Purpose:

Familiarize the student with program development using the Linux command line environment and several useful Linux/Unix commands.

1. Linux commands - a refresher
   Upon entering the lab log on to the physical machine using your PODS userid and password. This machine will be acting as a gateway. You will NOT be doing any work o it.

   o Go to Prof. Foreman's website (http://dforeman.cs.binghamton.edu/~foreman), click the CS212 button then click the Grade Tracker Secure link. Login to that site with your PODS UserID & password. Write down the TJW ID that you will see there. If the Grade Tracker secure link doesn't work, use my ALTERNATE site: http://dforeman.homedns.org/~dj

   o Open the SSH or Putty program and connect to the ID you saved above (e.g.; SSH TJW001.cc.binghamton.edu   but replace 001 with YOUR number)

   o You will be connected to a CentOS linux environment. Login with the userid & password given in class. You will be in a Linux "terminal" window.

   o IF you want a full-screen Graphical User Environment (like Gnome or KDE). Type the command: *vncserver*
   then enter a new password for use with a vnc client. Repeat that password when prompted. You can now connect to your GUI screen from anywhere, using a VNC client, such as Tightvnc. (You will have to explore the lab systems to see if there is a VNC program already installed for you.)

   o The Linux help system is accessible through the system "man" pages. This is standard on all Unix/Linux distributions. "man" is short for manual (but the command is "man"). To look up the help for a particular command type the command "man" (without quotes) followed by the command you are interested in followed by the ENTER key.
   For example to see the help information for the "pwd" command type:
     man   pwd
   this will open up the man program and display the iformation for the pwd command. In the man page environment, to go forward to look at additional information depress the enter key. To exit the man page program, type the letter "q".

2. Explore the man pages for the following commands. Using your own words BRIEFLY write definitions, in a plain text file, for what each does and submit this text file via FTP (see "Submissions" below).
   o man
   o pwd
   o mkdir
   o mv
   o cd
   o ls

- o find
- o locate
- o g++
3. Programs (to be written on the TJW system):
    A. While in the lab write a "HelloWorld" program. Use the nano editor (or gedit) program to create the source file in your home directory. To compile the source file:
    To compile your helloworld.c file type:
      gcc helloworld.c -ohelloworld.exe
    fix any errors that the compiler may detect by editing the source file. When everything is OK (i.e. no errors) run your program by typing:
    ./helloworld.exe
    Don't forget the ./ in front of it.
    B. Write a short program that will allow the user to enter an integer from 0 to 32) and will print out the binary equivalent (a string of 1's and 0's that represent that binary number. (This doesn't require any arrays or division). Name the program "PrintBinary".

Submission:

Put all the files for this lab together into a single folder. Name the folder as follows (using the Linux "mv" command you examined above):
    your last name-your first initial-CS212-
follow the last "-" with the lab #. You will do this for EVERY lab & project in this course. (e.g.; foreman-d-CS212-Lab-1)

•FTP the whole folder UNCOMPRESSED
- definitions.txt
- helloworld.c
- PrintBinary.c
- NOTE: you CANNOT use FTP in a browser to submit your files. You MUST use an FTP program, such as *filezilla* or the command-line version of FTP. The FTP info is:
    ftp site name: dforeman.homedns.org
    userid: 212
    password: cs212xx

If you ever need to replace your files, add a version number (-v1, -v2, etc.) to the folder name. You CANNOT delete or replace any files on the FTP server.