
Question 1 Consider the following DTDs.

<!DOCTYPE univ1[
  <!ELEMENT univ1 (student*)>
  <!ELEMENT student (fname, lname, major, classes)>
      <!ATTLIST student id ID #REQUIRED>
  <!ELEMENT classes (course*)>
  <!ELEMENT course (CNO, title, creditHours)>
  <!ELEMENT fname (#PCDATA)>
  <!ELEMENT lname (#PCDATA)>
  <!ELEMENT major (#PCDATA)>
  <!ELEMENT CNO (#PCDATA)>
  <!ELEMENT title (#PCDATA)>
  <!ELEMENT creditHours (#PCDATA)>
]>  

<!DOCTYPE univ2[
  <!ELEMENT univ2 (course*)>
  <!ELEMENT course (title, creditHours, enrolment)>
      <!ATTLIST course CNO ID #REQUIRED>
  <!ELEMENT enrolment (student*)>
  <!ELEMENT student (id, name, major)>
  <!ELEMENT title (#PCDATA)>
  <!ELEMENT creditHours (#PCDATA)>
  <!ELEMENT id (#PCDATA)>
  <!ELEMENT name (#PCDATA)>
  <!ELEMENT major (#PCDATA)>
]>  

<!DOCTYPE univ3[
  <!ELEMENT univ3 (courses, students)>  
  <!ELEMENT courses (course*)>  
  <!ELEMENT students (student*)>  
  <!ELEMENT course (title, creditHours)>  
      <!ATTLIST course CNO ID #REQUIRED enrolment IDREFS #REQUIRED>  
  <!ELEMENT student (name, major)>  
      <!ATTLIST student id ID #REQUIRED classes IDREFS #REQUIRED>  
  <!ELEMENT title (#PCDATA)>  
  <!ELEMENT creditHours (#PCDATA)>  
  <!ELEMENT name (#PCDATA)>  
  <!ELEMENT major (#PCDATA)>  
]>  

Write the following queries in XQuery for each of the DTDs.
Q1. List students, and courses for each student (in the format of DTD1).
Q2. List courses, and students in each course (in the format of DTD2).
Q3. List courses that have fewer than 5 students.
Q4. List majors (one element for each major), and the last names of students in each major (as subelements of each major).