Root File System

Assignment adding the root file system to the SD card to have Liunx boot properly to a login prompt, by finding the first userspace process to execute.

Make sure to provide screenshots for each step and a video booting the board.

RFS (Root File System)

1. Download a premade RFS from the following: (make sure you are in your home directory, called student)
   https://nweb.eng.fiu.edu/aperezpo/eel4734/rootfs.tar.xz

   Now run the following commands: (they will copy the directory rootfs from your home directory in the directory eel4734 and remove the previous root directory)
   1. sudo tar -xvf rootfs.tar.xz
   2. sudo mv rootfs ../eel4734/
   3. sudo rmdir rootfs

1. Extract the tar.gz file you downloaded.

2. cd into the directory. You should be in /rootfs

3. Plug in the sd card into the VM. (If you already had it plugged in, that's fine)

4. Use the command: sudo cp -r * /media/student/rootfs (change student for your user)

5. Check the rootfs partition on the sd card to make sure all the folders are there.

Loading the Kernel and RFS to the SD Card

1. Insert your SD card to your computer. Be sure it appears on your Ubuntu-VM

2. You have previously formatted the SD card with two partitions one called boot and the other rootfs. The boot partition was previous loaded with the files u-boot, MLO, zimage, and Env.txt(as shown in previous assignment tutorial).

3. Now install your RFS(Root File System) to your SD card. Transfer the contents of the RFS to your SD card, go to ~/eel4734 and enter

4. Use the command: sudo cp -r * /media/student/rootfs (change student for your user)
5. Check the rootfs partition on the sd card to make sure all the folders are there.

Boot BeagleBoneBlack from the SD Card

1. Connect your debug cable to the beaglebone and to your computer. Make sure your VM recognizes it
2. Run picocom with the following command `picocom -b 115200 /dev/ttyUSB0` and be sure the output of that command reads 'Terminal Ready' (might have to install picocom)
3. Insert your SD into the BeagleBoneBlack
4. Hold the reset button on the BeagleBoneBlack (across from the USB Port)
5. Now power up the board with the usb cable
6. When prompted to login, enter `root` as the user login (take screenshot)