5.306 order

DESCRIPTION LINKS

Origin Derived from sort_permutation

Constraint order(VECTORS, PERMUTATION)

Type
VECTOR : collection(var−dvar)

Arguments
VECTORS : collection(vec − VECTOR)
PERMUTATION : collection(var−dvar)

Restrictions
|VECTOR| ≥ 1
|VECTORS| ≥ 1
required(VECTORS, vec)
same_size(VECTORS, vec)
required(PERMUTATION, var)
PERMUTATION.var ≥ 1
PERMUTATION.var ≤ |PERMUTATION|
|PERMUTATION| = |VECTORS|

Purpose Given a collection of distinct VECTORS, enforces PERMUTATION.var[i] to be equal to the position of vector VECTORS.vec[i] within the sorted vectors of the collection VECTORS.

Example

$$\left\langle \begin{array}{l} \left\{ \begin{array}{l} \text{vec} - \langle 1,1,2,2\rangle, \\ \text{vec} - \langle 2,1,2,1\rangle, \\ \text{vec} - \langle 2,1,1,1\rangle, \\ \text{vec} - \langle 1,1,1,2\rangle, \\ \text{vec} - \langle 1,2,2,1\rangle, \\ \text{vec} - \langle 1,1,1,1\rangle, \\ \text{vec} - \langle 2,2,1,1\rangle, \\ \text{vec} - \langle 2,1,1,2\rangle \end{array} \right\rangle, \\ \langle 3,7,5,2,4,1,8,6\rangle \end{array} \right\rangle$$

The order constraint holds since:

- The vector $\langle 1,1,2,2\rangle$ is in the third position of the sorted collection VECTORS,
- The vector $\langle 2,1,2,1\rangle$ is in the seventh position of the sorted collection VECTORS,
- The vector $\langle 2,1,1,1\rangle$ is in the fifth position of the sorted collection VECTORS,
- The vector $\langle 1,1,1,2\rangle$ is in the second position of the sorted collection VECTORS,
- The vector $\langle 1,2,2,1\rangle$ is in the fourth position of the sorted collection VECTORS,
- The vector $\langle 1,1,1,1\rangle$ is in the first position of the sorted collection VECTORS,
- The vector $\langle 2,2,1,1\rangle$ is in the eigth position of the sorted collection VECTORS,
- The vector $\langle 2,1,1,2\rangle$ is in the sixth position of the sorted collection VECTORS.

Typical

|VECTOR| > 1
|VECTORS| > 1

Arg. properties

Functional dependency: PERMUTATION determined by VECTORS.

See also

common keyword: sort_permutation *(sort, permutation)*.

Keywords

characteristic of a constraint: sort.

combinatorial object: permutation.

modelling: functional dependency.