5.221 lex_alldifferent_except_0

DESCRIPTION LINKS

Origin H. Simonis

Constraint lex_alldifferent_except_0(VECTORS)

Synonyms lex_alldiff_except_0, lex_alldistinct_except_0, alldiff_on_tuples_except_0, alldifferent_on_tuples_except_0, alldistinct_on_tuples_except_0.

Type VECTOR : collection(var−dvar)

Argument VECTORS : collection(vec − VECTOR)

Restrictions
|VECTOR| ≥ 1
required(VECTOR, var)
required(VECTORS, vec)
same_size(VECTORS, vec)

Purpose All the non null vectors of the collection VECTORS are distinct. A vector is *null* if all its components are equal to zero. Two non null vectors $(u_1, u_2, \ldots, u_n)$ and $(v_1, v_2, \ldots, v_n)$ are *distinct* if and only if there exists $i \in [1, n]$ such that $u_i \neq v_i$.

Example

$$\left\langle \begin{array}{l} \mathtt{vec} - \langle 0, 0, 0 \rangle, \\ \mathtt{vec} - \langle 5, 2, 0 \rangle, \\ \mathtt{vec} - \langle 5, 8, 0 \rangle, \\ \mathtt{vec} - \langle 0, 0, 0 \rangle \end{array} \right\rangle$$

The lex_alldifferent_except_0 constraint holds since its two non null vectors, i.e. the second and third vectors are distinct (the vectors $\langle 5, 2, 0 \rangle$ and $\langle 5, 8, 0 \rangle$ differ in their second component.

Typical
|VECTOR| > 1
|VECTORS| > 1

Arg. properties Contractible wrt. VECTORS.

See also **implied by:** lex_alldifferent.

Keywords **characteristic of a constraint:** vector, joker value.
modelling: difference between pairs of variables.