Nowadays, data exchange widely happens over the Internet. Since its publication by the W3C in 1998, XML is the standard for sharing information among different computers running different applications in different organizations. However there are still two problems. Firstly, we need to inspect whether a given XML document is well-formed. Secondly, we need to ensure that different applications can read and understand XML documents in the same way. This means that XML documents must be ensured to follow the correct set of logical rules. Such documents are said to be valid. In order to solve the first problem, well-formedness rules are specified in the XML specification. To validate XML documents, schemas must be defined. Then, the validity of an XML document is checked against its associated schema. To solve the second problem, XML modeling languages are essential. There are many XML modeling languages, which appear with dedicated purposes. The most popular ones are DTD, W3C XML Schema and Relax NG.

DML (Document Modeling Language) is a new schema language, developed by the DIVA group at University of Fribourg. DML is based on regular expressions. DML is part of an integrated set of languages for the management of semi-structured documents. The goal of this master thesis is to position DML against the existing modeling languages. First, we propose an in-depth comparison of DTD, XML Schema, Relax NG and DML. As the result of the analysis, we show that DML and Relax NG are very comparable. As Relax NG, DML have been developed to be more expressive than DTD and less complicated than XML Schema. Since DML is very comparable to Relax NG, the implementation part of this master thesis tries to find the proper way for making a conversion tool between these two languages. To build this tool, we use an abstract syntax notation, in order to represent the schemas; the translation is achieved between the abstract tree structures that are then converted in a concrete syntax. For each abstract construct in the two languages, we define a corresponding abstract construct in the other language. The major problems occur with the datatyping since Relax NG uses an external library of types while DML defines its own types as regular expression. Furthermore, the definitions of elements and references to structures do not follow the same rules in Relax NG and DML and this has implied some adaptations in our tool. Finally, the translation tool does not consider the inheritance mechanism of DML since no corresponding mechanism exists in Relax NG. As the result, the translation tool that has been implemented allows Relax NG documents to be translated into DML documents and vice versa.

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