

Let there be N players and let C be the set of classes. Let $x_{i,c}$ be the indicator variable indicating whether the i th player in class $c \in C$ is included or not. Let $p_{i,c}$ be the prices of the players, and let $v_{i,c}$ be the values of the players.

Maximize $\sum_i \sum_{c \in C} x_{i,c} v_{i,c}$ under the following constraints:

$$\begin{aligned} \sum_i \sum_{c \in C} x_{i,c} &= 8 && \text{(choose exactly 8 players)} \\ \sum_i \sum_{c \in C} x_{i,c} p_{i,c} &\leq 50000 && \text{(salary constraint)} \\ 1 &\leq \sum_i x_{i,1} \leq 2 \\ 1 &\leq \sum_i x_{i,2} \leq 2 \\ 1 &\leq \sum_i x_{i,3} \leq 2 \\ 1 &\leq \sum_i x_{i,4} \leq 2 \\ 1 &\leq \sum_i x_{i,5} \leq 2 \\ 4 &\leq \sum_i \sum_{c \in \{1,2,5\}} x_{i,c} \leq 5 \\ 4 &\leq \sum_i \sum_{c \in \{3,4,5\}} x_{i,c} \leq 5 \end{aligned}$$