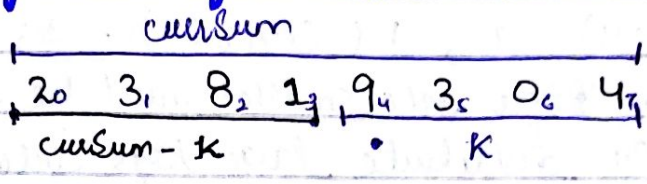
- **Hashing :-**

i) Find Subarray with given sum K :-



map :-

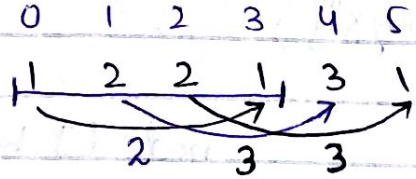
key :	value → i+1
a_0+a_1	1
$a_0+a_1+a_2$	2
$a_0+a_1+a_2+a_3$	3

Suppose ;

- K = 16 ; curSum = 30 ; curSum - K = 14 ;
  start = map [curSum - K] + 1 ;
  end = i ; break ;
- if (curSum == K) start = 0 , end = i ; break ;

ii) Find Distinct elements in window K :-

K = 4 ;



i<K ; length

1 → ② } ②
2 → 2
i >= K

2 → 2
1 → 2-1 → 1 } ③
3 → 1

map :-

- if (i < K)
  map [array [i]] = (map [array [i]] | 0) + 1 ;
- if (i >= K) // if value of ist element is > 1 the subtract
  if (map [array [i-K]]) map [array [i-K]] -= 1 ;
  if (map [array [i-K]] <= 1) delete ;
  map [array [i]] = (map [array [i]] | 0) + 1 ;
  console (map . size) ;