Lab 1

Programming to C
CSCI 112, Fall 2020

Objectives

- Write your first C program.
- Familiarize yourself with C's I/O commands.
- Write a program that interacts with a human user.
- Write expressions using arithmetic operators.

Description:

This comes from problem 7, chapter 2 on page 104.
Given:
1 barrel of oil provides 5.8 million BTU (British Thermal Units) of heat at maximum efficiency
A barrel contains 42 gallons of oil

You are to determine how many BTU's of heat are delivered to a house that is heated by an oil furnace. This furnace is not perfect so it has some percentage of efficiency which will reduce the BTU's by that percentage.

Input from the user: amount of oil burned and efficiency of the furnace (both input as integers)
Output to screen: Amount of BTUs per million delivered to the house (printed as a double with 2 decimal places)

Requirements:

- Best practice: create a directory called lab1 to work in
- Run your program twice.
    - 1) inputs: 100 gallons of oil with 65% efficiency furnace
    - 2) inputs 80 gallons of oil with 90% efficiency furnace

- DO NOT USE GLOBALS.
- MUST COMPILE WITH -Wall
- You must submit:
    - 1) Screen shot showing your successful compile and the two runs with the results.
    - 2) source code

Hint

When dividing (to get true percentage or by a million), use a real number, not integer. (Example: for percentage, divide by 100.0, not 100. To get BTUs per million, divide by 100000.0, not 100000). This is to avoid integer division.

My Output

```
[k57h721@csci112 lab1]$ ./lab1
Enter number of gallons of oil for house: 100
Enter furnace efficiency: 65
BTUs delivered to house through furnance is 8.98 million
[k57h721@csci112 lab1]$ ./lab1
Enter number of gallons of oil for house: 80
Enter furnace efficiency: 90
BTUs delivered to house through furnance is 9.94 million
```

Submission

- Due Date: Sunday, 8/30 at 11pm

  Each student will complete and submit this assignment individually. I will check for plagerism. Labs submitted after the due date/time will not be accepted.

Grading

Points (100 pts)

- 5 points – comments explaining what your program does
- 10 points – indent your code so it is readable
- 25 points – submitted screenshot as required above
- 20 points – compiles successfully with -Wall – no warnings
- 10 points – uses proper math equation in c to compute BTUs delivered to the house
- 10 points – prints the output as specified above as a double (BTUs per million)
- 10 points – reads in the input as specified above as integers (with appropriate message to user)
- 10 points – submitted source code