

HW-5 CSL2020 (Jan 2021)

Assigned: 20 Jan 2021

Submission deadline: 27 Jan 2021 (Wednesday) 9 AM

Marks: 6

Submit two files with name: hw5 q1 roll number.c and hw5 q2 roll number.c

1. Read two arrays A and B from the command line. You can assume that the input is given in two separate lines and the format of each line is as follows:

N, x1, x2, ..., xN

Here, N is the number of elements and this is followed by the actual numbers. Further, all the numbers are positive integers.

Using hashing techniques we studied in the class, create two new arrays C and D such that:

(i) C contains numbers only in A or in B (symmetric difference) [2 Marks]

(ii) D contains numbers in both A and in B (intersection). [2 Marks]

Print C and D on separate lines.

Your algorithm should run in linear time.

2. Read an array A from the command line just like the previous question. Then read a number k from the command line. Write a program to find two numbers x and y in A such that $x+y = k$. If no such pair can be found then print "Not found". [2 Marks]

Your algorithm should run in linear time.