

5.337 same_intersection

	DESCRIPTION	LINKS	GRAPH
Origin	Derived from same and common .		
Constraint	<code>same_intersection(VARIABLES1, VARIABLES2)</code>		
Arguments	VARIABLES1 : collection (var-dvar) VARIABLES2 : collection (var-dvar)		
Restrictions	required (VARIABLES1, var) required (VARIABLES2, var)		
Purpose	<div style="border: 1px solid pink; padding: 5px;"> Each value, which occurs both in the VARIABLES1 and in the VARIABLES2 collections, has the same number of occurrences in VARIABLES1 as well as in VARIABLES2. </div>		
Example	<div style="border: 1px solid blue; padding: 5px; display: inline-block;"> $(\langle 1, 9, 1, 5, 2, 1 \rangle, \langle 9, 1, 1, 1, 3, 5, 8 \rangle)$ </div> <p>First note that the values, which occur both in $VARIABLES1 = \langle 1, 9, 1, 5, 2, 1 \rangle$ as well as in $VARIABLES2 = \langle 9, 1, 1, 1, 3, 5, 8 \rangle$ correspond to values 1, 5, and 9. Consequently, the <code>same_intersection</code> constraint holds since these values 1, 5, and 9 have the same number of occurrences in both collections (i.e., they respectively occur 3, 1, and 1 times within $VARIABLES1$ and $VARIABLES2$).</p>		
Typical	$ VARIABLES1 > 1$ range (VARIABLES1.var) > 1 $ VARIABLES2 > 1$ range (VARIABLES2.var) > 1		
Symmetries	<ul style="list-style-type: none"> Arguments are permutable w.r.t. permutation (VARIABLES1, VARIABLES2). Items of VARIABLES1 are permutable. Items of VARIABLES2 are permutable. All occurrences of two distinct values in VARIABLES1.var or VARIABLES2.var can be swapped; all occurrences of a value in VARIABLES1.var or VARIABLES2.var can be renamed to any unused value. 		
See also	common keyword: common , nvalue_on_intersection (<i>constraint on the intersection</i>). implied by: alldifferent_on_intersection , same .		
Keywords	constraint arguments: constraint between two collections of variables. constraint type: constraint on the intersection.		

Arc input(s)	VARIABLES1 VARIABLES2
Arc generator	$PRODUCT \mapsto collection(variables1, variables2)$
Arc arity	2
Arc constraint(s)	$variables1.var = variables2.var$
Graph property(ies)	for all connected components: $NSOURCE=NSINK$

Graph model

Parts (A) and (B) of Figure 5.670 respectively show the initial and final graph associated with the **Example** slot. The `same_intersection` constraint holds since each connected component of the final graph has the same number of sources and sinks. Note that all the vertices corresponding to the variables that take values 2, 3 or 8 were removed from the final graph since there is no arc for which the associated equality constraint holds.

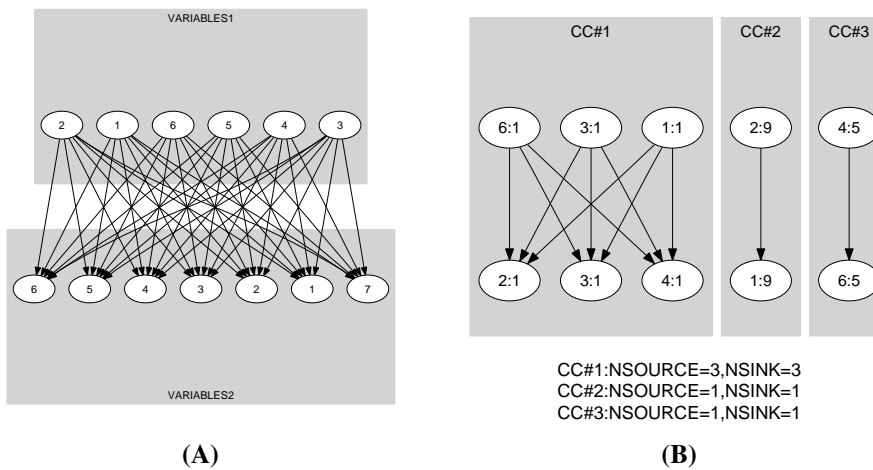


Figure 5.670: Initial and final graph of the `same_intersection` constraint