Lab Assignment Week 02

CSC 3320 – System-level Programming

January 22nd, 2026

Introduction

Welcome to the first programming lab of CSC 3320! Today we will be covering the following topics:

1. Accessing Remote Systems through SSH and SFTP
2. Using Unix-Like Systems and Shell Commands

We will also be going over the lab policies and procedures.

- Attendance is mandatory.
- Labs must be completed **individually.**
- TAs are here to help you. Ask them for help!
- Lab assignments are due at midnight on the day of your lab.

Deliverables:

1. The typescript/log file from your SSH session.

If you have any questions, please do not hesitate to ask your TA.

Unix-like System & Command Line Interfaces

In today's lab, you will practice accessing the CS Snowball server using SSH and running commands on a remote Linux server. You will need to demonstrate an understanding of Unix-like systems and shell commands. You will need to log in to the snowball server via SSH and execute several shell commands that were discussed in class. You will also need to demonstrate that you understand how to download files from a remote server using SFTP.

Lab Tasks

- Log into snowball.cs.gsu.edu using SSH.
- Record your interactive terminal session using the script utility.
    - Note: Avoid using the *clear* command when running the script utility.
- Record yourself performing the following task on Snowball using shell commands and utilities.
    1) Create a **csc3320** directory in your home directory.
    2) Change your current working directory to your **csc3320** directory.
    3) Show your current working directory using the *pwd* utility/command.
    4) Copy the syllabus file from within my home directory, **ssaghaeiannejadesfa1**, to your **csc3320** directory.
        - Path to syllabus:
            - /home/ssaghaeiannejadesfa1/csc3320/syllabus
    5) Show the contents of the syllabus file in your terminal.
    6) Rename the syllabus file to csc3320_syllabus.
    7) Look up the *wc* utility/command in the UNIX manual.
    8) Compute the number of words in the syllabus.
    9) Create a hello_world.c file using a text editor (*vim* or *nano*).
    10) Implement a simple C program that outputs "Hello World!" to the terminal.
    11) Compile and execute your Hello World program.
    12) Use the *chmod* utility/command to change the file permissions of your hello_world.c file to give writing permission to others.
- End the script recording.
    - Check to make sure the recording worked; Open the output file using cat, less, vi, or nano.
        - If you open the typescript file using vi or nano, it's okay if you see lots of special/strange characters! (vi and nano will display some of the normally invisible formatting characters).
- Transfer your typescript log file from Snowball to your local PC using SFTP.
    - Note: You will need to exit from the SSH session and start the SFTP client on your local computer!

Deliverables

For today's lab, you will need to submit the typescript/log file of your session on Snowball. Please name your typescript/log file as follows:

- Log/Typescript File
    - lastname_firstname_filename
    - For example: esfahani_hossein_lab02