**CS 209**

**Week Two, Lab 3 (of all three parts)**

You should have the class City defined in Review Lab 1, complied. Solutions is provided, but you still need to compile it and use it with other programs.

Copy the incomplete code of ArrayAppS19 class and the data file usa\_city.txt. The only incomplete part is for you to enter your uniquely assigned state name to replace /\*TODO1 ….\*/ and your name to replace /\*TODO2 \*/

**Part 1**

Compile, run. If it does not even compile, you need to go back to your City class to make changes:

Do you have all needed getters (and named correctly)?

Do you have your class implementing Comparable interface?

Do you have your toString method returning meaningful information?

Your console output of a sample city is for testing, it has nothing to do with the assignment state for you.

Check your output file. If your output is meaningless, modify the code of toString method of class City. **Submit the output file as an attachment via Blackboard.**

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**Part 2**

Go to the application file, replace the original line

Collections.sort(shortlist);

by

Collections.sort(shortlist, Collections.reverseOrder());

Compile again, run again. Find the output. Check to see if it is indeed sorted correctly. **Submit the output file as an attachment via Blackboard.**

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**Part 3**

You should have completed Part 1 and 2.

Create a class **ByPopulation** that implements the interface Comparator, for type City. That interface has only one method

int compare(**City** ob1, **City** ob2) {

//you must enter your code here

}

**Modify the application ArrayAppS19**

Go to the application file, replace the original line

Collections.sort(shortlist);

by

Collections.sort(shortlist, new ByPopulation());

Compile again, run again. Find the output. Check to see if it is indeed sorted correctly. **Submit a) the full code of class ByPopulation and b) the output file.**