Hashing

Step 0: Pre-storing / Fetching

We have an array = [1, 1, 3, 2, 10, 6]
We are asked to find the number of occurrences of elements given by the user
Maximum array element assignment is set to 10

Input :	Output :
0	0 - 1
1	1 - 3
3	3 - 1
7	7 - 0
10	10 - 0

We will assign a hash array of length '11', i.e and we will fill the indexes with '0'.

0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0

When we execute our program, the hash array will update as follows :

0	1	2	3	4	5	6	7	8	9	10
~~0~~	~~0~~	0	~~0~~	0	0	0	0	0	0	0

So, the updated hash array will look like this :

0	1	2	3	4	5	6	7	8	9	10
1	3	0	1	0	0	0	0	0	0	0

So, hash[0] = 1
hash[1] = 3
hash[2] = 0
hash[8] = 1
1
1
1

hash[10] = [0]

We therefore get all our queries in one single computation.

* If the data structure is array and the data type is int, we can have max arr[10^6] elements in int main() and arr[10^7] globally.