Homework 1

100 Points

One Dimensional Arrays

Project: Lucky Numbers and Insertion Sort

The input file numbers.txt contains one line for each student in CIS22B. Each line contains two integers representing the student ID followed by their lucky number, an integer. The lucky numbers are either positive or negative, but not zero:

```
1234 22
2200 -5
7784 17
9288 18
```

Read data from file in two parallel array: one for the IDs and the other one for the lucky numbers. Use an array of maximum size 50. In case the input file contains data for more than 50 students, print a message such as "The file contains more than 50 lines!" and terminate the program.

Change the Insertion Sort function to sort the parallel arrays in descending order (from the largest to the smallest ID).

Write the sorted arrays to another file named sorted.txt, 8 numbers per line in 4 columns (id / lucky number), as shown below:

```
9288 18    7784 17    2200 -5    1234 22
1200 -3    1150 29    1100 -8    1010 99
1000 13
```

Place the even lucky numbers in an array called **`eList`**, the odd lucky numbers in an array called **`oList`**, and the negative lucky numbers in an array called **`nList`**.

Write the three arrays to a file named lucky.txt, as shown below

```
EVEN  ODD   NEGATIVE
  18   17         -5
  22   -5         -3
  -8   -3         -8
       29
       99
       13
```

Run the program once and save the output at the end of the source file as a comment. Compress the source file, input and output files, and upload the compressed file: 22B_LastName_FirstName_H1.zip

Grading

Read data from file in two parallel array	– 15Points
Insertion sort	– 15
Write the sorted arrays to a file	– 20
Place the even, odd, negative numbers in other arrays	– 20
Write the three arrays to a file	– 20
main()	– 10