

Web Engineering

Group name: Victor

Abdullah Imad Abdullah Elkindy (aelkindy@uni-koblenz.de)

Alisa Karolina Becker (alisabecker@uni-koblenz.de)

Abed Naseri Douraki (naseri@uni-koblenz.de)

Rinku Kanti Chowdhury (rinkuchowdhury@uni-koblenz.de)

Assignment 1_solution

Exercise 1:

Interactive as its response based on user input but only in read only mode. Example : module registration and its timetable.

Portal oriented as it is a source of information from a single platform to many users.

Example : information about module, exam, results etc.

Ubiquitous as it is a platform independent web application.

Transactional because we make some changes to the database like by enrolling in a course or dropping

Exercise 2:

The first main difference between SAX and DOM parsers is that SAX parses XML files step by step as it is an event-based parser. Every time the parser encounters an opening tag, attribute or element it triggers an event. DOM in comparison is a tree model parser. It creates a DOM Memory tree representation of the XML file and then parses it. In conclusion this means that DOM should only be used for small XML files, because otherwise there might be long processing time and a lot of required memory. Another important difference of both parsers resulting from their different modes of operating is access to the document. Because the DOM parser stores the complete document in memory, it allows for random and repeated access unlike the SAX parser. In terms of validation this allows the DOM parser to check the entire document prior to validating so it is error-free as soon as the validation starts. SAX on the other hand possibly needs to resume actions that took place before an error in the validation process and therefore might produce significant calculation overhead.

Exercise 3:

startElement note
startElement to
characters John
endElement to
startElement from
characters Jenny
endElement from
startElement heading
characters Reminder
endElement heading
startElement body
characters Don't
startElement b
characters forget
endElement b
characters our meeting!
endElement body
endElement note

Exercise 4 : semesterPlan.dtd

```
<!DOCTYPE semesterPlan [  
  
  <!ELEMENT Student (Name,Birthday,Address)>  
  <ATTLIST Student matriculation ID #REQUIRED>  
  <!ELEMENT Name (firstName,familyName)>  
  <!ELEMENT Birthday (Day,Month,Year)>  
  <!ELEMENT Address (street,sNumber,postCode,city,(state|province)?,country?)>  
  
  <!ELEMENT Education (semester+,study?)>  
  
  <!ELEMENT Course (moduleName,(classTime,classNumber)+>  
  <ATTLIST Course name CDATA #REQUIRED>  
  
  <!ELEMENT firstName (#PCDATA)>  
  <!ELEMENT familyName (#PCDATA)>  
  <!ELEMENT Day (#PCDATA)>  
  
  <!ELEMENT Month (#PCDATA)>
```

<!ELEMENT Year (#PCDATA)>
<!ELEMENT street (#PCDATA)>
<!ELEMENT sNumber (#PCDATA)>
<!ELEMENT postCode (#PCDATA)>
<!ELEMENT city (#PCDATA)>
<!ELEMENT state (#PCDATA)>
<!ELEMENT province (#PCDATA)>
<!ELEMENT country (#PCDATA)>

<!ELEMENT semester (#PCDATA)>
<!ELEMENT study (#PCDATA)>

<!ELEMENT moduleName (#PCDATA)>
<!ELEMENT classTime (#PCDATA)>
<!ELEMENT classNumber (#PCDATA)>

]>