Corrigendum
A correction to "Compact Representation of a Set of String-Classes"
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Abstract

This note corrects two errors in examples used in [2].

In [2], our starting point was as follows: Given an input language (L), if L has the characteristics of String-class, *i.e.,* each class (of L) has a non empty common maximal suffix (CMS), then it is possible to divide L into q+1 automata where q stands for the number of CMSes. Using $L = \{aabb, abab, abbb, bbab\}$ in Example 1 (page 2), the first error is as follows:

Wrong	**Correct**
$\mathtt{P}_2 = \{\mathtt{aa}, \mathtt{bb}\}$	$\mathtt{P}_2 = \{\mathtt{a}, \mathtt{b}\}$
$\mathtt{CMS}_2 =$ "bb"	$\mathtt{CMS}_2 =$ "bab"

L is composed of two classes as follow:

$\mathtt{L} = \mathtt{L}_1 \cup \mathtt{L}_2$	$\mathtt{L}_1 = \{\mathtt{aabb}, \mathtt{abbb}\}$	$\mathtt{L}_2 = \{\mathtt{abab}, \mathtt{bbab}\}$
$\mathtt{L}_1 = \mathtt{P}_1 \oplus \mathtt{CMS}_1$	$\mathtt{P}_1 = \{\mathtt{aa}, \mathtt{ab}\}$	$\mathtt{CMS}_1 =$ "bb"
$\mathtt{L}_2 = \mathtt{P}_2 \oplus \mathtt{CMS}_2$	$\mathtt{P}_2 = \{\mathtt{a}, \mathtt{b}\}$	$\mathtt{CMS}_2 =$ "bab"

So, we obtain three automata shown in Figure 2. Consequently, all sequel errors (*i.e.,* examples 4, 9 and 10) should be reconsidered using the right set of CMSes.

The second error concerns the example of the separate states. Indeed, in Example 3, it is stated that state 6 is a separate one, which is incorrect. The

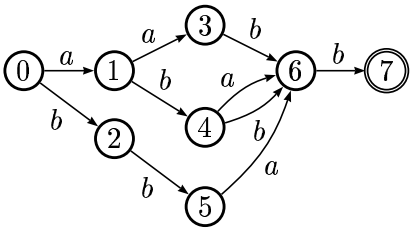

Figure 1: A (8,10) automaton of L = $\{aabb, abab, abbb, bbab\}$.

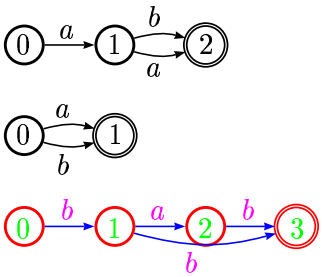

Figure 2: The 2 first automata are for prefix-sub-languages. Bottom automaton corresponding to reverse suffixes of L.

set of separate states is as follows: $\{2, 7, 10, 13\}$. Consequently, the description of Example 10 used for the calculation of CMSes became different, but the essence of reasoning process for such a calculation remains valid which is based on double-array data structures of Aoe's approach [1] no described in [2].

References

[1] J.-I. Aoe and K. Morimotto. An efficient implementation of trie structures. *Software-Practice and Experience*, 22(9):695–721, 1992.

[2] A. Fatholahzadeh. Compact Representation of a Set of String-Classes. In L. Cleophas and B.W. Watson editors, *Proceeding of the Eindhoven FASTAR Days*, pages, 1–16, Dep. of mathematics and computer science, University of Eindohoven, Netherlands, CS-Report 04-40, 2004.