

greedy, always choose the undone project with the maximum P_i where $C_i \leq \text{current capital}$. after sorting according to C_i , we can use a priority queue to maintain this.

1. use heap, $O(n \log n)$.

2. there's a deterministic reduction from priority queue to sorting: if we can sort n keys in $S(n)$ time per key, then there is a priority queue supporting delete and insert in $O(S(n))$ time and find-min in $O(1)$ [1]. so the total running time is sorting time.

https://en.wikipedia.org/wiki/Priority_queue

References

- [1] Mikkel Thorup. Equivalence between priority queues and sorting. *Journal of the ACM (JACM)*, 54(6):28, 2007.