

SECOND 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. A copy of the restaurants program is included for reference. Good luck!

Problem 1 (15 points)

Fill in the `averagePriceOfGenre()` method in the following code.

```
class Book {
    private String title; // The title of the book
    private String genre; // The genre of the book (fiction, travel, computers, ...)
    private double price; // The price of the book

    public String getTitle() {return this.title;}
    public String getGenre() {return this.genre;}
    public double getPrice() {return this.price;}
}

class BookList {
    private ArrayList<Book> theBooks;

    // Return the average price of books that match the specified genre.
    // If there are no books, return zero.
    // Development hint: First, write code to get the average price of ALL books.
    public double averagePriceOfGenre(String genreToMatch) {

    }
}
```

Problem 2 (5 points)

Sometimes we find the classic data structures in real-life situations. Try to recognize which structure is described in the situations below.

Huey, Dewey, and Louie work for TV producers, reading scripts.

(a) (1 point) When Huey's boss gives him a new script to read, he puts the script on top of Huey's pile of unread scripts. When Huey is ready to read the next script, he takes it from the top of his pile. Is this arrangement more like a stack, queue, tree, or array?

(b) (1 point) When Dewey's boss gives him a new script to read, he puts the script at the bottom of Dewey's pile of unread scripts. When Dewey is ready to read the next script, he takes it from the top of his pile. Is this arrangement more like a stack, queue, tree, or array?

(c) (1 point) Louie keeps his unread scripts in a filing drawer with dividers for each letter of the alphabet. When Louie's boss gives him a new script to read, he files the script behind the divider that corresponds to the first letter of the author's name. He reads the scripts in whatever order he chooses. Is this arrangement more like a stack, queue, tree, or array?

(d) (2 points) Whose arrangement is most efficient, and why? Each of the three could be a correct answer, so be sure to give one clear sentence describing the basis on which you make your choice: What "resource" are you using most efficiently in the arrangement you choose—is it search time, comparisons, data movements, or ... ?