Ontario Tech University

SOFE 3950U / CSCI 3020I

Operating Systems

LAB # 2

Shell Project

Instructor: Md Nahid Ebna Hasan Khan

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Objectives:

- Learn to work in groups to build software using git
- Gain experience building multi source files in C
- Experience using make files and other build tools

Important Notes:

- Work in groups of **four** students
- All reports must be submitted as a PDF on blackboard, if source code is included submit everything as an archive (e.g. zip, tar.gz)
- Save the submission as <lab_number>_<first student's id> (e.g. lab2_100123456.pdf)
- If you cannot submit the document on blackboard then please contact the TA with your submission at **nahid.hasankhan@uoit.ca**

Lab Details

Notice

It is recommended for this lab activity and others that you save/bookmark the following resources as they are very useful for C programming.

- http://en.cppreference.com/w/c
- http://www.cplusplus.com/reference/clibrary/
- http://gribblelab.org/CBootcamp

The following resources are helpful as you will need to perform string tokenization and use POSIX functions.

- http://www.tutorialspoint.com/c_standard_library/c_function_strtok.htm
- http://www.thegeekstuff.com/2012/06/cdirectory/

Lab Activity

1. For the purpose of this lab, either create a new repository on GitHub for this lab, or create a folder in your existing GitHub repository that you created in the previous lab.

2. Download the example source code and Makefile and use git to add the contents and push it to your GitHub repository.

3. Ensure that you are able to use the makefile and C source code examples to build the code using **make**. If you are having issues you may need to modify the makefile and set the **CC** variable to **GCC** instead of **clang**.

4. Before writing any of the source code for your project, review the entire shell project description and ensure that you understand what is required.

5. Next, work in groups to write the documentation for the **readme** file for the shell project, which is displayed when the **help** command is used.

6. Finally, work on implementing the string tokenization for the shell to process each of the commands using the resources listed above.

Deliverables

Notice

Please complete the deliverables and include whatever screenshots and other work is necessary to demonstrate that you have completed the deliverables in your lab submission on Blackboard. All lab report submissions are due on Blackboard prior to the start of the next lab.

1. Demonstrate that you have created a GitHub repository for the lab activity and that you have committed and pushed all of the source code provided in the templates to the repository.

2. Demonstrate that you are able to build the source code using the **make** command.

3. Complete writing the **readme** for the shell project and include it in your submission.

4. Complete writing the string tokenizer for processing the shell commands, include the source code for your tokenizer in your submission.