Assignment Problem

Parameters
- n = amount of items to assign (*index* i)
- m = amount of places where to assign (*index* j)
- C_{ij} = cost of assignment item i to place j ($\forall i = 1, \cdots, n \quad \forall j = 1, \cdots, m$)

Variables

$$- x_{ij} = \begin{cases} 1 & \text{if the item } i \text{ is assigned to place } j; \\ 0 & \text{otherwise.} \end{cases}$$

$$min \sum_{i=1}^{n} \sum_{j=1}^{m} c_{ij} \cdot x_{ij} \tag{1}$$

s.v

$$\sum_{i=1}^{n} x_{ij} = 1 \qquad \forall j = 1, \cdots, m \tag{2}$$

$$\sum_{j=1}^{m} x_{ij} \leq 1 \qquad \forall i = 1, \cdots, n \tag{3}$$

$$x_{ij} \in \{0, 1\} \qquad \forall i = 1, \cdots, n \quad \forall j = 1, \cdots, m \tag{4}$$