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CSC415 Operating Systems

Assignment 2 – Buffer and Structure

Description:
This assignment is to write a C program that accepts arguments via the command line and then stores those arguments in our personal info. We need to allocate memory in our system for our object personal info and store messages in a buffer that is size 256.
We are using the header file to help us and it is used for basic information such as languages , couple of functions

Approach / What I Did:
After I cloned my repository I started looking at each step of the assignment. I started by copying my assignment 1 where we were inputting arguments into our cmdline. I realized that this assignment is similar to the other one except we work with pointers. We have store the arguments from our cmdline into our info pointer where we store each variable into datastruct. I realized that I need to create multiple buffers with memory allocation not to overfill it.

Issues and Resolutions:

My first issue was I was getting checkit() where it would fail . I realized that I was adding 1 into my already iterating for loop where it would add one extra on each loop.

I resolved it by debugging my code with printf and using different debugging techniques till I find an actual problem.

Next issue I faced where I would get a check fail , that check failure would be caused by wrong implementation of our free(buffer) command

Analysis: (If required for the assignment)

END-OF-ASSIGNMENT
000000: 90 32 07 DE FF 7F 00 00 97 32 07 DE FF 7F 00 00 | ?2.??..?2.??..
000010: 08 64 A2 36 03 00 00 00 06 40 04 02 46 6F 75 72 | .d?6.....@..Four
000020: 20 73 63 6F 72 65 20 61 6E 64 20 73 65 76 65 6E | score and seven
000030: 20 79 65 61 72 73 20 61 67 6F 20 6F 75 72 20 66 | years ago our f
000040: 61 74 68 65 72 73 20 62 72 6F 75 67 68 74 20 66 | athers brought f
000050: 6F 72 74 68 20 6F 6E 20 74 68 69 73 20 63 6F 6E | orth on this con
000060: 74 69 6E 65 6E 74 2C 20 61 20 6E 65 77 20 6E 61 | tinent, a new na
000070: 74 69 6F 6E 2C 20 63 6F 6E 63 65 69 76 65 64 20 | tion, conceived
This shows
In yellow it is an 8byte value of my my first name (0x7ffc337b1290)
In red it is an 8 byte value address of my last name (0x7ffc337b1297)
In this color it is my student id (0x36a26408)

Represents 4byte value of our enum
Represents languages 4byte value
And the rest is our 100 byte message that was already allocated

To check byte values of pointer we need to do printf("%p",AboutMe->lastName) e.t.c
The right side of the "table" is our ASCII characters

Screen shot of compilation:

```
student@student-VirtualBox:~/Desktop/Homework/csc415-assignment2a-bufferandstruc
t-ArslanAlimov$ make
gcc -c -o Alimov_Arslan_HW2_main.o Alimov_Arslan_HW2_main.c -g -I.
gcc -o Alimov_Arslan_HW2_main Alimov_Arslan_HW2_main.o assignment2.o -g -I.
student@student-VirtualBox:~/Desktop/Homework/csc415-assignment2a-bufferandstruc
t-ArslanAlimov$
```

Screen shot(s) of the execution of the program:

```
student@student-VirtualBox:~/Desktop/Homework/csc415-assignment2a-bufferandstruct-ArslanAlimov$ make run
./Alimov_Arslan_HW2_main Arslan Alimov "Four score and seven years ago our fathers brought forth on this continent, a new nation, conc
eived in Liberty, and dedicated to the proposition that all men are created equal."
---------------------------------- CHECK ----------------------------------
Running the check for Arslan Alimov
Student ID: 916612104, Grade Level: Senior
Languages: 33832966 (2044006)
Known languages are JAVA, JAVASCRIPT, C_SHARP, MIPS_ASSEMBLER, PHP
Message:
Four score and seven years ago our fathers brought forth on this continent, a new nation, conceived

The Check Succeded (0)

END-OF-ASSIGNMENT
000000: 90 A2 50 C6 FC 7F 00 00  97 A2 50 C6 FC 7F 00 00 | ??P??..??P??..
000010: 08 64 A2 36 03 00 00 00  06 40 04 02 46 6F 75 72 | .d?6.....@..Four
000020: 20 73 63 6F 72 65 20 61  6E 64 20 73 65 76 65 6E |  score and seven
000030: 20 79 65 61 72 73 20 61  67 6F 20 6F 75 72 20 66 |  years ago our f
student@student-VirtualBox:~/Desktop/Homework/csc415-assignment2a-bufferandstruct-ArslanAlimov$
```