Faculty of Engineering and Applied Science

SOFE 3200U Systems Programming

Background

First of all, there are several basic topics about C language

- Comments
  - // for single line comments
  - /*…*/ for multiline comments
- Variables
  - Letters, digits, underscores
  - Naming convention use underscores (for example, my_variable)
- Sections of code (code blocks) are enclosed using curly braces {…}
- C has many operators, many of which your familiar with from other languages
  - Assignment: =
  - Arithmetic: +,-,*,/,%
  - Augmented assignment: +=, -=,*=,/=,%= …
  - Boolean logic: !, &&, ||
  - Equality logic: ==, !=
  - Increment and decrement: ++, --
  - Member selection: ., ->
  - Object size: sizeof
  - Order relation: <,<=,>,>=
  - Pointer, reference, and dereference: &, *,[]
- Date types, C has the following base types
  - char
  - int
  - long
  - float
  - double
  - void
- Scope
  - Scope, a very important concept, easiest to remember that variables defined inside { ⋯ } cannot be accessed outside of it
  - Variables and methods declared in other header files can be used when you include the header file
  - Generally you have access to everything included from the header file (functions, constants, structs) anywhere in your code

Objectives

The objectives of this experiment are to understand arguments and ASCII coded characters in C programming language. The concept of being able to utilize arguments to define program behavior should be understood. It should also be known that in order for computers to represent characters, each characters needs a numerical representation.

Lab Tasks

Task 0

1. Make a makefile to do the compilation of the programs. Makefile's will simplify your life.

Task 1

1. Read, compile, and execute the ARGS.c program.
2. Looking at the lab report template, answer the questions related to the ARGS.c program.

Task 2

1. Read, compile, and execute the CAPFIX.c program with the given text file.
2. Looking at the lab report template, answer the questions related to the CAPFIX.c program.

Task 3

1. Rewrite the CAPFIX.c code to use 2 separate functions
   - int ReadData(FILE *fpt, char first[20][30], char last[20][30])
   - void CapFix(char word[30])
2. Compile and execute with proof.

Deliverable

Answer all the questions in the lab report template provided, fill in the title page correctly and submit along with your commented code for task 3.