

# Computer Science I: Lab 1

due Tuesday, February 9, 11:59 PM

In this lab, we will practice input and output commands, use of variables, and basic arithmetic.

We will write a small program for The Bronx Bookstore to take an order from a customer, calculate how much to charge a customer based on his/her order, and display a receipt. The store sells only three books, designated by their authors: Cervantes (\$41.25 each), Homer (\$15.85 each), and Skakespeare (\$30.50 each).

Your program is to work as follows:

1. Display a welcome message (e.g., "Welcome to the Bronx Bookstore!")
2. Prompt the user for his/her first name
3. Prompt the user to input the number of books by Cervantes s/he wants
4. Prompt the user to input the number of books by Homer s/he wants
5. Prompt the user to input the number of books by Shakespeare s/he wants
6. Compute the total amount due, including an 10% sales tax
7. Display amount due
8. Ask the user how much money s/he will pay
9. Display a receipt listing the name of the user, the quantity of each item ordered, the total cost of the order, and the amount the user will have left after paying

Execution of the compiled program should appear roughly as follows (with red text being user input):

```
> ./BronxBooks.out
Welcome to the Bronx Bookstore
Enter your first name: Irene
Enter number of Cervantes books: 2
Enter number of Homer books: 0
Enter number of Shakespeare book: 3
Total cost of order is: $191.40
How much money will you pay? $200.25
```

```
-----
Customer: Irene
-----
Item          Number  Price
Cervantes     2        $82.50
Homer         0         $0.00
Shakespeare   3        $91.50
-----
Tax                       $17.40
-----
```

```
Total                $191.40
User pay             $200.25
-----
Change                $8.85
>
```

**Notes:**

1. To display all decimal numbers with two decimal places (e.g., \$4.52 dollars), include the following code in your `main` function before your first decimal output:

```
cout.setf(ios::fixed);
cout.setf(ios::showpoint);
cout.precision(2);
```

2. Take an incremental approach to your work. Code a little, test a little. Save already-working code as backup in separate C++ files before building on it to make the larger final code.

3. While de-bugging, it may be helpful for you to include extra `cout` statements telling you the value of different variables across the runtime of the program.

**Grading guidelines:**

Check on our course website to see the guidelines for grading for labs 1 and beyond. Be careful to format your programs properly (including indentations), use meaningful variable names, and use comments.

**Submitting your files:**

Submit your C++ code as `BronxBookstore.cpp`.

To submit a file, type `submit1600 fileName` (where the file is named `fileName`)

To verify your submission has been received, type `verify1600 fileName`, and you will see the contents of the file you submitted.