Day - 33

BS Interview Questions

* __Book Allocation:__
1. Every student get atleast 1 Book.
2. Books will be allocated in contiguous way.
3. Out of all permutation, student with most no. of books get min. pages.

| 12 | 34 | 67 | 90 | M = 2

I   II

12 {12   34, 67, 90} 191 ⎫ 191
12, 34 {46   67, 90} 157   ⎬ 157
12, 34, 67 {113   90} 90   ⎭ (113)

approaching

⇒ For this question, we will start by giving one book only when we reach that no. of count value that we start from 1.

⇒ But when we start from 1, the largest book give to anyone in the last.

⇒ That's why, we start from the largest no. of book as count.

I   II

12, 37   67 → till 113
12, 37, 67   90 → after 113

⇒ So, 90 .... 91, 92 ,...... 105,..... (113) min
⇒ We can also take long jumps.

=) Also, we get our correct answer in right direction.

=1 And, we get min, answer in left direction.

So, our start is — max of array
our end is — sum of array

Code

```
Start = 90, end = 203 , mid , ans;
while (start <= end){
    mid = (start + end)/2;
    page = 0, count = 1;
    for(i = 0; i<n; i++){
        page += arr[i];
        if(page > mid ){
            count++ ;
            page = arr[i];
        }
    }
    if (count <= M){
        ans = mid;
        end = mid-1;
    }
    else {
        start = mid +1;
    }
}
```

* **Painter Partition:**

| S | 10 | 30 | 20 | 15 | $k=3$

=) We have walls of different length and we have to paint these walls.

=) Also, we have 'k' no. of painters.

=) We use the same ~previous~ approach in this question.

=) We one by one check that in that time how much wall we can paint.

* **Ship Packages:**

| 3 | 2 | 2 | 4 | 1 | 4 | $days=3$

=) We have to parcel packages in the given no. of days with min. weight.