Notations

Variable entière (ou booléenne)

Variable intervalle

Expression entière

Constante entière

Tuple d’entiers

valeur absolue (si x est une expression, une variable ou une constante)

cardinal d’un ensemble E

OU logique

ET logique

OU logique

Constraints

|  |  |  |
| --- | --- | --- |
| **Factory function** | **Constraint** | **Observations** |
| MakeIfThenElseCt(c,t,e,v) |  |  |
| MakeTrueConstraint() |  | Always succeed |
| MakeFalseConstraint() |  | Always fails |
| MakeIsEqualCstCt(v, c, b) |  |  |
| MakeIsEqualCt(v1, v2, b) |  |  |
| MakeEquality(v1, v2) |  |  |
| MakeEquality(v, c) |  |  |
| MakeIsDifferentCstCt(v, c, b) |  |  |
| MakeIsDifferentCt(v1, v2, b) |  |  |
| MakeNonEquality(v1, v2) |  |  |
| MakeNonEquality(v, c) |  |  |
| MakeIsLessOrEqualCstCt(v, c, b) |  |  |
| MakeIsLessOrEqualCt(v1, v2, b) |  |  |
| MakeLessOrEqual(v1, v2) |  |  |
| MakeLessOrEqual(v, c) |  |  |
| MakeIsGreaterOrEqualCstCt(v, c, b) |  |  |
| MakeIsGreaterOrEqualCt(v1, v2, b) |  |  |
| MakeGreaterOrEqual(v1, v2) |  |  |
| MakeGreaterOrEqual(v, c) |  |  |
| MakeIsGreaterCstCt(v, c, b) |  |  |
| MakeIsGreaterCt(v1, v2, b) |  |  |
| MakeGreater(v1, v2) |  |  |
| MakeGreater(v, c) |  |  |
| MakeIsLessCstCt(v, c, b) |  |  |
| MakeIsLessCt(v1, v2, b) |  |  |
| MakeLess (v1, v2) |  |  |
| MakeLess (v, c) |  |  |
| MakeSumLessOrEqual(&v, c) |  |  |
| MakeSumGreaterOrEqual(&v, c) |  |  |
| MakeSumEquality(&v, c) |  |  |
| MakeSumEquality(&v, s) |  |  |
| MakeScalProdEquality(&v, &a, c) |  |  |
| MakeScalProdEquality(&v, &a, s) |  |  |
| MakeScalProdGreaterOrEqual(&v, &a, c) |  |  |
| MakeScalProdLessOrEqual(&v, &a, c) |  |  |
| MakeMinEquality(&v, m) |  |  |
| MakeMaxEquality(&v, m) |  |  |
| MakeElementEquality(&v, i, t) |  | Index is a variable |
| MakeElementEquality(&v, i, t) |  |  |
| MakeElementEquality(&v, i, t) |  |  |
| MakeAbsEquality(v, a) |  |  |
| MakeIndexOfConstraint(&v, i, t) |  | Constraint on index variable |
| MakeBetweenCt(v, l, u) |  |  |
| MakeNotBetweenCt(v, l, u) |  | Lazy, doesn’t make holes in domain |
| MakeIsBetweenCt(v, l, u, b); |  |  |
| MakeMemberCt(v, &S) |  | Lazy, doesn’t make holes in domain |
| MakeNotMemberCt(v, &S) |  |  |
| MakeNotMemberCt(v, s, e) |  |  |
| MakeIsMemberCt(v, &S, b) |  |  |
| MakeCount(&v, c, n) |  | Cardinality constraint |
| MakeCount(&v, c, n) |  |  |
| MakeDistribute(&v, &c, &n) |  |  |
| MakeDistribute(&v, &n); |  |  |
| MakeDistribute(&v, n\_min, n\_max, n\_size); |  |  |
| MakeDistribute(&v, &n\_min, &n\_max) |  |  |
| MakeDistribute(&v, &c, &n\_min, &n\_max) |  |  |
| MakeDeviation(&v, d, t) |  |  |
| MakeAllDifferent(&v) |  |  |
| MakeAllDifferentExcept(&v, e) |  |  |
| MakeSortingConstraint(&v, &s) |  | is a permutation |
| MakeLexicalLess(&u, &v); |  |  |
| MakeLexicalLessOrEqual(&u, &v) |  |  |
| MakeInversePermutationConstraint(&v, &u) |  |  |
| MakeIndexOfFirstMaxValueConstraint(i, &v); |  |  |
| MakeIndexOfFirstMinValueConstraint(i, &v) |  |  |
| MakeNullIntersect(&u, &v) |  |  |
| MakeNullIntersectExcept(&u, &v, e) |  |  |
| MakeNoCycle(&n, &a, s) |  |  |
| MakeNoCycle(&n, &a, s, ap) |  |  |
| MakeCircuit(&n) |  |  |
| MakeSubCircuit(&n) |  |  |
| MakePathCumul(&n, &a, &c, &t) |  |  |
| MakeDelayedPathCumul(&n, &a, &c, &t) |  | Propagation on n variables delayed after all constraints propagated |
| MakePathCumul(&n, &a, &c, te) |  |  |
| MakePathCumul(&n, &a, &c, &s, te) |  |  |
| MakeMapDomain(v, &b); |  |  |
| MakeAllowedAssignments(&v, &T) |  | Define constraint by extension |
| MakeTransitionConstraint(&v, &T, s\_i, &s\_f) |  | Finite automaton |
| MakeNonOverlappingBoxesConstraint(&x, &y, &w, &h) |  |  |
| MakeNonOverlappingBoxesConstraint(&x, &y, &w, &h) |  |  |
| MakeNonOverlappingNonStrictBoxesConstraint(&x, &y, &w, &h) |  |  |
| MakeNonOverlappingNonStrictBoxesConstraint(&x, &y, &w, &h) |  |  |
| MakeIntervalVarRelation(t, r, d) |  | R is a relation between t and d : ENDS\_AFTER, ENDS\_AT, ENDS\_BEFORE, STARTS\_AFTER, STARTS\_AT, STARTS\_BEFORE, CROSS\_DATE, AVOID\_DATE |
| MakeIntervalVarRelation(t1, r, t2) |  | R is a relation between t1 and t2 : ENDS\_AFTER\_END, ENDS\_AFTER\_START, ENDS\_AT\_END, ENDS\_AT\_START, STARTS\_AFTER\_END, STARTS\_AFTER\_START, STARTS\_AT\_END, STARTS\_AT\_START, STAYS\_IN\_SYNC |
| MakeIntervalVarRelationWithDelay(t1, r, t2, d) |  |  |
| MakeTemporalDisjunction(t1, t2, a) |  |  |
| MakeTemporalDisjunction(t1, t2) |  |  |
| MakeDisjunctiveConstraint(&t, name) |  |  |
| MakeStrictDisjunctiveConstraint(&t, name) |  |  |
| MakeCumulative(&t, &d, c, name) |  |  |
| MakeCumulative(&t, &d, c, name) |  |  |
| MakeCumulative(&t, &d, c, name) |  |  |
| MakeCover(&t, v) |  |  |
| MakeEquality(t1, t2) |  |  |

Expressions

|  |  |  |
| --- | --- | --- |
| **Factory function** | **Result** |  |
| MakeSum(e1, e2) |  |  |
| MakeSum(e, c) |  |  |
| MakeSum(&v) |  |  |
| MakeScalProd(&v, &c); |  |  |
| MakeDifference(e1, e2) |  |  |
| MakeDifference(e, c) |  |  |
| MakeOpposite(e) |  |  |
| MakeProd(e1, e2) |  |  |
| MakeProd(e, c) |  |  |
| MakeDiv(e, c) |  | Integer division |
| MakeDiv(e1, e2) |  | Integer division |
| MakeAbs(e) |  |  |
| MakeSquare(e) |  |  |
| MakePower(e, n); |  |  |
| MakeElement(&c, i); |  |  |
| MakeElement(ie, i); |  | ie is a function |
| MakeMonotonicElement(ie, incr, i); |  | ie is monotonic, increasing if incr=true |
| MakeElement(ie, i1, i2) |  |  |
| MakeElement(&v, i) |  |  |
| MakeIndexExpression(&v, c) |  |  |
|  |  |  |