

11. XML Integration

Consider the student details given below and create an XML file and save it as sample.xml.

Student Details: -

Sl. No.	Student Name	USN	Department Name
1.	Alex	1RITCS001	CSE
2.	Smith	1RITDS040	DS
3.	Saliena	1RITCV051	Civil
4.	Elizabeth	1RITMEO11	Mechanical

Department Details: -

Sl. No.	Dept Name	Dept Id	Total no of enrolled students
1.	CSE	01	170
2.	DS	02	188
3.	Civil	03	160
4.	Mechanical	04	150

a. From the above XML file, separate only student details and redirect the out-

put to a file.

b. Replacing the tag name from name to Dept name and change globally in a shell script.

c. Read the tag value of USN and redirect the output to standard output as well as

redirect to a file.

Solution:

```
exam@ThinkCentre-M70t:~$ sudo apt-get install xml-twig-tools
```

```
exam@ThinkCentre-M70t:~$ sudo apt-get install xsltproc
```

exam@ThinkCentre-M70t:~\$ gedit sample.xml

Source Code:

```
<?xml version="1.0" encoding="UTF-8"?>
<university>
<students>
<student>
<serialNumber>1</serialNumber>
<DeptName>Alex</DeptName>
<usn>1RITCS001</usn>
<deptName>CSE</deptName>
</student>
<student>
<serialNumber>2</serialNumber>
<DeptName>Smith</DeptName>
<usn>1RITDS040</usn>
<deptName>DS</deptName>
</student>
<student>
<serialNumber>3</serialNumber>
<DeptName>Saliena</DeptName>
<usn>1RITCV051</usn>
<deptName>Civil</deptName>
</student>
<student>
<serialNumber>4</serialNumber>
<DeptName>Elizabeth</DeptName>
<usn>1RITME011</usn>
<deptName>Mechanical</deptName>
</student>
</students>
<departments>
<department>
<serialNumber>1</serialNumber>
<DeptName>CSE</DeptName>
<departmentId>01</departmentId>
<totalEnrolledStudents>170</totalEnrolledStudents>
</department>
<department>
<serialNumber>2</serialNumber>
<DeptName>DS</DeptName>
<departmentId>02</departmentId>
<totalEnrolledStudents>188</totalEnrolledStudents>
</department>
<department>
<serialNumber>3</serialNumber>
<DeptName>Civil</DeptName>
<departmentId>03</departmentId>
<totalEnrolledStudents>160</totalEnrolledStudents>
</department>
<department>
```

```
<serialNumber>4</serialNumber>
<DeptName>Mechanical</DeptName>
<departmentId>04</departmentId>
<totalEnrolledStudents>150</totalEnrolledStudents>
</department>
</departments>
```

```
</university>
```

```
exam@ThinkCentre-M70t:~$ cat sample.xml
```

```
exam@ThinkCentre-M70t:~$ xmlstarlet sel -t -c "//student" sample.xml > students.xml
```

Command 'xmlstarlet' not found, but can be installed with:

```
exam@ThinkCentre-M70t:~$ sudo snap install xmlstarlet # version 1.6.1+pkg-47d2, or
```

```
exam@ThinkCentre-M70t:~$ sudo apt install xmlstarlet # version 1.6.1-2build1
```

```
exam@ThinkCentre-M70t:~$ sudo apt install xmlstarlet # version 1.6.1-2build1
```

```
exam@ThinkCentre-M70t:~$ xmlstarlet sel -t -c "//student" sample.xml > students.xml
```

```
exam@ThinkCentre-M70t:~$ sed -i 's/<name>/<DeptName>/g' sample.xml
```

```
exam@ThinkCentre-M70t:~$ sed -i 's/<\name>/<\DeptName>/g' sample.xml
```

```
exam@ThinkCentre-M70t:~$ chmod +x replace_tags.sh
```

```
exam@ThinkCentre-M70t:~$ ls replace_tags.sh
```

```
exam@ThinkCentre-M70t:~$ nano replace_tags.sh
```

Copy and Paste the below code:

```
#!/bin/bash
sed -i 's/<name>/<DeptName>/g' sample.xml
sed -i 's/<\name>/<\DeptName>/g' sample.xml
```

Press Ctrl + X

```
exam@ThinkCentre-M70t:~$ ls
```

Desktop eclipse-workspace Public sample.xml Templates

Documents Music replace_tags.sh snap test

Downloads Pictures sample students.xml Videos

```
exam@ThinkCentre-M70t:~$ chmod +x replace_tags.sh
```

```
exam@ThinkCentre-M70t:~$ ./replace_tags.sh
```

```
exam@ThinkCentre-M70t:~$ xmlstarlet sel -t -v "//usn" sample.xml > usn_values.txt
```

```
exam@ThinkCentre-M70t:~$ cat students.xml
```

```
<student>
<serialNumber>1</serialNumber>
<name>Alex</name>
<usn>1RITCS001</usn>
<deptName>CSE</deptName>
</student><student>
<serialNumber>2</serialNumber>
<name>Smith</name>
<usn>1RITDS040</usn>
<deptName>DS</deptName>
</student><student>
<serialNumber>3</serialNumber>
<name>Saliena</name>
<usn>1RITCV051</usn>
<deptName>Civil</deptName>
</student><student>
<serialNumber>4</serialNumber>
<name>Elizabeth</name>
<usn>1RITME011</usn>
<deptName>Mechanical</deptName>
```

```
</student>exam@ThinkCentre-M70t:~$ cat usn_values.txt
```

```
1RITCS001
1RITDS040
1RITCV051
```