# Team Formation Problems in Hackathon

July 18, 2017

## 1 Partition Version

### 1.1 Problem definition

Suppose we have $P$: a set of participants, where $|P|$ = n. We want to partition $W$ into $T_1, T_2, ..., T_l$ such that $|T_i| \leq k$ and either

- $min_{i=1...l}|S(T_i) \cap Task|$ is maximized.
- $\sum_{i=1}^{l} |S(T_i) \cap Task|$ is maximized.

,where $S(w_i)$ denotes the union of the skills of participants of team i, and $Task$ denotes the required skill sets.

### 1.2 Algorithm 1

At every iteration, pick $(p, T_i)$ such that $|S(T_i \cup p) - S(T_i)|$ is maximized.

## 2 Recommendation Version