

## **At-least-m-different predicate**

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Constraint Programming(CP) is a very efficient method used to model and solve complex combinatorial problems. It is an alternative to Integer Programming (IP) for solving large scale industrial problems. Under some circumstances, CP is much more efficient than IP and its strength lies in the use of predicates. We discuss the at-least-m-different predicate, a generalization of the all-different predicate, and provide a class of facet-defining inequalities of the convex hull of integer solutions. This predicate bounds the number of identical values that variables in a set may receive. We also present a polynomial time separation algorithm to be used in the context of a branch-and-bound optimization approach.

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