CSC541
Project 2, deliverable 2: SOA

1 Data persistence in relational form

(45 points) Write a program to persist XML data in relational form and query the data as per the instructions given.

1.1 (25 points) Create a relational persistence storage for XML

All students have accounts on NCSUs Oracle installation. Please see here for usage details: `http://www.csc.ncsu.edu/techsupport/technotes/oracle.php`

Consider the XML file named *edge_config3.xml*; you'll find it in `http://courses.ncsu.edu/csc541/common/projectFiles/edge_config3.xml`. (This has the same schema as the one assigned to you in deliverable 1). Create tables for your elements. For example,

- A table to store all devices, another table to store all domains, another table to store all deploymentPolicies and so on.
- The tables should be such that the relationship between the elements should be maintained.
  - Since one domain belongs to a device, the deviceid can be used as foreign key in the domain table.
  - Since one deployment policy can be deployed across multiple domains in multiple devices, the deployment policy id can also be used as a foreign key in the domain table.

These are only suggestions, you are free to design your database in any manner, manually or using any tool. (No support will be provided if you are using an external tool like Hibernate `http://www.hibernate.org/`).

1.2 (20 points) Write a program to accept an XML file of the same schema

Write a program to accept the XML file of the same schema as given in the question above. Parse the XML file and populate your tables in your database instance with the data in the XML file. Query the database to answer the following:

1. List the number of DPDevices in your database.
2. List the number of DeploymentPolicies in your database.

Your program should take the input xml file as an argument:

Groupid_del2proj2.exe Name_of_Input_XML_File

Output: Number_of_devices Number_of_deploymentpolicies

Example for running code with the sample XML file as input:

Groupid_del2proj2.exe edge_config3.xml
Output: 30 29

Groupid_del2proj2.exe should parse the edge_config3.xml file and populate the tables in the Oracle database instance designed in question 1. The program should then query the database for the number of devices and number of deployment policies and output the answer. Here is a sample DPDevice table with partial entries for the file edge_config3.xml. (This is just an example, you can implement however you want to)

Table 1: Sample DPDevice table with partial entries.

id	*deviceType*	*GUIPort*	*HLMPort*	*currentAMPVersion*	*quiesceTimeout*	*featureLicenses*
DPDevice_0	XC10	50080	5550	1.0	60	MQ; TAM; DataGlue; JAXPAPI; PKCS7-SMIME; SQLODBC; Tibco-EMS; WebSphere-JMS;
DPDevice_1	XI50	50080	5550	1.0	60	MQ; TAM; DataGlue; JAX-PAPI; PKCS7-SMIME;SQLODBC; Tibco-EMS;WebSphere-JMS;
			ALL OTHER DEVICE ELEMENTS FOLLOW IN SUBSEQUENT ROWS...			

Note:

1. NO GUI is required to be provided
2. Use any language you are comfortable with.
3. MAKE SURE THAT YOUR PROGRAM COMPILES AND RUNS IN EOS OR VCL MACHINES. (If testing with VCL, please figure out which VCL image suitable, no support will be provided to you for selecting a supporting image)
4. **YOUR OUTPUT FILENAME SHOULD BE Groupid_del2proj2.exe or Groupid_del2proj2.jar (this refers to an executable jar)**

5. **You need to submit instructions to create the executable file, no other format apart from the ones mentioned above is accepted.**

6. **Please submit your exe/jar file as well.**