

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.

```
// Take a year as an argument and print out each song that was recorded in or after
// that year.
public void printLaterSongs (int targetYear) {
```

```
}
```

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.