

GIN 5201  
Digital Transformation  
Lab 3

**Shell, File System,  
Server (CSLab 1).**

Time and date:  
11:35–12:25, 9-Feb-2026  
Location: Mona Campbell  
building 1201

Image: DALL-E. Bing Image Creator. Generated by AI

# Lab Overview

- Logging into the server using ssh
- Shell: some useful commands
- File System navigation
- File System: permissions
- Apache web server and sample pages

## Using timberlea Server

- ssh login into timberlea.cs.dal.ca
- First step: open a Terminal or Command Line Interface:
  - ▶ Command Line on Windows
  - ▶ Terminal on Mac
  - ▶ Terminal on Linux
- use the ssh command:

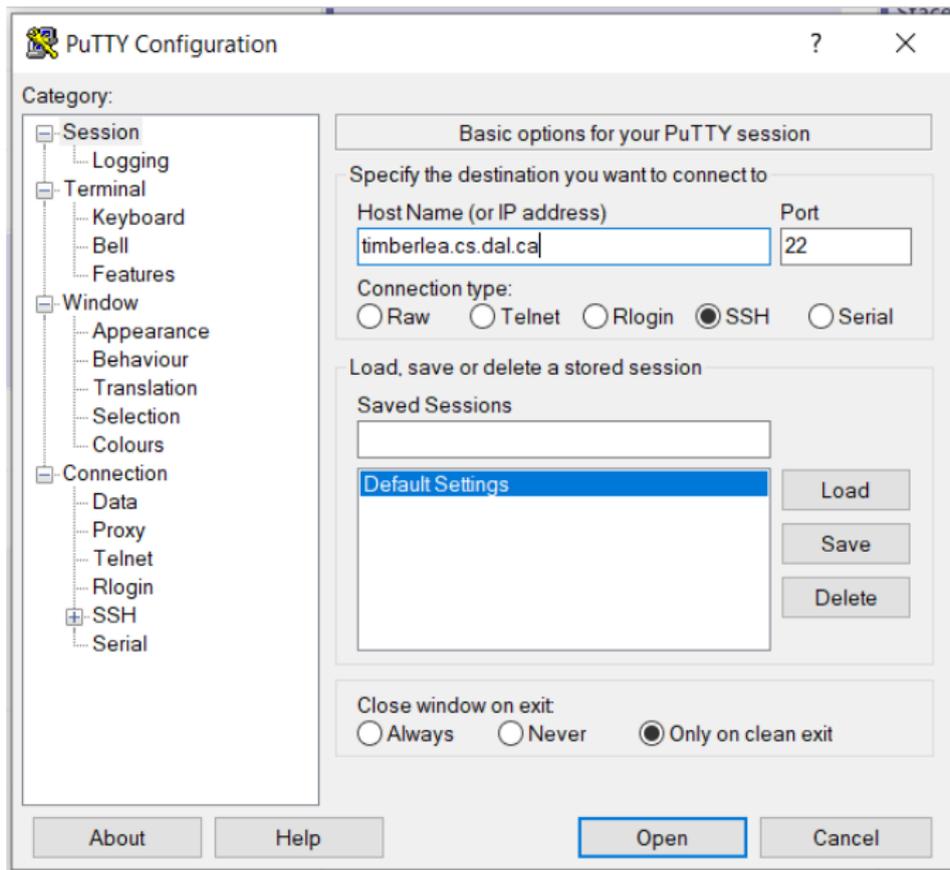
```
ssh <your_csid>@timberlea.cs.dal.ca
```

where instead of `<your_csid>` you should use your own CSID

- Older Windows: you can use the program PuTTY
  - ▶ other options available; e.g., MobaXterm

# Running PuTTY

- Install and run PuTTY only if your ssh command does not work on Windows
- Double-click the PuTTY icon, and the following window should appear:



## After Successful Login

- Using the `ssh` command or PuTTY you should login to `timberlea`
- Another popular tool: FileZilla is a good tool to copy files back and forth, but does not provide access to command-line (shell)
- The following exercises should be finished and will be graded as a part of Assignment 1
- Example of command-line (bash shell) access:



```
vlado@timberlea:~  
vlado@timberlea:~$
```

The image shows a terminal window with a title bar that reads "vlado@timberlea:~". The window contains two lines of text: "vlado@timberlea:~" followed by a green cursor, and "vlado@timberlea:~\$" followed by a green cursor. The window has standard window controls (minimize, maximize, close) in the top right corner. A vertical scrollbar is visible on the right side of the terminal area.

## Example 1 (e1) Creating a Simple Web Page

- Try command: `pwd`
- Enter directory: `public_html`
- Create directories: `dgin5201/e1`
- Set permissions for this directory to be all-accessible:  
`chmod` command
- Go to directory `dgin5201/e1` and create file `index.html` with the following content:  

```
<html><body>  
This is a very small HTML file.  
</body></html>
```
- Make `index.html` all-readable and access it over Web

## Opening Web Page in a Browser

- Check that the page works; using Web browser open URL `https://web.cs.dal.ca/~<your_csid>/dgin5201/e1`
- Review the process of obtaining a web page

# Concepts Review: Example 1

- ssh access, PuTTY, bash shell
- bash commands: `pwd`, `ls`, `cd`, `mkdir`, `chmod`, `rmdir`
- File permissions
- Text editors: `emacs`, `vi`, `pico`, `nano`, or use remote editing: FileZilla, `vscode`
- Emacs editor:  
`emacs index.html` or `emacs -nw index.html`  
`C-x C-s` to save, `C-x C-c` to exit, `C-h t` to go through simple tutorial (`C-` means Ctrl and other key)
- HTML: simple tags, `html`, `body`
- Web and HTTP access

## Requirements of e1

- At the end of Example 1 (e1), there should be the following directories (folders), files and their permissions:

```
~/public_html/dgin5201                rwx--x--x
~/public_html/dgin5201/e1              rwx--x--x
~/public_html/dgin5201/e1/index.html  rwxr--r--
```

- Content of index.html was given previously

## File Permissions Review

- Each file or directory has user owner and group owner (group of users)
- Permissions defined for: user, group, other
- Each of these have three permissions: `rwX` — read, write, execute
- For directories 'execute' means actually access
- Examples of using `chmod`:  
`chmod 664 file.txt`  
`chmod og-r file.txt`  
`chmod u+x,og+r file.txt`  
`chmod u=rw,og= file.txt`  
`chmod a+r file.txt; chmod -R u+r+w+X dir1`

## Example e2: User Registration, Printable Page, Files Shared

- Consider a Conference Management System
- Let us build a conference registration form
- We also want to provide them with some material
- First iteration: Create a printable form
- Create directory `public_html/dgin5201/e2`
- Go to that directory
- Add file `index.html` (content to be given)
- Make sure that the permissions of `e2` are `rwX--X--X`, and of `index.html` are `rwXr--r--`

## Example e2: `public_html/dgin5201/e2/index.html`

```
<html><head><title>Conference Registration</title></head>
<body>
<h1>Conference Registration</h1>

<p>This is a registration page for CoMS.<br/>
For additional documents, please check <a
href="material">here</a>.<br/>
Please enter your information below to register:

<table>
<tr><th align=right>First and last name:</th>
<td>_____</td></tr>
<tr><th align=right>Email:</th>
<td>_____</td></tr>
<tr><th>Area of Interest (DB, HI, DS):</th>
<td>_____</td></tr>
</table>
```