

Database Systems

Spring 2019 (Theory Assignment)

Purpose:

DTD, XML Schema (XSD)

Instruction:

- You will be using xmllint for this assignment.
- Helping examples of bookstore are included in the shared folder.

Schema:

We have the following schema regrading relational model:

Course(CourseId, CourseName, *CreditHrs*, *ContactHrs*, CourseInstructorId)

Student(RegistrationNumber, FirstName, *MiddleName*, LastName, *Address*, *GPA*)

RegisteredCourses(RegistrationNumber, CourseId, RegistrationDate)

Instructor(InstructorId, FirstName, *MiddleName*, LastName, Designation)

Note: Italic attributes are Nullable

We want to convert the above schema into xml. For this purpose, consider that:

- CourseInstructorId in course relation is foreign key from Instructor relation.
- A course can have exactly one instructor.
- For the Student relation, take the First, Last, Middle name as single Name.
- Address can have City, ZipCode and District.
- We have the choice to write only city or Zip Code.
- GPA has the restriction from 0 to 4.
- Student entity will also include list of registered courses and Course Entity will contain the list of registered Students.

Task:

1. Create DTD against the above describe schema, and generate the XML data that validates the generated schema. You have to add at least 5 instructors. 5 students and 10 courses.
2. Create XSD against the above describe schema, and generate the XML data that validates the generated schema. You must add at least 10 instructors. 10 students and 15 courses.