

Northeastern Illinois University
CS 200: Programming I
Professor Yehuda Gutstein
Homework

Please zip all HW files, including source files (.java) and results (.txt) for this week in ONE folder and submit on D2L.

HW is due prior to the start of the next class.

At the beginning of each .java file, please include (in comments):

```
//CS200
//(insert here: Semester, Year)
//Student Name
//Instructor: Y. Gutstein
//HW #x: (Name of HW)
//Due: (insert due date here)
//File name: (Insert FileName).java
```

HW #1: Arrays

Create a new .java file named Swapping.java.

Write a program that asks the user how many numbers they would like to enter.

Then prompt the user to enter the numbers.

Write a method that has the following header:

```
public static int[] swapEnds(int[] nums)
```

Use your method (i.e. invoke it) in the main method to swap the first and last elements in the array. Return the modified array.

Print out the new array.

Your output should match the sample output below.

```
Total number to input? 4
Enter the numbers: 1 2 3 4
After the shift: 4 2 3 1
```

```
Total number to input? 5
Enter the numbers: 8 6 7 9 5
After the shift: 5 6 7 9 8
```

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HW #2: Arrays

Create a new .java file named Shifted.java.

Write a program that asks the user how many numbers they would like to enter.

Then prompt the user to enter the numbers.

Write a method that has the following header:

```
public static int[] shiftLeft(int[] nums)
```

Use your method (i.e. invoke it) in the main method to shift all the elements in the array one position to the left.

For example, {6, 2, 5, 3} when shifted to the left becomes {2, 5, 3, 6} Return the modified array.

Print out the new array.

Your output should match the sample output below.

```
Total number to input? 4
Enter the numbers: 1 2 3 4
After the shift: 2 3 4 1
```

```
Total number to input? 5
Enter the numbers: 8 6 7 9 5
After the shift: 6 7 9 5 8
```

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HW #3: Arrays

Create a new .java file named FizzBuzz.java.

This is slightly more difficult version of the famous FizzBuzz problem which is sometimes given as a first problem for job interviews.

Consider the series of numbers beginning at start and running up to but not including end. For example start = 1 and end = 5 gives the series 1, 2, 3, 4.

Write a method that has the following header: `public static String[] fizzBuzz(int start, int end)` .

Return a new `String[]` array containing the string form of these numbers, except in the case of multiples of 3 use the word "Fizz" instead of the number, and for multiples of 5 use the word "Buzz" instead of the number, and for multiples of both 3 and 5 use "FizzBuzz".

To convert an integer to a String, use `String.valueOf()`. For example, `String.valueOf(5)` produces the value "5".

Hint: Your String array size will be the value of end - start

Use your method (i.e. invoke it) in the main method on the following test cases:

`fizzBuzz(1, 6)` \Rightarrow {"1", "2", "Fizz", "4", "Buzz"}

`fizzBuzz(10, 16)` \Rightarrow {"Buzz", "11", "Fizz", "13", "14", "FizzBuzz"}