EG1113 - C Programming for Engineering Lab

Report #1

Virtual Machines, Hello World, Eliza

Date of the experiment: August 19, 2021

Due date of report: August 27, 2021

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1. **Core concepts learned**

During the lab, I learned new concepts of programming that I have not encountered before, because I am not very familiar with programming. I learned how to use certain shortcuts like “tab”, “cat”, and “ls” just to name a few. I practiced how to check the status of my git to see what programs have been added. Although I was supposed to commit each assignment, I didn't do it properly. As a result, I was not able to commit it properly and save onto the repository. I practiced the code Eliza.

1. **List of equipment and software used**

I used GitHub to be able to create my token/password for my entire coding, to be able to use the git commit and push command. Additionally, I used VirtualBox to be able to code the different actions that were required of me. I used Geany to be able to change some of the coding that was previously created. For hardware, I used the USB given to be able to access Raspberry and the computer to actually type.

1. **Relevant web links and other documents**

<https://docs.github.com/en/github/authenticating-to-github/keeping-your-account-and-data-secure/creating-a-personal-access-token> this link was used for me to be able to create my token for the code. I used Outlook to be able to send myself the code, copy it, and apply it to my code.

1. **Exercise**

Summary

I was able to somewhat create my first code in C programming (exciting). I got to create a program saying, “Hello World!”. After creating the code I learned how to compile code using the gcc command. Next, I learned how to add, commit, and push my work into the Git repository. To be able to save my work and have others view it, the push command is the way to be able to accomplish that. Afterwards, I learned how to use Geany in the virtual box to be able to change or create new code. I could use nano as well, but Geany was more helpful in my opinion. Lastly, I was introduced to Eliza. We had to compile Eliza and run it in the program. From there I was able to have a conversation with her. Everything that I coded worked for me. All of the commands to execute the program worked very smoothly.

Procedures

This being the first lab, I did not know if I needed to take screenshots of the lab, because for the most part it was setting up the codes that were provided and executing them. To build the first code in exercise 2, I added a new file by typing “touch” and the name I wanted the file to be called. Then, to edit my code I used the nano command and made sure to input what was necessary. I compiled using gcc and ran the program by typing “./[Name of file]” and executed the code. It came out correctly stating “Hello World!”. After completing the exercise by adding, committing, and pushing it I moved to the next exercise. In exercise 3, I opened Geany, opened my helloWorld file in Geany, and began changing the coding. This was necessary so that I would be able to type, “Hello, C Programming Class!”. The code executed came out correctly and was able to state the correct words. Lastly, in exercise 4, I had to compile an existing code that was created many years ago, and execute the program. The execution came out perfect, because I was able to have a conversation with a computer asking and answering questions. Overall, all the building and executing came together very smoothly, and the objectives were complete.

1. **Problems experienced and areas of concern**

I had a couple of problems that occurred at the end of the lab mainly, and that was mainly user error and not having the experience. I accidentally named and submitted my assignment 2 as my assignment 4, and was not able to change it back. The biggest problem I had was that I did not commit my work properly. I forgot to sign in, because I thought I had already signed in earlier but I did not. Next time, I will make sure I have logged in and documented everything properly so that my work can be accredited for. I have learned that mistake and will not be repeating the mistake made.

1. **Course Goals**

0= none 5= large amount

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|  | **Lab 1** |
| To compile, link, debug and run C programs | **5** |
| To use the basic C program structure; variables,  constants, and operators | **4** |
| To use the repetition constructs such as looping  with for, while, and do-while statements | **0** |
| To use the selection structures such as if, If/else,  switch, conditional expression statement | **0** |
| To create program modules using functions  (passing data to and returning values from functions) | **0** |
| To use arrays and pointers | **0** |
| To work with strings and string manipulating  functions | **0** |
| To perform file, I/O operations | **0** |
| To develop structured, modular, and top-down  design of software | **0** |