FIRST QUIZ

You have 15 minutes from the start of class to complete this quiz. Read the questions with care; work with deliberate speed. Don’t give us more than we ask for. The usual instructions apply. Good luck!

Problem 1 (12 points)

Suppose you’re writing software to manage a music collection. Write a complete definition of the class Song; it should include each of the following components:

• Fields for the song’s title, the name of the artist, the year the song was recorded, and the length of the song (in seconds). (The first two are strings; the last two are numbers.)

• A constructor method that fills all four fields with the method’s four arguments

• Accessor (getter) functions for each of the fields

• A toString method that returns the song information in this form (assuming that “You’ve Got to be Carefully Taught” is a song from 1949 sung by William Tabbert that lasts 79 seconds):

  (1949) William Tabbert: You’ve Got to be Carefully Taught---79 seconds.

We have provided a copy of the restaurants program as a reference.
Problem 2 (11 points)

Your music collection saves groups of songs using a class called PlayList. Write a method for the PlayList class that takes an argument representing a year and prints out all the songs in that PlayList that were recorded in or after the given year. Assume the PlayList class has a field called theSongs that contains an ArrayList of songs.

```java
// Take a year as an argument and print out each song that was recorded in or after
// that year.
public void printLaterSongs (int targetYear) {
    for (Song s : theSongs) { // 2 points
        if (s.getYear() >= targetYear) { // 6 points: 1 for attempt to use loop variable to access song's year
            // 1 for attempt to use a getter method for the year
            // 1 for completely correct access to song's year
            // 1 for correct <= or >=
            // 1 for including argument in comparison with song's year
            // 1 for everything else correct
            System.out.println(s); // 2 points: 1 for Sys.out.println, 1 for loop variable
        }            // 1 point for executing println only when comparison is correct
    }
}
```

Problem 3 (2 points)

In one brief English sentence, say what it means to have a static field in a Java class.

Then, give a plausible example of how a static field might be useful in the Song or PlayList class described above.