5.88 consecutive_values

DESCRIPTION LINKS

Origin Derived from alldifferent_consecutive_values.

Constraint consecutive_values(VARIABLES)

Argument VARIABLES : collection(var−dvar)

Restriction required(VARIABLES, var)

Purpose Constraint the difference between the largest and the smallest values of the VARIABLES collection to be equal to the number of distinct values assigned to the variables of the VARIABLES collection minus one (i.e., there is no holes at all within the used values).

Example $(\langle 5, 4, 3, 5\rangle)$

The consecutive_values constraint holds since all values between value 3 and value 5 are actually used.

Typical $|\texttt{VARIABLES}| > 1$
$\texttt{range}(\texttt{VARIABLES.var}) > 1$

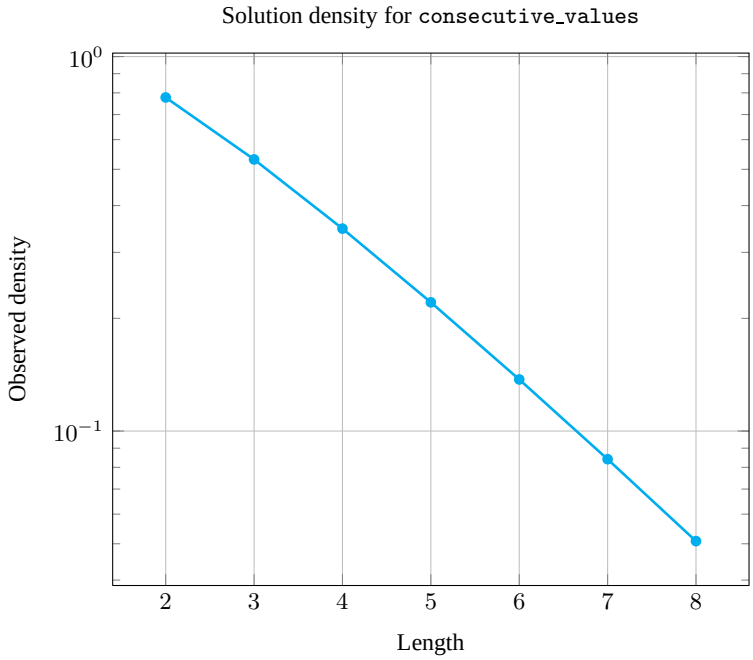
Symmetries

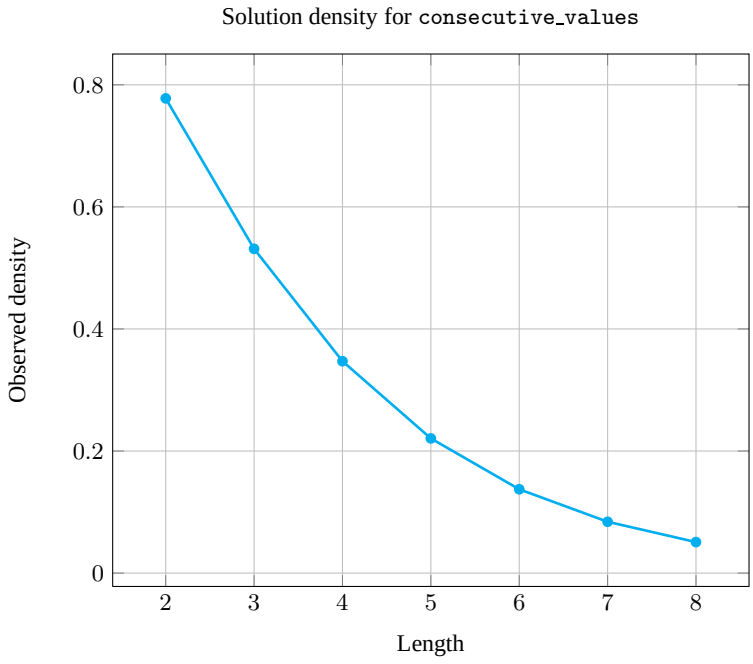
- Items of VARIABLES are permutable.
- One and the same constant can be added to the var attribute of all items of VARIABLES.

Counting

Length (n)	2	3	4	5	6	7	8
Solutions	7	34	217	1716	16159	176366	2187637

Number of solutions for consecutive_values: domains $0..n$





See also **implied by:** `all_equal`, `alldifferent_consecutive_values`, `global_contiguity`.

used in reformulation: `nvalue`.

Keywords **characteristic of a constraint:** sort based reformulation.
constraint type: value constraint, predefined constraint.

Cond. implications consecutive_values(VARIABLES)
with |VARIABLES| >range(VARIABLES.var)
implies some_equal(VARIABLES).