COMP 116   Data Structures

Lab #5

In this lab, we will practice using `struct` to store and access information for a program.

1. Define a `struct menuItemType` with at least two components: `menuItem` of type `string` and `menuPrice` of type `int` (the price is stored in number of cents). I wrote *at least* two components because you may find it useful to add more components to the `struct` in order to solve some of the problems below.

2. Write a function `getMenu` that takes a string (a file name) as input and returns a pointer to the beginning of an array of menuItemType. The file will have the following format:

   ```
   2
   Bacon and Egg
   $2.45
   French Toast
   $1.99
   ```

   where the first number is always the number of items in the menu, and after that, the lines alternate between the name of an item and its price. The strings should always be padded with spaces so that the string recorded in the `struct` is exactly 20 characters long. Note that the price will always be in the format `$[int].[int]`, and that the price in your struct should be stored in number of cents. Read the price carefully! Also, don't forget to initialize any other fields you added to the `struct` in the first step.
   The files `menu1.txt` and `menu2.txt` on the course schedule contain examples of menu files.

   _____   Show me your code when you are done.

3. Write a function `showMenu` that shows each menu item with a number, asks the user to enter a number for their choice and returns that number (I'm not telling you the parameters this function takes, feel free to give the function whatever you think it needs). The menu should look something like:

   ```
   Welcome to Johnny's Restaurant. Here's out menu:
   (1) Bacon and Eggs      $2.45
   (2) French Toast        $1.99
   Enter the number corresponding to your selection, (0) to finish your order:
   ```

4. Write a function `printCheck` that calculates and prints the check on screen. The check should include a 5% tax (always rounded *down*). The check should look something like this:

```
Thank you for coming to Johnny's Restaurant.
3 Bacon and Eggs        $7.35
1 French Toast          $1.99
  Tax                   $0.46
  Amount Due            $9.80
```

_____   Show me your code when you are done.

5. Write a function `main` that asks the user for a menu file, reads it, shows the menu repeatedly until the user has finished ordering and then prints the check on screen. The user should be allowed to order the same dish many times, that should only add to the quantity of that item that was ordered. Feel free to store how many of each item was ordered in any way you want.

_____   Show me your code when you are done.

When you are done, write your name on the sheet and hand it to the lab instructor.

Name: _____