**LECTURE #10: cs0401 (Tim Hoffman)**

**Tim Hoffman**

**ArrayList and the Collections Library**

* [ArrayListDemo1.java](http://www.cs.pitt.edu/~hoffmant/401/lecture-10/ArrayListDemo1.java)
* [input.txt](http://www.cs.pitt.edu/~hoffmant/401/lecture-10/input.txt)

Read the ArrayListDemo1 code and notice that there are three distinct way to access the elements that you have put into the ArrayList. My personal favorite is the new for loop that requires the least amount of code:

**for ( String s : a1 ) // a1 is the name of our ArrayList**

**System.out.println( s );**

Notice also that there are two ways to sort the elements in the ArrayList. My personal favorite is again the simplest one

**Collections.sort( a1 ); // a1 is the name of our ArrayList**

Read the demo code again to see the second way to sort. Notice that reverting back to the Arrays.sort() ncurs a severe penalty in efficiency due to the need to extract, convert and reinitialize the array that lives inside our Arraylist. In fact it can be shown that it requires 3 times the amount of work.

**Here is the output of our demo program**

C:\Users\tlh\Desktop>java ArrayListDemo1 input.txt

a1 contains 7 strings read in from file: input.txt

Printing the elements using old fashioned for loop and .get(i)

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Printing the elements using new for loop

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Printing the elements using iterator

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Printing the elements AFTER COLLECTIONS SORT using new for loop

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Printing the elements AFTER ARRAYS SORT using new for loop

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