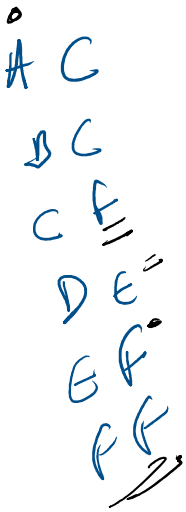
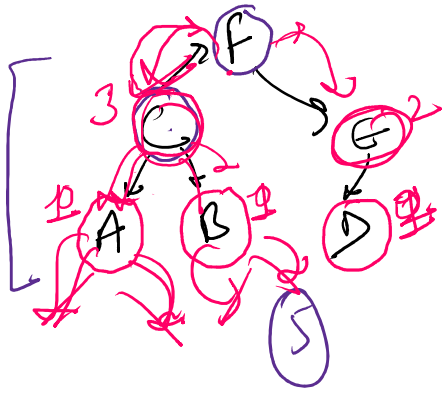
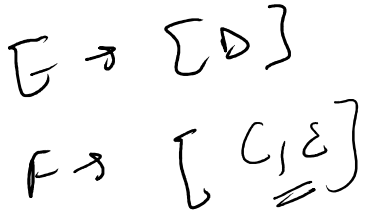
3.6 Hashing - 2

Saturday, July 19, 2025 10:49 AM

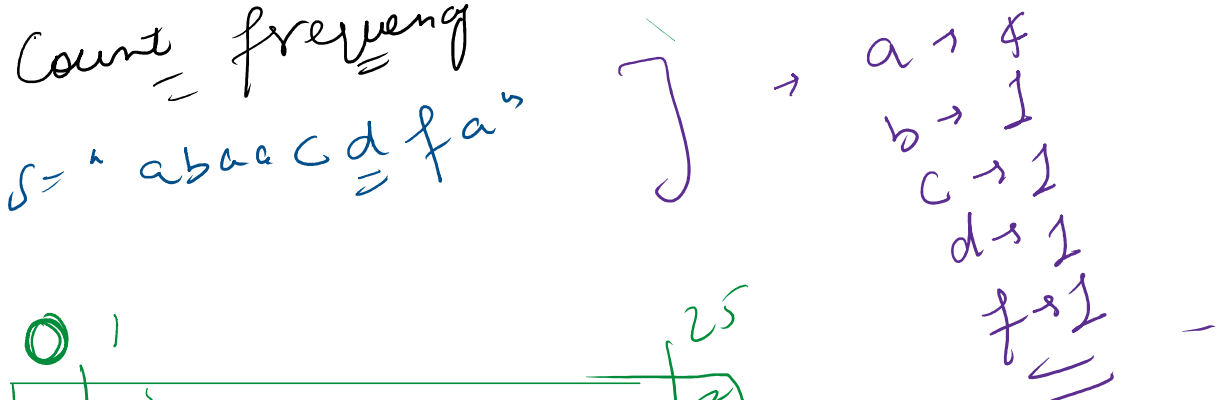






* Internal libraries work on keys by default because keys are unique

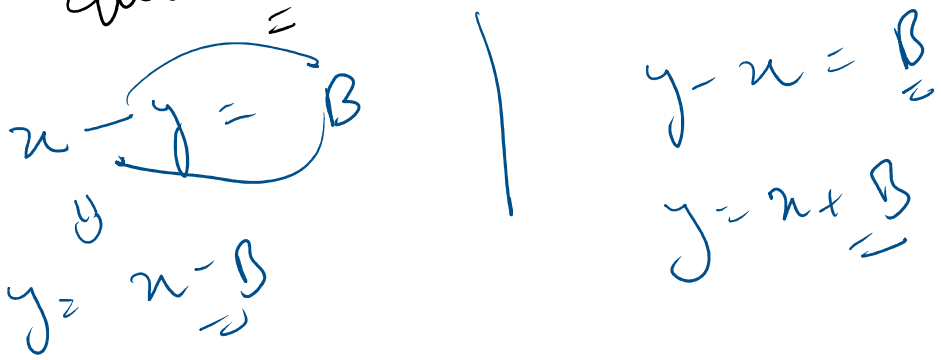
Count frequency



for (i=0 → 1000) → O(1)

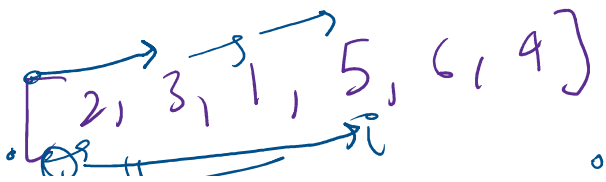
for (i=0 → n) → O(n) n<=100

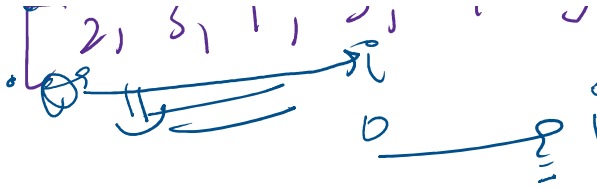
General approach to solve questions



{ 5, 10, 3, 2, 50,

Approach of prefix sum

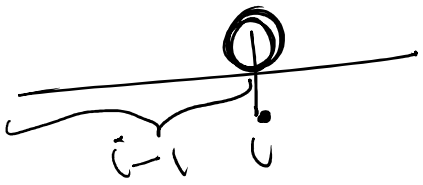


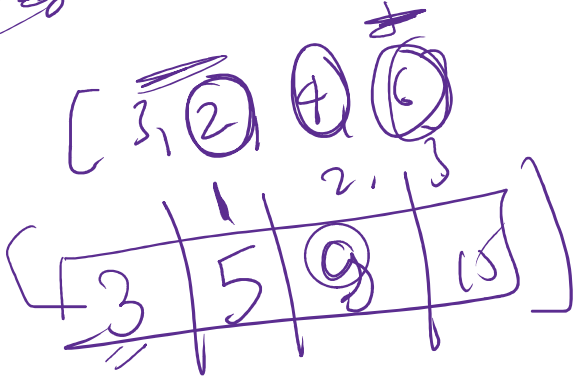


[2, 5, 6, 11, 17, 21]

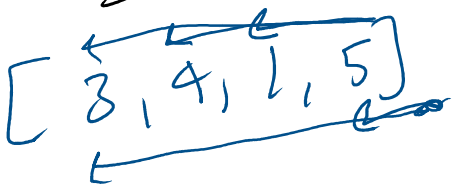
prefix[n]

```
prefix[0] = arr[0]
for (i=1; i<n; i++) {
    prefix[i] = prefix[i-1] + arr[i]
}
```





⇒ suffix sum

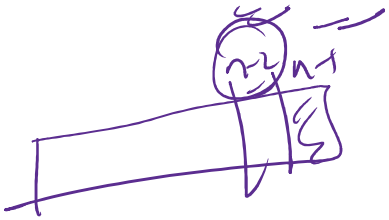


[13, 10, 6, 5] suffix

suffix[n]

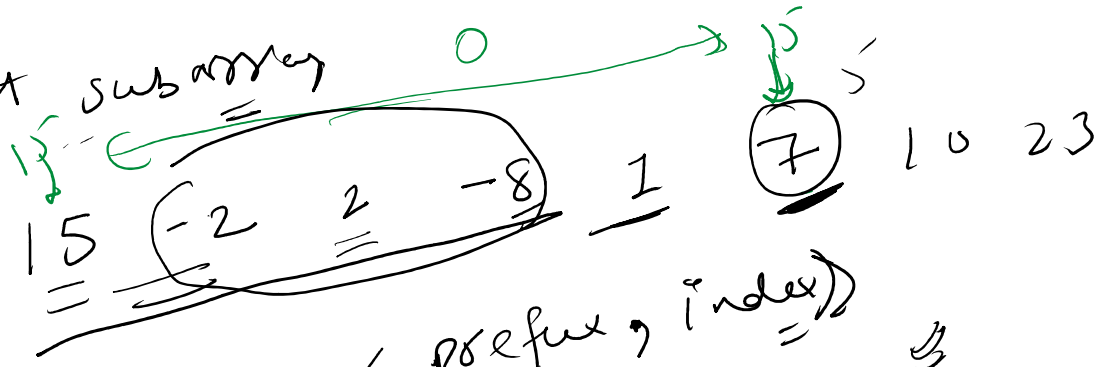
suffix[n-1] = arr[n-1];

for (i = n-2; i>=0; i--) {



```
for(i= n-2 ; i>=0 ; i--)
    suffix[i] = suffix[i+1] + arr[i]
}
```

Largest subarray



< prefix, index >

15 → 0
13 → 1
7 → 3
2
15 8 → 4

15 15 n