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Fall 2024

Week of 09/02/2024

## CSC 3320: System-Level Programming: Lab 1

INSTRUCTOR: DR. MD. MAHFUZUR RAHMAN

100 Points

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### Introduction

Welcome to the first programming lab of **CSC 3320: System-Level Programming!** Today we will be covering the following topics:

1. Accessing remote systems through SSH and SFTP
2. Recording terminal session into a log file
3. Using Unix-Like systems and shell commands

### Lab Policies

- Attendance is mandatory.
- Labs must be completed individually.
- Lab assignments are due at midnight on the day of your lab (i.e., by 11:59 PM).
- If you have any questions, please do not hesitate to ask TA.

**Deliverables:** The typescript/log file from your SSH session.

Go to the **next page** for detailed instructions.

## Unix-like System & Command Line Interfaces

In today's lab, you will practice accessing the CS Snowball server using SSH. 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 upload/download files to/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.
- Record yourself performing the following tasks on Snowball using shell commands and utilities.
  1. Create a **csc3320** directory in your home directory. (use **mkdir csc3320**)
  2. Change your current working directory to your **csc3320** directory. (use **cd csc3320**)
  3. Show your current working directory. (use **pwd**)
  4. List the files in your working directory.
  5. Do the following on your local machine:
    - (a) Create a text file containing first 10 lines of a song you like the most. Save it in a file named **username\_song.txt**.
    - (b) Open another terminal on your local machine.
    - (c) Connect to the snowball using SFTP. Transfer the file **username\_song.txt** from your local machine to the **csc3320** directory at snowball. [**Hint:** use the correct destination path]
  6. List the files in your **csc3320** directory after the transfer.
  7. Show the contents of the **username\_song.txt** file in your snowball terminal.
  8. Rename the song file to **csc3320\_username\_song.txt**.
  9. Look up the echo utility/command in the UNIX manual. (use **man echo**)
  10. Use the echo command to display 'Welcome to UNIX!' in the terminal.
- End the script recording. Check to make sure the recording worked. It's okay if you see lots of special/strange characters!
- Transfer/download your typescript log file from Snowball to your local PC using SFTP.

**Note:** You do not need to record the terminal session of your local machine. Only record your session on Snowball.

### Deliverables

For today's lab, you will need to submit the typescript/log file of your session on Snowball that you downloaded at your local machine. Please name your typescript/log file as **lastname\_firstname\_lab01.txt** and then submit to iCollege.