7th International Conference on Applied Informatics
Eger, Hungary, 2007.

Container Model*

Zsolt Hernáth

Dept. of Information Systems,
Fac. of Informatics, Eötvös Loránd University, Budapest
e-mail:hernath@ullman.inf.elte.hu

Abstract

Considering documentation systems like HTML, Latex or MS Word a document consists of a not necessarily contiguous sequence of characters and structural, probably also typographical mark-ups. Removing mark-ups produces a plain text. Removing punctuation and also whitespaces a sequence of non-whitespace characters remains. Inserting mark-ups, punctuation or whitespace characters into a plain text or pure charcter string a kind of document or structured text arises. We face some analogue also in programming: e.g. the complex value of a particular C-structure typed variable in the executable appears as a contiguous sequence of bytes which holds information neither on the C -structure nor its components' types.

In Container Model two structural operations namely composing finite-length tupples and composing finite-length sequences, further on a set $\mathcal{U}$ whose elements are all finite-length tupples and sequences recursively composed from non-negative interegers are considered. In addition, we consider finite-length sequences of bytes, called raw data. Any non-negative integer is mapped to shortest raw datum that represents its binary scaled value, and any particular $u \in \mathcal{U}$ is mapped to the raw datum that is composed from the raw data of its components by putting them after each other in the order of apperance. The mapping above induces a partition over $\mathcal{U}$ whose elements are called containers. An arbitrary structure-expression of a raw datum using the srtuctural operations above identifies some subset of the container the raw datum identifies. Correlations between relationships among structure-expressions and those among the corresponding container subsets are detected.

Keywords: raw data, complex value, data model

MSC: 68P99 data model

Zsolt Hernáth
Pázmány Péter sétány 1/c., H-1117 Budapest, Hungary

*Supported by the Hungarian Ministry of Education under Grant FKFP0018/2002