

Tutorial 9 (Solution)

SQL+XML

Classroom Exercise

Question 1

#	1	2	3	4	5	6
Faster	X		X	X	X	
Same		X				X

Question 2

Any specific example illustrating all the rules will do.

Question 3

Part (i)

```
<!DOCTYPE courses [
<!ELEMENT courses (course*)>
<!ELEMENT course (name, instructor, room, student+)>
<!ELEMENT student (name, email, grade)>
<!ATTLIST course cid ID #required>
<!ATTLIST student sid CDATA #required>
<!ELEMENT name (#PCDATA)>
<!ELEMENT instructor (#PCDATA)>
<!ELEMENT room (#PCDATA)>
<!ELEMENT email (#PCDATA)>
<!ELEMENT grade (#PCDATA)>
]>
```

Part (ii)

Student

sid	name	email
s01	Jim Halpert	j.halpert@cis.upenn.edu
s02	Dwight Schrute	schrute@cis.upenn.edu
s03	Nelly Bertram	n.bertram@cis.upenn.edu

Course

cid	name	instructor	room
CIS550	DBMS	Dr. Davidson	SKIRAUD
CIS552	Advanced Programming	Dr. Weirich	TOWNE321
CIS500	Software Foundations	Dr. Pierce	MOORE216

Enrolls

sid	cid	grade
s01	CIS550	A
s01	CIS552	A
s02	CIS550	B+
s02	CIS500	B-
s03	CIS550	A-

```
<?xml version="1.0"?>
<!DOCTYPE courses SYSTEM "courses.dtd">
<courses>
  <course cid = "CIS550">
    <name>DBMS</name>
    <instructor>Dr. Davidson</instructor>
    <room>SKIRAUD</room>
    <student sid = "s01">
      <name>Jim Halpert</name>
      <email>j.halpert@cis.upenn.edu</email>
      <grade>A</grade>
    </student>
    <student sid = "s02">
      <name>Dwight Schrute</name>
      <email>schrute@cis.upenn.edu</email>
      <grade>B+</grade>
    </student>
    <student sid = "s03">
      <name>Nelly Bertram</name>
      <email>n.bertram@cis.upenn.edu</email>
      <grade>A-</grade>
    </student>
  </course>
</courses>
```