

York University
Lassonde school of Engineering
Dept. of Electrical Engineering and Computer Science
EECS2032
Introduction to Embedded Systems
Fall 2021

EECS2032E

Test 3

Tuesday Dec. 7, 2021

Time 2:30-4:00 (followed by 10 minutes to submit)

Please note the change in submit directories (easier to detect dishonesty)

- Be careful with the naming convention for both file name and submission directory
- Display what I ask you to display, nothing more, nothing less
- Do not display Please “Enter the array”, or “Enter the input”, or “The result is”. That will cost you marks
- This test is out of 20. You can get 20 if you answer the first 4 questions. The fifth question is a bonus
- **Question 1 is available only from 2:30-3:00pm**

Problem 1 5 points

A Quiz on Eclass

Problem 2 5 points

Write a program that reads 2 matrices and displays either YES or NO. It displays YES if every element in the first matrix is greater than the corresponding element in the second matrix, otherwise displays NO.

Input

two integers r and c

r rows each contains c elements of the first matrix (A)

r rows each contains c elements of the second matrix (B)

Output

YES or NO

For example,

Input

2 4

3 7 1 5

7 8 9 9

1 2 4 4

5 6 7 8

Output

NO.

Since all the elements of the first matrix is greater than the second one **except** element (1,3). 1 is not greater than 4.

submit 2032E LABTEST3_2 labtest3_2.c

Problem 3 5 points

Read a string of characters (non white characters) from the standard input and display the length of the first word. Assume words are separated by ZZ, and no word contains ZZ as a part of the word. If there is no ZZ, display NO ZZ

for example

Input

thisismZZsentence

Output

7

This line is not a part of the output, it is only to explain the output. 7 is the number of characters up to but not including ZZ, i.e. the number of characters in "thisism"

Input

ABCDZ

Output

NO ZZ

submit 2032E LABTEST3_3 labtest3_3.c

Problem 4. 5 points (3 points for the first part, and 2 for the second)

Read an integer n , then read a $n \times n$ matrix and display the main diagonal and antidiagonal each on a separate line.

Then the program proceeds to read two integers, r and c , then it reads $r \times c$ matrix and display the diagonal and antidiagonal each on a separate line

For example, The output is in red and bold

Input

```
3      3
1      2      3
4      5      6
7      8      9
```

```
1      5      9
3      5      7
```

```
2      5
1      5      3      6      7
3      8      9      2      1
```

```
1      8
7      2
```

submit 2032E LABTEST3_4 labtest3_4.c

Problem 5 4 points. (A bonus question)

Redo Problem 1 such that. if all the elements of the first matrix (A) is greater than all the elements of the second matrix (B), display YES

Otherwise display NO on a line by itself, then

For every element in A, that is not greater than the corresponding element of B, display the indices and value of each element on a line by itself as follows

$A[i][j] = x$ is not greater than $B[i][j]=y$, where i,j are the indices of the offending element, x and y are the values of $A[i][j]$ and $B[i][j]$ respectively

For example,

Input

2 4

3 7 1 5

7 8 9 9

1 2 4 4

5 6 7 9

Output

NO

$A[0][2] = 2$ is not greater than $B[0][2] = 4$

$A[1][3] = 9$ is not greater than $B[1][3] = 9$

submit 2032E LABTEST3_5 labtest3_5.c