CSC 1300 LAB 3

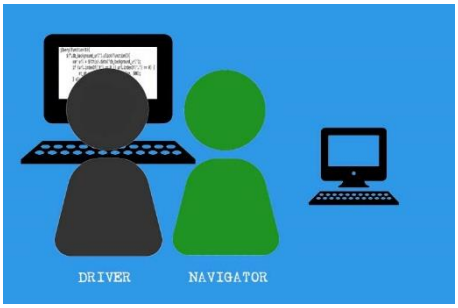
Fall 2023, Written by April Crockett

Learning Objectives

- Relational Operators
- If/Else statements
- Switch statements
- While loop

Paired Programming Option

You may complete this lab assignment alone or you have an OPTION to complete this lab with a lab partner using paired programming techniques. If you choose to pair program, follow the directions in this section. 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 3 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 A: Time Management & Logical Operators

DIRECTIONS

- Create a program named **lab3a.cpp**.
- You will ask the user for their average daily screen time in hours as well as their average daily study (or homework) time they spend in hours.
- Then, based on what they answer, you will print out advice on how they should spend their time.
- **You must use logical operators in your solution.**
- Below is the logic you should use to print your statements:
    - Screen time less than or equal to 2 and study time greater than or equal to 6 then print "You need to socialize with people more often"
    - Screen time greater than 2 and study time greater than or equal to 6 then print "You need to socialize with people more often and get off that phone."
    - Screen time less than or equal to 2 and study time greater than or equal to 2, but less than 6, then print "You manage your time well."
    - Screen time greater than 2 and study time less than 6 then print "What are you going to do if you lose that phone? It is interfering with your ability to have a real life."

- Make sure to test your code with all 4 sample outputs below to make sure your code logic is correct!

Sample Output 1

```
Rounding to the nearest hour, how many hours is you daily average PHONE screen time?
AVG DAILY SCREEN-TIME HOURS:  2

Rounding to the nearest hour, how many hours is your daily average study or homework
time?
AVG DAILY STUDY or HOMEWORK HOURS:  6

You need to socialize with people more often.
```

Sample Output 2

```
Rounding to the nearest hour, how many hours is you daily average PHONE screen time?
AVG DAILY SCREEN-TIME HOURS:  1

Rounding to the nearest hour, how many hours is your daily average study or homework
time?
AVG DAILY STUDY or HOMEWORK HOURS:  3

You manage your time well.
```

Sample Output 3

```
Rounding to the nearest hour, how many hours is you daily average PHONE screen time?
AVG DAILY SCREEN-TIME HOURS:  3

Rounding to the nearest hour, how many hours is your daily average study or homework
time?
AVG DAILY STUDY or HOMEWORK HOURS:  6


You need to socialize with people more often and get off that phone.
```

Sample Output 4

```
Rounding to the nearest hour, how many hours is you daily average PHONE screen time?
AVG DAILY SCREEN-TIME HOURS:  5

Rounding to the nearest hour, how many hours is your daily average study or homework
time?
AVG DAILY STUDY or HOMEWORK HOURS:  1

What are you going to do if you lose that phone?
It is interfering with your ability to have a real life.
```

Part B: Switch Statements

The switch statement is another conditional statement that can be used in place of if / else-if / else statements when the statement uses the value of an integer expression (or a char) to determine which group of statement(s) to branch through.

DIRECTIONS

- Retrieve the given file **lab3b_given.cpp** and save it as **lab3b.cpp**.
- Put BOTH your name and your partner's name and date in the comment block.
- Rewrite this program to use a ***switch*** statement instead of ***if and else if*** statements. The output should be identical before and after you rewrite the program.

Part C: While Loop

Often in programming one needs a statement or block of statements to repeat during execution. This can be accomplished using a loop. A loop is a control structure that causes repetition of code within a program. C++ has three types of loops and the one we will focus in in this lab is the **`while`** loop.

DIRECTIONS

- Write a program and name it **lab3c.cpp**.

- Define a character variable and initialize it to the letter 'n';
- Define an integer variable and initialize it to zero.

- Add a while loop that will repeat until the letter they enter is 'y' **and** they correctly calculated 4+18. (BOTH conditions must be **true** for the loop to quit.

- The following code should happen inside the loop:
    - ask the user “Please enter a letter.”
    - Read in their letter.
    - Print out the letter they entered.
    - Ask the user for the result of the calculation of 4 + 18.

SAMPLE OUTPUT

```
What do you get if you add 4 + 18?  20
Enter the letter 'y' if you want to quit.
y
The letter you entered is y
Oh goat foot!  You forgot how to add!

What do you get if you add 4 + 18?  22
Enter the letter 'y' if you want to quit.
n
The letter you entered is n

What do you get if you add 4 + 18?  22
Enter the letter 'y' if you want to quit.
y
The letter you entered is y
```

What to Turn In

Create a zip file named **labPartner1username_labPartner2username_lab3** 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_lab3.zip**

- lab3a.cpp
- lab3b.cpp
- lab3c.cpp

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