LAB 2

Q 1. The array data structure can be used to store a large number of values. Data can be searched or modified. A specific data part can be deleted. New Data can always be inserted. However, all these operations may not be efficient. In this lab, you need to figure out the number of operations/(steps of data movement) needed for various types of jobs. In a later lab we shall see the difference when a different data structure would be used.

1. Create a group of employee information with following fields. Fix sizes of each field:

a. Name

b. ID (a 4 digit integer)

c. Department

d. Salary (integer)

e. Address (string with max 12 words)

f. Contact No (integer)

g. Email ID

h. Position (string)

2. Declare and allocate memory to an array of structure of size 50.

3. Construct a database for 30 employees in the array by random values.

4. Perform the following operations. Set up a counter in each case and print number of times any data value is shifted in the array. Show your results in a tabular form.

a. Search for 4th person (by ID) and print name of the employee

b. Print data for the first employee

c. Print data for the last employee

d. Delete data for the employee at last position

e. Delete data for the employee at first position

f. Delete data for the employee at third position

g. Insert data for a new employee at last position

h. Insert data for a new employee at first position

i. Insert data for a new employee at second position

Q 2. Chandan is an extremely biased person, and he dislikes people who fail to solve all the problems in the interview he takes for hiring people. There are n people on a day who came to be interviewed by Chandan.

Chandan rates every candidate from 0 to 10. He has to output the total ratings of all the people who came in a day. But, here's the problem: Chandan gets extremely frustrated when someone ends up scoring a 0 in the interview. So in frustration he ends up removing the candidate who scored that 0, and also removes the candidate who came before him. If there is no candidate before the one who scores a 0, he does nothing.

You've to find the summation of all the ratings in a day for Chandan.

Input constraints:

The first line of input will contain an integer — n. The next n lines will contain an integer, where the ith integer represents the rating of the ith person.

Output constraints:

Print the required sum.

Constraints:

$1 \leq n \leq 5 * 103$

$0 \leq$ Value of ratings ≤ 10

SAMPLE INPUT

- 5
- 2
- 3
- 0
- 7
- 0

SAMPLE OUTPUT

- 2