

1. PROGRAM 5 INSTRUCTIONS, CS102, PROF. LOFTIN

Write the code for two classes `Name` and `Person`, both of which implement the `Comparable` interface.

2. NAME CLASS

Each object of class `Name` has as data two strings, representing the first name and last name of a person. Implement the following public methods:

```
Name (String first, String last)
String toString()
```

as well as the `compareTo` method required to implement the `Comparable` interface. As usual, names are alphabetized by last name first, and then first name (similar code is implemented in the book's `Contact` class).

3. PERSON CLASS

Each object of class `Person` has as data a `Name`, and also an `int` variable to store the person's year of birth. Implement the following public methods:

```
Person (String first, String last, int y)
Person (Name n, int y)
String toString ()
```

as well as the `compareTo` method. Two objects in `Person` class should be ordered by their names (call the `Name` version of `compareTo`). Note that the constructor of `Person` is overloaded.

4. SUBMISSION

You should submit your `Name.java` and `Person.java` as email attachments to `loftin@rutgers.edu`.

5. DUE DATE: OCTOBER 19, 2009

6. THE DRIVER CLASS MAIN.JAVA

This class depends on the class `SelectionPoly`, as discussed in class (see below).

```
public class Main{
    public static void main (String[] args){
        Name[] names = new Name[5];
        Person[] persons = new Person[6];
        names[0] = new Name("Joe", "Smith");
        names[1] = new Name("Harper", "Lee");
```

```

names[2] = new Name("Arthur","Chang");
names[3] = new Name("Victor","Torres");
names[4] = new Name("Dara","Torres");

SelectionPoly.selectionSort(names);

persons[0] = new Person(names[0], 1993);
persons[1] = new Person("David","Chang", 1952);
persons[2] = new Person(names[4], 1980);
persons[3] = new Person("Carmen","Electra",1971);
persons[4] = new Person(names[2],1962);
persons[5] = new Person(names[3], 1940);

SelectionPoly.selectionSort(persons);

for (Name n : names)
    System.out.println(n);
System.out.println();
for (Person p : persons)
    System.out.println(p);
}
}

```

7. THE CLASS SelectionPoly.java

```

public class SelectionPoly{
    public static void selectionSort(Comparable[] list){
        // list can refer to an array of any class which
        // implements Comparable

        for (int index=0; index < list.length-1; index++){

            int min = index;
            for (int scan = index+1; scan < list.length; scan++)
                if (list[scan].compareTo(list[min]) < 0)
                    min = scan;
            Comparable temp = list[min];
            list[min] = list[index];
            list[index] = temp;
        }
    }
}

```

8. OUTPUT OF THE DRIVER CLASS

Arthur Chang
Harper Lee
Joe Smith
Dara Torres
Victor Torres

Arthur Chang 1993
David Chang 1952
Carmen Electra 1971
Joe Smith 1962
Dara Torres 1940
Victor Torres 1980