EXAMPLE 8

Salim wishes to define the scheduling of costumers that he must attend in the next 3 days.

The list of jobs (demands) with the duration of job and its profit is defined below:

A) duration 2h, profit 200 USD

B) duration 3h, profit 500 USD

C) duration 5h, profit 300 USD

D) duration 2h, profit 100 USD

E) duration 6h, profit 1,000 USD

F) duration 4h, profit 300 USD

Salim wants to maximize the profit for the next 3 days working 6h per day. Which demands he should attend per day?

- Neglect the traveling time

-Each demand only can be attended once

-Salim wish to do a maximum one job per day

Variables

$x_{j,d}$→ Binary decision on attending (or not) job j in day d

Parameters

P_j→ Profit for the job

D_j → Duration of the job in hours

T_h → Number of hours in a working day (6)

Objective Function

$$max \sum_j \sum_d x_{j,d} * P_j$$

Constraints

$$\sum_d x_{j,d} * D_j \leq T_h \qquad \forall d$$

$$\sum_d x_{j,d} \leq 1 \qquad \forall j$$

$$\sum_{d} x_{j,d} \leq 1 \qquad \forall d$$