꿀 따기

# Index	21758
CreatedAt	@September 28, 2022
Person	A Ally Hyeseong Kim
Status	Done
Tags	Greedy Python
UpdatedAt	@September 28, 2022

21758번: 꿀 따기

BAEKJOON ONLINE JUDGE

https://www.acmicpc.net/problem/21758

1. 부분합

```
import sys
import heapq

n = int(sys.stdin.readline())
honey = list(map(int, sys.stdin.readline().split()))

from_leftmost_sums = [0 for _ in range(n)]
for i in range(n):
    if i == 0:
        from_leftmost_sums[i] = honey[i]
    else:
        from_leftmost_sums[i] = from_leftmost_sums[i - 1] + honey[i]

from_rightmost_sums = [0 for _ in range(n)]
for i in range(n - 1, -1, -1):
    if i == n - 1:
        from_rightmost_sums[i] = honey[i]
    else:
        from_rightmost_sums[i] = from_rightmost_sums[i + 1] + honey[i]

mid = sum(honey[1:-1]) + max(honey[1:-1])
```

```
left = sum(honey[:-1])
right = sum(honey[1:])

leftmost_house = []
rightmost_house = []
for i in range(1, n - 1):
    heapq.heappush(leftmost_house, -(left - honey[i] + from_leftmost_sums[i - 1]))
    heapq.heappush(rightmost_house, -(right - honey[i] + from_rightmost_sums[i + 1]))

left = -heapq.heappop(leftmost_house)
right = -heapq.heappop(rightmost_house)

print(max([left, right, mid]))
```

2. Greedy Algorithm

```
import sys

N = int(sys.stdin.readline())
honeys = list(map(int, sys.stdin.readline().split()))
accum_forward = 0
maximum_forward = 0
for honey in honeys[2:-1]:
    accum_forward += honey
    maximum_forward = max(maximum_forward, honeys[1]-accum_forward-honey)
    if accum_forward > honeys[1]:
        break
sum_forward = 2*sum(honeys[2:]) + maximum_forward

accum_backward = 0
maximum_backward = 0
for honey in honeys[N-3:0:-1]:
    accum_backward += honey
    maximum_backward = max(maximum_backward, honeys[-2]-accum_backward-honey)
    if accum_backward > honeys[-2]:
        break
sum_backward = 2*sum(honeys[:-2]) + maximum_backward

sum_mid = sum(honeys[1:-1]) + max(honeys[1:-1])

print(max(sum_forward, sum_backward, sum_mid))
```

- 최적 부분 구조: 3개의 부분 case로 분리
- 탐욕 선택 속성: 각 case에서 최선의 선택