

# Optimal Database Design Problem

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- Mathematical Model
- Algorithm presentation
- Results Analysis

# Mathematical Model

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# Mathematical Model

o.f.

$$\max \sum_{c \in C} \sum_{q \in Q} y_{cq} g_{cq} - \sum_{i \in I} z_i f_i$$

s.t.

$$\sum_{i \in I} z_i m_i \leq M$$

$$\sum_{c \in C} y_{cq} \leq 1 \quad \forall q \in Q$$

$$y_{cq} \leq z_i \quad \forall c \in C, q \in Q, i \in I_c$$

$$y_{cq}, z_i \in [0, 1]$$

$y_{cq} = 1$  if config  $c$  satisfies query  $q$ , 0 otherwise

$z_i = 1$  if index  $i$  is built, 0 otherwise

# Mathematical Model

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# Algorithm presentation

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# Algorithm Presentation

# Results analysis

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# Result Analysis

FINE