Lab1 - CIT315

Goals

The primary goal of this first project is to write, test and complete a basic C program that takes inputs, completes some basic calculations and provides some output. It will emphasize the use of basic ANSI C language syntax, experience with types and variables and explore the use of user interaction.

Specifications

In this exercise, the user will input numbers to calculate the answers and to see how many boxes that can fit into a shipping container and calculate the total cost of shipping for the user. The shipping boxes are either:

- **(Type 1)** 1 foot by 1 foot by 1 foot, *1 foot cubed*
- **(Type 2)** 1 foot by 2 feet by 2 feet, *4 feet cubed*

The shipping container is 40 feet long x 8 feet tall x 8 feet wide. A *shipping container* is a large metal box that is filled with boxed products, put on a ship or train or large truck and shipped to a destination. Your job is to program some calculations for a standard shipping container. It costs $20 to ship a Type 1 box and $35 to ship a Type 2 box, respectively.

You will ask the user how many boxes they have to ship in BOTH Type 1 and Type 2. Then, you will need to calculate if the shipping container can hold that much square footage in boxes.

General Algorithm - The order of these can be changed as long as you solve the problem.

1. ~~Ask the user how many Type 1 and Type 2 boxes they want to ship.~~
2. ~~Calculate the number of cubic feet is available in the shipping container and display it for the user.~~
3. ~~Calculate the total cubic footage for the boxes they want to ship.~~
4. ~~If the cubic footage is greater than the available space, then tell the user it is too large.~~
5. ~~After the user enters the Type 1 number of boxes, calculate the space remaining for Type 2 boxes and display to the user.~~
6. ~~Calculate what is the max number of Type 2 boxes that you can store in the container and show that to the user.~~
7. ~~After the Type 2 number of boxes is entered, show how much space in remaining in the~~ container, in cubic feet.
8. Show the total shipping cost of their boxes.

9. Give a $2 per cubic foot discount for any unused space in the container. Show the discount to the user.
10. Show the total shipping cost with the discount applied to give the final user cost.
11. Display a message. "Program has ended..."

Rubric - 25 points total

- 2 points - two points for correct implementation of each of the steps above.
- 2 points - Inline documentation describing the input, processing and output parts of the program.
- 1 points - Your name, email, TA name and lab time in comments at the top.

Submission

Submit to the link on Brightspace by the deadline.