

FIT 100

Lab 2b:

Creating Directories and Navigating Directory Structures

in a Command Line Environment

(or, Where am I, where are my files, and how do I put my files somewhere else? Part 2)

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Introduction:

This part of lab requires you to work within your Dante file space using a command line environment and the **Tera Term** application.

The first part of lab 2 covered SFTP (secure file transfer), creating and moving directories, and understanding where we were at all times when moving and saving files. The SFTP client you used, **SSH Secure Shell**, has a Graphical User Interface (GUI). In a GUI you manipulate images or icons and click on buttons to use the software. A command line interface requires you to know and use a fixed set of commands in order to manipulate files and folders and to move them from location to location. Your maneuverability in this environment depends mostly on the keyboard, not on the mouse.

Lab 2b explores the ways to manipulate and move files using UNIX commands. You will be doing similar tasks to Lab 2a, but with a different interface and you will work completely within your remote account on Dante using Tera Term.

What is Tera Term Pro?

"Tera Term Pro is a software terminal emulator that supports VT100 emulation, **telnet**, **SSH**, kerberos, and serial port connections. It comes with a scripting language and can be used across Ethernet networks or dial-up connections." ~UW Computing and Communications

Objectives:

1. To explore the difference between a command line and a GUI interface.
2. To become comfortable with using the command-line prompt to navigate directory structures and access directories stored in various locations on a remote computer.
3. To understand the concept of directory location and its impact on retrieval.
4. To understand that there are many ways to access remote directories.

- To understand that functionality [*the ability of an mechanism to perform the operation for which it was created*] is separate from the interface.

What we know:

- Your User ID and Password for your email account at the UW
- A Directory is also called a Folder

TO DO:

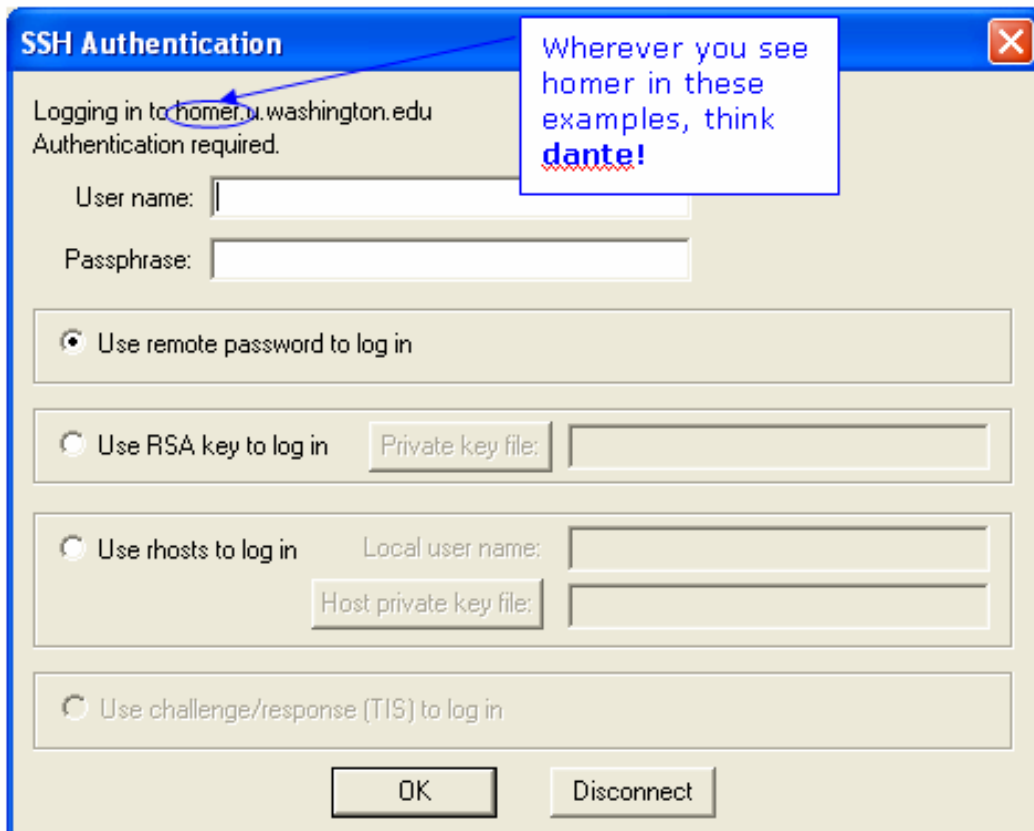
1. Create a Directory remotely using Unix commands

One way to move files between directories inside your account on Dante is by using command language. This is one way to get to the Unix Shell command line interface.

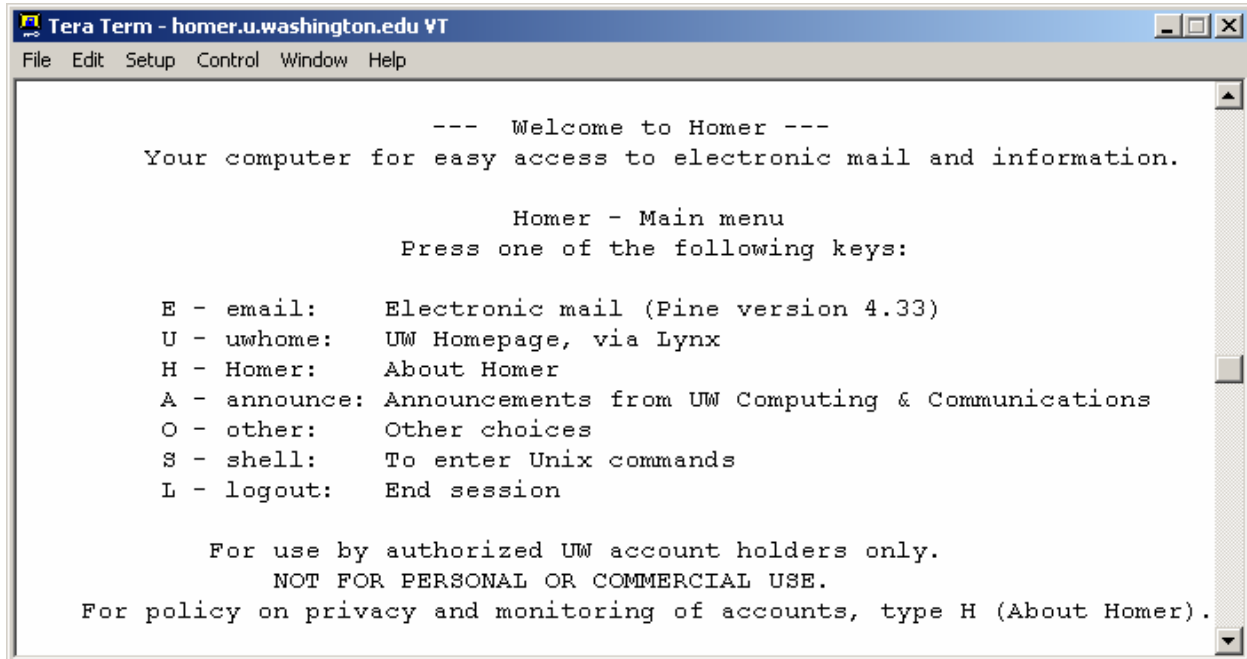
- Find the icon for Tera Term (Dante) on the desktop in front of you. It is also located in the Start button menu in the lower left.



- Log in with your UW Net ID and password



Entry point into email, web or file server space on Dante



```
Tera Term - homer.u.washington.edu VT
File Edit Setup Control Window Help

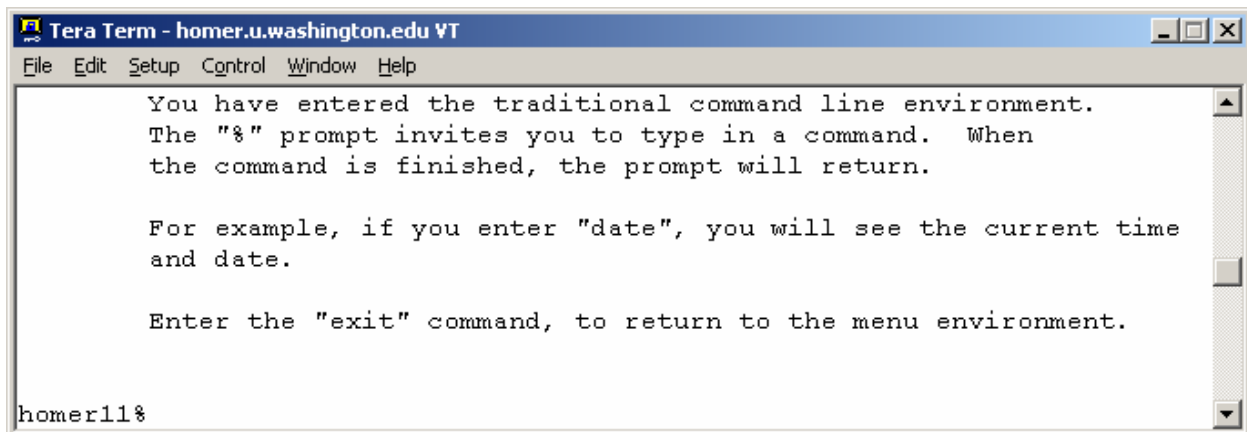
      --- Welcome to Homer ---
Your computer for easy access to electronic mail and information.

      Homer - Main menu
      Press one of the following keys:

E - email:      Electronic mail (Pine version 4.33)
U - uwhome:    UW Homepage, via Lynx
H - Homer:     About Homer
A - announce:  Announcements from UW Computing & Communications
O - other:     Other choices
S - shell:     To enter Unix commands
L - logout:    End session

      For use by authorized UW account holders only.
      NOT FOR PERSONAL OR COMMERCIAL USE.
      For policy on privacy and monitoring of accounts, type H (About Homer).
```

- C. Press **<S>** for the shell.
You are now located in the root (home) directory of your Dante account.
The name of that directory is your UW Net ID.



```
Tera Term - homer.u.washington.edu VT
File Edit Setup Control Window Help

You have entered the traditional command line environment.
The "%" prompt invites you to type in a command.  When
the command is finished, the prompt will return.

For example, if you enter "date", you will see the current time
and date.

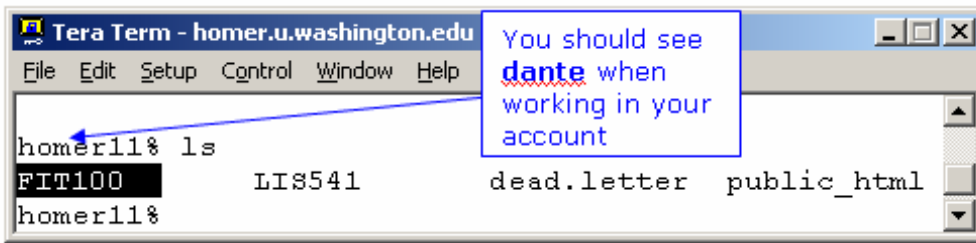
Enter the "exit" command, to return to the menu environment.

homer11%
```

- D. In Lab 2, you created a folder called **Labs** inside of a folder called **fit100**. Even though this was done using a different client and interface, you can see those folders here because you are looking into the same file space. To see if **fit100** is there, list the contents of the current directory in the remote account:
- A. Enter **ls** and hit return
ls is the UNIX command to list the contents of the directory

****NOTE****

The contents of your account will be different from what is shown below.



- E. Move into the directory that will hold future lab work. Change directories and move into FIT100:

cd FIT100

***Note that the folder name is capitalized. Why? Because the folder was created using all capitals to name it.**

****Notice that this environment demands your understanding of the Unix commands. ****

These commands can, among other things:

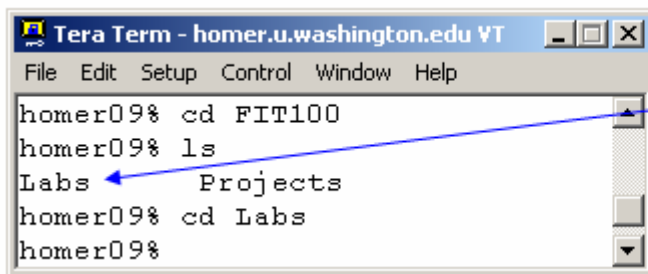
- Make folders**
- Move folders**
- Transfer folders or files** to and from other areas within your account.

See the end of the lab for a basic list of Unix commands.

If you get lost and need to find out where you are in your remote directory, go to the help section at the end of this lab.

- F. Use your **ls** command again to see the folders that are inside of your FIT100 folder/directory.
- G. Change directories (**cd**) again to your **Labs** directory.

cd Labs



Unix is case-sensitive. If you use capital letters in file names, you must use them with Unix commands

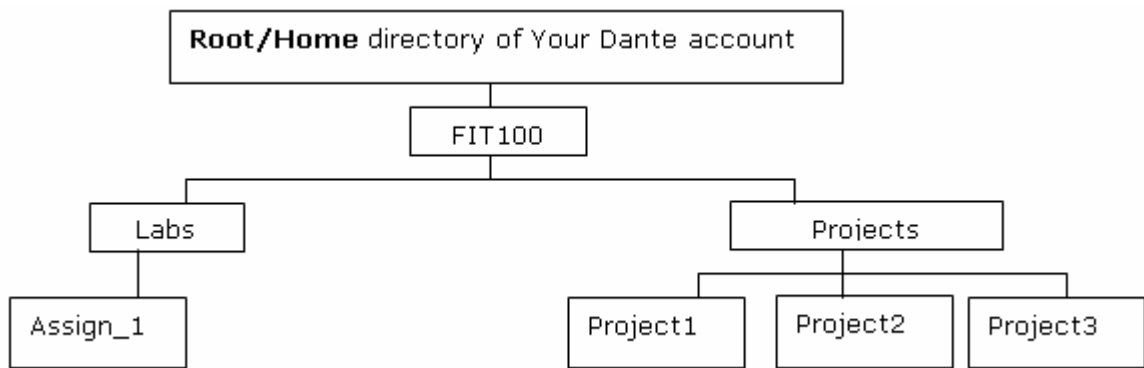
- H. Create a directory called **Assign_1** in Labs with the following command:

mkdir Assign_1

```
Tera Term - homer.u.washington.edu VT
File Edit Setup Control Window Help
homer09% cd FIT100
homer09% ls
Labs      Projects
homer09% mkdir Assign_1
homer09%
```

You've created a directory named **Assign_1** inside **Labs** which sits inside of **fit100** which sits at the root of your Dante account.

The structure of your folders for FIT100 in your remote account should be:



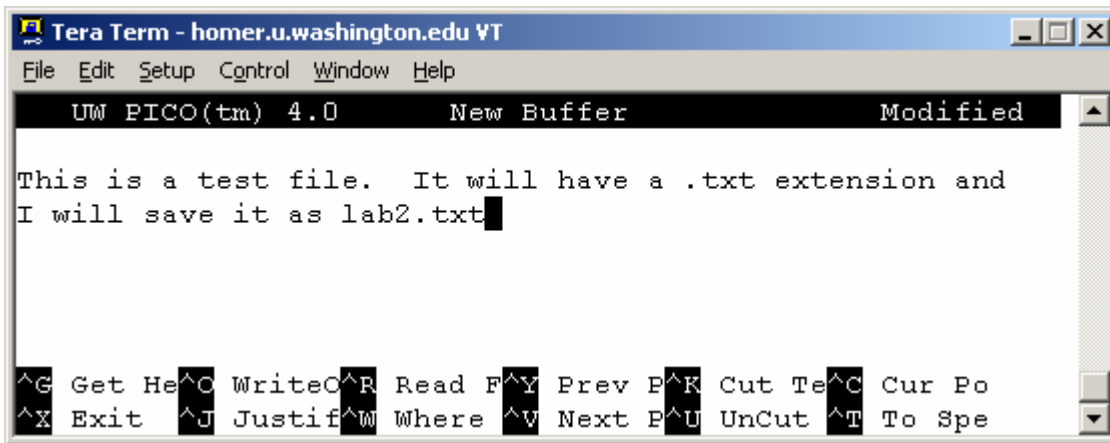
- I. Using the change directory command to move into the `Assign_1` directory

2. Using PICO

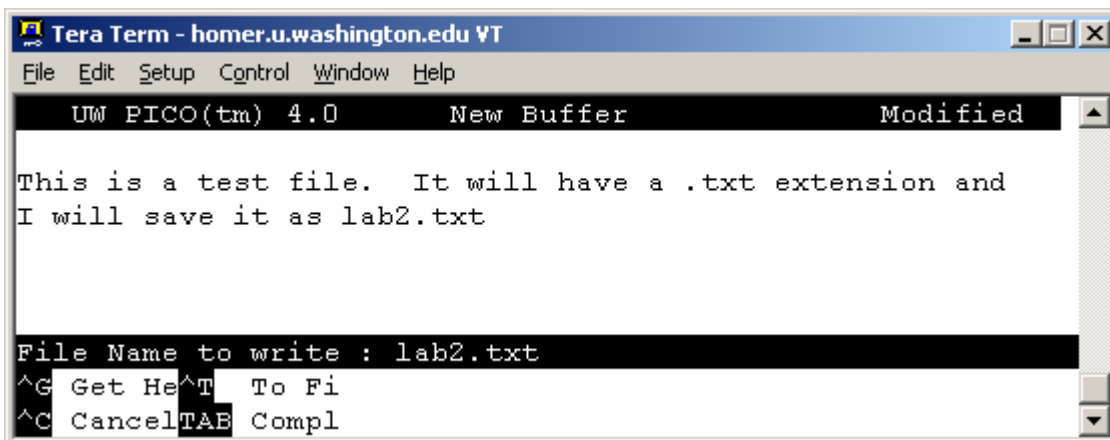
- A. The Unix shell has a text editor that you can use (it is just like using Notepad). Call up the editor by typing `pico` in the command line

```
Tera Term - homer.u.washington.edu VT
File Edit Setup Control Window Help
homer36% cd FIT100Labs
homer36% ls
Assign_1
homer36% cd Assign_1
homer36% pico
```

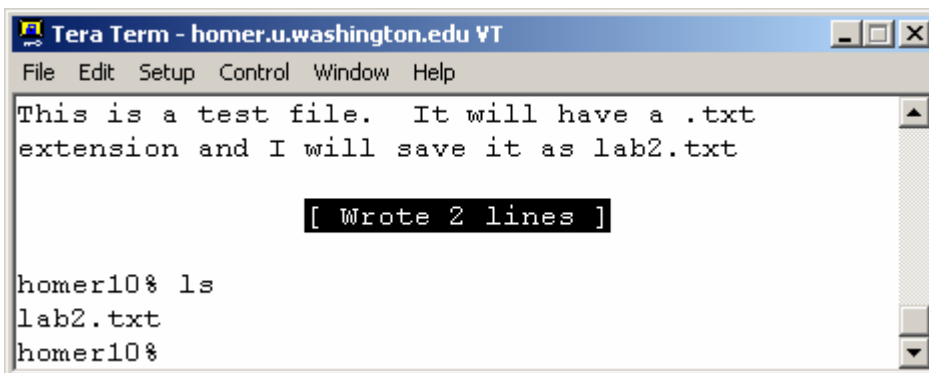
- B. Enter in the following text and then exit and save the file as **lab2.txt**



- C. Use <Ctrl>x to Exit
- D. *Save modified buffer?* Yes
- E. *File Name to write:* lab2.txt
 This environment doesn't recognize spaces.
 It is best not to include spaces in your file or folder names.
- F. Press Enter or Tab to save



- G. From the command prompts, list the contents of the folder Assign_1.
 There should now be a file called lab2.txt.



- H. Go back into the file and edit it. Call the editor and give the file name to open:

pico lab2.txt

To save changes to a file without exiting, use `^O`, which writes the changes to the file.

3. Moving from here to there in one step

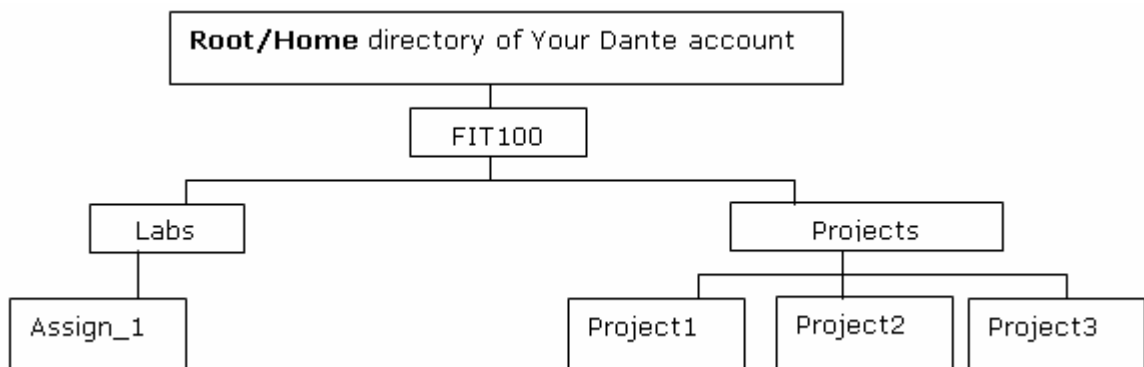
A benefit of using the command line interface is that you can go from the root of your directory structure all the way to the deepest folder with one command if you choose.

Up until now, you have moved up and down your account one level at a time using the `cd` command. Now we will move from inside the **Assign_1** folder and go into one of our Project folders in one step.

If I want to move from the **Assign_1** folder location to the **Project3** folder that is sitting inside of **FIT100Projects**. I would enter the following:

```
cd ~gbw/FIT100/Projects/Project3
```

- A. Use the `cd` command to move from your current location in folder `Assign_1` to the new location of the `Project3` folder.



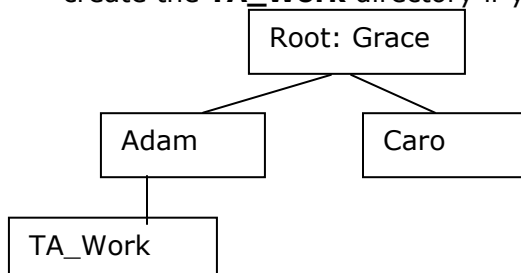
- B. Look at the Unix command at the end of this assignment and do the following:

- Copy the `lab2.txt` file to your `Project3` folder
- Move `lab2.txt` from `Project3` folder to the `Project1` folder

4. Questions for Lab

- A. What is Dante?

- B. Use the picture below to answer the question: What single UNIX command will create the **TA_Work** directory if you are inside the root directory?



5. Understanding the concepts covered in Lab 2b:

- A. Enter full path to your Assign_1 folder. Then use the **ls** command to show the **lab2.txt** inside.
- B. Remember to log off the machine as you leave.

Congratulations!

You have made directories and moved files using the command line interface!!!!!!

You can now create folders and move content between folders in your account on Dante using the command line. This is a very helpful resource when you need to be able to access and work on documents at a variety of locations but may not have a disk to transport the work.

You want to become comfortable in the environment introduced in this lab. It will save you headaches in the weeks to come!!!

HELPFUL HINTS

When you get lost:

As we go through all of this new material it is very easy to get confused and often times to get lost. When that happens in the command line environment the easiest thing to do is go back to your root directory. From there you can navigate back through your directories to find the place you need to be again.

If you get lost, or take a wrong turn as we go through this lab, simply get yourself back to the home directory, the root, of your account with the following step:

- A. Type in the shortcut command to change directories to your root and press <Enter>:

cd

- B. To move up just one directory at a time, use **cd ..** and press <Enter>:

Common Unix Commands

[See more commands at: <http://www.washington.edu/computing/unix/unixqr.html>]

Exit the shell back to the main Tera Term menu:

exit
logout

Change directories (folders):

cd *path*
The path can be either relative or absolute.

cd *~yourUWNetID*
Command to go to your root directory

cd *..*
Command to move back one level at a time:

Changing permission status for a file or directory:

chmod *code file*
chmod *code directory*

To keep a file private: **chmod 600** <file>
To give everyone read permission: **chmod 644** <file>

List contents of directory / directories:

ls

Get Manual pages:

man *topic*
Get the Unix manual pages for a particular topic
man ls retrieves man page for the ls command

Create a new directory on the remote machine:

mkdir *path*
Make a directory on the remote machine. The path can be relative or absolute.

Moving and renaming files:

mv *file directory*
Moves a file to a different directory

mv *directory1 directory2*
Moves a directory to a second directory

mv *file1 file2*
To rename file1 as file2

mv *directory1 directory2*
To rename directory1 as directory2:

mv -i *file1 file2*
To inquire before overwriting an existing file:

Remove remote directory:

rmdir *path*

To remove a directory on the remote machine. If your directory contains any files, you will not be able to delete it. This is a nice safety feature, no?

Delete a remote file / files:

rm *file*

Show the remote machine working directory:

pwd

print working directory on remote machine. This command will print the directory path to your screen, not to a printer.