IT 329 – Advanced Web Technologies
2nd Semester 1439-1440 H

Course PROJECT

Milestone #1: XML	**Due Date: February 9, 2019**

Part #1:

Imagine you have a service to list students' courses. In your service, you need to send to the client's application the student's account information which also contains a list of his/her courses and their information, instructors, textbooks, etc. So what's better than to design and XML file to hold all this information!

To fully satisfy your applications requirements, the XML file should have the following structure:

- The XML file root is a **student**. The root has two attributes which are the student's **ID** and their **password**. The ID must follow the well-known KSU ID pattern to be valid. The password is any string, but it must at least be 6 characters (or more).
- Then, the XML will contain a list of courses. The user's account may have 1 or unbounded number of packages.
- Each **course** has two attributes: one is the **course_ID** which is a required attribute and its value should start with 'IT' followed by three digits (i.e. IT222, IT345). The second is the course **status**, which can be either '**current**' or '**pass**'. The **course**'s default status is '**current**'.
- Each **course** must contain elements to specify the following:
  o The **course_name**.
  o The **instructor** of the course, which can be at least one and at most four. It also has the attribute **for** that take only two values either '**lecture**' or '**lab**'.
  o The **credit_hours** of the course which is a number,
  o The **description** of the course,
  o The **textbooks** of the course which contains a set of **text**(s). **text** is optional but should not exceeds 20. Each text must contain the following:
    ▪ It has **type** attribute that specifies the type of the text (**book**, **paper**, **webpage**).
    ▪ It has **is_main** attribute, it is a Boolean value that specifies weather this textbook is the main reference for the course or not.
    ▪ It contains the elements:
      • **ISBN** (optional),
      • **title**,
      • **author** which contains three further elements: **fname, mname** (optional) and **lname**. The **text** could have many authors.
      • **edition** (optional),
      • **link** (optional, i.e. if the type is webpage, or type book but it is an online book).

IT 329 – Advanced Web Technologies
2nd Semester 1439-1440 H

A) Create a well-formed and valid XSD document to represent the XML schema needed to exchange this important information between the server and the client device.

B) Create the required XML documents (instances) to represent 3 different students. Any XML file must be valid and well-formed.
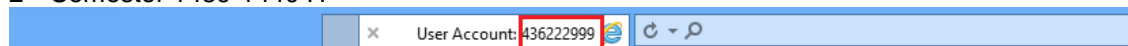
    Deliverables: XML File(s) + XSD File

Part #2:

Use the same XML document created in Part 1 to transform the document to Web pages using CSS and XSLT.

Create an XSL Transformation stylesheet to transform the XML document into a Web page. Use the following specifications to create the Web page layout:

1. Inside the XSLT, define embedded CSS that specifies the font size of the body to be 13px. The **h1** tag should be in **teal** color and **h2** tag in **CadetBlue** color.
2. Inside the XSLT, link to the external CSS file **'table_style.css'**. Without changing the CSS file, use it to style the tables you will use in the XSLT file.
3. Define the XSLT to display all your XML files in this format:
   (Data outlined in RED is imported from the XML file, otherwise it is static in the template itself.)
4. Notice that:
   a. The first part only displays courses that has the status **'current'**.
   b. In the textbooks row, if the textbook has link, it should be the URL to the textbook name (see the image below).
   c. The final section only shows the number of courses that are **'pass'**.

IT 329 – Advanced Web Technologies
2nd Semester 1439-1440 H

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List of current courses:

This is a list of all current courses:

Course Info:

Course Name:	Network Management
Instructors:	lecture: John Landay, lab: James Gregory,
Credit Hours:	4
Description:	The course covers the basics of network management, alternative architectures, evaluation techniques, network management system components, SNMP and CMIP management protocols and the ISO network management applications: fault management, performance management, configuration management, security management, and accounting management.
Text:	An Introduction to Computer Networks, Peter L. Dordal, 1.9.9 edition. Computer network management: Theory and practice, Bruce Elenbogen.

Course Info:

Course Name:	Database Management Systems
Instructors:	lecture: Michael Hirsch,
Credit Hours:	3
Description:	Provides fundamental knowledge of, and practical experience with, database concepts. Includes study of information concepts and the realization of those concepts using the relational data model. Practical experience gained designing and constructing data models and using SQL to interface to both multi-user DBMS packages and to desktop DBMS packages.
Text:	Fundamentals of Database Systems, Ramez Elmasri, Shamkant B. Navathe, published by Addison-Wesley, sixth edition, ISBN: 11111111. Database SQL Reference.

Number of passed courses: 1

Deliverables: XML Files + XSD File + XSLT File + CSS File

Make sure that all these files are linked properly, if you fail to link one file, the file will not be graded.

Notes:

- Work in groups of 2-3 students.
- Projects must be uploaded to one of your hosting spaces.
- Upload the project in .zip file on LMS. The .zip file name should be: [IT341]MS#1 Your Names.
- Add to the .zip file: a text file (readme.txt) that contains the **links** to the three XML files you uploaded (must appear correctly with XSLT).
- You must upload your project and send the email before midnight.