

More Pizza formulation model

Intro

Formulation model for the “more pizza” hashcode 2020 preparation round.

Definitions

$m=1..M$, pizza indice to order

$Pizza(m)$ $m=1..M$, vector containing pizza slices per pizza type

N : max slice size

Decision variables

$x_m = \{0, 1\}$, $m = 0..M$: Whether to order pizza m or not

Objective function

Maximize $\sum_m x_m * Pizza_m$

Constraints

C1: At most one pizza of each type can be chosen

Use binary decision variables

C2: Total pizza slices should not exceed N

$$\sum_m x_m * Pizza_m < N$$