https://www.codechef.com/practice/course/nutanix-interview-questions/NUTANIXCON01/problems/NUTANIX06

Book Allocation

no. of books = 4

no of pages = [10, 20, 30, 40]

no of students = 2

Constraints:

- 1 book 1 student
- every book read
  - inc order given
  - contiguous segment

no case

minimize the maximum

10 20 30 40

S1 S2

no of pages: 40 90 : max 90

10 20 30 40

S1 S2

20 70 : max 70

10 20 30 40

S1 S2

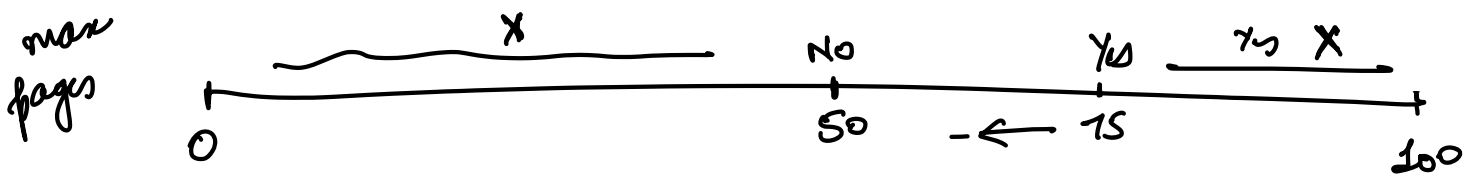
60 40 max: 60

min(90, 70, 60) = 60

b = 4

s = 3

$b-1 C_{s-1}$: possible cases



lo = 0 | lo = 51 | lo = 71

hi=100
mid=50
max no of pages=50 || No
all books read ?
10 20 20 40

S1:10+20
S2:20
S3:40
RHS
lo=mid+1

lo=50
mid=75
max no of pages=75
all books read ? || Yes

S1: 10+20+30
S2:40
LHS
hi=mid-1

hi=74

i: [10, 20, 30, 40] mid=53

S1: 10 20 30

https://leetcode.com/problems/capacity-to-ship-packages-within-d-days/description/

Capacity Ship

minimize the max weight

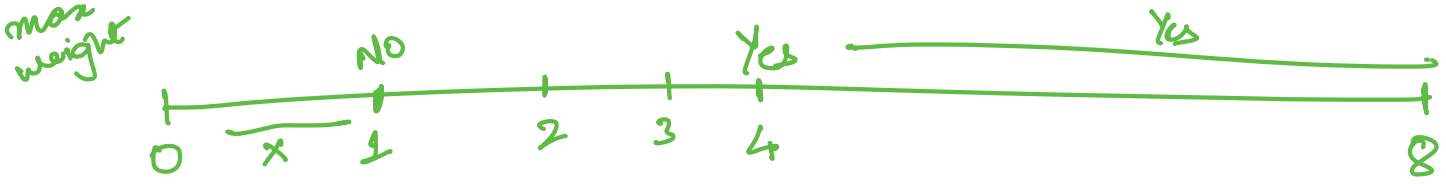
weights [1,2,3,1,1] days=4

weights= [1,2,3,4,5,6,7,8,9,10] days=5
3 7 11 15 19 = 19

12345 : 15
67 : 13
8 : 8
9 : 9
10 : 10

15

weights [1,2,3,1,1] days=4



lo = 0
hi = 8
mid = 4
max weight 4 kgs, all products?
↳ Yes

d1 → 1+2
d2 → 3+1
d3 → 1
d4

LHS
hi = mid - 1

lo = 0
hi = 3
mid = 1
NO LHS
lo = 2

lo = 2
hi = 3
mid = 2
NO LHS

lo = 3
hi = 3
mid = 3
Yes
LHS
hi = mid - 1
= 2

lo = 2
hi = 2
X