

28 May

Problem :- Operation sea ever - The last boats from  
seagull :-

⇒ I/P :-  $N = 4$   
limit = 100  
 $w = [70, 50, 80, 50]$   
O/P = 3

- 1 soln :- Approaches :- Greedy - 2 pointers approach.
1. we will sort the list of weight.
  2. pair the lightest & highest or if weight + light ~~is~~ not less than limit then we will send the highest.
  3. Move the pointer accordingly and count each boat used.

pseudo code :-  
Arrays.sort (weights);  
int i = 0;  
int j = ~~++~~ weight.length - 1;  
int boat = 0;  
while ( $i \leq j$ ) {  
 if (weight[i] + weight[j]  $\leq 100$ ) {  
 i++;  
 j--;  
 } else {  
 j--;  
 boat++;  
 }  
}  
return boat;

say sun's  $W = [70, 50, 80, 50]$ , limit = 100,  $N = 4$   
 sort by weight =  $[50, 50, 80, 70]$

$\begin{matrix} \text{boat(1)} & \text{boat(2)} & \text{boat(3)} \\ 70 & 80 & (50+50) \end{matrix}$ 

 $i=0$        $j=n-1$   
 $50 + 70 > 100$   
 Not possible

Total Max. rounds = 3 output

$\begin{matrix} 50, i=1 \\ i=0 & j=n-2 \\ 50 + 80 > 100 \end{matrix}$ 

 $50 + 50 = 100$   
 Not possible (j=1)

problem 2  $\Rightarrow$  festival fallout - saving seats in rain's

I/P  $\Rightarrow N = 3$

$C = 5$

$G = [3, 5, 4]$

O/P 3

Approaches  $\Rightarrow$  The way to calculate total number of empty chairs after seating all groups is by  $(C - \sum G[i])$ , we will get the chairs.

pseudo code  $\Rightarrow$    
 $\text{totalEmpty} = 0;$   
 $\text{for } int \text{ groupSize : groups}$   
 $\{$   
 $\text{if } (\text{groupSize} \leq \text{chairs}) \{$   
 $\text{totalEmpty} += (\text{chairs} - \text{groupSize});$   
 $\}$

$\text{else } \{$

$\text{s.o.pen}(\text{group size too big});$

$\}$   
 $\text{return totalEmpty};$

Day-Ran  
Output  $\Rightarrow C = 5$   
 $g = [3, 5, 4]$

P0

$\Rightarrow$  every row have 5 chairs.

 $\Rightarrow$ 

<u>Groupsize</u>	rowcapacity	<u>empty_size</u>
3	5	2
5	5	0
4	5	1

$\Rightarrow \text{totalEmpty} = 2 + 0 + 1 = 3$  Ans

SC