Lec-14

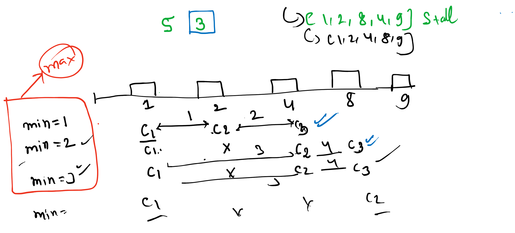
23/10/24 2:31 PM

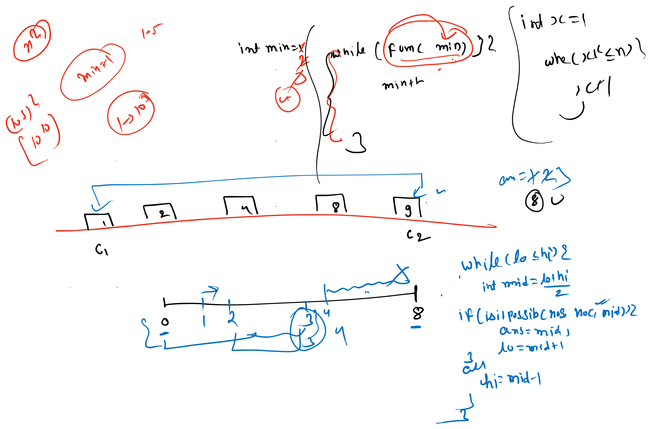
AGGRCOW - Aggressive cows

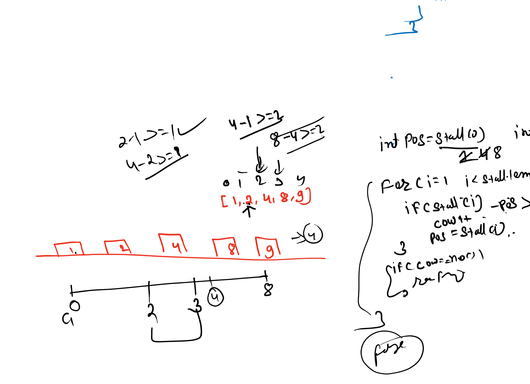
#binary-search

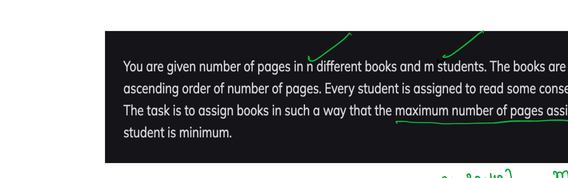
Farmer John has built a new long barn, with N (2 <= N <= 100,000) stalls. The stalls are located along a straight line at positions x1 ... xN (0 <= xi <= 1,000,000,000).

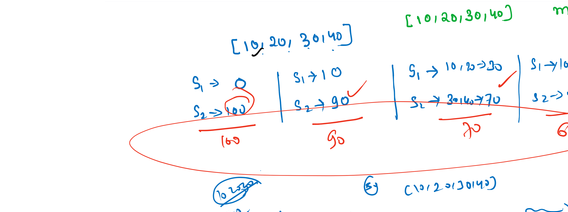
His C (2 <= C <= N) cows don't like this barn layout and become aggressive towards each other once put into a stall. To prevent the cows from hurting each other, FJ wants to assign the cows to the stalls, such that the minimum distance between any two of them is as large as possible. What is the largest minimum distance?

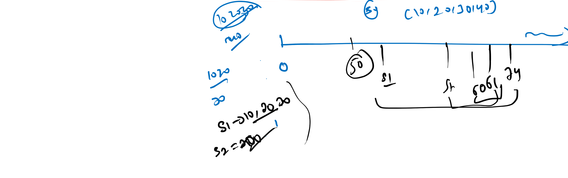




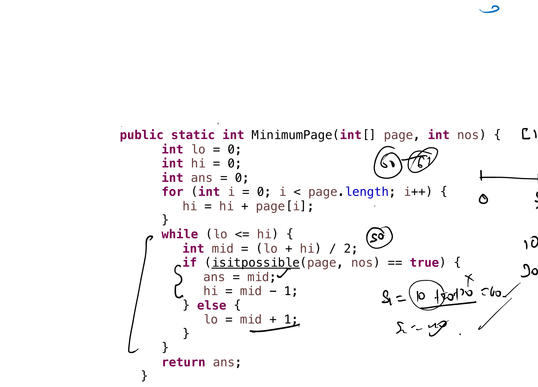


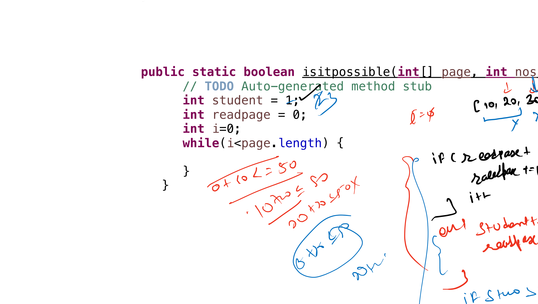




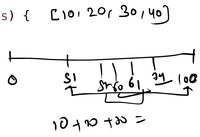


You are given number of pages in n different books and m students. The books are arranged in ascending order of number of pages. Every student is assigned to read some consecutive books. The task is to assign books in such a way that the maximum number of pages assigned to a student is minimum.





```
public static int MinimumPage(int[] page, int nos) {
    int lo = 0;
    int hi = 0;
    int ans = 0;
    for (int i = 0; i < page.length; i++) {
        hi = hi + page[i];
    }
    while (lo <= hi) {
        int mid = (lo + hi) / 2;
        if (isitpossible(page, nos) == true) {
            ans = mid;
            hi = mid - 1;
        } else {
            lo = mid + 1;
        }
    }
    return ans;
}
```



```
public static boolean isitpossible(int[] page, int nos, int mid) {
    // TODO Auto-generated method stub
    int student = 1;
    int readpage = 0;
    int i=0;
    while(i<page.length) {

    }
}
```