**ECCS 1611 – Programming 1 – Fall Semester 2022**
**Major Programming Assignment #1 (MP1) – Gotta sell'em donuts…**
**Due date: Thursday 29 September 2022 by end of lab**

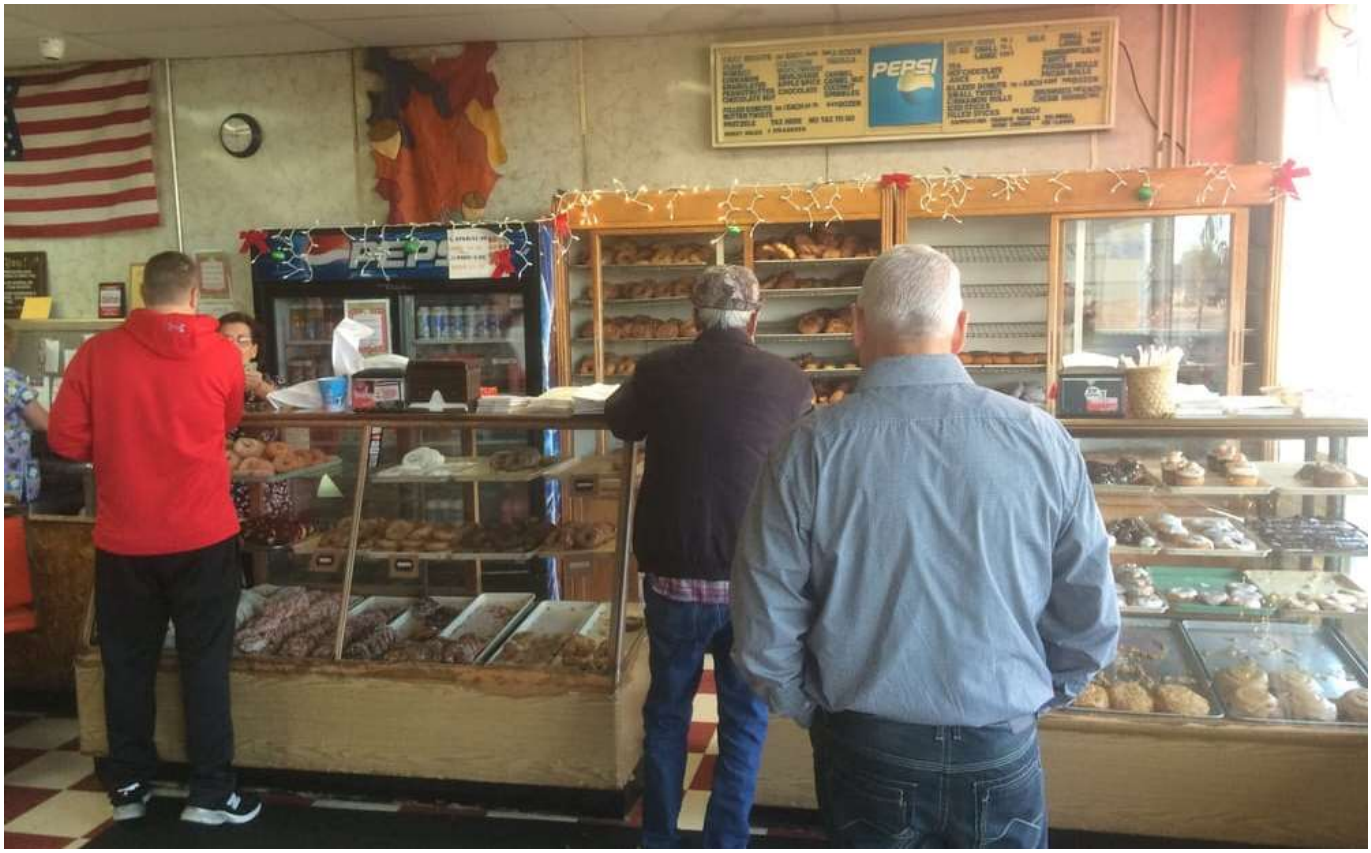


Photo from https://www.yelp.com/biz_photos/jims-donut-shop-vandalia

Assume that you are an employee at Jim's Donut Shop in Vandalia, Ohio. Your supervisor, upon hearing that you're taking a programming class, asks you to write a program that calculates the cost of a customer's purchase. Fortunately for you, while there are over 40 varieties of donuts available, there are only two pricing categories for donuts: regular and fancy. Those varieties considered as "regular" donuts are priced at 75 cents individually, or you can get a dozen for $7.99. "Fancy" donuts, on the other hand, are priced at 85 cents each, or at $8.49/dozen. Also available at Jim's are their humungous apple fritters, priced at $1.50 each (sorry, no volume discount).

Your program is to execute once per customer, and is to ask for the number of regular donuts, fancy donuts, and apple fritters purchased as shown in the example runs on the next page. For purposes of calculating cost, you will need to determine the number of donuts purchased first in terms of dozens; any donuts left over are then priced individually. The cost must include the sales tax, which for food purchases within Vandalia is 7.5%. After displaying the cost, you must obtain the amount of payment received; you may assume that the payment is either equal to or greater than the cost. From this, you are to calculate the change to be provided to the customer and then display that information as indicated by the provided example runs.

This assignment will be evaluated by demonstrating the execution of your program during your lab session – and ONLY during your lab session – on Thursday, 29 September. This project is to be named MP1 and must be stored in your GitHub repository. A scoresheet for MP1 will be distributed in lab; this scoresheet is used to record your validation testing and is to be submitted along with a listing of your source code no later than the end of your lab session.

**Grading:**

- In-lab validation testing: 50 points
- Documentation and Style: 50 points - see Source Code Analysis Rubric for details

**SAMPLE RUNS** (user input shown in ***red bold italics***) – your output is to look ***exactly*** the same as the following

**Run #1:**

```
Number of regular donuts ordered: 1
Number of fancy donuts ordered: 1
Number of apple fritters ordered: 1
Customer owes $3.33
Customer pays $5.00
Changed owed is $1.67 - 1 dollar, 2 quarters, 1 dime, 1 nickel, 2 pennies.
```

**Run #2:**

```
Number of regular donuts ordered: 12
Number of fancy donuts ordered: 0
Number of apple fritters ordered: 0
Customer owes $8.59
Customer pays $10.00
Changed owed is $1.41 - 1 dollar, 1 quarter, 1 dime, 1 nickel, 1 penny.
```

**Run #3:**

```
Number of regular donuts ordered: 28
Number of fancy donuts ordered: 30
Number of apple fritters ordered: 2
Customer owes $47.36
Customer pays $50.00
Changed owed is $2.64 - 2 dollars, 2 quarters, 1 dime, 4 pennies.
```

**Run #4:**

```
Number of regular donuts ordered: 0
Number of fancy donuts ordered: 0
Number of apple fritters ordered: 12
Customer owes $19.35
Customer pays $19.35
Exact payment received - no changed owed.
```

Yes, them apple fritters are B-I-G!!!