CSC 1300 LAB 4

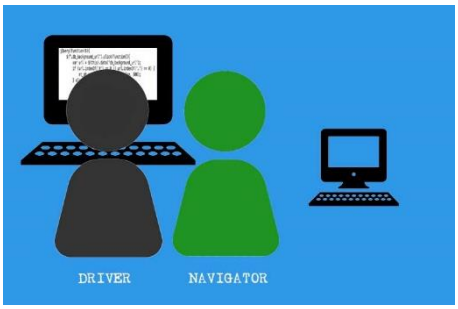
Fall 2024, Written by Kelsey Rainey, Last Updated Sept 19, 2024

Learning Objectives

- String/Character Functions
- While Loops
- Do-While Loops

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 1: Create a Game!

1. Create a source file called lab4.cpp
2. Write a program where you create a game following the Dos and Don't listed below
3. Make sure the program compiles and runs with no syntax or logic errors

DO	DON'T
You must generate at least one random number in some kind of range other than 0 to RAND_MAX	Don't create any functions other than the main function.
Your program must contain at least one integer read in from the user and you must **validate** that the number is in a valid range with a **while loop**. You may assume that the user entered in the correct data type, but not the correct value in that data type.	Don't create any structs or classes.
Use one **do-while** loop in a situation where it makes sense to use this loop (running the program again or menu-based game)	Don't use vectors.
Do have **at least** one character variable in the program and use at least **one** character testing or character conversion function from the <**cctype**> library	Don't use pointers.
Do use **at least** two of the following string functions: substr(), strcmp(), length(), append(), replace()	Don't use maps or algorithm classes.
Do create a **comment block** at the top containing the filename, author (you), date, and **make sure to describe the purpose of your program.**	Don't create any global variables.
Do include one piece of ASCII art (Tips below)	
Do include some **comments** throughout your code to explain major sections.	

Do use good programming practices and make your output readable (does the user know what to do?) as well as your code.	

Part 2: Fill Out the Lab Report

You will fill out this lab report for every lab and it is part of your grade. To get credit, you must upload a screenshot of the confirmation page to this lab assignment. Name your screenshot **lab4ReportProof**.

Lab Report Link: https://tntech.co1.qualtrics.com/jfe/form/SV_d6BGc6kzQdSvBmS

Tips for ASCII Art

- For text, you can use https://patorjk.com/software/taag/#p=display&f=Graffiti&t=Type%20Something%20
- For image to ASCII, you can use https://www.asciiart.eu/image-to-ascii
- You will have to copy the ASCII art and then paste it in your source file. Then, you will need to make each line a cout statement with an endline or newline at the end of each line.
- Then, you will need to escape all characters that are ‘, “, or \. (More information on this here: https://en.cppreference.com/w/cpp/language/escape)

What to Turn In

Create a zip file named **labPartner1username_labPartner2username_lab4** 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_lab4.zip`**

- lab4.cpp
- lab4ReportProof

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