

CSCD 240

1. Using the concepts of function pointers from class, I have provided a main cscd240Lab14.c that sorts an array of 30 integers and then sorts an array of 20 characters using the qsort method. This method requires a function pointer to a compar (you will call yours compareTo) function. You will need to have two functions one called compareToInts and the other called compareToChars.

Here is the function pointers code from class

```
#include <stdio.h>
#include <stdlib.h>

double sumOfSquares(double (*f)(double), int m, int n);
double nums(double x);
double invNums(double x);

int main()
{
    double result = sumOfSquares(nums, 1, 4);
    printf("The result is %lf\n", result);

    result = sumOfSquares(invNums, 1, 4);
    printf("The result is %lf\n", result);

    return 0;
} // end main

double sumOfSquares(double (*f)(double), int m, int n)
{
    int x;
    double sum = 0.0;
    for(x = m; x <= n; x++)
        sum += f(x) * f(x);

    return sum;
} // end sum

double nums(double x)
{
    return x;
} // end nums

double invNums(double x)
{
    return 1/x;
} // end inv
```

SAMPLE OUTPUT

Ints Before

[17, 65, 19, 85, 68, 92, 34, 34, 36, 41, 98, 37, 29, 30, 41, 32, 36, 17, 19, 44, 79, 48, 6, 34, 72, 44, 23, 88, 54, 59]

Ints After

[6, 17, 17, 19, 19, 23, 29, 30, 32, 34, 34, 34, 36, 36, 37, 41, 41, 44, 44, 48, 54, 59, 65, 68, 72, 79, 85, 88, 92, 98]

Chars Before

[P, U, K, Y, C, A, Z, H, B, H, B, V, F, Z, H, T, P, X, C, U]

Chars After

[A, B, B, C, C, F, H, H, H, K, P, P, T, U, U, V, X, Y, Z, Z]

NOTE: Your formatting must match mine (Don't worry about the wrapping of the ints) I mean
[#, #, #, #] formatting.

TO TURN IN

A zip

- Your C/H files
- A makefile
- An output file named cscd240Lab14out.txt

You will submit a zip file named your last name, first letter of your first name, lab14 (Example
steinerslab14.zip)