- Students must be able to ssh into their Linux server. If they cannot, ssh must be installed and configured on their Linux servers.
- SSH into the server. ssh username@ipaddress <CR> Yes and password.
- Update the Linux server. sudo apt update
- Upgrade the server. sudo apt upgrade y
- Install the FTP server. sudo apt install vsftpd <CR>
- See if the FTP server is running. systemctl status vsftpd –no-page -l
- Add an FTP user. sudo adduser (firstname) <CR>
- Give the user a password (parkway)
- Create a directory to access and send files to the server.
  sudo mkdir /home/firstname/ftp
- Change the ownership of the new folder.
  sudo chown nobody:nogroup /home/firstname/ftp
- Remove the write permissions to the folder
  sudo chmod a-w /home/firstname/ftp
- Create an upload directory where your files will be stored.
  sudo mkdir /home/firstname/ftp/upload
- Set the owner of this new directory.
  sudo chown firstname:firstname /home/firstname/ftp/upload
- Test create a sample file in the upload folder.
  echo "My FTP Server" | sudo tee /home/firstname/ftp/upload/demo.txt
- Verify the permissions for the FTP directory.
  sudo ls -la /home/firstname/ftp
- Edit the config file vsftpd.conf
  sudo nano /etc/vsftpd.conf <CR>
- Changes to be made to this file:
  local_enable=YES
  Uncomment: write_enable=YES
  Uncomment: chroot_local_user=YES
  Go to the end of the file and add these lines:
  user_sub_token=$USER
  local_root=/home/$USER/ftp
  pasv_min_port=30000
  pasv_max_port=31000
  userlist_enable=YES
  userlist_file=/etc/vsftpd.userlist
  userlist_deny=NO
  Save and close
- If the firewall is running, we must allow SSH and FTP traffic to the server.
  sudo ufw allow ssh
  sudo ufw allow 20,21,990/tcp
  sudo ufw allow 30000:31000/tcp
  sudo ufw status

       sudo ufw enable
       sudo ufw status

- Add the new user to allow access to the FTP server
  echo "firstname" | sudo tee -a /etc/vsftpd.userlist
- Restart the vsftpd service.
  sudo systemctl restart vsftpd
- Now install FileZilla onto your computer.
- Open FileZilla and supply your host which is your IP of your Linux Server.
  add your User name: firstname and password: parkway and Port 21.
  Click on QuickConnect. (Remember user is not encrypted)
- **ADDING ENCRYPTION AND SECURITY TO THE FTP SERVER**
- To add SSL encryption use this command:
  sudo openssl req -x509 -nodes -days 3650 -newkey rsa:2048 -keyout
  /etc/ssl/private/vsftpd.pem -out /etc/ssl/private/vsftpd.pem
  Complete all of the information asked for.
- Edit the /etc/vsftpd.conf file to add the location of the SSL and certificate.
  rsa_cert_file=/etc/ssl/private/vsftpd.pem
  rsa_private_key_file=/etc/ssl/private/vsftpd.pem
  ssl_enable=YES
- Add to the end of the config file:
  allow_anon_ssl=NO
  force_local_data_ssl=YES
  force_local_logins_ssl=YES
- Save the file
- sudo systemctl restart vsftpd
- Reconnect the FTP server, and you should receive an SSL certificate.