**Homework Assignment #8 due Thursday April 05, 2018**

**Comparable and Comparator**

**Problem 1:**

Write a program called PriorityQueueRunner that uses the Person class below. Notice that this class implements Comparable<Person>.

public class Person implements Comparable<Person>

{

private String firstName;

private String lastName;

public Person(String firstName, String lastName)

{

this.firstName = firstName;

this.lastName = lastName;

}

public String getFirstName() { return firstName; }

public String getLastName() { return lastName; }

public String toString()

{

return "Name: " + firstName + " " + lastName;

}

public int compareTo(Person p)

{

String pname1 = firstName + lastName;

String pname2 = p.firstName + p.lastName;

return pname1.compareTo(pname2);

}

}

Use this class to create Person objects for each of the names below, and add them to a PriorityQueue<Person> object. Empty the queue by polling it and printing the Person objects that are returned. Are Person objects returned in sequence?

Sam Smith

Charlie Black

Betty Brown

Jessica Stewart

John Friday

Frank Foley

**Problem 2:**

Repeat the previous problem but develop an alternate solution without changing the Person class. (*Hint:* Research the TreeSet class for alternate constructors.) What code needs to be added or modified?

Use the following Person class and PersonRunner class for this problem:

public class Person

{

private String firstName;

private String lastName;

public Person(String firstName, String lastName)

{

this.firstName = firstName;

this.lastName = lastName;

}

public String getFirstName() { return firstName; }

public String getLastName() { return lastName; }

public String toString()

{

return "Name: " + firstName + " " + lastName;

}

}

-----------------------------------------------------------------------------

import java.util.TreeSet;

public class PersonRunner

{

public static void main(String[] args)

{

TreeSet<Person> mySet = new TreeSet<Person>();

mySet.add(new Person("Sally", "Brown"));

mySet.add(new Person("Fred", "Kelly"));

mySet.add(new Person("Bill", "Akins"));

mySet.add(new Person("Julie","Wilkins"));

mySet.add(new Person("James", "Langdon"));

for (Person p : mySet)

{

System.out.println(p);

}

}

}

Execute the PersonRunner class. What causes the run-time error? Fix the problem by changing the Person class and then run the PersonRunner class again. Do the Person objects appear in the correct sequence after you have modified Person?