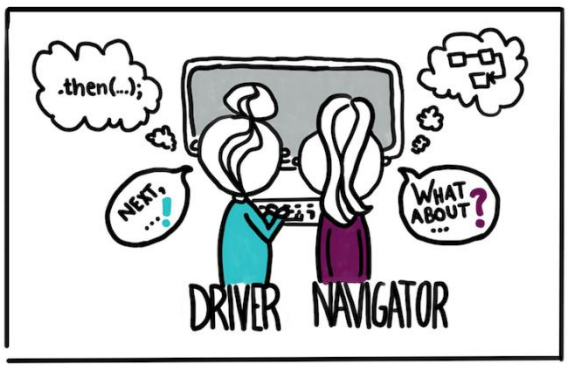
CSC 1300 LAB 2

Fall 2023, Written by April Crockett

Paired Programming Assignment

Your Partner

Your lab instructor has assigned you a lab partner for this lab. You are required to complete this lab with your lab partner using paired programming techniques. Your first step is to **exchange preferred contact information** just in case you are unable to complete the lab during lab and need to meet outside of lab class to finish.



Submission in iLearn

You will both upload the same exact zip file to your Lab 2 assignment in ilearn. Each source file should have both of your names in the comment block at the top. Both students will receive the same feedback and grade.

How to Pair Program

One of you can start writing (or debugging) the initial code (DRIVER) while the other reviews and suggests improvements (NAVIGATOR). **Take turns regularly (every 10 to 15 minutes)** to ensure both of you are actively involved.

Part 1: Debugging a Simple Program

Part 1 Learning Objectives

- Elements and syntax of a C++ program
- Calculations using math expressions
- Simple input and output
- Debugging and Troubleshooting Code
- Whitespace, Indentions, and Comments

Part 1 Directions

You are provided in the lab assignment with a partially completed program (`lab2a_given.cpp`) that contains syntax and logical errors. Rename this file to `lab2a.cpp`. Your task is to identify and correct these errors to make the program compile and run correctly. The program should ask the user for their name, display a welcome message (with their name), and then print you & your partner's names and a fun fact about each of you. Then the program should ask the user for the radius of a circle, then calculate and print the area.

Your secondary task is to fix the program's readability. There should be a comment block at the top of the source file with the filename, authors (both you & your partner's first & last names), today's date, and purpose of the program. There should be consistent, appropriate indentions.

Part 1 Sample Output

User input is highlighted in yellow. Remember that your names and fun facts should replace the names and facts below.

```
What is your name? Atticus
Hi, Atticus, welcome to this program!
Our names are Joe Dean and April Crockett.

A fun fact about Joe Dean is that he was a professional poker player who once won
a $50000 boat with an insane bluff and the next day lost the entire amount plus
his vehicle with a royal flush.

A fun fact about April Crockett is that the catalyst that changed her career path
from eye doctor to engineer was when she passed out on a highschool physiology
field trip to Carson Newman College when visiting the room with two cadavers.

What is the radius of your circle? 7.56

The area of your circle is 179.462
```

Part 2: Energy Drinks

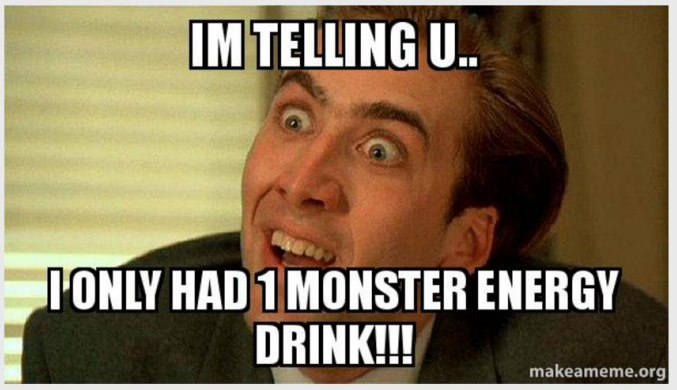


Image copied from https://makeameme.org/meme/im-telling-u-p2xy7a

Part 2 Learning Objectives

- Arithmetic expressions
- Basic output

Part 2 Directions

The Coca-Cola Company recently surveyed 16,500 of its customers and found that approximately 15 percent of those surveyed purchase one or more energy drinks per week. Of those customers who purchase energy drinks, approximately 58 percent of them prefer citrus-flavored energy drinks. Write a program that displays the following:

- The approximate number of customers in the survey who purchase one or more energy drinks per week.
- The approximate number of customers in the survey who prefer citrus-flavored energy drinks.

You should always end up with a whole person. Also, you should use constant variables for the amounts that won't change in the program (16500, 15%, 58%).

Save this program as `lab2b.cpp`. Make sure your program compiles and runs like the sample output below. You should have a comment block at the top of your source file with the filename, authors (both lab partners names), date, and purpose of the program. Your program should be readable and have proper indentions.

Part 2 Sample Output

Note: there is no user input in this program. **DO NOT HARD-CODE the numbers in this sample output. These values should be calculated, saved to a variable, and then the variable printed to the screen to produce these results.**

```
Num of people who drink more than one a week: 2475
Num of people who drink more than one a week and prefer Citrus flavored: 1436
```

Part 3: Married Couple's Names

Image copied from https://www.boredpanda.com

Part 3 Learning Objectives

- Working with C++ strings
- Basic input and output

Part 3 Directions

Take the program given to you in ilearn named `lab2c_given.cpp`. Rename this file `lab2c.cpp`. This program should show the possible last name combinations once they get married. Extend this program to print the two hyphenated last name options (Smith-Jones, and Jones-Smith).

Also make sure to modify the author information in the comment to be yours and your partner's names.

Part 3 Sample Output

User input is highlighted in yellow.

```
What is the first person's first name?
Wonder
What is the first person's last name?
Woman
What is the second person's first name?
Super
```

```
What is the second person's last name?
Man
Here are some common married-couple names:
Wonder Woman and Super Man
Wonder and Super Woman
Wonder and Super Man
Wonder Woman and Super Woman-Man
Wonder Woman and Super Man-Woman
```

What to Turn In

Create a zip file named **labPartner1username_labPartner2username_lab2** containing the following .cpp files and upload it to ilearn. Replace labPartner1username with one lab partner's TTU username and replace labPartner2username with the other lab partner's TTU username. Example: **jdean42_acrockett43_lab2.zip**

- **lab2a.cpp**
- **lab2b.cpp**
- **lab2c.cpp**

Remember, both lab partners should upload this zip file to their ilearn assignment.