# Task 1 & 2

<?xml version="1.0" encoding="UTF-8"?>

<!DOCTYPE data [

<!ELEMENT data (courses,students)>

<!ELEMENT courses (course\*)>

<!ELEMENT students (student\*)>

<!ELEMENT course

(course-name, department, allowable-student-status)>

<!ATTLIST course id IDREF #REQUIRED>

<!ELEMENT course-name (#PCDATA)>

<!ELEMENT department (#PCDATA)>

<!ELEMENT allowable-student-status (studentStatus+)>

<!ELEMENT student

(name, phone, address,courses-taken+,studentStatus, degree?)>

<!ATTLIST student id IDREF #REQUIRED>

<!ELEMENT name (#PCDATA)>

<!ELEMENT phone (#PCDATA)>

<!ELEMENT address (stno, street-name, city, province)>

<!ELEMENT courses-taken (courseTaken)>

<!ELEMENT studentStatus EMPTY>

<!ATTLIST studentStatus status (degree | special) #REQUIRED>

<!ELEMENT degree EMPTY>

<!ATTLIST degree name (BSc | BEng | BA) #IMPLIED>

<!ELEMENT courseTaken EMPTY>

<!ATTLIST courseTaken courseId IDREF #REQUIRED>

<!ELEMENT stno (#PCDATA)>

<!ELEMENT street-name (#PCDATA)>

<!ELEMENT city (#PCDATA)>

<!ELEMENT province (#PCDATA)>

]>

<data>

<courses>

<course id="x239">

<course-name>OOP</course-name>

<department>seecs</department>

<allowable-student-status>

<studentStatus status="degree"/>

<studentStatus status="special"/>

</allowable-student-status>

</course>

<course id="x45">

<course-name>FOCP</course-name>

<department>seecs</department>

<allowable-student-status>

<studentStatus status="degree"/>

<studentStatus status="special"/>

</allowable-student-status>

</course>

<course id="x22339">

<course-name>Accounting I</course-name>

<department>NBS</department>

<allowable-student-status>

<studentStatus status="degree"/>

</allowable-student-status>

</course>

</courses>

<students>

<student id="x4534">

<name>Ahemd</name>

<phone>03001234567></phone>

<address>

<stno>5646</stno>

<street-name>Street A</street-name>

<city>Islamabad</city>

<province>ICT</province>

</address>

<courses-taken>

<courseTaken courseId="x239"/>

<courseTaken courseId="x22339"/>

</courses-taken>

<studentStatus status="degree"/>

<degree name="BSc"/>

</student>

<student id="x3454">

<name>Ali</name>

<phone>03001234567></phone>

<address>

<stno>21</stno>

<street-name>Street B</street-name>

<city>Peshawar</city>

<province>KPK</province>

</address>

<courses-taken>

<courseTaken courseId="x22339"/>

</courses-taken>

<studentStatus status="degree"/>

<degree name="BA"/>

</student>

<student id="x5435">

<name>Arif</name>

<phone>03001234567></phone>

<address>

<stno>5646</stno>

<street-name>Street R</street-name>

<city>Lahore</city>

<province>AO</province>

</address>

<courses-taken>

<courseTaken courseId="x239"/>

</courses-taken>

<studentStatus status="special"/>

<degree name="BSc"/>

</student>

</students>

</data>

# Task 3

<?xml version="1.0" encoding="UTF-8"?>

<!DOCTYPE student [

<!ELEMENT student (firstName,lastName,id,plan)>

<!ELEMENT firstName (#PCDATA)>

<!ELEMENT lastName (#PCDATA)>

<!ELEMENT id (#PCDATA)>

<!ELEMENT plan (courses)>

<!ELEMENT courses (course\*)>

<!ELEMENT course

(name, shortName, record?)>

<!ELEMENT name (#PCDATA)>

<!ELEMENT shortName (#PCDATA)>

<!ATTLIST courses year CDATA #REQUIRED>

<!ELEMENT record

(grade, date)>

<!ELEMENT grade (#PCDATA)>

<!ELEMENT date (#PCDATA)>

]>

<student>

<firstName>Luca</firstName>

<lastName>Rossi</lastName>

<id>281283</id>

<plan>

<courses year="3">

<course>

<name> Programmazione Orientata agli Oggetti </name>

<shortName>POO</shortName>

<record>

<grade>30</grade>

<date>13/06/11</date>

</record>

</course>

<course>

<name>Analisi e progettazione del software</name>

<shortName>APS</shortName>

</course>

</courses>

</plan>

</student>

# Task 4

<?xml version="1.0" encoding="UTF-8"?>

<!DOCTYPE email [

<!ELEMENT email (from,to,content)>

<!ELEMENT from (#PCDATA)>

<!ELEMENT to (#PCDATA)>

<!ELEMENT content (person\*,course\*,exercises\*)>

<!ELEMENT person (#PCDATA)>

<!ELEMENT course (#PCDATA)>

<!ELEMENT exercises (exercise+)>

<!ELEMENT exercise (topic,description)>

<!ELEMENT topic (#PCDATA)>

<!ELEMENT description (#PCDATA)>

]>

<email>

<from> luca.rossi.917@gmail.com </from>

<to> atzeni@dia.uniroma3.it </to>

<content>

Dear <person> Paolo </person>,

here are some very hard exercises for the upcoming assignment of <course> web

engineering </course>:

<exercises>

<exercise>

<topic> DTD </topic>

<description> From Instance to DTD </description>

</exercise>

<exercise>

<topic> XPath </topic>

<description> Find students with average grade better than 26

</description>

</exercise>

</exercises>

Best Regards,

<person> Luca </person>

</content>

</email>