First name (color-in initial)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	section (4, 5 or 6)	first name initial	last name initial
Last name (color-in initial)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z			

H04: Due Wednesday, 01.14 in Lecture

plain old Java arrays vs. ArrayList, initialization of instance variables, foreach style loop (HFJ 4,5,6)
Assigned: Wed 01.07   Total Points: 50

MAY ONLY BE TURNED IN IN THE LECTURE/LAB LISTED ABOVE AS THE DUE DATE,
or offered in person, for in person grading, during instructor or TAs office hours.
See the course syllabus at https://foo.cs.ucsb.edu/56wiki/index.php/W15:Syllabus for more details.

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(1) (10 pts) Fill in the information below. Also, fill in the A-Z header by

- **coloring in** the first letter of your first and last name (as it appears in Gauchospace),
- writing **either 4, 5, or 6** to indicate your **discussion section (lab)** meeting time
- writing your **first and last initial** in large capital letters.

All of this helps us to manage the avalanche of paper that results from the daily homework.

name:	
umail address:	@umail.ucsb.edu

If you collaborated with AT MOST one other person on this homework, write his/her name below. She/he should also have your name on his/her paper.

- Read Chapter 6 in HFJ, p. **125** -164. Using the Java Library
- Some of these questions also come from HFJ chapters 4 and 5

(2) Review the difference betwen plain old java arrays (as in Chapter 4) and the ArrayList type (as in Chapter 6). Assume that a class called Student exists.

(a) (10 pts) write a line of java that makes a plain old Java array (Chapter 4 style) of Student references of size 5. (Don't allocate the Student objects, just the array of references, initially null).

(b) (10 pts) Now, write a line of java that makes an ArrayList of Student references (Chapter 6 style). Capacity is unimportant---choose 5, or take the default, whatever you like. (Don't allocate the Student objects, just the ArrayList, initially empty).

(3) (10 pts) Based on your reading in HFJ Chapter 4:

Consider the following Java code.

- Will this code produce an error message, when compiled with `javac *.java` and if so what? (I don't need a detailed character by character account of the error messsage—just a general description of what the error is will be sufficient.)

- If it does compile: will this code produce an error message, when run with `java StudentTestDrive` and if so what? (same as the previous question—just a general description of the error is sufficient.)
- If this code does NOT produce an error message when compiled or run, what will be the resulting output when this code is run?

Contents of `Student.java`

```
class Student {
    private int perm;
    private String name;

    public int getPerm() {
        return perm;
    }
    public String getName() {
        return name;
    }
}
```

Contents of `StudentTestDrive.java`

```
public class StudentTestDrive {
    public static void main (String[] args) {
        Student s = new Student() ;
        System.out.println("Student's perm is " + s.getPerm() ) ;
        System.out.println("Student's name is " + s.getName() ) ;
    }
}
```

(4) (10 pts) Based on your reading in HFJ Chapter 5: Java 1.5 introduced a new (to Java) kind of for loop sometimes called a "foreach" loop (even though foreach is not a keyword in Java)—your textbook calls it the "enhanced for loop". HFJ provides an overview of this kind of loop on p. 105 and 116. Write a few lines of code that declare an array of five integers, initializing them to the first five prime numbers (you can use a literal array initializer here—you don't need to write code to compute the prime numbers), and then write a foreach type loop that iterates through that array printing out the values, one on each line.