HW 3

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CS477-1001 – Professor Monica Nicolescu

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1. (a)

#include <iostream>

using namespace std;

int main()

{

int size = 12;

char word[12] = { 'E', 'A', 'S', 'Y', 'Q', 'U', 'E', 'S', 'T', 'I', 'O', 'N' };

cout << "initial array : ";

for (int i = 0; i < size; i++) {

cout << word[i];

}

bool nochange = false;

int firstIndex = 0;

int lastIndex = size - 1;

while (!nochange) {

nochange = true;

/\* LEFT TO RIGHT \*/

for (int i = firstIndex; i < lastIndex; ++i) {

if (word[i] > word[i + 1]) {

int temp = word[i];

word[i] = word[i + 1];

word[i + 1] = temp;

nochange = false;

}

}

/\* print after ltr \*/

cout << "\narray after ltr: ";

for (int k = 0; k < size; k++) {

cout << word[k];

}

// stop if there was no change.

if (!nochange) {

nochange = true;

lastIndex--; // last should be sorted now, no need to //check

/\* RIGHT TO LEFT \*/

for (int i = lastIndex - 1; i >= firstIndex; --i) {

if (word[i] > word[i + 1]) {

int temp = word[i];

word[i] = word[i + 1];

word[i + 1] = temp;

nochange = false;

}

}

/\* print after rtl \*/

cout << "\narray after rtl: ";

for (int k = 0; k < size; k++) {

cout << word[k];

}

firstIndex++; // first should be sorted now, no need to //check

}

}

cout << endl;

return 0;

}