Pg. 306, Java Programming *A comprehensive Introduction*

**Section 1: Define / Answer**

comparator-A comparison function, which imposes a *total ordering* on some collection of objects. Comparators can be passed to a sort method (such as [Collections.sort](https://docs.oracle.com/javase/8/docs/api/java/util/Collections.html" \l "sort-java.util.List-java.util.Comparator-) or [Arrays.sort](https://docs.oracle.com/javase/8/docs/api/java/util/Arrays.html" \l "sort-T:A-java.util.Comparator-)) to allow precise control over the sort order. Comparators can also be used to control the order of certain data structures (such as[sorted sets](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) or [sorted maps](https://docs.oracle.com/javase/8/docs/api/java/util/SortedMap.html)), or to provide an ordering for collections of objects that don't have a[natural ordering](https://docs.oracle.com/javase/8/docs/api/java/lang/Comparable.html).

Task 1:

**USE OBJECT ORIENTATED PROGRAM DESIGN TO SOLVE PROBLEM**

Update Assignment #11-13, Task 1.

You can re-create your program in one package for this expansion.

Create 1 “Programmer Created” Class to read student data from the text file, and create student objects. (Objects will need to be stored in a data structure)

Create a class Student. Containing First Name, Last Name, private DOB, Social Security Number.

Containing protected class variables Street Address, and Zip Code

Containing public Student ID number, Major.

The program should execute in way that student objects are created.

Then create a menu where the user can print sorted list of the student data available.

Use Comparator Interface to sort over different data fields.

Create private modifiers for sensitive materials.

Return redacted versions of social security, DOB.

For example – Social security = XXX-XX-8010

DOB – XX/XX/1980

Attach Snipping Photos Below

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**\* Main Menu: \***

**\* Enter # to run program or Quit \***

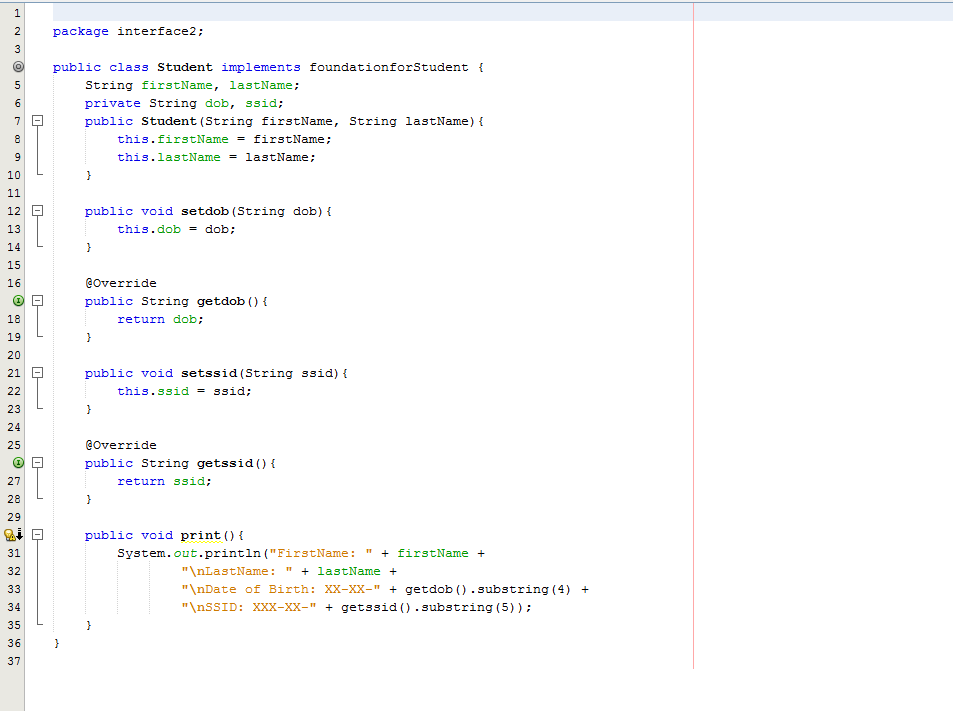
**\* 1) Print Sorted List of Student Names \***

**\* 2) Print Sorted List of Student Addresses \***

**\* 3) Print Soretd lsit of Student ID numbers \***

**\* 4) Quit \***

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