



CSCI-1110 (Winter 2023)

ASSIGNMENT 0

The purpose of this assignment is to allow you to self-assess your readiness for this course. If you are struggling to complete this assignment, and have not taken CSCI 1100 or CSCI 1105, please consider taking CSCI 1105 before this course. This assignment may be done in any programming language.

For this problem you will be provided with sample inputs and corresponding outputs. All input is done via the console (unless specified otherwise) and all output is to be done to the console as well. If you are submitting your assignment via Codio, you can test it by clicking the “Check It” button. If you are using a language not supported by Codio, a zip file containing the test inputs and outputs is provided for testing. Please note that unlike the rest of the assignments in this course, this assignment is strictly graded based on functionality. This ensures that you receive the appropriate feedback to decide if CSCI 1110 is the right course for you. Assignment submission and grading is described in the last section of this assignment.

There are three problems and each one builds on the next. Completing Problem 1 yields a grade of 60% (a pass); completing Problem 2 yields a grade of 80%; and completing Problem 3 yields a grade of 100%.

DUE DATE:

This Assignment is **due on Monday, January 23rd at 14:00 (2PM)** Halifax time.

- It may be completed in any programming language.
- If using C, Python, or Java, you will submit in Codio.
- Any other languages must be submit through Brightspace.

Willy's Wing World

Willy's Wing World, a Chicken Wing Restaurant, is famed for its large selection of wing flavours. Especially the great range and number of spicy wings.

In this assignment, you will be developing components of the electronic menu, as well as processing orders and calculating the daily results.

Each Chicken Wing menu item has a

- Flavour name;
- 3 associated prices, for each of :
 - 6 wings,
 - 12 wings, and
 - 18 wings; as well as
- its Scoville Value (SHU).



Scovilles are a unit used to measure how spicy something is, ranging from 0 (not spicy) to 16,000,000 (Pure capsaicin).

You can learn more about the Scoville Scale here:

<https://www.masterclass.com/articles/a-guide-to-the-scoville-scale>

Question 1 (60%): Bring on the Heat

For this question, you will receive a list of menu items, and print out a sentence describing each to the customer.



Initially, you will receive the number of items on the current menu.

For each, you will receive a single line of input formatted:

```
NAME SHU Price(6) Price(12) Price(18)
```

and output a single line of text in the following format:

```
NAME Wings cost $ (P6) /$ (P12) /$ (P18) and have SHU Scovilles (WARNING)
```

Where **WARNING** is set to “**mild**” if its Scoville value is less than or equal to 10,000 SHU; “**hot!**” if its Scoville value is less than 1,000,000 SHU; and “**DANGER!!!**” otherwise.

Example

Input:

```
3
Medium    5000    6 11 16
Crazy     30000   4  7 10
Wild      1200500 5  6  7
```

Output:

```
Medium Wings cost $6.00/$11.00/$16.00 and have 5000 Scovilles (mild)
Crazy Wings cost $4.00/$7.00/$10.00 and have 30000 Scovilles (hot!)
Wild Wings cost $5.00/$6.00/$7.00 and have 1200500 Scovilles (DANGER!!!)
```

Hint 1: You will have to store similar data for multiple menu items, so it is important to find an efficient approach to do so! Arrays may be your friend.

Hint 2: If you are not sure how to format the price to be two decimals, attend your week 2 lab. Your TAs will be there and are happy to help you out!

Question 2 (20%): Wonderful Wings

Each day Willy's Wing World promotes a certain number (**N**) flavours of wings as their daily recommended options.

You will read and store these **N** menu items given in the same format as above.

Then, one of these options will be displayed as the daily recommended Cauliflower Wing option, which costs 50% more (1.5 times as much).

You will be given the name of one of the **N** daily recommended menu items (as above), and display its Cauliflower Variant price in the following format:

NAME Cauliflower Wings cost \$ (new P6) /\$ (new P12) /\$ (new P18)

with the prices correctly adjusted.

Example

Input:

```
3
Plain      0   4   8   12
Garlic    100  5   10  15
Ranch      0   6   11  16
Ranch
```

Output:

Ranch Cauliflower Wings cost \$9.00/\$16.50/\$24.00

Hint: In Question 3, a varied number of menu items will need to be stored, if you solve that problem in this question, it will be less work overall.

Question 3 (20%): Order Up!

Every day is different at Willy's Wing World, and the prices are even subject to change as the day goes on.

You will be developing the ordering system as well as the price adjustment system.

Each day, a variety of Willy's Wings is served. You will be told how many there are, and then they will be given in the earlier format.

Next, the machine will process orders.

Orders will continue to arrive until the

"ORDERS COMPLETE"

command appears.

Each order is formatted as follows:

COUNT SIZE NAME

E.g:

2 12 SmokeyChipotle"

stands for and order of 2 x 12 SmokeyChipotle Wings

You will output the average SHU of all the orders, as well as the total income, in the following format:

"The income was \$ (Income) and the order averaged (AverageSHU) Scovilles per wing served"

Sometimes, a patron tries to order a menu item that is not currently offered. If they do so, print out

"This item is not on the menu."

Then, continue processing the remaining orders normally.

Hint: Remember that larger sizes have more wings, and, therefore, a greater effect on the average SHU.

Willy, the proprietor, enjoys changing around the prices for the evening crowd using a "complex" and "sophisticated" algorithm.

You will be given the name of the wing to be changed, and a percentage value by which it needs to change.



- The percentage will be a whole number, e.g. 50% will be given as 50.
- You will adjust the given wings prices by the correct percentage (i.e. 50% will make them half the price, and 200% will double their price),

Then process another order in the manner given above.

To achieve any points on this question, you MUST implement at least one meaningful method/function.

Hint: The order processing component may be a good candidate for this.

Example

Input:

```

3
Plain      0   6   11  16
HoneyGarlic 100 6   11  16
Ranch      0   6   11  16
2 6 Ranch
1 18 HoneyGarlic
1 12 Plain
ORDERS COMPLETE
Ranch 80
1 18 HoneyGarlic
2 6 Ranch
5 6 HoneyBunny
1 12 Plain
ORDERS COMPLETE

```

Output:

```

2 order - 6 Ranch Wings
1 order - 18 HoneyGarlic Wings
1 order - 12 Plain Wings
The income was $39.00 and the order averaged 42.86 Scovilles per wing served

```

Price for RANCH are now \$4.80/\$8.80/\$12.80

```

1 order - 18 HoneyGarlic Wings
2 order - 6 Ranch Wings
This item is not on the menu.
1 order - 12 Plain Wings
The income was $36.60 and the order averaged 42.86 Scovilles per wing served

```