

Allie and Books

Week-04

No of pages:	2	1	4	4
After reading i^{th}	$B=1$ $B=2^X$	$B=1$ $B=2^X$ \vdots	$B=1$ $B=2$ $B=3^X$	$B=1$ $B=2$ $B=3^X$ \vdots
B-books, at least b-pages				
Ans:-	1	1	2	2

Method 1 → frequency method

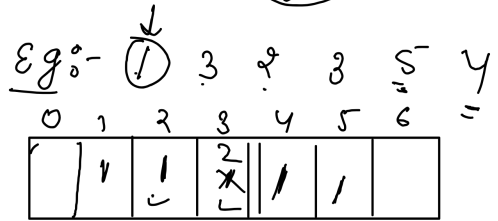
Freq(i) → how many books have i pages.

($b=4$)

```
#include <bits/stdc++.h>
using namespace std;

#define IOS ios::sync_with_stdio(0); cin.tie(0); cout.tie(0);
```

```
int main() {
    IOS
    int t;
    cin >> t;
    while(t--) {
        int n;
        cin >> n;
        int freq[100001] = {};
        int b = 0, cnt = 0;
        for (int i = 0; i < n; ++i) {
            int x;
            cin >> x;
            freq[x]++;
            if (x > b) {
                cnt++;
            }
            if (cnt > b) {
                b++;
                cnt -= b;
            }
            cout << b << " ";
        }
    }
}
```



(b) cnt

$p=0$, 0

$p=1$, 1

$p=2$, 2

2-1=1

$b=3$ → at least
→ kehne
↓

$b=4$

1 1 2 2 3

$i=3$

$i=4$

2

3

2

3

→

freq

3 - 2 = 1

Method-02