# 구명보트

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| 📅 CreatedAt | @September 28, 2022 |
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| ☀ Status | Done |
| ☰ Tags | Greedy · Python |
| 📅 UpdatedAt | @September 28, 2022 |

## *References*

https://school.programmers.co.kr/learn/courses/30/lessons/42885

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## 1. Greedy Algorithm

### 1.1. Solution 1

```python
import collections

def solution(people, limit):
    num_weight = dict()
    for p in people:
        num_weight[p] = num_weight.get(p, 0) + 1

    result = 0
    weights = collections.deque(sorted(num_weight.keys()))
    while weights:
        cur = weights.pop()
        while weights and num_weight[cur] > 0 and weights[0] <= limit - cur:
            w = weights.popleft()
            move = min(num_weight[cur], num_weight[w])
            result += move
            num_weight[cur] -= move
            num_weight[w] -= move
            if num_weight[w]:
                weights.appendleft(w)
```

```
            if num_weight[cur]:
                if 2 * cur <= limit:
                    move = num_weight[cur] // 2
                    result += move
                    num_weight[cur] -= move * 2
                result += num_weight[cur]
                num_weight[cur] = 0

    return result
```

## 1.2. Solution 2

```
def solution(people, limit):
    people.sort()
    pair = 0

    a = 0
    b = len(people) - 1
    while a < b:
        if people[a] + people[b] <= limit:
            pair += 1
            a += 1
        b -= 1

    return len(people) - pair
```