

## 1. DRP PAIRING MODEL

$$\max \sum_{i \in A} \sum_{j \in B} s_{ij} x_{ij}$$

(1)

$x_{ij} \in \{0, 1\}$  assigns mentee  $i$  to mentor  $j$

$$1 \leq \sum_{i \in A} x_{ij} \leq 2, \quad j \in B$$

(2)

$A$ : set of mentees

$A_u$ : set of mentees from university  $u$

$B$ : set of mentors

$C$ : set of study areas

$U$ : set of universities

$$\sum_{j \in B} x_{ij} \leq 1, \quad i \in A$$

(3)

$m_u$ : max # of assigned mentees from university  $u$ .

$s_{ij}$ : score of assigning mentee  $i$  to mentor  $j$ .

$$\sum_{i \in A_u} \sum_{j \in B} x_{ij} \leq m_u, \quad u \in U,$$

(4)

$s_{ij} = 0 \iff i, j$  do not share a common interest.

$$x_{ij} \leq s_{ij} x_{ij}, \quad i \in A, \quad j \in B$$

(5)

$s_{ij} = \sum_{t \leq 3} \sum_{k \leq 3} a_{tk} \iff t$ .th interest of  $i$  and  $k$ .th interest of  $j$  are the same.  $a_{tk}$ 's are pre-defined parameters.

---

### Constraints

(1) maximizes total assignment score.

(2) each mentor receives one or two mentees.

(3) each mentee is assigned to at most one mentor.

(4) at most  $m_u$  mentees are assigned from uni  $u$ .

(5)  $i$  is assigned to  $j$  only if their interests intersect.

---

### Missing Constraints

1. Öğrencinin 3. veya 4. sınıfta olması dikkate alınır.

---

### Questions

**Q1.** İyi bir eslesmeyi nasıl tanımlarız? Objective function'i tanımlamak için önemli.

**Q2.** Sınıf bilgisinin nasıl dikkate alınacağı net değil. Mesela önce 3. ve 4. sınıfları atayıp sonra mı 1. ve 2. sınıfları atayalım?