York University

Lassonde School of Engineering

Dept. of Electrical Engineering and Computer Science
EECS 2032
Embedded Systems
Winter 2020

EECS2032Z **Lab Test 2_B** **Intro to Embedded Systems**

Thursday, March. 13th 2019 4:00– 5:50pm

Question 1 (4 points)

Write a C program to read one string from the standard input and check if this string is an integer or not. An integer starts with an optional ‘+’ or ‘-‘ followed by characters between ‘0’ and ‘9’. The program prints to the standard input either “Integer” or “Not an integer” without the quotes followed by a new line character.

For example (Blue is user input, red is computer response)

```
CPU % a.out
+123456
Integer
CPU% a.out
17a23
Not an integer
CPU%
```

submit 2032Z labtest2B labtest2_1B.c

Question 2 (5 points)

Write a C program to read a string from the standard input and decide if the string is a palindrome or not. A palindrome is a string that is read the same left-to-right or right-to-left, for example civic is a palindrome. Max length is 50

Specifications

- The string may contain only small caps, spaces, and tabs, so you have to read until end of line.
- Remove the white spaces from the string (remove spaces and tabs)
- Print the string after removing white spaces followed by a new line
- Print if the string is a palindrome or not (print YES or NO) followed by a new line

(System prompt and response in red, user input is blue)

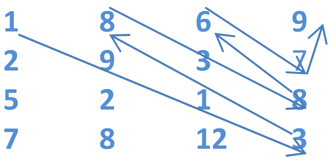
```
CPU % a.out
this is my string
thisismystring
NO
CPU%
```

submit 2032Z labtest2B labtest2_2B.c

Question 3 (6 points)

Write a C program to read a square integer array. The input is an integer *n* followed by n^2 elements of the matrix in a row major format. Your code should display the upper triangle part of the matrix a diagonal by a diagonal. The elements should be displayed separated by two spaces and ends with \n. (The maximum array size is 50×50)

For example (system prompt in red, user input in blue)



```
CPU % a.out
4
1      8      6      9
2      9      3      7
5      2      1      8
7      8      12     3
1 9 1 3 8 3 8 6 7 9
CPU%
```

submit 2032Z labtest2B labtest2_3B.c