

5.354 xor

	DESCRIPTION	LINKS	AUTOMATON
Origin	Logic		
Constraint	<code>xor(VAR, VARIABLES)</code>		
Synonym	<code>rel.</code>		
Arguments	VAR : <code>dvar</code> VARIABLES : <code>collection(var-dvar)</code>		
Restrictions	$VAR \geq 0$ $VAR \leq 1$ $ VARIABLES = 2$ <code>required(VARIABLES, var)</code> $VARIABLES.var \geq 0$ $VARIABLES.var \leq 1$		
Purpose	Let VARIABLES be a collection of 0-1 variables VAR_1, VAR_2 . Enforce $VAR = (VAR_1 \neq VAR_2)$.		
Example	$(0, \langle 0, 0 \rangle)$ $(1, \langle 0, 1 \rangle)$ $(1, \langle 1, 0 \rangle)$ $(0, \langle 1, 1 \rangle)$		
Symmetry	Items of VARIABLES are <code>permutable</code> .		
Systems	<code>reifiedXor</code> in Choco , <code>rel</code> in Gecode , <code>xorbool</code> in JaCoP , <code>#\</code> in SICStus .		
See also	common keyword: <code>and</code> , <code>equivalent</code> , <code>imply</code> , <code>nand</code> , <code>nor</code> , or (<i>Boolean constraint</i>).		
Keywords	characteristic of a constraint: <code>automaton</code> , <code>automaton without counters</code> , <code>reified automaton constraint</code> . constraint network structure: Berge-acyclic constraint network. constraint type: Boolean constraint. filtering: arc-consistency.		

Automaton

Figure 5.638 depicts the automaton associated with the xor constraint. To the first argument VAR of the xor constraint corresponds the first signature variable. To each variable VAR_i of the second argument VARIABLES of the xor constraint corresponds the next signature variable. There is no signature constraint.

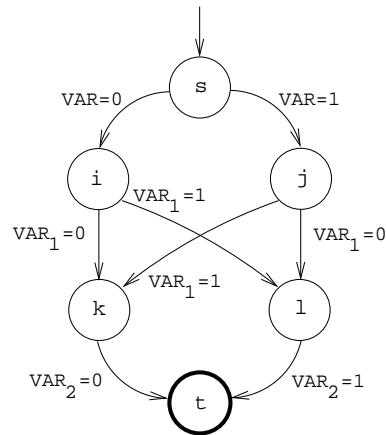


Figure 5.638: Automaton of the xor constraint

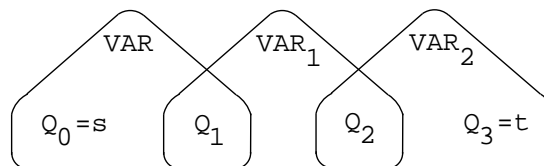


Figure 5.639: Hypergraph of the reformulation corresponding to the automaton of the xor constraint

