CSci 1113: Introduction to C/C++
Programming for Scientists and Engineers
Homework 10
Fall 2018

Due Date: Wednesday, December 12, 2018 before 11:00pm.

Instructions: This is an individual homework assignment. There are two problems worth 20 points each. Solve the problem below by yourself (unlike the labs, where you work collaboratively), and submit the solution as a C++ source code file. Here are a few more important details:

1. Unlike the computer lab exercises, this is not a collaborative assignment.

2. Because all homework assignments are submitted and tested electronically, the following are important:
　　　• You follow any naming conventions mentioned in the homework instructions.
　　　• You submit the correct file(s) through Moodle by the due deadline.
　　　• You follow the example input and output formats exactly given in each problem description.
　　　• **Regardless of how or where you develop your solutions, your programs compile and execute on cselabs computers running the Linux operating system.**

3. You should test your program on other test cases (that you make up) as well. Making up good test cases is a valuable programming skill, and is part of ensuring your code solution is correct.

Problem A: Burger Queen (20 points)
You are starting up your own fast-food restraunt and want to offer the following items:
(1) burgers with either: fish, beef, chicken or cheese (and beef). Each of these cost $3.50. (Pricey!)
(2) drinks filled with: coke, sprte or juice. Large cups cost $0.99, Medium costs $0.75 and Small $0.65

Repeatedly ask the user what they want to order until they choose the check-out. After they select check-out, show everything **in the order that they ordered it** and the total.

You can assume only valid options will be entered. You may also assume less than 100 items will be ordered.

Hint: use inheritance

Example 1 (user input underlined):
```
Would you like to order a (d)rink, (b)urger or (c)heck out?
d
Do you want (c)oke, (s)prite or (j)uice?
c
What size cup?  (l)arge, (m)edium or (s)mall
s
Would you like to order a (d)rink, (b)urger or (c)heck out?
b
Do you want to have (f)ish, (b)eef, (c)hicken or ch(e)ese?
e
```

```
Would you like to order a (d)rink, (b)urger or (c)heck out?
d
Do you want (c)oke, (s)prite or (j)uice?
j
What size cup?  (l)arge, (m)edium or (s)mall
l
Would you like to order a (d)rink, (b)urger or (c)heck out?
c
Your order is:
Price: 0.65, Item: small coke
Price: 3.5, Item: cheese burger
Price: 0.99, Item: large juice
Total: 5.14
```

When you are done, name the source code file <username>_10A.cpp. Here you replace <username> with your U of M email address; for example, if your email address is smithx1234@umn.edu, your file should be named smithx1234_10A.cpp. Then submit your program using the HW 10 Problem A submission link in Moodle.

Problem B: Six guys (20 points)
Now add salads and fries to the menu:
(3) all salads cost $1.30, they get to choose their own dressing (anything), then ask them if they want cheese on top for an extra $0.30.
(4) fries cost $1.49 for large, $0.99 for medium and $0.79 for small

Additionally, when they checkout add numbers to each item (starting at 1) and ask them if the order is correct. If they say the order is incorrect, ask them which number they want removed and then re-show them the order (repeat as many times as necessary). Do not re-number the order after items have been removed (this should make it easier for you).

Again, you can assume only valid options will be entered.

Example 1 (user input underlined):
```
Would you like to order a (d)rink, (b)urger, (s)alad, (f)ries or
(c)heck out?
d
Do you want (c)oke, (s)prite or (j)uice?
j
What size cup?  (l)arge, (m)edium or (s)mall
l
Would you like to order a (d)rink, (b)urger, (s)alad, (f)ries or
(c)heck out?
s
Do you want a (c)hicken, (f)ruit or (t)urkey salad?
c
What type of dressing?
ranch
```

Do you want to add cheese for $0.30?

y

Would you like to order a (d)rink, (b)urger, (s)alad, (f)ries or (c)heck out?

s

Do you want a (c)hicken, (f)ruit or (t)urkey salad?

f

What type of dressing?

little tiny cucumbers shaped like ponies

Do you want to add cheese for $0.30?

n

Would you like to order a (d)rink, (b)urger, (s)alad, (f)ries or (c)heck out?

f

What size? (l)arge, (m)edium or (s)mall

l

Would you like to order a (d)rink, (b)urger, (s)alad, (f)ries or (c)heck out?

f

What size? (l)arge, (m)edium or (s)mall

s

Would you like to order a (d)rink, (b)urger, (s)alad, (f)ries or (c)heck out?

b

Do you want to have (f)ish, (b)eef, (c)hicken or ch(e)ese?

f

Would you like to order a (d)rink, (b)urger, (s)alad, (f)ries or (c)heck out?

c

Your order is:

1: Price: 0.99, Item: large juice

2: Price: 1.6, Item: chicken salad with ranch and cheese

3: Price: 1.3, Item: fruit salad with little tiny cucumbers shaped like ponies

4: Price: 1.49, Item: large fries

5: Price: 0.79, Item: small fries

6: Price: 3.5, Item: fish burger

Total: 9.67

Is this correct? (y\n)

n

What item do you wish to remove?

2

Your order is:

1: Price: 0.99, Item: large juice

3: Price: 1.3, Item: fruit salad with little tiny cucumbers shaped like ponies

4: Price: 1.49, Item: large fries

```
5: Price: 0.79, Item: small fries
6: Price: 3.5, Item: fish burger
Total: 8.07
Is this correct? (y\n)
n
What item do you wish to remove?
5
Your order is:
1: Price: 0.99, Item: large juice
3: Price: 1.3, Item: fruit salad with little tiny cucumbers shaped
like ponies
4: Price: 1.49, Item: large fries
6: Price: 3.5, Item: fish burger
Total: 7.28
Is this correct? (y\n)
y
```
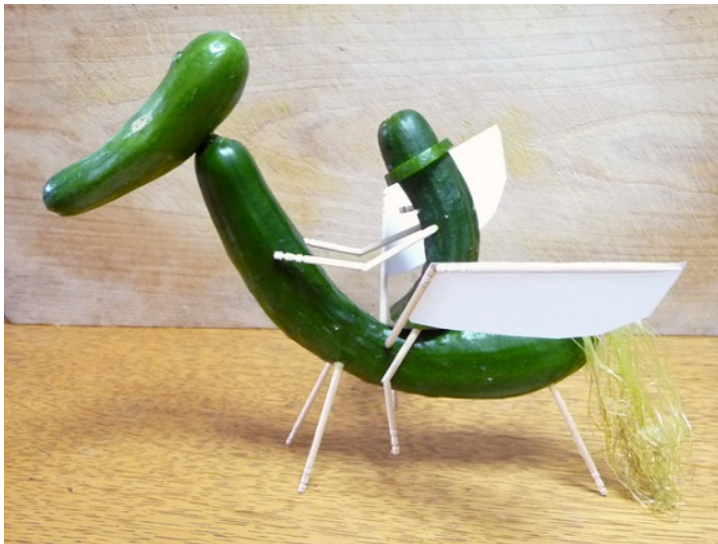

When you are done, name the source code file <username>_10B.cpp. Here you replace <username> with your U of M email address; for example, if your email address is smithx1234@umn.edu, your file should be named smithx1234_10B.cpp. Then submit your program using the HW 10 Problem B submission link in Moodle.