINCT zip, r.studentID
         FROM registration r
         INNER JOIN students s
         ON s.studentID = r.studentID)
     GROUP BY zip) t
ON s.zip = t.zip
WHERE s.zip IN
    (SELECT zip
     FROM
        (SELECT DISTINCT zip, r.studentID
         FROM registration r
         INNER JOIN students s
         ON s.studentID = r.studentID)
     GROUP BY zip
     HAVING COUNT(*) =
        (SELECT MAX(ENROLLED)
         FROM
            (SELECT zip, COUNT(*) AS ENROLLED

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        FROM
            (SELECT DISTINCT zip, r.studentID
              FROM registration r
              INNER JOIN students s
                ON s.studentID = r.studentID)
        GROUP BY zip)
    )
7.
SELECT DISTINCT s.studentID, firstname, lastname
FROM Students s
INNER JOIN Registration r
  ON s.studentID = r.studentID
INNER JOIN Sections s
  ON r.sectionID = s.sectionID
INNER JOIN Courses c
  ON s.courseID = c.courseID
WHERE s.studentID IN
    (SELECT DISTINCT s.studentID
      FROM Students s
      INNER JOIN Registration r
        ON s.studentID = r.studentID
      INNER JOIN Sections s
        ON r.sectionID = s.sectionID
      INNER JOIN Courses c
        ON s.courseID = c.courseID
      WHERE subjectcode = 'WEB')
AND s.studentID NOT IN
    (SELECT DISTINCT s.studentID
      FROM Students s
      INNER JOIN Registration r
        ON s.studentID = r.studentID
      INNER JOIN Sections s
        ON r.sectionID = s.sectionID
      INNER JOIN Courses c
        ON s.courseID = c.courseID
      WHERE subjectcode = 'CS'
      OR subjectcode = 'NET')
ORDER BY lastname, firstname;
8.
SELECT DISTINCT firstname, lastname, s.sectionID, subjectcode as subj,
coursenumber as course
FROM Students s
INNER JOIN Registration r
  ON s.studentID = r.studentID
INNER JOIN Sections s
  ON r.sectionID = s.sectionID
INNER JOIN Courses c
  ON s.courseID = c.courseID
WHERE coursenumber IN
    (SELECT coursenumber
      FROM
        (SELECT DISTINCT coursenumber, r.studentID
          FROM Students s

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        INNER JOIN Registration r
        ON s.studentID = r.studentID
        INNER JOIN Sections s
        ON r.sectionID = s.sectionID
        INNER JOIN Courses c
        ON s.courseID = c.courseID)
GROUP BY coursenumbr
HAVING COUNT(*) =
    (SELECT MAX(ENROLLED)
     FROM
        (SELECT coursenumbr, COUNT(*) AS ENROLLED
         FROM
            (SELECT DISTINCT coursenumbr, r.studentID
             FROM Students s
              INNER JOIN Registration r
                ON s.studentID = r.studentID
              INNER JOIN Sections s
                ON r.sectionID = s.sectionID
              INNER JOIN Courses c
                ON s.courseID = c.courseID)
          GROUP BY coursenumbr)
        )
    )
ORDER BY firstname, lastname;
9.
SELECT r.sectionID, subjectcode as su, capacity, ENROLLED
FROM
    (SELECT sectionID, COUNT(*) AS ENROLLED
     FROM
        (SELECT DISTINCT sectionID, s.studentID
         FROM students s
          INNER JOIN registration r
            ON s.studentID = r.studentID)
        GROUP BY sectionID) r
INNER JOIN sections s
ON s.sectionID = r.sectionID
INNER JOIN courses c
ON s.courseID = c.courseID
WHERE ENROLLED >= capacity
ORDER BY capacity DESC, sectionID;
10.
SELECT DISTINCT firstname, lastname, city, state as st, zip, phone
FROM Students s
INNER JOIN Registration r
ON s.studentID = r.studentID
INNER JOIN Sections s
ON r.sectionID = s.sectionID
INNER JOIN Courses c
ON s.courseID = c.courseID
WHERE s.studentID IN
    (SELECT DISTINCT s.studentID
     FROM Students s
      INNER JOIN Registration r
        ON s.studentID = r.studentID

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INNER JOIN Sections s
ON r.sectionID = s.sectionID
INNER JOIN Courses c
ON s.courseID = c.courseID
WHERE subjectcode = 'CS')
AND s.studentID IN
(SELECT DISTINCT s.studentID
FROM Students s
INNER JOIN Registration r
ON s.studentID = r.studentID
INNER JOIN Sections s
ON r.sectionID = s.sectionID
INNER JOIN Courses c
ON s.courseID = c.courseID
WHERE subjectcode = 'CHNS'
OR subjectcode = 'FRCH'
OR subjectcode = 'GRMN'
OR subjectcode = 'ITLN'
OR subjectcode = 'JPNS'
OR subjectcode = 'PTGS'
OR subjectcode = 'SPAN')
ORDER BY state, city, lastname, firstname;
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