Webservices – Homework 1

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Tasks -1: We have created following schema file:

1) shortCv.xsd
2) Transcript.xsd
3) EmploymentRecord.xsd
4) CompanyInfo.xsd
5) ApplicantProfile.xsd

All the above schema has been created manually and validated using intellij idea IDE. Then we manually created the xml files for each one of them filling some random information. Each xml file was validated against the schema using Intellij Idea IDE. All the xml and schema files can be found in resources/xml directory.

Tasks -2: Different parsing programs were written to read xml files and display their content on the console. Also, the programs are written which also generate Application profile by reading and combining other xml files. Following are the details of programs:

1) **DOMParser2.java**: parses shortCv.xml file using DOM parser and prints various values on the console.
2) **SAXParser.java**: parses file transcript.xml file using SAX parser and prints the contents on the console
3) **JAXBParser.java**: uses JAXB to parse file applicantProfile.xml and also writes the same content to another file in **out** directory.
4) **ApplicantProfileUsingDOM.java**: This programs generates the Applicant profile by parsing and combining various xml files. It uses DOM for both parsing and writing.
5) **ApplicantProfileUsingJAXB.jav**a: This programs generates the Applicant profile by parsing and combining information from various xml files. It uses JAXB for both parsing and writing.
6) **XSLTParser**.java: This program users Java XSLT API to transform the 4 xml files into one single xml file (applicant profile). The transformer takes in the path of a xslt file and the applicant profile xml file, and return a xml file.

To generate JAXB binding classes we used jaxb2 maven plugin which generates all the required classes.

Tasks -3: Calculate the GPA by summing individual course grade, dividing by the number of courses listed on the transcript, then rounding the result to 2 decimal place, using XPath operators. There calculation result is displayed in the applicant profile as required. Here is a snippet of the code:

```
<xsl:value-of select="round (sum(document('transcript.xml')//ts:GradesInCourse) div
count(document('transcript.xml')//ts:Course) *100) div 100"/>
```

Instructions: All the source code is in Intellij maven project format. In order to run it we first need to import it in Intellij and run **mvn clean install**. After that all jaxb binding classes will be generated and then we can run all the programs mentioned above.